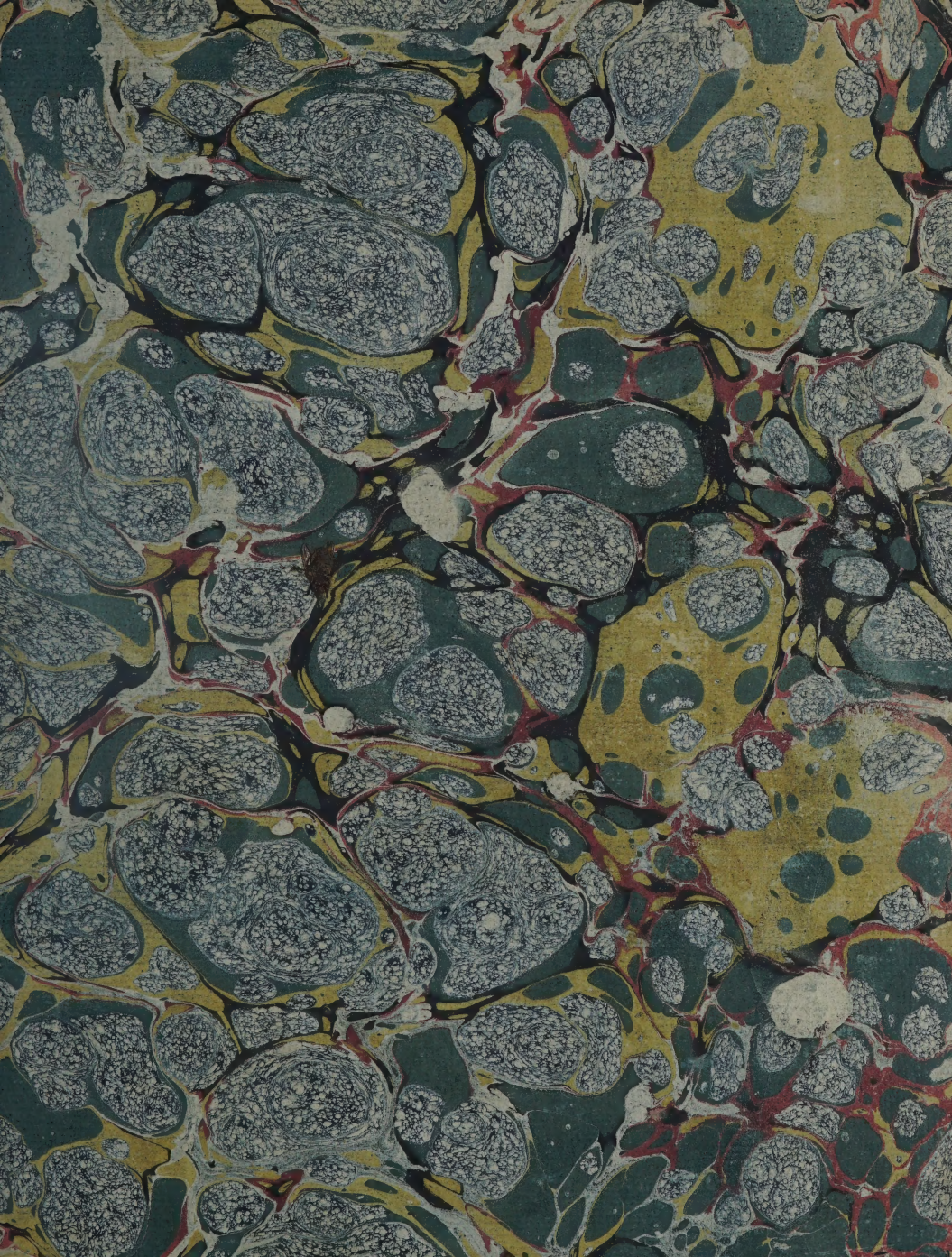


Anth. G. Wright. Biddulph.





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THE
ENGLISH ENCYCLOPÆDIA:
BEING
A COLLECTION OF TREATISES,
AND
A DICTIONARY OF TERMS,
ILLUSTRATIVE OF THE
ARTS AND SCIENCES.

COMPILED FROM MODERN AUTHORS OF THE FIRST EMINENCE IN THE DIFFERENT
BRANCHES OF SCIENCE.

IN TEN VOLUMES.

THE WHOLE ILLUSTRATED WITH UPWARDS OF FOUR HUNDRED COPPER-PLATES.

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THE SECOND EDITION, WITH ADDITIONAL CORRECTIONS AND IMPROVEMENTS



LONDON

THE ENGLISH ENCYCLOPÆDIA.

TRE

TREACLE. See MELASSES.

TREACLE-Beer. See SPRUCE.

TREACLE-Mustard. See CLYPEOLA.

TREASON, a general appellation, made use of by the law, to denote not only offences against the king and government, but also that accumulation of guilt which arises whenever a superior reposes a confidence in a subject or inferior, between whom and himself there subsists a natural, a civil, or even a spiritual relation; and the inferior so abuses that confidence, so forgets the obligations of duty, subjection and allegiance, as to destroy the life of any such superior or lord. Hence treason is of two kinds, *high* and *petty*.

High-Treason, or Treason Paramount (which is equivalent to the *crimen læse majestatis* of the Romans, as Glanvil denominates it also in our English law), is an offence committed against the security of the king or kingdom, whether by imagination, word, or deed. In order to prevent the inconveniences which arose in England from a multitude of constructive treasons, the statute 25 Edw. III. c. 2. was made; which defines what offences only for the future should be held to be treason; and this statute comprehends all kinds of high-treason under seven distinct branches.

“1. When a man doth compass or imagine the death of our lord the king, of our lady his queen, or of their eldest son and heir.” Under this description it is held that a queen-regnant (such as Queen Elizabeth and Queen Anne) is within the words of the act, being invested with royal power, and intitled to the allegiance of her subject: but the husband of such a queen is not comprised within these words; and therefore no treason can be committed against him.

Let us next see what is a *compassing* or *imagining* the death of the king, &c. These are synonymous terms: the word *compass* signifying the purpose or design of the mind or will; and not, as in common speech, the carrying such design to effect. And therefore an accidental stroke, which may mortally wound the sovereign, *per infortunium*, without any traitorous intent, is no treason: as was the case of Sir Walter Tyrrel, who, by the command of King William Rufus, shooting at a hart, the arrow glanced against a tree, and killed the king upon the spot. But as this compassing or imagination is an act of the mind, it cannot possibly fall under any judicial cognizance, unless it be demonstrated by some open or overt act. The statute expressly requires, that the accused “be

TRE

thereof upon sufficient proof attained of some open act by men of his own condition.” Thus, to provide weapons or ammunition for the purpose of killing the king, is held to be a palpable overt act of treason in imagining his death. To conspire to imprison the king by force, and move towards it by assembling company, is an overt act of compassing the king’s death; for all force, used to the person of the king, in its consequence may tend to his death, and is a strong presumption of something worse intended than the present force, by such as have so far thrown off their bounden duty to their sovereign: it being an old observation, that there is generally but a short interval between the prisons and the graves of princes. It seems clearly to be agreed, that by the common law and the statute of Edw. III. words spoken amount only to a high misdemeanor, and no treason. For they may be spoken in heat, without any intention; or be mistaken, perverted, or misremembered by the hearers; their meaning depends always on their connection with other words and things; they may signify differently even according to the tone of voice with which they are delivered; and sometimes silence itself is more expressive than any discourse. As therefore there can be nothing more equivocal and ambiguous than words, it would indeed be unreasonable to make them amount to high treason. And accordingly, in 4 Car. I. on a reference to all the judges, concerning some very atrocious words spoken by one Pyne, they certified to the king, “that though the words were as wicked as might be, yet they were no treason; for unless it be by some particular statute, no words will be treason.” If the words be set down in writing, it argues more deliberate intention; and it has been held, that writing is an overt act of treason; for *scribere est agere*. But even in this case the bare words are not the treason, but the deliberate act of writing them.

2. The second species of treason is, “if a man do violate the king’s companion, or the king’s eldest daughter unmarried, or the wife of the king’s eldest son and heir.” By the king’s companion is meant his wife; and by violation is understood carnal knowledge, as well without force as with it; and this is high treason in both parties if both be consenting; as some of the wives of Henry VIII. by fatal experience evinced.

3. The third species of treason is, “if a man do levy war against our lord the king in his realm.” And this may be done

by taking arms, not only to dethrone the king, but under pretence to reform religion, or the laws, or to remove evil counsellors, or other grievances whether real or pretended. For the law does not, neither can it, permit any private man, or set of men, to interfere forcibly in matters of such importance; especially as it has established a sufficient power for these purposes in the high court of parliament: neither does the constitution justify any private or particular resistance for private or particular grievances; though, in cases of national oppression, the nation has very justifiably risen as one man, to vindicate the original contract subsisting between the king and his people.

4. "If a man be adherent to the king's enemies in his realm, giving to them aid and comfort in the realm or elsewhere," he is also declared guilty of high-treason. This must likewise be proved by some overt act; as by giving them intelligence, by lending them provisions, by selling them arms, by treacherously surrendering a fortress, or the like.

5. "If a man counterfeit the king's great or privy seal," this is also high-treason. But if a man takes wax bearing the impression of the great seal off from one patent and fixes it to another, this is held to be only an abuse of the seal, and not a counterfeiting of it: as was the case of a certain chaplain, who in such a manner framed a dispensation for non-residence. But the knavish artifice of a lawyer much exceeded this of the divine. One of the clerks in chancery glued together two pieces of parchment; on the uppermost of which he wrote a patent, to which he regularly obtained the great seal, the label going through both the skins. He then dissolved the cement, and taking off the written patent, on the blank skin, wrote a fresh patent of a different import from the former, and published it as true. This was held no counterfeiting of the great seal, but only a great misprison; and Sir Edward Coke mentions it with some indignation that the party was living at that day.

6. The sixth species of treason under this statute is, "if a man counterfeit the king's money; and if a man bring false money into the realm counterfeit to the money of England, knowing the money to be false, to merchandise and make payment withal." As to the first branch, counterfeiting the king's money; this is treason, whether the false money be uttered in payment or not. Also if the king's own minters alter the standard or alloy established by law, it is treason. But gold and silver money are only held to be within this statute. With regard likewise to the second branch, importing foreign counterfeit money in order to utter it here; it is held that uttering it, without importing it, is not within the statute.

7. The last species of treason ascertained by this statute is, "if a man slay the chancellor, treasurer, or the king's justices of the one bench or the other, justices in eyre, or justices of assize, and all other justices assigned to hear and determine, being in their places doing their offices." These high magistrates, as they represent the king's majesty during the execution of their offices, are therefore for the time equally regarded by the law. But this statute extends only to the actual killing of them; and not to wounding, or a bare attempt to kill them. It extends also only to the officers therein specified; and therefore the barons of the exchequer, as such, are not within the protection of this act; but the lord keeper or commissioners of the great seal now seem to be within it, by virtue of the statutes 5 Eliz. c. 18. and 1 Will. and M. c. 21.

The new treasons, created since the statute 1 M. c. 1. and not comprehended under the description of statute 25 Edw. III. may be comprised under three heads. The first species relates to Papists; the second to falsifying the coin or other royal signatures, as falsely forging the sign manual, privy signet,

or privy seal, which shall be deemed high-treason (1. M. stat. ii. c. 6.) The third new species of high-treason is such as was created for the security of the Protestant succession in the house of Hanover. For this purpose, after the act of settlement was made, it was enacted by statute 13 and 14 W. III. c. 3. that the pretended prince of Wales, assuming the title of King James III. should be attainted of high-treason; and it was made high-treason for any of the king's subjects to hold correspondence with him or any person employed by him, or to remit money for his use. And by 17 Geo. II. c. 39. it is enacted, that if any of the sons of the Pretender shall land or attempt to land in this kingdom, or be found in the kingdom or any of its dominions, he shall be adjudged attainted of high-treason; and corresponding with them, or remitting money to their use, is made high-treason. By 1 Ann. stat. 2. c. 17. the offence of hindering the next in succession from succeeding to the crown is high-treason: and by 6 Ann. c. 7. if any person shall maliciously, advicely, and directly, by writing or printing, maintain, that any other person hath any right to the crown of this realm, otherwise than according to the act of settlement; or that the kings of this realm with the authority of parliament are not able to make laws to bind the crown and its descent; such person shall be guilty of high-treason.

The punishment of high-treason in general is very solemn and terrible. 1. That the offender be drawn to the gallows, and not be carried or walk; though usually (by connivance, at length ripened by humanity into law) a sledge or hurdle is allowed, to preserve the offender from the extreme torment of being dragged on the ground or pavement. 2. That he be hanged by the neck, and then cut down alive. 3. That his entrails be taken out, and burned while he is yet alive. 4. That his head be cut off. 5. That his body be divided into four parts. 6. That his head and quarters be at the king's disposal.

The king may, and often doth, discharge all the punishment except beheading, especially where any of noble blood are attainted. For beheading being part of the judgment, that may be executed, though all the rest be omitted by the king's command. But where beheading is no part of the judgment, as in murder or other felonies, it hath been said that the king cannot change the judgment, although at the request of the party, from one species of death to another.

In the case of poisoning, which is a treason of a different complexion from the rest, the punishment is milder for male offenders; being only to be drawn and hanged by the neck till dead. But in treasons of every kind the punishment of women is the same, and different from that of men. For as the natural modesty of the sex forbids the exposing and publicly mangling their bodies, their sentence (which is to the full as terrible to sense as the other) is to be drawn to the gallows, and there to be burned alive.

For the consequences of this judgment, see *ATTAINDER, FORFEITURE, and CORRUPTION of Blood*.

Petty or Petit Treason, according to the statute 25 Edward III. c. 2. may happen three ways: by a servant killing his master, a wife her husband, or an ecclesiastical person (either secular or regular) his superior, to whom he owes faith and obedience. A servant who kills his master whom he has left, upon a grudge conceived against him during his service, is guilty of petty treason: for the traitorous intention was hatched while the relation subsisted between them, and this is only an execution of that intention. So if a wife be divorced *a mensæ et thoro*, still the *vinculum matrimonii* subsists; and if she kills such divorced husband, she is a traitress. And a clergyman is understood to owe canonical obedience to the

Bishop who ordained him, to him in whose diocese he is benefited, and also to the metropolitan of such suffragan or diocesan bishop; and therefore to kill any of these is petit treason. As to the rest, whatever has been said with respect to wilful MURDER, is also applicable to the crime of petit treason, which is no other than murder in its most odious degree; except that the trial shall be as in cases of high treason, before the improvements therein made by the statutes of William III. But a person indicted of petit treason may be acquitted thereof, and found guilty of manslaughter or murder; and in such case it should seem that two witnesses are not necessary, as in cases of petit treason they are. Which crime is also distinguished from murder in its punishment.

The punishment of petit treason in a man, is to be drawn and hanged, and in a woman to be drawn and burned: the idea of which latter punishment seems to have been handed down to us from the laws of the ancient Druids, which condemned a woman to be burned for murdering her husband; and it is now the usual punishment for all sorts of treasons committed by those of the female sex. Persons guilty of petit treason were first debarred the benefit of clergy by statute 12 Henry VII. c. 7. which has since been extended to their aiders, abettors, and counsellors, by statutes 23 Henry VIII. c. 1. and 4 & 5 P. and M. c. 4.

TREASURE, in general, denotes a store or stock of money in reserve.

TREASURE-TROVE, in law, derived from the French word *trouver*, "to find," called in Latin *thesaurus inventus*, is where any money or coin, gold, silver, plate, or bullion, is found hidden in the earth or other private place, the owner thereof being unknown; in which case the treasure belongs to the king: but if he that hid it be known, or afterwards found out, the owner and not the king is intitled to it.

TREASURER, an officer to whom the treasure of a prince or corporation is committed to be kept and duly disposed of, in payment of officers and other expences. See TREASURY. Of these there is a great variety. His majesty of Great Britain, in quality of elector of Brunswick, is arch-treasurer of the Roman empire. In England, the principal officers under this denomination are, the lord high-treasurer, the treasurer of the household, treasurer of the navy, of the king's chamber, &c.

The lord high-treasurer of Great Britain, or first commissioner of the treasury, when in commission, has under his charge and government all the king's revenue which is kept in the exchequer. He holds his place during the king's pleasure; being instituted by the delivery of a white staff to him. He has the check of all the officers employed in collecting the customs and royal revenues: and in his gift and disposition are all the offices of the customs in the several ports of the kingdom; escheators in every county are nominated by him; he also makes leases of the lands belonging to the crown.

The office of lord-treasurer is now in commission. The number of lords commissioners is five; one of whom is the first lord, whose annual salary was formerly 283l. but is now 4000l.; and who, unless he be a peer, is also chancellor of the exchequer, and prime minister in the government of this country; the other lords commissioners have an annual salary of 1000l. each.

TREASURER of the Household, is an officer who, in the absence of the lord-treasurer, has power, with the comptroller and other officers of the Green-Cloth and the steward of the Marshalsea, to hear and determine treasons, felonies, and other crimes committed within the king's palace. See HOUSEHOLD. There is also a treasurer belonging to the establishment of her majesty's household, &c.

TREASURER of the Navy, is an officer who receives money out of the exchequer, by warrant from the lord high-treasurer, or the lords commissioners executing that place; and pays all charges of the navy, by warrant from the principal officers of the navy.

TREASURER of the County, he that keeps the county stock. There are two of them in each county, chosen by the major part of the justices of the peace, &c. at their general quarter session; under previous security given for the money entrusted with them, and the faithful execution of the trusts reposed in them.

TREASURY, the place wherein the revenues of a prince are received, preserved, and disbursed. In England the treasury is a part of the exchequer; by some called the *lower exchequer*. The officers of his majesty's treasury, or the lower exchequer, are the lords commissioners, one of whom is chancellor, two joint secretaries, private secretary to the first lord, two chamberlains, an auditor, four tellers, a clerk of the pells, officers of the receipt, a tally-cutter, &c. See each officer under his proper article, CHANCELLOR, TELLER, TALLY, &c.

Lords of the TREASURY. In lieu of one single director and administrator of his majesty's revenues under the title of *lord high-treasurer*, it is at present thought proper to put that office in commission, i. e. to appoint several persons to discharge it with equal authority, under the title of *lords commissioners of the treasury*.

TREBLE, in music, the highest or most acute of the four parts in symphony, or that which is heard the clearest and shrillest in a concert.

TREBUCHET, TREBUCKET, *Tribuch* (*Terbichetum*), a tumbrel or cucking-stool. Also a great engine to cast stones to batter walls.

TREE, a large vegetable rising with one woody stem to a considerable height. Trees may be divided into two classes, *timber and fruit trees*; the first including all those trees which are used in machinery, ship-building, &c. or, in general, for purposes of utility; and the second comprehending those trees valued only, or chiefly, for their fruit. It is not necessary to form a third class to include trees used for fuel, as timber is used for this purpose where it is abundant; and where it is not abundant, the branches of the timber trees, or such of them as are dwarfish, unhealthy, or too small for mechanical purposes, are used as fuel.

The anatomy and physiology of trees have already been given under the generic name PLANT and SAP. For an account of their natural history, see NATURAL HISTORY.

Certain trees, it is well known, are natives of particular districts; but many of them have been transplanted from their native soil, and now flourish luxuriantly in distant countries, so that it becomes a matter of very considerable difficulty to ascertain their original soil. The following rules are given for this purpose by the Honourable Daines Barrington.

1. They must grow in large masses, and cover considerable tracts of ground, the woods not ending abruptly, by a change to other trees, except the situation and strata become totally different. 2. They must grow kindly in copses, and shoot from the stool, so as to continue for ever, if not very carefully grubbed up. 3. The feed must ripen kindly; nature never plants, but where a succession in the greatest profusion will continue. Lastly, trees that give names to many places are probably indigenous.

The growth of trees is a curious and interesting subject; yet few experiments have been made to determine what the additions are which a tree receives annually in different periods of its age. The only observations which we have seen

on this subject worth repeating were made by the ingenious Mr. Barker, to whom the Philosophical Transactions are much indebted for papers containing an accurate register of the weather, which he has kept for many years. He has drawn up a table to point out the growth of three kinds of trees, oaks, ashes, and elms; which may be seen in the Philosophical Transactions for 1788. We shall give his conclusions.

"I find (says he) the growth of oak and ash to be nearly the same. I have some of both sorts planted at the same time, and in the same hedges, of which the oaks are the largest; but there is no certain rule as to that. The common growth of an oak or an ash is about an inch in girth in a year; some thriving ones will grow an-inch and a half; the unthriving ones not so much. Great trees grow more timber in a year than small ones; for if the annual growth be an inch, a coat of one-sixth of an inch is laid on all round, and the timber added to the body every year is its length multiplied into the thickness of the coat, and into the girth, and therefore the thicker the tree is, the more timber is added."

We will present our readers with a table, showing the growth of seventeen kinds of trees for two years. The trees grew at Cavenham in Suffolk.

No.		July 1785.		July 1786.		July 1787.	
		P. In.	F. In.	P. In.	F. In.	P. In.	F. In.
1	Oak	0	10½	0	11½	—	1 0½
2	Larch	—	0 0½	—	1 3	—	1 4
3	Scotch fir	—	1 3½	—	1 5½	—	1 7½
4	Spruce fir	—	0 5½	—	0 6½	—	0 7½
5	Spanish chestnut	—	0 7½	—	0 7½	—	0 8
6	Elm	2	7½	2	9	2	11
7	Pinaster	—	2 3½	—	2 4½	—	2 7
8	Larch	—	1 5½	—	1 6	—	1 7
9	Weymouth pine	—	0 5	—	0 6	—	0 7½
10	Acacia	—	1 2½	—	1 5½	—	1 6½
11	Beech	—	0 6½	—	0 6½	—	0 7½
12	Plane occidental	—	0 6½	—	0 7½	—	0 8
13	Lombardy poplar	—	1 8	—	2 0	—	2 2½
14	Bald poplar	—	1 2½	—	1 4½	—	1 5½
15	Willow	—	2 9½	—	3 2	—	3 3
16	Silver fir	—	0 7½	—	0 8½	—	0 9½
17	Lime	—	1 8½	—	1 10½	—	2 0

Trees sometimes attain a very great size: this must depend in a great measure on the richness of soil, but no less on the degree of heat. Indeed heat is so essential to the growth of trees, that as we go from the place within the polar circles where vegetation begins, and advance to the equator, we find the trees increase in size. Greenland, Iceland, and other places in the same latitude, yield no trees at all; and the shrubs which they produce are dwarfish; whereas, in warm climates, they often grow to an immense size. Mr. Marshall saw spruce and silver firs in the dock-yard in Venice above forty yards long, and one of thirty-nine yards was eighteen inches diameter at the small end. He was informed that they came from Switzerland.

The largest tree in Europe, mentioned by travellers, is the chestnut tree on mount Etna, already described under the article ETNA. It is a certain fact that trees acquire a very great size in volcanic countries. Beside the multitude of fine groves in the neighbourhood of Albano in Italy, there are many detached oaks twenty feet in circumference, and many elms of the same size, especially in the romantic way to Eastello, called the *Galleria*. In travelling by the side of the lake of Boffena, the road leads us through an immense number of oaks, spread upon beautiful hills. Where the lava has been sufficiently softened, they are clean and straight, and of a considerable size; but where the lava has not been converted

into soil proper for strong vegetation, they are round-headed, and of less bigness; however, taken all together, they make a magnificent appearance; and the spot itself ought to be ranked among the fine parts of Italy. The same may be observed of the small lake of Vico, encompassed with gentle risings, that are all clothed with forest trees.

Some yews have been found in Britain sixty feet round. Palms in Jamaica attain the height of 200 feet; and some of the pines in Norfolk Island are 280 feet high.

Of all the different kinds known in Europe, oak is best for building; and even when it lies exposed to air and water, there is none equal to it. Fir-timber is the next in degree of goodness for building, especially in England, where they build upon leaves. It differs from oak in this, that it requires not much seasoning, and therefore no great stock is required before hand. Fir is used for flooring, wainscoting, and the ornamental parts of building within doors. Elm is the next in use, especially in England and France: it is very tough and pliable, and therefore easily worked: it does not readily split; and it bears driving of bolts and nails better than any other wood; for which reason it is chiefly used by wheelwrights and coach-makers, for shafts, naves, &c. Beech is also used for many purposes; it is very tough and white when young, and of great strength; but liable to warp very much when exposed to the weather, and to be worm-eaten when used within doors; its greatest use is for planks, bedsteads, chairs, and other household goods. Ash is likewise a very useful wood, but very scarce in most parts of Europe; it serves in buildings, or for any other use, when screened from the weather; handspikes and oars are chiefly made of it. Wild chestnut timber is by many esteemed to be as good as oak, and seems to have been much used in old buildings; but whether these trees are more scarce at present than formerly, or have been found not to answer so well as was imagined, it is certain that this timber is now but little used. Walnut-tree is excellent for the joiner's use, it being of a more curious brown colour than beech, and not so subject to the worms. The poplar, abel, and aspen trees, which are very little different from each other, are much used instead of fir; they look well, and are tougher and harder. See QUERCUS, OAK, PRUNUS, ULMUS, PLATANUS, POPULUS, &c.

The goodness of timber not only depends on the soil and situation in which it stands, but likewise on the season wherein it is felled. In this people disagree very much; some are for having it felled as soon as its fruit is ripe, others in the spring, and many in the autumn. But as the sap and moisture of timber is certainly the cause that it perishes much sooner than it otherwise would do, it seems evident, that timber should be felled when there is the least sap in it, viz. from the time that the leaves begin to fall till the trees begin to bud. This work usually commences about the end of April in England, because the bark then rises most freely; for where a quantity of timber is to be felled, the statute requires it to be done then, for the advantage of tanning. The ancients chiefly regarded the age of the moon in felling their timber; their rule was to fell it in the wane, or four days after the new moon, or sometimes in the last quarter. Pliny advises it to be in the very instant of the change; which happening to be in the last day of the winter solstice, the timber, says he, will be incorruptible.

Timber should likewise be cut when of a proper age; for when it is either too young or too old, it will not be so durable as when cut at a proper age. It is said that oak should not be cut under sixty years old, nor above 200. Timber, however, should be cut in its prime, when almost fully grown, and before it begins to decay; and this will be sooner or later, according to the dryness and moistness of the soil where the

timber grows, as also according to the bigness of the trees; for there are no fixed rules in felling of timber, experience and judgment must direct here as in most other cases.

Great attention is necessary in the seasoning of timber. Some advise the planks of timber to be laid for a few days in some pool or running stream, in order to extract the sap, and afterwards to dry them in the sun or air. By this means, it is said, they will be prevented from either chopping, casting, or cleaving; but against shrinking there is no remedy. Some again are for burying them in the earth, others in a heat; and some for scorching and seasoning them in fire, especially piles, posts, &c. which are to stand in water or earth. The Venetians first found out the method of seasoning by fire; which is done after this manner: they put the piece to be seasoned into a strong and violent flame; in this they continually turn it round by means of an engine, and take it out when it is every-where covered with a black coaly crust; the internal part of the wood is thereby so hardened, that neither earth nor water can damage it for a long time afterwards.

Dr. Plott says, it is found by long experience, that the trunk or body of the trees, when barked in the spring, and left standing naked all the summer exposed to the sun and wind, are so dried and hardened, that the sappy part in a manner becomes as firm and durable as the heart itself. This is confirmed by M. Buffon, who, in 1738, presented to the Royal Academy of Sciences at Paris a memoir, intitled, "An easy method of increasing the solidity, strength, and duration of timber;" for which purpose he observes, "nothing more is necessary than to strip the tree entirely of its bark during the season of the rising of the sap, and to leave it to dry completely before it be to cut down."

By many experiments, particularly described in that essay, it appears, that the tree should not be felled till the third year after it has been stripped of the bark; that it is then perfectly dry, and the sap become almost as strong as the rest of the timber, and stronger than the heart of any other oak tree which has not been so stripped; and the whole of the timber stronger, heavier, and harder; from which he thinks it fair to conclude, that it is also more durable. "It would no longer (he adds) be necessary, if this method were practised, to cut off the sap; the whole of the tree might be used as timber; one of forty years' growth would serve all the purposes for which one of sixty years is now required; and this practice would have the double advantage of increasing the quantity, as well as the strength and solidity, of the timber."

The navy board, in answer to the inquiries of the commissioners of the land revenue, in May 1789, informed them, they had then standing some trees stripped of their bark two years before, in order to try the experiment of building one half of a sloop of war with that timber, and the other half with timber felled and stripped in the common way. This very judicious mode of making the experiment, if it be properly executed, will undoubtedly go far to ascertain the effects of this practice. We are sorry that we are not able to inform our readers what was the result of the experiment.

After the planks of timber have been well seasoned and fixed in their places, care is to be taken to defend or preserve them; to which the smearing them with linseed oil, tar, or the like oleaginous matter, contributes much. The ancients, particularly Hesiod and Virgil, advise the smoke-drying of all instruments made of wood, by hanging them up in the chimneys where wood-fires are used. The Dutch preserve their gates, portcullises, drawbridges, sluices, &c. by coating them over with a mixture of pitch and tar, whereon they strew small pieces of cockle and other shells, beaten almost to powder, and mixed with sea-sand, which incrusts and arms them

wonderfully against all assaults of wind and weather. When timber is felled before the sap is perfectly at rest, it is very subject to worms; but to prevent and cure this, Mr. Evelyn recommends the following remedy as the most approved: put common sulphur into a cucurbit, with as much aquafortis as will cover it three fingers deep; distil it to dryness, which is performed by two or three rectifications. Lay the sulphur that remains at bottom, being of a blackish or sand-red colour, on a marble; or put it in a glass, and it will dissolve into an oil; with this oil anoint the timber which is infected with worms. This, he says, will not only prevent worms, but preserve all kinds of woods, and many other things, as ropes, nets, and masts, from putrefaction, either in water, air, or snow.

An experiment to determine the comparative durability of different kinds of timber, when exposed to the weather, was made by a nobleman in Norfolk; of which an account is given by Sir Thomas Beever in the *Annals of Agriculture*, vol. vi. This nobleman, in the year 1774, ordered three posts, forming two sides of a quadrangle, to be fixed in the earth on a rising ground in his park. Into these posts were mortised planks, an inch and an half thick, cut out of trees from thirty to forty-five years growth. These, after standing ten years, were examined, and found in the following state and condition.

The cedar was perfectly sound; larch, the heart sound, but the sap quite decayed; spruce fir, sound; silver fir, in decay; Scotch fir, much decayed; pinaster, quite rotten; chestnut, perfectly sound; abele, sound; beech, sound; walnut, in decay; sycamore, much decayed; larch, quite rotten. Sir Thomas Beever justly remarks, that the trees ought to have been of the same age; and Mr. Arthur Young adds, they ought to have been cut out of the same plantation.

The immense quantity of timber consumed of late years in ship-building and other purposes has diminished in a very great degree the quantity produced in this country. On this account, many gentlemen who with well to their country, alarmed with the fear of a scarcity, have strongly recommended it to government to pay some attention to the cultivation and preservation of timber.

It has been proposed to appropriate such part of the crown-lands as are fit for the purpose solely for producing timber for the navy. This appears a very proper scheme in speculation; but it has been objected, that for government to attempt the farming of forests would be really to establish groups of officers to pocket salaries for doing what, it is well known, will never be done at all. But to this objection we reply, that such an agreement might be made with the inspectors of forests, as to make it their own interest to cultivate trees with as much care as possible. Their salary might be fixed very low, and raised in proportion to the number of trees which they could furnish of such a size in a certain number of years. After all, we must acknowledge, that we must depend greatly on Russia, Sweden, Norway, and America, for supplying us with timber; and while these countries take our manufactures in exchange, we have no reason to complain. Still, however, we ought surely not to neglect the cultivation of what is of so much importance to our existence as a nation, for it may often be impossible in time of war to obtain timber from foreign countries.

The following is the method proposed by Mr. William Forsyth for curing injuries and defects in trees; for which a reward was given to him by his majesty, on condition that he should make it public. It is equally applicable to forest as to fruit-trees.

Take one bushel of fresh cow-dung, half a bushel of lime rubbish of old buildings (that from the ceilings of rooms is

preferable); half a bushel of wood-ashes; and a sixteenth part of a bushel of pit or river sand. The three last articles are to be sifted fine before they are mixed; then work them well together with a spade, and afterwards with a wooden beater, until the stuff is very smooth, like fine plaster used for the ceilings of rooms. The composition being thus made, care must be taken to prepare the tree properly for its application by cutting away all the dead, decayed, and injured parts, till you come to the fresh sound wood, leaving the surface of the wood very smooth, and rounding off the edges of the bark with a draw-knife, or other instrument perfectly smooth, which must be particularly attended to. Then lay on the plaster about one-eighth of an inch thick all over the part where the wood or bark has been so cut away, finishing off the edges as thin as possible. Then take a quantity of dry powder of wood-ashes, mixed with a sixth part of the same quantity of the ashes of burnt bones; put it into a tin box, with holes in the top, and shake the powder on the surface of the plaster, till the whole is covered over with it, letting it remain for half an hour to absorb the moisture; then apply more powder, rubbing it on gently with the hand, and repeating the application of the power, till the whole plaster becomes a dry smooth surface.

All trees cut down near the ground should have the surface made quite smooth, rounding it off in a small degree, as before mentioned; and the dry powder directed to be used afterwards should have an equal quantity of powder of alabaster mixed with it, in order the better to resist the dripping of trees and heavy rains. If any of the composition be left for a future occasion, it should be kept in a tub or other vessel, and urine of any kind poured on it, so as to cover the surface; otherwise the atmosphere will greatly hurt the efficacy of the application. Where lime-rubbish or old buildings cannot be easily got, take powdered chalk, or common lime, after having been slaked a month at least. As the growth of the tree will gradually affect the plaster, by raising up its edges next the bark, care should be taken, where that happens, to rub it over with the finger when occasion may require (which is best done when moistened by rain), that the plaster may be kept whole, to prevent the air and wet from penetrating into the wound.

By this process, some old worn-out pear trees, that bore only a few small, hard fruit, of a kernelly texture, were made to produce pears of the best quality and finest flavour the second summer after the operation; and in four or five years they bore such plenteous crops, as a young healthy tree would not have produced in four times that period.

By this process, too, some large ancient elms, in a most decayed state, having all their upper parts broken, and a small portion only of the bark remaining, shot out stems from their tops, above thirty feet in length, in fix or seven years from the first application of the composition.

Thus may valuable fruits be renovated; and forest trees, which are useful or ornamental from their particular situation, be preserved in a flourishing state. But what is far more interesting, a perfect cure has been made, and sound timber produced, in oak trees, which had received very considerable damage from blows, bruises, cutting of deep letters, the rubbing off the bark by the ends of rollers, or wheels of caris, or from the breaking of branches by storms.

TREFOIL, in botany. See TRIFOLIUM.

TREMELLA, in botany: a genus of plants belonging to the class of *cryptogamia*, and natural order of *algæ*. It is a gelatinous membranous substance; the parts of the fructification scarcely visible. There are 11 species; of which five are indigenous; the noxious, lichened, verrucosa, hemispherica, and purpurea. 1. The *myces*, or jelly rain tremella, is found

in pastures and by the sides of gravel-walks in gardens after rains; not uncommon in spring, summer, and autumn. It is a membranaceous, pellucid, and gelatinous substance, without any visible root; of a yellowish dull green colour; assuming various forms, either round, angular, plaited or folded together irregularly, like the intestines, or a pocket-handkerchief, an inch or two or more in diameter: soft to the touch when moist; but thin, membranaceous, and brittle, when dry; and of a black fulvous colour.—The ancient alchemists called this vegetable the *flowers of heaven*, and imagined that from it they would procure the universal menstruum: but all their researches ended in discovering that by distillation it yielded some phlegm, volatile salt, and empyreumatic oil. It has been extolled in wounds, ulcers, &c. but no regard is ever paid to it by judicious practitioners. Dr. Darwin says, he has been well informed that this tremella is a mucilage voided by herons after they have eaten frogs!! 2. The *lichenoides*, or transparent tremella, is erect, plane, margin curled, lacinated, and brown. It grows on heaths and in woods, &c. 3. *Verrucosa*, or warty tremella, is tubercular, solid, wrinkled, roundish, and resembling a bladder; it is of a blackish yellow. It grows on stones in rivulets. 4. *Hemispherica*, or sea tremella, is scattered among conservæ, fuci, &c. 5. *Purpurea*, or purple tremella, is globular, sessile, solitary, and smooth. It grows on ditch-banks about London.

TRELLIUS (Emmanuel), a Jew by birth, was born at Ferrara in the year 1510. He was so carefully educated as to become a great master of the Hebrew tongue: he was converted to Christianity by the celebrated Peter Martyr. After travelling to Germany and England, he was made professor of Hebrew, first at Heidelberg, and then at Sedan, where he died in 1580. He translated the Hebrew Bible and Syriac Testament into Latin; in the former he was assisted by Junius, who afterwards corrected the second edition in 1587. This work was received by the Protestant churches with great approbation.

TREMOR, an involuntary shaking, chiefly of the hands and head, sometimes of the feet, and sometimes of the tongue and heart.—Tremors arising from a too free use of spirituous liquors require the same treatment as palsies.

TRENCHES, in fortification, are ditches cut by the besiegers, that they may approach the more securely to the place attacked; whence they are also called *lines of approach*.

TRENT, bishopric of, a province of Germany, in the circle of Austria, near the frontiers of Italy, is bounded on the north by Tirol; on the east, by the Feltrino and Bellunese; on the south by Vicentino, the Veronese, Bresciano, and the lake de Garda; and on the west, by the Bresciano and the lake de Garda. The soil is said to be pretty fruitful, and to abound in wine and oil.

TRENT, a city of Germany, and capital of the bishopric of that name, is a very ancient place, and stands in a fertile and pleasant plain, in the midst of the high mountains of the Alps. The river Adige washes its walls, and creeping for some time among the hills, runs swiftly into Italy. Trent has three considerable churches, the principal of which is the cathedral: this is a very regular piece of architecture. The church of St. Maria Major is all of red and white marble; and is remarkable for being the place where the famous council of Trent was held, whose decisions are now the standing rule of the Romish church. E. Long. 11. 5. N. Lat. 46. 10.

TRENT, one of the largest rivers in England, which rises in the Moorland of Staffordshire, and runs south-west by New-castle-under-Line; and afterwards dividing the county in two parts, runs to Burton, then to Nottingham and Newark; and so continuing its course due north to Gainborough on the

confines of Lincolnshire, it joins several rivers, and falls into the Humber.

TRENT (council of), in ecclesiastical history, denotes the council assembled by Paul III. in 1545, and continued by twenty-five sessions till the year 1563, under Julius III. and Pius IV. in order to correct, illustrate, and fix with perspicuity, the doctrine of the church, to restore the vigour of its discipline, and to reform the lives of its ministers. The decrees of this council, together with the creed of Pope Pius IV. contain a summary of the doctrines of the Roman Catholics. These decrees were subscribed by 255 clergy, consisting of four legates, two other cardinals, three patriarchs, twenty-five archbishops, 163 bishops, besides inferior clergy. Of these 150 came from Italy; of course the council was entirely under the influence of the pope. For a more particular account of the council of Trent, see *Mosheim's Church History*, the *Modern Universal History*, vol. XXIII. and *Father Paul's History of the Council of Trent*.

TRENTON. See *New Jersey*.

TREANNING. See *Surgery*.

TRES TABERNÆ (anc. geog.), a place in Latium, lying on the Via Appia, on the left or south side of the river Astura, to the north of the Paludes Pomptinæ. Its ruins are now seen near Cisterna, a village in the Campagna di Roma, twenty-one miles from Rome, whence the Christians went out to meet St. Paul.

TRESPASS, in law, signifies any transgression of the law; under treason, felony, or misprison of either: but it is commonly used for any wrong or damage that is done by any one private person to another, or to the king in his forest.

TRESSLE-TREES, in ship-building, two strong bars of timber fixed horizontally on the opposite sides of the lower main-head, to support the frame of the top and the weight of the top-mast.

TRESSURE, in heraldry, a diminutive of an orle, usually held to be half the breadth thereof.

TRET, in commerce, an allowance made for the waste or the dirt that may be mixed with any commodity; which is commonly four pounds in every 104 pounds weight.

TREVERI, or **TREVIRI** (anc. geog.), an ancient and a powerful people both in horse and foot, according to Cæsar; extending far and wide between the Meuse and the Rhine. Their chief town was called *Trevis*. Now *Triers* or *Trees*.

TREVES, or **TRIERS** (in Latin *Trevere*, *Trevers*, *Treviris*, or *Augusta Trevirorum*), the capital of a German archbishopric of the same name, stands sixty miles west of Mentz, fifty-two south of Cologne, and eighty-two north of Strasbourg. This city vies with most in Europe for antiquity, having been a large and noted town before Augustus settled a colony in it. It was free and imperial till the year 1560, when it was surprised and subjected by its archbishop James III. It stands on the Moselle, over which it has a fair stone bridge. The cathedral is a large building; and near it stands the elector's palace, which not long ago was rebuilt. Here are three collegiate and five parish churches, three colleges of Jesuits, thirteen monasteries and nunneries, an university founded in 1472, a house of the Teutonic order, and another of that of Malta, with some remains of the ancient Roman theatre. Roman coins and medals are often found in the ruins of the old city. In the cathedral they pretend to have our Saviour's coat and St. Peter's staff, to which they ascribe miracles. The private houses here are mean; and the city is neither well fortified nor inhabited. E. Long. 6. 41. N. Lat. 49. 45.

TRIAL, in law, the examination of a cause according to the laws of the land before a proper judge; or it is the man-

ner and order observed in the hearing and determining of causes.—Trials are either *civil* or *criminal*.

I. Civil Trials. The species of trials in civil cases are seven: by *record*; by *inspection*, or examination; by *certificate*; by *witnesses*; by *wager of battel*; by *wager of law*; and by *jury*. The first six are only had in certain special or eccentric cases, where the trial by jury would not be so proper or effectual: (see them explained under their respective titles). The nature of the last, that principal criterion of truth in the law of England, shall be explained in this article.

As trial by jury is esteemed one of the most important privileges which members of society can enjoy, and the bulwark of the British constitution, every man of reflection must be stimulated by the desire of inquiring into its origin and history, as well as to be acquainted with the forms and advantages by which it is accompanied. We will therefore begin with tracing it to its origin. Its institution has been ascribed to our Saxon ancestors by Sir William Blackstone.

“Some authors (says that illustrious lawyer) have endeavoured to trace the original of juries up as high as the Britons themselves, the first inhabitants of our island; but certain it is, that they were in use among the earliest Saxon colonies, their institution being ascribed by Bishop Nicholson to Woden himself, their great legislator and captain. Hence it is, that we may find traces of juries in the laws of all those nations which adopted the feudal system, as in Germany, France, and Italy; who had all of them a tribunal composed of twelve good men and true, *boni homines*, usually the vassals or tenants of the lord, being the equals or peers of the parties litigant: and, as the lord's vassals judged each other in the lord's courts, so the king's vassals, or the lords themselves, judged each other in the king's court. In England we find actual mention of them so early as the laws of King Ethelred, and that not as a new invention. Stiernhook ascribes the invention of the jury, which in the Teutonic language is denominated *nemda*, to Regner king of Sweden and Denmark, who was contemporary with our King Egbert. Just as we are apt to impute the invention of this, and some other pieces of juridical polity, to the superior genius of Alfred the Great; to whom, on account of his having done much, it is usual to attribute every thing: and as the tradition of ancient Greece placed to the account of their own Hercules whatever achievement was performed superior to the ordinary prowess of mankind. Whereas the truth seems to be, that this tribunal was universally established among all the northern nations, and so interwoven in their very constitution, that the earliest accounts of the one give us also some traces of the other.”

This opinion has been controverted with much learning and ingenuity by Dr. Pettingal in his Enquiry into the Use and Practice of Juries among the Greeks and Romans, who deduces the origin of juries from these ancient nations.

He begins with determining the meaning of the word *δικασται* in the Greek, and *judices* in the Roman writers. “The common acceptation of these words (says he), and the idea generally annexed to them, is that of *presidents of courts*, or, as we call them, *judges*; as such they are understood by commentators, and rendered by critics. Dr. Middleton, in his life of Cicero, expressly calls the *judices*, *judges of the bench*: and Archbishop Potter, and in short all modern writers upon the Greek or Roman orators, or authors in general, express *δικασται* and *judices* by such terms as convey the idea of *presidents in courts of justice*. The propriety of this is doubted of, and hath given occasion for this inquiry; in which is shown, from the best Greek and Roman authorities, that neither the *δικασται* of the Greeks, or the *judices* of the Romans, ever signified *presidents in courts of judicature*, or *judges of the bench*; but, on the contrary, they were distinguished from each other,

and the difference of their duty and function was carefully and clearly pointed out by the orators in their pleadings, who were the best authorities in those cases, where the question related to forms of law, and methods of proceeding in judicial affairs and criminal process.

The presidents of the courts in criminal trials at Athens were the nine archons, or chief magistrates, of which whoever presided was called *ἄρχων δικαστικός*, or president of the court. These nine presided in different causes peculiar to each jurisdiction. The archon, properly so called, had belonging to his department, all pupillary and heritable cases; the *βουλευτής* or *rex sacrorum*, the chief priest, all cases where religion was concerned; the polemarchus, or general, the affairs of the army and all military matters; and the six, the *smiths*, the other ordinary suits.

Wherever then the *ἀνδρες δικασταί*, or judicial men, are addressed by the Greek orators in their speeches, they are not to be understood to be the presiding magistrates, but another class of men, who were to enquire into the state of the cause before them, by witnesses and other methods of coming at truth; and after inquiry made and witnesses heard, to report their opinion and verdict to the president, who was to declare it.

The several steps and circumstances attending this judicial proceeding are so similar to the forms observed by our jury, that the learned reader, for such I must suppose him, cannot doubt but that the nature, intent, and proceedings of the *δικαστήριον* among the Greeks were the same with the English jury; namely, for the protection of the lower people from the power and oppression of the great, by administering equal law and justice to all ranks; and therefore when the Greek orators directed their speeches to the *ἀνδρες δικασταί*, as we see in Demosthenes, *Æschines*, and *Lyfias*, we are to understand it in the same sense as when our lawyers at the bar say, *Genlemen of the jury*.

So likewise among the Romans, the *judices*, in their pleadings at the bar, never signified judges of the bench, or presidents of the court, but a body or order of men, whose office in the courts of judicature was distinct from that of the prætor or *judex questorius*, which answered to our judge of the bench, and was the same with the archon, or *πρωτος δικαστικος*, of the Greeks: whereas the duty of the *judices* consisted in being impanelled, as we call it, challenged, and sworn to try uprightly the case before them; and when they had agreed upon their opinion or verdict, to deliver it to the president who was to pronounce it. This kind of judicial process was first introduced into the Athenian polity by Solon, and thence copied into the Roman republic, as probable means of procuring just judgment, and protecting the lower people from the oppression or arbitrary decisions of their superiors.

When the Romans were settled in Britain as a province, they carried with them their *jura* and *instituta*, their laws and customs, which was a practice essential to all colonies; hence the Britons, and other countries of Germany and Gaul, learned from them the Roman laws and customs; and upon the irruption of the northern nations into the southern kingdoms of Europe, the laws and institutions of the Romans remained, when the power that introduced them was withdrawn; and Montefquieu tells us, that under the first race of kings in France, about the fifth century, the Romans that remained, and the Burgundians their new masters, lived together under the same Roman laws and police, and particularly the same forms of judicature. How reasonable then is it to conclude, that in the Roman courts of judicature continued among the Burgundians, the form of a jury remained in the same state it was used at Rome. It is certain, Montefquieu, speaking of those times, mentions the *paires* or *hommes de fief*, homagers or peers, which in the same chapter he calls *juges*, judges or

jurymen; so that we hence see how at that time the *hommes de fief*, or "men of the fief," were called *peers*, and those *peers* were *juges* or *jurymen*. These were the same as are called in the laws of the confessor *peers de la tenure*, the "peers of the tenures, or homagers," out of whom the jury of peers were chosen, to try a matter in dispute between the lord and his tenant, or any other point of controversy in the manor. So likewise in all other parts of Europe, where the Roman colonies had been, the Goths succeeding them, continued to make use of the same laws and institutions, which they found to be established there by the first conquerors. This is a much more natural way of accounting for the origin of a jury in Europe, than having recourse to the fabulous story of Woden and his savage Scythian companions, as the first introducers of to humane and beneficent an institution.

Trials by jury in civil causes are of two kinds; *extraordinary* and *ordinary*.

2. The first species of extraordinary trial by jury is that of the grand assize, which was instituted by King Henry II. in parliament, by way of alternative offered to the choice of the tenant or defendant in a writ of right, instead of the barbarous and unchristian custom of duelling. For this purpose a writ *de magna assisa eligenda* is directed to the sheriff, to return four knights, who are to elect and choose twelve others to be joined with them; and these all together form the grand assize, or great jury, which is to try the matter of right, and must now consist of sixteen jurors. Another species of extraordinary juries is the jury to try an attain: which is a process commenced against a former jury for bringing a false verdict. See the article *ATTAIN*.

2. With regard to the ordinary trial by jury in civil cases, the most clear and perspicuous way of treating it will be by following the order and course of the proceedings themselves.

When therefore an issue is joined by these words, "And this the said A prays may be inquired of by the country;" or, "And of this he puts himself upon the country, and the said B, does the like," the court awards a writ of *venire facias* upon the roll or record, commanding the sheriff "that he cause to come here, on such a day, twelve free and lawful men, *liberes et legales homines*, of the body of his county, by whom the truth of the matter may be better known, and who are neither of kin to the aforesaid A nor the aforesaid B, to recognize the truth of the issue between the said parties." And such writ is accordingly issued to the sheriff. It is made returnable on the last return of the same term wherein issue is joined, *viz.* hilly or trinity terms; which, from the making up of the issues therein, are usually called *issuable terms*. And he returns the names of the jurors in a panel (a little pane or oblong piece of parchment) annexed to the writ. This jury is not summoned, and therefore not appearing at the day must unavoidably make default. For which reason a compulsive process is now awarded against the jurors, called in the common pleas a writ of *habere corpus juratorum*, and in the King's Bench *disfranchis*, commanding the sheriff to have their bodies, or to distrain them by their lands and goods, that they may appear upon the day appointed. The entry therefore on the roll of record is, "that the jury is respited, through defect of the jurors, till the first day of the next term, then to appear at Westminster; unless before that time, *viz.* on Wednesday the fourth of March, the justices of our lord the king appointed to take assizes in that county shall have come to Oxford, that is, to the place assigned for holding the assizes. Therefore the sheriff is commanded to have their bodies at Westminster on the said first day of next term, or before the said justices of assize, if before that time they come to Oxford, *viz.* on the fourth of March aforesaid." And as the judges are sure to come and open the circuit-commissions

on the day mentioned in the writ, the sheriff returns and summons this jury to appear at the assizes; and there the trial is had before the justices of assize and *nisi prius*: among whom (as hath been said under the article *Assize*) are usually two of the judges of the courts at Westminster, the whole kingdom being divided into six circuits for this purpose. And thus we may observe, that the trial of common assizes, at *nisi prius*, was in its original only a collateral incident to the original business of the justices of assize; though now, by the various revolutions of practice, it is become their principal civil employment; hardly any thing remaining in use of the real assizes but the name.

If the sheriff be not an indifferent person, as if he be a party in the suit, or be related by either blood or affinity to either of the parties, he is not then trusted to return the jury; but the *venue* shall be directed to the coroners, who in this, as in many other instances, are the substitutes of the sheriff to execute process when he is deemed an improper person. If any exception lies to the coroners, the *venue* shall be directed to two clerks of the court, or two persons of the county named by the court, and sworn. And these two, who are called *clerks*, or electors, shall indifferently name the jury, and their return is final; no challenge being allowed to their array.

Let us now pause a while, and observe (with Sir Matthew Hale, Hist. C. L. c. 12), in these first preparatory stages of the trial, how admirably this constitution is adapted and framed for the investigation of truth beyond any other method of trial in the world. For, first, the person returning the jurors is a man of some fortune and consequence; that so he may be not only the less tempted to commit wilful errors, but likewise be responsible for the faults of either himself or his officers: and he is also bound by the obligation of an oath faithfully to execute his duty. Next, as to the time of their return: the panel is returned to the court upon the original *venue*, and the jurors are to be summoned and brought in many weeks afterwards to the trial, whereby the parties may have notice of the jurors, and of their sufficiency or insufficiency, characters, connections, and relations, that so they may be challenged upon just cause; while, at the same time, by means of the compulsory process (of *disfringas*, or *habere corpora*) the cause is not like to be retarded through defect of jurors. Thirdly, as to the place of their appearance: which in causes of weight and consequence is at the bar of the court; but in ordinary cases at the assizes, held in the county where the cause of action arises, and the witnesses and jurors live: a provision most excellently calculated for the saving of expence to the parties. For though the preparation of the causes in point of pleading is transacted at Westminster, whereby the order and uniformity of proceeding is preserved throughout the kingdom, and multiplicity of forms is prevented; yet this is no great charge or trouble, one attorney being able to transact the business of forty clients. But the troublesome and most expensive attendance is that of jurors and witnesses at the trial; which therefore is brought home to them, in the county where most of them inhabit. Fourthly, the persons before whom they are to appear, and before whom the trial is to be held, are the judges of the superior court, if it be a trial at bar; or the judges of assize, delegated from the courts at Westminster by the king, if the trial be held in the country: persons, whose learning and dignity secure their jurisdiction from contempt, and the novelty and very parade of whose appearance have no small influence upon the multitude. The very point of their being strangers in the county is of infinite service, in preventing those factions and parties which would intrude in every cause of moment, were it tried only before persons resident on the spot, as justices of the

peace, and the like. And the better to remove all suspicion of partiality, it was wisely provided by the statutes 4 Edw. III. c. 2. 8 Ric. II. c. 2. and 33 Hen. VIII. c. 24. that no judge of assize should hold pleas in any county wherein he was born or inhabits. And as this constitution prevents party and faction from intermingling in the trial of right, so it keeps both the rule and the administration of the laws uniform. These justices, though thus varied and shifted at every assize, are all sworn to the same laws, have had the same education, have pursued the same studies, converse and consult together, communicate their decisions and resolutions, and preside in those courts which are mutually connected, and their judgments blended together, as they are interchangeably courts of appeal or advice to each other. And hence their administration of justice, and conduct of trials, are consonant and uniform; whereby that confusion and contrariety are avoided, which would naturally arise from a variety of uncommunicating judges, or from any provincial establishment. But let us now return to the assizes.

When the general day of trial is fixed, the plaintiff or his attorney must bring down the record to the assizes, and enter it with the proper officer, in order to its being called on in court.

These steps being taken, and the cause called on in court, the record is then handed to the judge, to peruse and observe the pleadings, and what issues the parties are to maintain and prove, while the jury is called and sworn. To this end the sheriff returns his compulsory process, the writ of *habeas corpora*, or *disfringas*, with the panel of jurors annexed, to the judge's officer in court.

The jurors contained in the panel are either special or common jurors. Special juries were originally introduced in trials at bar, when the causes were of too great nicety for the discussion of ordinary freeholders; or where the sheriff was suspected of partiality, though not upon such apparent cause as to warrant an exception to him. He is in such cases, upon motion in court, and a rule granted thereupon, to attend the prothonotary or other proper officer with his freeholder's book; and the officer is to take indifferently forty-eight of the principal freeholders, in the presence of the attorneys on both sides: who are each of them to strike off twelve, and the remaining twenty-four are returned upon the panel. By the statute 3 Geo. II. c. 25. either party is entitled upon motion to have a special jury struck upon the trial of any issue, as well at the assizes as at bar, he paying the extraordinary expence, unless the judge will certify (in pursuance of the statute 24 Geo. II. c. 18.) that the cause required such special jury.

A common jury is one returned by the sheriff according to the directions of the statute 3 Geo. II. c. 25. which appoints, that the sheriff or officer shall not return a separate panel for every separate cause, as formerly; but one and the same panel for every cause to be tried at the same assizes, containing not less than forty-eight, nor more than seventy-two, jurors: and that their names being written on tickets, shall be put into a box of glass; and when each cause is called, twelve of these persons, whose names shall be first drawn out of the box, shall be sworn upon the jury, unless absent, challenged, or excused; or unless a previous view of the messuages, lands, or place in question, shall have been thought necessary by the court; in which case, six or more of the jurors returned, to be agreed on by the parties, or named by a judge or other proper officer of the court, shall be appointed by special writ of *habeas corpora* or *disfringas*, to have the matters in question shown to them by two persons named in the writ; and then such of the jury as have had the view, or so many of them as appear, shall be sworn on the inquest previous to any other jurors. These

acts are well calculated to restrain any suspicion of partiality in the sheriff, or any tampering with the jurors when returned.

As the jurors appear when called, they shall be sworn, unless challenged by either party. See the article CHALLENGE.

If by means of challenges or other cause, a sufficient number of unexceptionable jurors doth not appear at the trial, either party may pray a *tales*.

A *tales* is a supply of such men as are summoned upon the first panel, in order to make up the deficiency. For this purpose a writ of *decem tales, octo tales*, and the like, was wont to be issued to the sheriff at common law, and must be still so done at a trial at bar, if the jurors make default. But at the assizes, or *nisi prius*, by virtue of the statute 35 Hen. VIII. c. 6. and other subsequent statutes, the judge is empowered at the prayer of either party to award a *tales de circumstantibus* of persons present in court, to be joined to the other jurors to try the cause; who are liable, however, to the same challenges as the principal jurors. This is usually done till the legal number of twelve be completed; in which patriarchal and apostolical manner Sir Edward Coke hath discovered abundance of mystery.

When a sufficient number of persons impanelled, or talesmen appear, they are then separately sworn, well and truly to try the issue between the parties, and a true verdict to give according to the evidence; and hence they are denominated "the jury," *jurata*, and "jurors," *sc. juratores*.

The jury are now ready to hear the merits; and to fix their attention the closer to the facts which they are impanelled and sworn to try, the pleadings are opened to them by counsel on that side which holds the affirmative of the question in issue. For the issue is said to lie, and proof is always first required upon that side which affirms the matter in question: in which our law agrees with the civil, *ei incumbit probatio qui dicit, non qui negat; cum per rerum naturam factum negantis probatio nulla sit*. The opening counsel briefly informs them what has been transacted in the court above; the parties, the nature of the action, the declaration, the plea, replication, and other proceedings; and lastly, upon what point the issue is joined, which is there sent down to be determined. Instead of which, formerly the whole record and process of the pleadings were read to them in English by the court, and the matter of issue clearly explained to their capacities. The nature of the case, and the evidence intended to be produced, are next laid before them by counsel also on the same side; and when the evidence is gone through, the advocate on the other side opens the adverse case, and supports it by evidence; and then the party which began is heard by way of reply. See PLEADINGS.

Evidence in the trial by jury is of two kinds; either that which is given in proof, or that which the jury may receive by their own private knowledge. The former, or *proofs* (to which in common speech the name of evidence is usually confined), are either written or parol, that is, by word of mouth. Written proofs, or evidence, are, 1. Records; and 2. Ancient deeds of thirty years' standing, which prove themselves; but, 3. Modern deeds; and, 4. Other writings, must be attested and verified by parol evidence of witnesses. With regard to parol evidence or witnesses; it must first be remembered, that there is a process to bring them in by writ of *habeas ad testificandum*; which commands them, laying aside all pretences and excuses, to appear at the trial on pain of 100 l. to be forfeited to the king; to which the statute 5 Eliz. c. 9. has added a penalty of 10 l. to the party aggrieved, and damages equivalent to the loss sustained by want of his evidence. But no witness, unless his reasonable expences be tendered him, is

bound to appear at all; nor, if he appears, is he bound to give evidence till such charges are actually paid him; except he resides within the bills of mortality, and is summoned to give evidence within the fame. This compulsory process, to bring in unwilling witnesses, and the additional terrors of an attachment in case of disobedience, are of excellent use in the thorough investigation of truth: and, upon the same principle, in the Athenian courts, the witnesses who were summoned to attend the trial had their choice of three things: either to swear to the truth of the fact in question, to deny or abjure it, or else to pay a fine of 1000 drachmas.

All witnesses, of whatever religion or country, that have the use of their reason, are to be received and examined, except such as are infamous, or such as are interested in the event of the cause. All others are competent witnesses; though the jury from other circumstances will judge of their credibility. Infamous persons are such as may be challenged as jurors, *propter delictum*: and therefore never shall be admitted to give evidence to inform that jury, with whom they were too scandalous to associate. Interested witnesses may be examined upon a *voir dire*, if suspected to be secretly concerned in the event; or their interest may be proved in court. Which last is the only method of supporting an objection to the former class; for no man is to be examined to prove his own infamy. And no counsel, attorney, or other person, intrusted with the secrets of the cause by the party himself, shall be compelled, or perhaps allowed, to give evidence of such conversation or matters of privacy as came to his knowledge by virtue of such trust and confidence: but he may be examined as to mere matters of fact, as the execution of a deed or the like, which might have come to his knowledge without being intrusted in the cause.

One witness (if credible) is sufficient evidence to a jury of any single fact: though undoubtedly the concurrence of two or more corroborates the proof. Yet our law considers that there are many transactions to which only one person is privy; and therefore does not always demand the testimony of two. Positive proof is always required, where, from the nature of the case, it appears it might possibly have been had. But, next to positive proof, circumstantial evidence, or the doctrine of presumptions, must take place: for when the fact itself cannot be demonstratively evinced, that which comes nearest to the proof of the fact is the proof of such circumstances which either necessarily or usually attend such facts; and these are called *presumptions*, which are only to be relied upon till the contrary be actually proved.

The oath administered to the witness is not only that what he deposes shall be true, but that he shall also depose the whole truth: so that he is not to conceal any part of what he knows, whether interrogated particularly to that point or not. And all this evidence is to be given in open court, in the presence of the parties, their attorneys, the counsel, and all bystanders; and before the judge and jury: each party having liberty to except to its competency, which exceptions are publicly stated, and by the judge are openly and publicly allowed or disallowed, in the face of the country: which must curb any secret bias or partiality that might arise in his own breast.

When the evidence is gone through on both sides, the judge, in the presence of the parties, the counsel, and all others, sums up the whole to the jury; omitting all superfluous circumstances, observing wherein the main question and principal issue lies, stating what evidence has been given to support it, with such remarks as he thinks necessary for their direction, and giving them his opinion in matters of law arising upon that evidence.

The jury, after the proofs are summed up, unless the case

be very clear; withdraw from the bar to consider of their verdict; and in order to avoid intemperance and causeless delay, are to be kept without meat, drink, fire, or candle, unless by permission of the judge, till they are unanimously agreed. A method of accelerating unanimity not wholly unknown in other constitutions of Europe, and in matters of greater concern. For by the golden bull of the empire, if, after the congress is opened, the electors delay the election of a king of the Romans for thirty days, they shall be fed only with bread and water till the fame is accomplished. But if our juries eat or drink at all, or have any eatables about them, without consent of the court, and before verdict, it is fineable; and if they do so at his charge for whom they afterwards find, it will set aside the verdict. Also, if they speak with either of the parties or their agents after they are gone from the bar, or if they receive any fresh evidence in private, or if, to prevent disputes, they cast lots for whom they shall find, any of these circumstances will entirely vitiate the verdict. And it has been held, that if the jurors do not agree in their verdict before the judges are about to leave the town, though they are not to be threatened or imprisoned, the judges are not bound to wait for them, but may carry them round the circuit from town to town in a cart. This necessity of a total unanimity seems to be peculiar to our own constitution; or at least, in the *nemda* or jury of the ancient Goths, there was required (even in criminal cases) only the consent of the major part; and in case of an equality, the defendant was held to be acquitted.

When they are all unanimously agreed, the jury return back to the bar; and before they deliver their verdict, the plaintiff is bound to appear in court, by himself, attorney, or counsel, in order to answer the amercement to which by the old law he is liable, in case he fails in his suit, as a punishment for his false claim. To be amerced, or a *mercie*, is to be at the king's mercy with regard to the fine to be imposed; *in misericordia domini regis pro falso clamore suo*. The amercement is dispensed, but the form still continues; and if the plaintiff does not appear, no verdict can be given; but the plaintiff is said to be nonsuit, *non sequitur clamorem suum*. Therefore it is usual for a plaintiff, when he or his counsel perceives that he has not given evidence sufficient to maintain his issue, to be voluntarily nonsuited, or withdraw himself: whereupon the crier is ordered to call the plaintiff; and if neither he, nor any body for him, appears, he is nonsuited, the jurors are discharged, the action is at an end, and the defendant shall recover his costs. The reason of this practice is, that a nonsuit is more eligible for the plaintiff than a verdict against him: for after a nonsuit, which is only a default, he may commence the same suit again for the same cause of action; but after a verdict had, and judgment consequent thereupon, he is for ever barred from attacking the defendant upon the same ground of complaint. But in case the plaintiff appears, the jury by their foreman deliver in their verdict.

A verdict, *vere dictum*, is either privy or public. A privy verdict is when the judge hath left or adjourned the court: and the jury, being agreed, in order to be delivered from their confinement, obtain leave to give their verdict privily to the judge out of court: which privy verdict is of no force, unless afterwards affirmed by a public verdict given openly in court; wherein the jury may, if they please, vary from their privy verdict. So that the privy verdict is indeed a mere nullity; and yet it is a dangerous practice, allowing time for the parties to tamper with the jury, and therefore very seldom indulged. But the only effectual and legal verdict is the public verdict: in which they openly declare to have found the issue for the plaintiff, or for the defendant; and if for the plaintiff, they assess the damages also sustained by the plaintiff,

in consequence of the injury upon which the action is brought.

When the jury have delivered in their verdict, and it is recorded in court, they are then discharged; and so ends the trial by jury: a trial which ever has been, and it is hoped ever will be, looked upon as the glory of the English law. It is certainly the most transcendent privilege which any subject can enjoy or wish for, that he cannot be affected either in his property, his liberty, or his person, but by the unanimous consent of twelve of his neighbours and equals. A constitution that we may venture to affirm has, under Providence, secured the just liberties of this nation for a long succession of ages. And therefore a celebrated French writer, who concludes, that because Rome, Sparta, and Carthage, have lost their liberties, therefore those of England in time must perish, should have recollected, that Rome, Sparta, and Carthage, at the time when their liberties were lost, were strangers to the trial by jury.

Great as this eulogium may seem, it is no more than this admirable constitution, when traced to its principles, will be found in sober reason to deserve.

The impartial administration of justice, which secures both our persons and our properties, is the great end of civil society. But if that be entirely entrusted to the magistracy, a select body of men, and those generally selected by the prince or such as enjoy the highest offices in the state, their decisions, in spite of their own natural integrity, will have frequently an involuntary bias towards those of their own rank and dignity: it is not to be expected from human nature, that the few should be always attentive to the interests and good of the many. On the other hand, if the power of judicature were placed at random in the hands of the multitude, their decisions would be wild and capricious, and a new rule of action would be every day established in our courts. It is wisely therefore ordered, that the principles and axioms of law, which are general propositions flowing from abstracted reason, and not accommodated to times or to men, should be deposited in the breasts of the judges, to be occasionally applied to such facts as come properly ascertained before them. For here partiality can have little scope; the law is well known, and is the same for all ranks and degrees: it follows as a regular conclusion from the premises of fact pre-established. But in settling and adjusting a question of fact, when intrusted to any single magistrate, partiality and injustice have an ample field to range in, either by boldly asserting that to be proved which is not so, or more artfully by suppressing some circumstances, stretching and warping others, and distinguishing away the remainder. Here therefore a competent number of sensible and upright jurymen, chosen by lot from among those of the middle rank, will be found the best investigators of truth, and the surest guardians of public justice. For the most powerful individual in the state will be cautious of committing any flagrant invasion of another's right, when he knows that the fact of his oppression must be examined and decided by twelve indifferent men not appointed till the hour of trial; and that when once the fact is ascertained, the law must of course redress it. This therefore preserves in the hands of the people that share which they ought to have in the administration of public justice, and prevents the encroachments of the more powerful and wealthy citizens.

Criminal Trials. The regular and ordinary method of proceeding in the courts of criminal jurisdiction may be distributed under twelve general heads, following each other in a progressive order: *viz.* 1. Arrest; 2. Commitment and bail; 3. Prosecution; 4. Process; 5. Arraignment, and its incidents; 6. Plea, and issue; 7. Trial, and conviction; 8. Clergy; 9. Judgment, and its consequences; 10. Reversal of Judgment.

ment; 11. Reprieve, or pardon; 12. Execution. See ARREST, COMMITMENT, PRESENTMENT, INDICTMENT, INFORMATION, APPEAL, PROCESS *upon an Indictment*, ARRAIGNMENT, and PLEA; in which articles all the forms which precede the trial are described, and are here enumerated in the proper order.

The several methods of trial and conviction of offenders, established by the laws of England, were formerly more numerous than at present, through the superstition of our Saxon ancestors; who, like other northern nations, were extremely addicted to divination; a character which Tacitus observes of the ancient Germans. They therefore invented a considerable number of methods of purgation or trial, to preserve innocence from the danger of false witnesses, and in consequence of a notion that God would always interpose miraculously to vindicate the guilty; as, 1. By ORDEAL; 2. By CORSED; 3. By BATTEL. See those articles.

4. A fourth method is that by the *peers of Great Britain*, in the Court of PARLIAMENT; or the Court of the Lord High STeward, when a peer is capitally indicted; for in case of an appeal, a peer shall be tried by jury. This differs little from the trial *per patriam*, or by jury; except that the peers need not all agree in their verdict; and except also, that no special verdict can be given in the trial of a peer; because the lords of parliament, or the lord high steward (if the trial be had in his court), are judges sufficiently competent of the law that may arise from the fact; but the greater number, consisting of twelve at the least, will conclude and bind the minority.

The trial by jury, or the country, *per patriam*, is also that trial by the peers of every Briton, which, as the great bulwark of his liberties, is secured to him by the great charter: *nullus liber homo capitur, vel imprisonetur, aut exulet, aut aliquo alio modo deſtratur, niſi per legale iudicium patriæ ſuorum, vel per legem terre*.

When therefore a prisoner on his ARRAIGNMENT has pleaded not guilty, and for his trial hath put himself upon the country, which country the jury are, the sheriff of the county must return a panel of jurors, *liberos et legales homines, de vicineto*; that is, freeholders without just exception; and of the *viſne* or neighbourhood; which is interpreted to be of the county where the fact is committed. If the proceedings are before the court of king's bench, there is time allowed between the arraignment and the trial, for a jury to be impanelled by writ of *venire facias* to the sheriff, as in civil causes; and the trial in case of a misdemeanor is had at *niſi prius*, unless it be of such consequence as to merit a trial at bar; which is always invariably had when the prisoner is tried for any capital offence. But, before commissioners of oyer and terminer and gaol-delivery, the sheriff, by virtue of a general precept directed to him beforehand, returns to the court a panel of forty-eight jurors, to try all felons that may be called upon their trial at that session; and therefore it is there usual to try all felons immediately or soon after their arraignment. But it is not customary, nor agreeable to the general course of proceedings, unless by consent of parties, to try persons indicted of smaller misdemeanors at the same court in which they have pleaded not guilty, or traversed the indictment. But they usually give security to the court to appear at the next assizes or session, and then and there to try the traverser, giving notice to the prosecutor of the same.

In cases of high-treason, whereby corruption of blood may ensue (except treason in counterfeiting the king's coin or seals), or imprisonment of such treason, it is enacted by statute 7 W. III. c. 3. first, that no person shall be tried for any such treason, except an attempt to assassinate the king, unless the indictment be found within three years after the offence committed; next, that the prisoner shall have a copy of the in-

dictment (which includes the caption), but not the names of the witnesses, five days at least before the trial, that is, upon the true construction of the act, before his arraignment; for then is his time to take any exceptions thereto, by way of plea or demurrer; thirdly, that he shall also have a copy of the panel of jurors two days before his trial; and, lastly, that he shall have the same compulsive process to bring in his witnesses for him, as was usual to compel their appearance against him. And by statute 7 Ann. c. 21. (which did not take place till after the decease of the late Pretender) all persons indicted for high-treason, or misprisions thereof, shall have not only a copy of the indictment, but a list of all the witnesses to be produced, and of the jurors impanelled, with their professions and places of abode, delivered to him ten days before the trial, and in the presence of two witnesses, the better to prepare him to make his challenges and defence. And no person indicted for felony is, or (as the law stands) ever can be, entitled to such copies before the time of his trial.

When the trial is called on, the jurors are to be sworn as they appear, to the number of twelve, unless they are challenged by the party.

Challenges may here be made, either on the part of the king, or on that of the prisoner; and either to the whole array, or to the separate polls, for the very same reasons that they may be made in civil causes. But in criminal cases, or at least in capital ones, there is, *in favorem vite*, allowed to the prisoner an arbitrary and capricious species of challenge, to a certain number of jurors, without showing any cause at all; which is called a *peremptory challenge*; a provision full of that tenderness and humanity to prisoners for which our English laws are justly famous. This is grounded on two reasons. 1. As every one must be sensible what sudden impressions and unaccountable prejudices we are apt to conceive upon the bare looks and gestures of another; and how necessary it is that a prisoner (when put to defend his life) should have a good opinion of his jury, the want of which might totally disconcert him; the law wills not that he should be tried by any one man against whom he has conceived a prejudice, even without being able to assign a reason for such his dislike. 2. Because, upon challenges for cause shown, if the reason assigned prove insufficient to set aside the juror, perhaps the bare questioning his indifference may sometimes provoke a resentment; to prevent all ill consequences from which, the prisoner is still at liberty, if he pleases, peremptorily to set him aside.

The peremptory challenges of the prisoner must, however, have some reasonable boundary; otherwise he might never be tried. This reasonable boundary is settled by the common law to be the number of thirty-five; that is, one under the number of three full juries.

If by reason of challenges or the default of the jurors, a sufficient number cannot be had of the original panel, a tales may be awarded as in civil causes, till the number of twelve is sworn, "well and truly to try, and true deliverance make, between our sovereign lord the king and the prisoner whom they have in charge; and a true verdict to give, according to their evidence."

When the jury is sworn, if it be a cause of any consequence, the INDICTMENT is usually opened, and the evidence marshalled, examined, and enforced by the counsel for the crown or prosecution. But it is a settled rule at common law, that no counsel shall be allowed a prisoner upon his trial upon the general issue, in any capital crime, unless some point of law shall arise proper to be debated. A rule which (however it may be palliated under cover of that noble declaration of the law, when rightly understood, that the judge shall be counsel for the prisoner; that is, shall see that the proceedings against him are legal and strictly regular) seems to be not at

all of a piece with the rest of the humane treatment of prisoners by the English law. For upon what face of reason can that assistance be denied to save the life of a man, which yet is allowed him in prosecutions for every petty trespass? Nor indeed is it, strictly speaking, a part of our ancient law; for the *Mirror*, having observed the necessity of counsel in civil suits, "who know how to forward and defend the cause by the rules of law, and customs of the realm," immediately afterwards subjoins, "and more necessary are they for defence upon indictments and appeals of felony, than upon other venial causes." And, to say the truth, the judges themselves are so sensible of this defect in our modern practice, that they seldom scruple to allow a prisoner counsel to stand by him at the bar, and to instruct him what questions to ask, or even to ask questions for him, with regard to matters of fact; for as to matters of law arising on the trial, they are entitled to the assistance of counsel. But still this is a matter of too much importance to be left to the good pleasure of any judge, and is worthy the interposition of the legislature; which has shown its inclination to indulge prisoners with this reasonable assistance, by enacting, in statute 7 W. III. c. 3. that persons indicted for such high-treason as works a corruption of the blood or misprison thereof (except treason in counterfeiting the king's coins or seals), may make their full defence by counsel, not exceeding two, to be named by the prisoner, and assigned by the court or judge; and this indulgence, by statute 20 Geo. II. c. 30. is extended to parliamentary impeachments for high-treason, which were excepted in the former act.

When the evidence on both sides is closed, the jury cannot be discharged (unless in cases of evident necessity) till they have given in their *VERDICT*. If they find the prisoner not guilty, he is then for ever quit and discharged of the accusation, except he be appealed of felony within the time limited by law. And upon such his acquittal, or discharge for want of prosecution, he shall be immediately set at large without payment of any fee to the goaler. But if the jury find him guilty, he is then said to be convicted of the crime whereof he stands indicted. See the article *CONVICTION*; and, subsequent thereto, the articles *JUDGMENT*, *ATTAINDER*, *FORFEITURE*, *EXECUTION*; also *Benefit of CLERGY*, *REPRISAL*, *PARDON*.

TRIANDRIA (from *tres* "three," and *andros* "a man or husband"), the name of the third class in Linnæus's sexual system, consisting of plants with hermaphrodite flowers, which have three stamens or male organs.

TRIANGLE, in geometry, a figure of three sides and three angles.

TRIBE, in antiquity, a certain quantity or number of persons, when a division was made of a city or people into quarters or districts.

TRIBRACHYS, in ancient poetry, a foot consisting of three syllables, and these all short; as, *melibius*.

TRIBUNAL, in general, denotes the seat of a judge, called in our courts *bench*.

TRIBUNUS, among the ancient Romans, a magistrate chosen out of the commons, to protect them against the oppressions of the great, and to defend the liberty of the people against the attempts of the senate and consuls. The tribunes of the people were first established in the year of Rome 259. The first design of their creation was to shelter the people from the cruelty of usurers, and to engage them to quit the Aventine mount, whither they had retired in displeasure. Their number at first was but two; but the next year, under the consulship of A. Posthumus Aruncius, and C. Cassius Viscellinus, there were three more added; and this number of five was afterwards increased by L. Trebonius to ten.

Military TRIBUNE, an officer in the Roman army, commander in chief over a body of forces, particularly the division of a legion; much the same with our colonel, or the French *maître de camp*.

TRIBUTARY, one who pays tribute to another, in order to live in peace with him or share in his protection.

TRIBUTE, a tax or impost which one prince or state is obliged to pay to another as a token of dependence, or in virtue of a treaty, and as a purchase of peace.

TRICES, in anatomy. See *ANATOMY*, *Table of the MUSCLES*.

TRICHECUS, **WALRUS**, a genus of aquatic animals belonging to the class of *mammalia*, and order of *bruta*. This genus has no fore-teeth, when full grown: has two great tusks in the upper jaw, which point downwards: has grinders on each side in both jaws, which are composed of furrowed bones. The body is oblong; the lips are doubled; and the hind legs are stretched backwards, and, as it were, bound together, forming a kind of tail fitted for swimming. There are three species; the *rosmarus*, *dugon*, and *manatus*.

1. The *rosmarus*, morse, or sea-horse, has a round head; small mouth; very thick lips, covered above and below with pellucid bristles as thick as a straw; small fiery eyes; two small orifices instead of ears; short neck; body thick in the middle, tapering towards the tail; skin thick, wrinkled, with short brownish hairs thinly dispersed; legs short, five toes on each, all connected by webs, and small nails on each: the hind feet are very broad; each leg loosely articulated; the hind legs generally extended on a line with the body: the tail is very short; penis long: length of the animal from nose to tail sometimes 18 feet, and 10 or 12 round in the thickest part: the teeth have been sometimes found of the weight of 30lb. each. Teeth of this size are only found on the coast of the Icy Sea, where the animals are seldom molested, and have time to attain their full growth. See *Plate 2*.

They inhabit the coast of Spitzbergen, Nova Zembla, Hudson's Bay, and the gulph of St. Lawrence; and the Icy Sea, as far as Cape Tchuktschi. They are gregarious; in some places appearing in herds of hundreds. They are shy animals, and avoid places which are much haunted by mankind; but are very fierce. If wounded in the water, they attempt to sink the boat, either by rising under it, or by striking their great teeth into the sides; they roar very loud, and will follow the boat till it gets out of sight. Numbers of them are often seen sleeping on an island of ice; if awaked, they fling themselves with great impetuosity into the sea; at which time it is dangerous to approach the ice, lest they should tumble into the boat and overset it. They do not go upon land till the coast is clear of ice. At particular times they land in amazing numbers: the moment the first gets on shore, so as to lie dry, it will not stir till another comes and forces it forward by beating it with its great teeth; this is served in the same manner by the next; and so in succession till the whole is landed; continuing tumbling over one another, and forcing the foremost, for the sake of quiet, to remove farther up.

They are killed for the sake of their oil, one walrus producing about half a tun. The knowledge of this chase is of great antiquity; Other the Norwegian, about the year 890, made a report of it to King Alfred, having, as he says, made the voyage beyond Norway, for the more commodious of *fish*ing of *horse-whales*, which have in their teeth bones of great price and excellency, whereof he brought some at his return into the king. In fact, it was in the northern world, in early times, the substitute to ivory, being very white and very hard. Their skins, Other says, were good to cut into cables. M. de Buffon says, he has seen braces for coaches made of the skin, which were both strong and elastic.

They bring one, or at most two, young at a time: they feed on sea herbs and fish; also on shells, which they dig out of the sand with their teeth: they are said also to make use of their teeth to ascend rocks or pieces of ice, fastening them to the cracks; and drawing their bodies up by that means. Besides mankind, they seem to have no other enemy than the white bear, with whom they have terrible combats; but generally come off victorious, by means of their great teeth.

In Captain Cook's Voyages we have the following affecting account of their parental attachment to their young. "On the approach of the boats towards the ice, they took their young ones under their fins, and attempted to escape with them into the sea. Some, whose cubs were killed or wounded, and left floating upon the surface of the water, rose again, and carried them down, sometimes just as our men were on the point of taking them into the boat; and could be traced bearing them to a considerable distance through the water, which was stained with their blood. They were afterwards observed bringing them, at intervals, above the surface, as if for air, and again plunging under it, with a horrid bellowing. The female, in particular, whose young one had been killed, and taken into the boat, became so furious, that she even struck her two tusks through the bottom of the cutter."

2. The *dugon*, or Indian walrus, is distinguished by the tusks which extend out of the mouth from the upper jaw being placed near each other. It inhabits the seas lying between the Cape of Good Hope and the Philippine islands. This animal, so far as can be known, resembles the morse very much; the head is, however, more lengthened and narrower; the nostrils are large, and placed higher; like the former species, there are no tusks in the under jaw, but those in the upper jaw, as has been already observed, are placed near each other, bent outwards, and resemble cutting teeth, only that they are near six inches long; there are four grinders on each side in the upper jaw, and three in the lower; these last are distant from the tusks, and are broader than those of the morse: the female has two teats on the breast: the chin has a bristly beard; the ears are short; the feet broad; and the legs so short that the belly trails on the ground. When full grown, the animal is six ells in length; the male being rather larger than the female, which has breasts like a woman: it feeds on a green sea moss or weed, which grows near the shore. The figure, manners, and history, of this animal, are very imperfectly known; but we are informed that its flesh eats like beef.

3. *Manatus*, fish-tailed walrus, or sea-cow, has no tusks, and no hind feet. Of this species there are two varieties; the australis, or lamantin, and the borealis or whale-tailed manati. The lamantin inhabits the African and American seas, particularly near the mouths of rivers, which they frequently enter, seldom going far from the shore. The lamantin varies in size from eight to seventeen feet long, is six or seven in circumference, and from 500 to 800 pounds weight: the skin is of a dark or black ash colour; there are nine square-shaped grinders on each side in each jaw, which are covered with a glassy crust of enamel; the back bone has 50 joints or vertebrae: it is a thick clumsy animal, having no properly distinct neck, as the body continues almost of an equal thickness to the head. The female has two teats placed near the arm-pits. This animal never comes on shore, but frequents the mouths of large rivers, browsing on the grass which grows close to the water. There seems to be two varieties, differing considerably in size. The larger frequents the seas near the mouths of large rivers; and the smaller is found higher up the same rivers, and in inland fresh water lakes, but never goes to the sea.

We are told that this animal is often tamed by the native inhabitants of America, and that it delights in music; hence,

according to some authors, it is probably the delphinus or dolphin of the ancients: and some believe, that what has been written concerning mermaids and sirens must be referred to this animal. It has a voracious appetite, and is perpetually eating: it is monogamous, or lives in families of one male, one female, a half grown and a very small young one; copulates in the spring, the female at first flying in various playful circles, and then throwing herself on her back to receive the male: when pasturing on the aquatic plants, the back is often above water: and, as the skin is full of a species of louse, numbers of sea fowls perch on them, to pick out the insects. They bellow like bulls: their sight is very weak, but their hearing extremely acute; the fore-feet are palmated and fin-shaped, almost like those of a sea-turtle; and instead of hind-feet they have a horizontal tail; they have no external ears; the nostrils are distinct, and at a distance from each other; the females have two teats about the breast; the upper lip is full of sharp, prickly, rigid bristles. This animal has great affinity to the whale and seal tribes. The flesh is very good eating.

The whale-tailed manati inhabits the north-west coast of America, the north-east of Asia, and the islands which lie between these two coasts. This animal very often enters the mouths of the rivers; is sometimes 23 feet long, and weighs 8000 pounds; the skin, while wet, is of a brown colour, but becomes black when dry. Instead of grinders, this species has, on each side of each jaw, a large rugged bone. The backbone has 65 vertebrae or joints: the body is very clumsy, and much deformed; its circumference at the shoulders is 12 feet, at the belly 20, and near the tail only four; the neck is near seven feet round, and the head only 3 1/2 inches.

They live perpetually in the water, and frequent the edges of the shores; and in calm weather swim in groves near the mouths of rivers: in the time of flood they come so near the land, that a person may stroke them with his hand: if hurt, they swim out to sea; but presently return again. The females oblige the young to swim before them, while the other old ones furround, and as it were guard them on all sides. The affection between the male and female is very great: for if the is attacked, he will defend her to the utmost; and if she is killed, will follow her corpse to the very shore, and swim for some days near the place it has been landed at. They copulate in the spring, in the same manner as the human kind, especially in calm weather, towards the evening. The female swims gently about; the male pursues; till, tired with wantoning, she flings herself on her back, and admits his embraces. Steller thinks they go with young about a year; it is certain that they bring but one young one at a time, which they suckle by two teats placed between the breasts. They are vastly voracious and gluttonous; and feed not only on the fuci that grow in the sea, but such as are flung on the edges of the shore. When they are filled, they fall asleep on their backs. During their meals, they are so intent on their food, that any one may go among them and choose which he likes best. Peter Martyr gives an instance of one that lived in a lake of Hispaniola for 25 years, and was so tame as to come to the edge of the shore on being called; and would even perform the part of a ferry, and carry several people at a time on its back to the opposite shore.—Their back and their sides are generally above water.

They continue in the Kamtschatkan and American seas the whole year; but in winter are very lean, so that you may count their ribs. They are taken by harpoons fastened to a strong cord; and after they are struck, it requires the united force of 30 men to draw them on shore. Sometimes when they are transfixed, they will lay hold of the rocks with their paws, and stick so fast as to leave the skin behind before they

can be forced off. When a manati is struck, its companions swim to its assistance; some will attempt to overturn the boat by getting under it; others will press down the rope, in order to break it; and others will strike at the harpoons with their tails, with a view of getting it out, in which they often succeed. They have not any voice; but make a noise by hard breathing like the snorting of a horse.

The skin is very thick, black, and full of inequalities, like the bark of oak, and so hard as scarce to be cut with an axe, and has no hair on it: beneath the hair is a thick blubber, which tastes like oil of almonds. The flesh is coarser than beef, and will not soon putrify. The young ones taste like veal. The skin is used for shoes, and for covering the sides of boats.

TRICHOMANES, in botany a genus of plants belonging to the class of *cryptogamia*, and order of *filices*. The parts of fructification are solitary, and terminated by a style like a bristle, on the very edge of the leaf. There are thirteen species; of which two are natives of Britain, the *pidiferum* and *tunbrigense*. 1. *Pidiferum*, or cup-trichomanes, has sub-bipinnated leaves, the pinnæ being alternate, close-lobed, and linear. It is found among stones in wet grounds in England. 2. *Tunbrigense*, or Tunbridge trichomanes, has pinnated leaves, the pinnæ being oblong, dichotomous, decurrent, and dentated. It is found in the fissures of moist rocks in Wales, and in many rocky places in Scotland.

TRICOCCÆ (τέρις "three," and κόκκος "a grain"), the name of the 38th order in Linnaeus's Fragments of a Natural Method, consisting of plants with a single three-cornered capsule, having three cells, or internal divisions, each containing a single seed. See **BOTANY**.

TRICOSANTHES, in botany a genus of plants belonging to the class of *monacia*, and order of *syngenesia*; and in the natural system ranging under the 34th order, *Cucurbitaceæ*. There are four species; only one of which is cultivated in the British gardens, the *anguria* or snake-gourd, which is a native of China, an annual, and of the cucumber tribe.

TRIDENT, an attribute of Neptune, being a kind of sceptre which the painters and poets put into the hands of that god, in form of a spear or fork with three teeth; whence the word.

TRIENNIAL, an epithet applied chiefly to officers or employments which last for three years.

TRIENS, in antiquity, a copper money of the value of one third of an *as*, which on one side bore a Janus's head, and on the other a water rat.

TRIENTALIS, CHICKWEED WINTER-GREEN, in botany a genus of plants belonging to the class of *heptandria*, and order of *monogynia*; and in the natural system ranging under the 20th order, *Rotaceæ*. The calyx is heptaphyllous; the corolla is equal and plane, and is divided into seven segments; the berry is multilocular and dry. There is only one species, the *europæa*; which is indigenous, and the only genus of *heptandria* that is so. The stalk is single, five or six inches high, terminated with five, six, or seven, oval pointed leaves; from the centre of which arise on long footstalks commonly two white starry flowers, each generally consisting of seven oval and equal petals, succeeded by a globular dry berry, covered with a thin white rind, having one cell, and containing several angular seeds.

TRIERS, or **TRÈVES**. See **TARVES**.

TRIFOLIUM, **TRÉFOIL**, or **CLOVER**, in botany a genus of plants belonging to the class of *diadelphis*, and order of *decandria*; and in the natural system ranging under the 32d order, *Papilionaceæ*. The flowers are generally in round heads; the pod is scarcely longer than the calyx, univalve, not opening, deciduous. The leaves are three together. According

to Murray's edition of Linnaeus, there are 46 species; of which 17 are natives of Britain. We shall describe some of the most remarkable of these:

1. *Meliloti officinalis*, or *mellilot*, has naked racemous pods, dispermous, wrinkly, and acute, with an erect stalk. It grows in corn-fields and by the way-sides, but not common. The stalk is erect, firm, striated, branched, and two or three feet high: the leaves ternate, smooth, obtusely oval, and serrated: the flowers are small, yellow, pendulous, and grow in long close spikes at the tops of the branches: the pod is very short, turgid, transversely wrinkled, pendulous, and contains either one or two seeds. The plant has a very peculiar strong scent, and disagreeable, bitter, acrid taste; but such, however, as is not disagreeable to cattle. The flowers are sweet-scented. It has generally been esteemed emollient and digestive, and been used in fomentations and cataplasms, particularly in the plaster employed in dressing blisters; but is now laid aside, as its quality is found to be rather acrid and irritating than emollient or resolvent. It communicates a most loathsome flavour to wheat and other grain, so as to render it unfit for making bread. It grows in corn-fields.

2. *Trifolium repens*, white creeping trefoil, or Dutch clover, has a creeping stalk, its flower gathered into an umbellar head, and its pods tetrapermous. It is very common in fields and pastures. It is well known to be excellent fodder for cattle; and the leaves are a good rustic hygrometer, as they are always relaxed and flaccid in dry weather, but erect in moist or rainy.

3. *Trifolium pratense*, purple or red clover, is distinguished by dense spikes, unequal corollas, by bearded stipulas, ascending stalks, and by the calyx having four equal teeth. This is the botanical description of this species given by Mr. Afzelius, who, in a paper of the first volume of the Linnaean Transactions, has been at much pains to remove three species of the trifolium from the confusion in which they have been long involved; namely, the *pratense*, *medium*, and *alpestre*. The red clover is common in meadows and pastures, and is the species which is generally cultivated as food for cattle. It abounds in every part of Europe, in North America, and even in Siberia. It delights most in rich, moist, and sunny places; yet flourishes in dry, barren, and shady places. For an account of the mode of cultivating it, see **HUSBANDRY**.

4. *Alpestre*, long-leaved purple trefoil, or mountain clover, is thus characterized by Mr. Afzelius. The spikes are dense; the corollas somewhat equal; the stipulas are bristly and divergent; the leaflets lanceolated; the stalks stiff, straight, and very simple. It grows in dry, mountainous, woody places, in Hungary, Austria, and Bohemia, &c.; but is not said by Mr. Afzelius to be a native of Britain.

5. The *medium*, according to Mr. Afzelius, has also been confounded with the two species last mentioned; but it is to be distinguished from them by having loose spikes, corollas somewhat equal, stipulas subulate and connivent, and stalks flexuose and branched. It is found in dry elevated situations, especially among shrubs, or in woods where the soil is chalky or clay, in England, Scotland, Sweden, Denmark, &c.

For a botanical description of the other species of the trifolium, see Lightfoot's *Flora Scotica*, Berkenhout's Synopsis of the Natural History of Great Britain and Ireland, and Withering's Botanical Arrangements.

TRIGA, in antiquity, denotes a kind of car or chariot drawn by three horses; whence the name.

TRIGLA, in ichthyology, a genus of fishes belonging to the order of thoracici. The head is loricated with rough lines, and there are seven rays in the membranes of the gills. There are eleven species; of which the principal are the *gurnardus*,

or grey gurnard; the cuculus, or red gurnard; the lyra, or piper; and the hirundo, or sapphirine gurnard.

TRIGLOCHIN, in botany: a genus of plants belonging to the class of *hexandria*, and order of *trigynia*; and in the natural system ranging under the fifth order, *Tripelatoide*. The calyx is triphyllous; the petals are three; there is no style; the capsule opens at the base. There are three species; of which the *palustre* and *maritimum* are British. 1. *Palustre*, or arrow-headed grass, has an oblong trilocular capsule. The stalk is simple, eight or ten inches high; the leaves long and narrow; the flowers are greenish, and grow at the end of a long spike. It is frequent in moist ground. 2. *Maritimum*, or sea-spiked grass, has ovate hexlocular capsules; the stalk is short; the spike long, and flowers purplish. It is frequent on the sea-coasts. Linnæus says that cattle eat these two species with avidity.

TRIGLYPHS, in architecture, a sort of ornaments repeated at equal intervals, in the Doric freeze.

Dialing TRIGON. See **DIALING**.

TRIGONALIS. See **EFILA**.

TRIGONOMETRY,

THE art of measuring the sides and angles of triangles, either plane or spherical, whence it is accordingly called either **PLANE TRIGONOMETRY**, or **SPHERICAL TRIGONOMETRY**.

Trigonometry is an art of the greatest use in the mathematical sciences, especially in astronomy, navigation, surveying, dialing, geography, &c. &c. By it we come to know the magnitude of the earth, the planets and stars, their distances, motions, eclipses, and almost all other useful arts and sciences. Accordingly we find this art has been cultivated from the earliest ages of mathematical knowledge.

Trigonometry, or the resolution of triangles, is founded on the mutual proportions which subsist between the sides and angles of triangles; which proportions are known by finding the relations between the radius of a circle and certain other lines drawn in and about the circle, called *cords*, *sines*, *tangents*, and *secants*. The ancients, Menelaus, Hipparchus, Ptolemy, &c. performed their trigonometry by means of the cords. As to the sines, and the common theorems relating to them, they were introduced into trigonometry by the Moors or Arabians, from whom this art passed into Europe, with several other branches of science. The Europeans have introduced, since the 15th century, the tangents and secants, with the theorems relating to them.

The proportion of the sines, tangents, &c. to their radius, is sometimes expressed in common or natural numbers, which constitute what we call the *tables of natural sines, tangents, and secants*. Sometimes it is expressed in logarithms, being the logarithms of the said natural sines, tangents, &c.; and these constitute the table of *artificial sines*, &c. Lastly, sometimes the proportion is not expressed in numbers; but the several sines, tangents, &c. are actually laid down upon lines of scales; whence the *line of sines*, of *tangents*, &c.

In trigonometry, as angles are measured by arcs of a circle described about the angular point, so the whole circumference

TRIGONELLA, FENUGREEK, in botany: a genus of plants belonging to the class of *diadelphia*, and order of *decandria*; and in the natural system arranged under the 32d order, *Papilionaceæ*. The vexillum and alas are nearly equal and patent, resembling a tripetalous corolla. There are twelve species; of which the most remarkable is the *fenugracum*, or fenugreek, a native of Montpelier in France. Fenugreek is an annual plant, which rises with a hollow, branching, herbaceous stalk, a foot and a half long, garnished with trifoliate leaves, placed alternately, whose lobes are oblong, oval, indented on their edges, and have broad furrowed footstalks. Fenugreek seeds have a strong disagreeable smell, and an unctuous farinaceous taste accompanied with a slight bitterness. The principal use of these seeds is in cataplasms and fomentations, for softening, maturing, and dissolving tumors; and in emollient and carminative glysters. They are an ingredient in the *oleum e mucilaginibus* of the shops, to which they communicate a considerable share of their smell, but this is not now in use.

of the circle is divided into a great number of parts; as 360 degrees, and each degree into 60 minutes, and each minute into 60 seconds, &c.; and then any angle is said to consist of so many degrees, minutes, and seconds, as are contained in the arc that measures the angle, or that is intercepted between the legs or sides of the angle.

Now the sine, tangent, and secant, &c. of every degree and minute, &c. of a quadrant, are calculated to the radius 1, and ranged in tables for use; as also the logarithms of the same; forming the triangular canon. And these numbers, so arranged in tables, form every species of right-angled triangles; so that no such triangle can be proposed, but one similar to it may be there found, by comparison with which the proposed one may be computed by analogy or proportion.

PLANE TRIGONOMETRY.

THERE are usually three methods of resolving triangles, or the cases of trigonometry; viz. geometrical construction, arithmetical computation, and instrumental operation. In the first method, the triangle in question is constructed by drawing and laying down the several parts of their magnitudes given, viz. the sides from a scale of equal parts, and the angles from a scale of cords or other instrument; then the unknown parts are measured by the same scales, and so they become known.

In the second method, having stated the terms of the proportion according to rule, which terms consist partly of the numbers of the given sides, and partly of the sines, &c. of angles taken from the tables, the proportion is then resolved like all other proportions, in which a fourth term is to be found from three given terms, by multiplying the second and third together, and dividing the product by the first. Or, in working with the logarithms, adding the logarithm of the

second and third terms together, and from the sum subtracting the logarithm of the first term; then the number answering to the remainder is the fourth term sought.

To work a case instrumentally, as suppose by the logarithm lines on one side of the two foot scales: Extend the compasses from the first term to the second or third, which happens to be of the same kind with it; then that extent will reach from the other term to the fourth. In this operation, for the sides of triangles, is used the line of numbers (marked Num.); and for the angles, the line of sines or tangents (marked sin. and tan.) according as the proportion respects sines or tangents. See SECTION.

In every case of plane triangles there must be three parts, one at least of which must be a side. And then the different circumstances, as to the three parts that may be given, admit of three cases or varieties only; viz.

First, When two of the three parts given are a side and its opposite angle. Second, When there are given two sides and their contained angle. And, thirdly, When the three sides are given.

To each of these cases there is a particular rule or proportion adapted for resolving it by.

First, *The Rule for the first Case*, or that in which, of the three parts that are given, an angle and its opposite side are two of them, is this, viz. that the sides are proportional to the sines of their opposite angles; that is,

As one side given :
To the sine of its opposite angle : :
So is another side given :
To the sine of its opposite angle.

Or, As the sine of an angle given :
To its opposite side : :
So is the sine of another angle given :
To its opposite side.

So that, to find an angle, we must begin the proportion with a given side that is opposite to a given angle; and to find a side, we must begin with an angle opposite to a given side.

Example. Suppose in the triangle BDC (Pl. i. fig. 1.) there be given the side BC = 106, DB = 65, and the angle BCD $31^{\circ} 49'$ given; to find the angle BDC obtuse and the side CD,

1. *Geometrically by Construction.*

Draw the line BC equal to 106, at C make an angle of $31^{\circ} 49'$ by drawing CD, take 65 in your compasses, and with one foot in B lay the other upon the line CD in D; draw the line BD, and it is done; for the angle D will be $120^{\circ} 43'$, the angle B $27^{\circ} 28'$, and the side DC 56.9 as was required.

2. *Arithmetically by Logarithms.*

As the side BD 65 log. 1.81291
Is to sine angle C $31^{\circ} 49'$ - - - 9.72198
So is the side BC 106 - - - 2.02531

11.74729
1.81291

To find angle D $120^{\circ} 43'$ - - - 9.93438

To find DC. 180.0
As sine ang. C $31^{\circ} 49'$ 9.72198 The supp. 59.17 of ang. D.

Is to the side BD 65 1.81291 120.43 angle D.
So is sine ang. B $27^{\circ} 28'$ 9.66392 31.49 angle C.

11.47683
9.72198
152.32 their sum.

To the side DC 56.88 1.75485 180.0
152.32 sum subt.

27.28 angle B.

Here it may be proper to observe, that if the given angle be obtuse, the angle sought will be acute; but when the given angle is acute, and opposite to a lesser given side, then the required angle is doubtful, whether acute or obtuse; it ought therefore to be determined before the operation. For it is plain the above proportion produces $59^{\circ} 17'$ for the required angle; but as it is obtuse, its supplement to 180 degrees must be taken, viz. $120^{\circ} 43'$.

By Gunter.

"The extent from 65 to 106 on the line of numbers will reach from $31^{\circ} 49'$ to $59^{\circ} 17'$ on the line of sines."

Secondly, "The extent from $31^{\circ} 49'$ to $27^{\circ} 28'$ on the line of sines will reach from 65 to 56.88 on the line of numbers."

CASE II. When there are given two sides and their contained angle, to find the rest, the rule is this:

As the sum of the two given sides :
Is to the difference of the sides : :
So is the tangent of half the sum of the two opposite angles or cotangent of half the given angle :

To tang. of half the diff. of those angles.

Then the half diff. added to the half sum, gives the greater of the two unknown angles; and subtracted leaves the less of the two angles.

Hence, the angles being now all known, the remaining third side will be found by the former case.

Example. The side BC = 109, BD = 76 (fig. 2.), and the angle CBD $101^{\circ} 30'$ given, to find the angle BDC or BCD, and the side CD.

1. *Geometrically by Construction.*

Draw the line BC 109, and BD, so as to make an angle with BC of $101^{\circ} 30'$, and make BD equal to 76; join BC and BD with a right line, and it is done; for the angle D being measured by the cord of 60° , will be $47^{\circ} 32'$; angle C $30^{\circ} 58'$, and the side DC 144.8, as was required.

2. *Arithmetically by Logarithms.*

Side BC 109 - 109 - 180.0
BD 76 - 76 - 101.30

Their sum 185 33 their diff. 78 30 sum of the ang.
D and C.

$\frac{1}{2}$ Sum $39^{\circ} 15'$ then.

To find the angles D and C.

As the sum of the sides BC and BD = 185 2.26717

Is to their difference - - - 33 1.51851

So is tang. of $\frac{1}{2}$ the sum of the angles C and D $39^{\circ} 15'$ 9.91224

11.43075
2.26717

To the tang. of $\frac{1}{2}$ the diff. of the angles C and D $8^{\circ} 17'$ 9.16358

To half the sum of the angles D and C 39.15
Add half the difference of the angles C and D 8 17

Gives the greater angle D 47.32

Subtracted, gives the lesser angle C $30^{\circ} 58'$

To find DC.

As sine angle D $47^{\circ} 32'$ - - - 9.86786

Is to the side BC 109 - - - 2.03743

So is sine angle B $101^{\circ} 30'$ - - - 9.99119

12.02862
9.86786

To the side DC required 144.8 2.16070

3. By Gunter.

1A. "The extent from 185 to 33 on the line of numbers will reach from $39^{\circ} 15'$ to $8^{\circ} 17'$ on the line of tangents. 2dly, The extent from angle D $47^{\circ} 32'$ to $78^{\circ} 30'$ (the supplement of angle B) on the line of sines, will reach from the side BC 109 to 144.8, the side DC required, on the line of numbers."

CASE III. Is when the three sides are given, to find the three angles; and the method of resolving this case is, to let a perpendicular fall from the greatest angle upon the opposite side or base, dividing it into two segments, and the whole triangle into two smaller right-angled triangles: then it will be,

As the base or sum of the two segments :
Is to the sum of the other two sides ::
So is the difference of those sides :
To the difference of the segments of the base.

Then half this difference of the two segments added to the half sum, or half the base, gives the greater segment, and subtracted gives the less. Hence, in each of the two right-angled triangles, there are given the hypotenuse, and the base, besides the right angle, to find the other angles by the first case.

Example. The sides BC (fig. 3.) = 105, BD = 85, and CD = 50, given to find the angles BDC, BCD, or CBD.

1. Geometrically by Construction.

Draw the line BC equal to 105, take CD 50 in your compasses, and with one foot in C describe an arch; then take BD 85 in your compasses, and with one foot in B cut the former arch in D, join BD and DC, and it is done; for the angle B, being measured, will be found $28^{\circ} 4'$, angle C $53^{\circ} 7'$, which being added together, is $81^{\circ} 11'$, their sum subtracted from 180, leaves angle D $98^{\circ} 49'$ as was required.

2. Arithmetically by Logarithms.

The two shortest sides are BD (= 85) and CD (= 50), the sum of which is 135, and their difference 35. The segments of the base BC are found in this manner:

As the side BC = 105 log. 2.02119
Is to the sum of the sides BD & DC = 135 = 2.13033
So is their difference = 35 = 1.54407
To the difference of the seg. of BC = 45 = 1.65321
Thus the sum and difference of the segments of the base BC being known, we have only to add half this sum = $52\frac{1}{2}$ to half the difference = 22 $\frac{1}{2}$, and we shall obtain the greater segment, which is = 75; which subtracted from 105, gives 30 = the smaller segment. Then

To find the angle BDA.

As the Hypotenuse BD = 85 log. 1.92942
Is to radius = 10.00000
So is the greater segment = 75 = 1.87506
To the sum of the angle BDA = 9.94564
The angle BDA therefore is equal to $61^{\circ} 56'$

Let us now find the angle ADC, which is done thus.

As the hypotenuse DC = 50 log. 1.69897
Is to radius = 10.00000
So is the smaller segment = 30 = 1.47712
To the sine of ADC = 9.77815
The angle ADC therefore is equal to $36^{\circ} 53'$, and the whole angle BDC = $98^{\circ} 49'$.

To find the angle at B, we have only to subtract the angle BDA (= $61^{\circ} 56'$) from 90° , and the rem. $28^{\circ} 4'$ is the angle sought. The angle at C is equal to $53^{\circ} 7'$.

3. By Gunter.

1st, "The extent from 105 to 135, will reach from 35 to 45 on the line of numbers." 2dly, "The extent from 85 to 35, on the line of numbers, will reach from radius to $61^{\circ} 56'$,

the angle BDA on the line of sines." 3dly, "The extent from 50 to 30 on the line of numbers, will reach from radius to angle ADC $36^{\circ} 53'$ on the line of sines."

The foregoing three cases include all the varieties of plane triangles that can happen, both of right and oblique-angled triangles. But besides these, there are some other theorems that are useful upon many occasions, or suited to some particular forms of triangles, which are often more expeditious in use than the foregoing general ones; one of which, for right-angled triangles, as the case for which it serves is often occurs, may be here inserted, and is as follows.

CASE IV. When in a right-angled triangle, there are given the angles and one leg, to find the other leg, or the hypotenuse. Then it will be

As radius :
To given leg AB :
So is tang. adjacent the angle A :
To the opposite leg BC, and :
So is sec. of same angle A :
To hypot. AC.

Example. In the triangle ABC (fig. 4.), right-angled at B,

Given the leg AB = 162
and the angle A = $53^{\circ} 7' 48''$ } to find BC
conseq. the angle C = $36^{\circ} 52' 12''$ and AC.

1. Geometrically.—Draw the leg AB = 162: erect the indefinite perpendicular BC: make the angle A = $53^{\circ} 7'$, and the side AC will cut BC in C, and form the triangle ABC. Then by measuring, there will be found AC = 270, and BC = 216.

2. Arithmetically.

As radius	= 10	-	-	log. 10.0000000
To AB	= 162	-	-	2.2095150
So is tang. A	= $53^{\circ} 7' 48''$	-	-	10.1249372
To BC	= 216	-	-	2.3344522
So is sec. A	= $53^{\circ} 7' 48''$	-	-	10.2218477
To AC	= 270	-	-	2.4313627

3. By Gunter.

Extend the compasses from 45° at the end of the tangents (the radius) to the tangent of $53^{\circ} 7'$; then that extent will reach, on the line of numbers, from 162 to 216, for BC. Again, extend the compasses from $36^{\circ} 52'$ to 90 on the sines; then that extent will reach, on the line of numbers, from 162 to 270 for AC.

Note. Another method, by making every side radius, is often added by the authors on trigonometry, which is thus: the given right-angled triangle being ABC, make first the hypotenuse AC radius, that is, with the extent of AC as a radius, and each of the centres A and C, describe arcs CD and AE (fig. 5.); then it is evident that each leg will represent the sine of its opposite angle, viz. the leg BC the sine of the arc CD or of the angle A, and the leg AB the sine of the arc AE or of the angle C. Again, making either leg radius, the other leg will represent the tangent of its opposite angle, and the hypotenuse the secant of the same angle; thus, with radius AB and centre A describing the arc BF, BC represents the tangent of that arc, or of the angle A, and the hypotenuse AC the secant of the same; or with the radius BC and centre C describing the arc BG, the other leg AB is the tangent of that arc BG or of the angle C, and the hypotenuse CA the secant of the same.

And then the general rule for all these cases is this, viz, that the sides bear to each other the same proportions as the parts or things which they represent. And this is called making every side radius.

SPHERICAL TRIGONOMETRY.

SPHERICAL TRIGONOMETRY is the art whereby, from three given parts of a spherical triangle, we discover the rest; and, like plane trigonometry, is either right-angled or oblique-angled. But before we give the analogies for the solution of the several cases in either, it will be proper to premise the following theorems:

THEOREM I. In all right-angled spherical triangles, the sign of the hypotenuse : radius :: sine of a leg : sine of its opposite angle. And the sine of a leg : radius :: tangent of the other leg : tangent of its opposite angle.

Demonstration. Let EDAFG (*ibid.* fig. 6.) represent the eighth part of a sphere, where the quadrantal planes EDFG, EDBC, are both perpendicular to the quadrantal plane ADFB; and the quadrantal plane ADGC is perpendicular to the plane EDFG; and the spherical triangle ABC is right-angled at B, where CA is the hypotenuse, and BA, BC, are the legs.

To the arches GF, CB, draw the tangents HF, OB, and the sines GM, CI, on the radii DF, DB; also draw BL the sine of the arch AB, and CK the sine of AC; and then join IK and OL. Now HF, OB, GM, CI, are all perpendicular to the plane ADFB. And HD, GK, OL, lie all in the same plane ADGC. Also FD, IK, BL, lie all in the same plane ADGC. Therefore the right-angled triangles HFD, CIK, ODL, having the equal angles HDF, CKI, OLB, are similar. And CK : DG :: CI : GM; that is, as the sine of the hypotenuse : rad. :: sine of a leg : sine of its opposite angle. For GM is the sine of the arc GF, which measures the angle CAB. Also, LB : DF :: BO : FH : that is, as the sine of a leg : radius :: tangent of the other leg : tangent of its opposite angle. Q. E. D.

Hence it follows, that the sines of the angles of any oblique spherical triangle ACD (fig. 7.) are to one another, directly, as the sines of the opposite sides. Hence it also follows, that, in right-angled spherical triangles, having the same perpendicular, the sines of the bases will be to each other, inversely, as the tangents of the angles at the bases.

THEOREM II. In any right-angled spherical triangle ABC (fig. 8.) it will be, As radius is to the co-sine of one leg, so is the co-sine of the other leg to the co-sine of the hypotenuse.

Hence, if two right-angled spherical triangles ABC, CBD (fig. 7.) have the same perpendicular BC, the co-sines of their hypotenuses will be to each other, directly, as the co-sines of their bases.

THEOREM III. In any spherical triangle it will be, As radius is to the sine of either angle, so is the co-sine of the adjacent leg to the co-sine of the opposite angle.

Hence, in right-angled spherical triangles, having the same perpendicular, the co-sines of the angles at the base will be to each other, directly, as the sines of the vertical angles.

THEOREM IV. In any right-angled spherical triangle it will be, As radius is to the co-sine of the hypotenuse, so is the tangent of either angle to the co-tangent of the other angle.

As the sum of the sines of two unequal arches is to their difference, so is the tangent of half the sum of those arches to the tangent of half their difference: and as the sum of the co-sines is to their difference, so is the co-tangent of half the sum of the arches to the tangent of half the difference of the same arches.

THEOREM V. In any spherical triangle ABC (fig. 9. and 10.) it will be, As the co-tangent of half the sum of half their difference, so is the co-tangent of half the base to the tangent of the distance (DE) of the perpendicular from the middle of the base.

Since the last proportion, by permutation, becomes co-tang. $\frac{AC+BC}{2}$: co-tang. AE :: tang. $\frac{AC-BC}{2}$: tang.

DE, and as the tangents of any two arches are, inversely, as their co-tangents; it follows, therefore, that tang. AE :

tang. $\frac{AC+BC}{2}$:: tang. $\frac{AC-BC}{2}$: tang. DE; or, that the

tangent of half the base is to the tangent of half the sum of the sides, as the tangent of half the difference of the sides to the tangent of the distance of the perpendicular from the middle of the base.

THEOREM VI. In any spherical triangle ABC (fig. 9.) it will be, As the co-tangent of half the sum of the angles at the base is to the tangent of half their difference, so is the tangent of half the vertical angle to the tangent of the angle which the perpendicular CD makes with the line CF bisecting the vertical angle.

The following propositions and remarks, concerning spherical triangles (selected and communicated to Dr. Hutton by the Reverend Nevil Maskelyne, D. D. Astronomer Royal, F. R. S.), will also render the calculation of them perspicuous, and free from ambiguity.

1. A spherical triangle is equilateral, isosceles, or scalene, according as it has its three angles all equal, or two of them equal, or all three unequal; and *vice versa*.
2. The greatest side is always opposite the greatest angle, and the smallest side opposite the smallest angle.
3. Any two sides taken together are greater than the third.
4. If the three angles are all acute, or all right, or all obtuse; the three sides will be, accordingly, all less than 90° , or equal to 90° , or greater than 90° ; and *vice versa*.
5. If from the three angles A, B, C, of a triangle ABC, as poles, there be described, upon the surface of the sphere, three arches of a great circle DE, DF, FE, forming by their intersections a new spherical triangle DEF; each side of the new triangle will be the supplement of the angle at its pole; and each angle of the same triangle will be the supplement of the side opposite to it in the triangle ABC.
6. In any triangle ABC, or A'B'C, right-angled in A, 1st, The angles at the hypotenuse are always of the same kind as their opposite sides; 2dly, The hypotenuse is less or greater than a quadrant, according as the sides including the right angle are of the same or different kinds; that is to say, according as these same sides are either both acute or both obtuse, or as one is acute and the other obtuse. And *vice versa*, 1st, The sides including the right angle are always of the same kind as their opposite angles; 2dly, The sides including the right angle will be of the same or different kinds, according as the hypotenuse is less or more than 90° ; but one at least of them will be of 90° , if the hypotenuse is so.

TRIGONOMETRY.

The Solution of the CASES of right-angled spherical Triangles (fig. 8.)

Case	Given	Sought	Solution
1	The hyp. AC and one angle A	The opposite leg BC	As radius : sine hyp. AC : : sine A : sine BC (by the former part of theor. 1.)
2	The hyp. AC and one angle A	The adjacent leg AB	As radius : co-sine of A : : tang. AC : tang. AB (by the latter part of theor. 1.)
3	The hyp. AC and one angle A	The other angle C	As radius : co-sine of AC : : tang. A : co-tang. C (by theorem 4.)
4	The hyp. AC and one leg AB	The other leg BC	As co-sine AB : radius : : co-sine AC : co-sine BC (by theorem 2.)
5	The hyp. AC and one leg AB	The opposite angle C	As sine AC : radius : : sine AB : sine C (by the former part of theorem 1.)
6	The hyp. AC and one leg AB	The adjacent angle A	As tang. AC : tang. AB : : radius : co-sine A (by theorem 1.)
7	One leg AB and the adjacent angle A	The other leg BC	As radius : sine AB : : tangent A : tangent BC (by theorem 4.)
8	One leg AB and the adjacent angle A	The opposite angle C	As radius : sine A : : co-sine of AB : co-sine of C (by theorem 3.)
9	One leg AB and the adjacent angle A	The hyp. AC	As co-sine of A : radius : : tang AB : tang. AC (by theorem 1.)
10	One leg BC and the opposite angle A	The other leg AB	As tang. A : tang. BC : : radius : sine AB (by theorem 4.)
11	One leg BC and the opposite angle A	The adjacent angle C	As co-sine BC : radius : : co-sine of A : sine C (by theorem 3.)
12	One leg BC and the opposite angle A	The hyp. AC	As sine A : sine BC : : radius : sine AC (by theorem 1.)
13	Both legs AB and BC	The hyp. AC	As radius : co-sine AB : : co-sine BC : co-sine AC (by theorem 2.)
14	Both legs AB and BC	An angle, suppose A	As sine AB : radius : : tang. BC : tang. A (by theorem 4.)
15	Both angles A and C.	A leg, suppose AB	As sine A : co-sine C : : radius : co-sine AB (by theorem 3.)
16	Both angles A and C	The hyp. AC	As tang. A : co-tang. C : : radius : co-sine AC (by theorem 4.)

Note. The 10th, 11th, and 12th cases are ambiguous : since it cannot be determined by the data, whether ABC, and AC, be greater or less than 90° degrees each.

Plane TRIGONOMETRY.

Fig. 1.

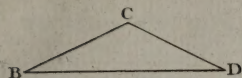


Fig. 2.

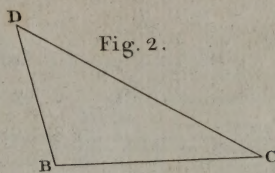


Fig. 3.

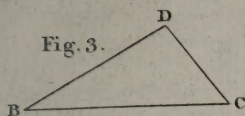


Fig. 4.

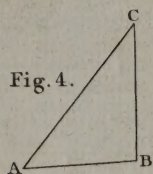


Fig. 5.

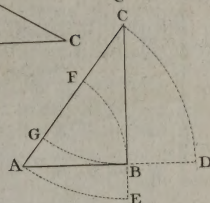


Fig. 6.

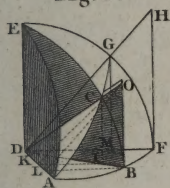


Fig. 7.

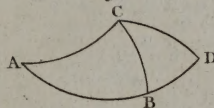
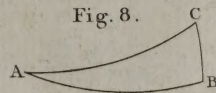


Fig. 8.



Spherical TRIGONOMETRY.

Fig. 10.

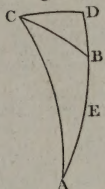


Fig. 11.

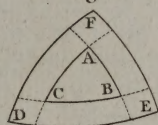


Fig. 12.

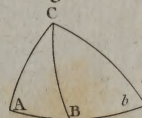
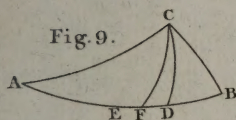


Fig. 9.



TURNING.

Fig. 1.

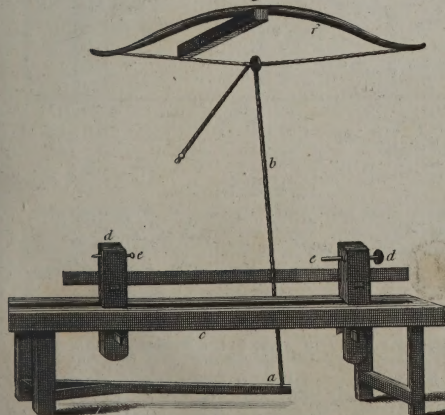


Fig. 2.



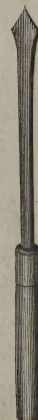
Fig. 3.



Fig. 4.



Fig. 5.



The Solution of the CASES of oblique spherical TRIANGLES (fig. 9 and 10.)

Case	Given	Sought	Solution
1	Two sides AC, BC, and an angle A opposite to one of them	The angle B opposite to the other.	As sine BC : sine A :: sine AC : sine B (by theorem 1.) Note, this case is ambiguous when BC is less than AC; since it cannot be determined from the data whether B be acute or obtuse.
2	Two sides AC, BC, and an angle A opposite to one of them	The included angle ACB	Upon AB produced (if need be) let fall the perpendicular CD; then (by theorem 4.) rad. : co-sine AC :: tang. A : co-tang. ACD; but (by theorem 1.) as tang. BC : tang. AC :: co-sine ACD : co-sine BCD. Whence $ACB = AC \pm BCD$ is known.
3	Two sides AC, BC, and an angle A opposite to one of them	The other side AB	As rad. : co-sine A :: tang. AC : tang. AD (by theor. 1.) and (by theor. 2.) as co-sine AC : co-sine BC :: co-sine AD : co-sine BD. Note, this and the last case are both ambiguous when the first is so.
4	Two sides AC, AB, and the included angle A	The other side BC	As rad. : co-sine A :: tang. AC : tang. AB (by theor. 1.) whence AD is also known; then (by theor. 2.) as co-sine AD : co-sine BD :: co-sine AC : co-sine BC.
5	Two sides AC, AB, and the included angle A	Either of the other angles, suppose B	As rad. : co-sine A :: tang. AC : tang. AD (by theor. 1.) whence BD is known; then (by theor. 4.) as sine BD : sine AD :: tang. A : tang. B.
6	Two angles A, ACB, and the side AC betwixt them	The other angle B	As rad. : co-sine AB :: tang. A : co-tang. ACD (by theorem 4.) whence BCD is also known; then (by theor. 3.) as sine ACD : sine BCD :: co-sine A : co-sine B.
7	Two angles A, ACB, and the side AC betwixt them	Either of the other sides, suppose BC	As rad. : co-sine AC :: tang. A : co-tang. ACD (by theorem 4.) whence BCD is also known; then, as co-sine BCD : co-sine ACD :: tang. AC : tang. BC (by theor. 1.)
8	Two angles A, B, and a side AC opposite to one of them	The side BC opposite the other	As sine B : sine AC :: sine A : sine BC (by theorem 1.)
9	Two angles A, B, and a side AC opposite to one of them	The side AB betwixt them	As rad. : co-sine A :: tang. AC : tang. AD (by theor. 1.) and as tang. B : tang. A :: sine AD : sine BD (by theor. 4.) whence AB is also known.
10	Two angles A, B, and a side AC opposite to one of them	The other angle ACB	As rad. : co-sine AC :: tang. A : co-tang. ACD (by theorem 4.) and as co-sine A : co-sine B :: sine ACD : sine BCD (by theor. 3.) whence ACB is also known.
11	All the three sides AB, AC, and BC,	An angle, suppose A	As tang. $\frac{1}{2}$ AB : tang. $\frac{AC+BC}{2}$:: tang. $\frac{AC-BC}{2}$: tang. DE the distance of the perpendicular from the middle of the base (by theorem 6.) whence AD is known: then, as tang. AC : tang. AD :: rad. : co-sine A (by theor. 1.)
12	All the three angles A, B, and ACB	A side, suppose AC	As co-tang. $\frac{ABC+A}{2}$: tang. $\frac{ABC-A}{2}$:: tang. $\frac{ACB}{2}$: tang. of the angle included by the perpendicular and a line bisecting the vertical angles; whence ACD is also known: then (by theorem 5.) tang. A : co-tang. ACD :: rad. : co-sine AC.

TRI

TRIHLATÆ, from *tres*, “three,” and *hilum*, “an external mark on the seed;” the name of the 23d class in Linnæus’s Fragments of a Natural Method; consisting of plants with three seeds, which are marked with an external cicatrix or scar, where they are fastened within the fruit. See BOTANY.

TRIM, implies in general the state or disposition by which a ship is best calculated for the several purposes of navigation. Thus the *trim of the hold* denotes the most convenient and proper arrangement of the various materials contained therein relatively to the ship’s motion or stability at sea. The trim of
VOL. X.

TRI

the masts and sails is also their most apposite situation with regard to the construction of the ship and the effort of the wind upon her sails. See SEAMANSHIP.

TRINGA, SANDPIPER; a genus of birds belonging to the order of *gallæ*. The bill is somewhat tapering, and of the length of the head; the nostrils are small; the toes are four in number and divided, the hind toe being frequently raised from the ground. According to Dr. Latham there are forty-five species, of which eighteen are British. We shall describe some of the most remarkable.

1. *Vanellus*, lapwing, or tewit, is distinguished by having
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the bill, crown of the head, crest, and throat, of a black colour; there is also a black line under each eye; the back is of a purplish green; the wings and tail are black and white, and the legs red: the weight is eight ounces and the length thirteen inches. It lays four eggs, making a slight nest with a few bents. The eggs have an olive cast, and are spotted with black. The young, as soon as hatched, run like chickens: the parents show remarkable solicitude for them, flying with great anxiety and clamour near them, striking at either men or dogs that approach, and often fluttering along the ground like a wounded bird, to a considerable distance from their nest, to delude their pursuers; and to aid the deceit, they become more clamorous when most remote from it: the eggs are held in great esteem for their delicacy, and are sold by the London poulterers for three shillings the dozen. In winter, lapwings join in vast flocks; but at that season are very wild: their flesh is very good, their food being insects and worms. During October and November, they are taken in the fens in nets, in the same manner that ruffs are; but are not preserved for fattening, being killed as soon as caught.

2. *Pugnax*. The male of this species is called *ruff*, and the female *reeve*. The name *ruff* is given to the males because they are furnished with very long feathers, standing out in a remarkable manner, not unlike the ruff worn by our ancestors. The ruff is of as many different colours as there are males; but in general it is barred with black; the weight is six or seven ounces; the length one foot. The female, or *reeve*, has no ruff; the common colour is brown; the feathers are edged with a very pale colour; the breast and belly white. Its weight is about four ounces.

These birds appear in the fens in the earliest spring, and disappear about Michaelmas. The reeves lay four eggs in a tuft of grass, the first week in May, and sit about a month. The eggs are white, marked with large rusty spots. Fowlers avoid in general the taking of the females; not only because they are smaller than the males, but that they may be left to breed.

Soon after their arrival, the males begin to hill, that is, to collect on some dry bank near a splash of water, in expectation of the females, who resort to them. Each male keeps possession of a small piece of ground, which it runs round till the grass is worn quite away, and nothing but a naked circle is left. When a female lights, the ruffs immediately fall to fighting. It is a vulgar error, that ruffs must be fed in the dark lest they should destroy each other by fighting on admission of light. The truth is, every bird takes its stand in the room as it would in the open fen. If another invades its circle, an attack is made, and a battle ensues. They make use of the same action in fighting as a cock, place their bills to the ground and spread their ruffs. Mr. Pennant says, he has set a whole room full a fighting, by making them move their stations; and after quitting the place, by peeping through a crevice, seen them resume their circles and grow pacific.

When a fowler discovers one of those hills, he places his net over night, which is of the same kind as those that are called *clap* or *day nets*; only it is generally single, and is about fourteen yards long and four broad. The fowler resorts to his stand at day-break, at the distance of one, two, three, or four hundred yards from the nets, according to the time of the season; for the later it is, the slyer the birds grow. He then makes his first pull, taking such birds as he finds within reach: after that he places his stuffed birds or stakes to entice those that are continually traversing the fen. When the fakes are set, seldom more than two or three are taken at a time. A fowler will take forty or fifty dozen in a season.—These birds are found in Lincolnshire, the Isle of Ely, and in the East Riding of York. They visit a place called

Martin-Mere in Lancashire the latter end of March or beginning of April; but do not continue there above three weeks; where they are taken in nets, and fattened for the table with bread and milk, hempseed, and sometimes boiled wheat; but if expedition is required, sugar is added, which will make them in a fortnight's time a lump of fat: they then sell for two shillings or half a crown a-piece. They are dressed like the woodcock, with their intestines; and when killed at the critical time, say the Epicures, are the most delicious of all mortals.

3. *Canutus*, or knot, has the forehead, chin, and lower part of the neck, brown, inclining to ash-colour; the back and scapulars deep brown, edged with ash-colour; the coverts of the wings white, the edges of the lower order deeply so, forming a white bar; the breast, sides, and belly, white, the two first streaked with brown; the coverts of the tail marked with white and dusky spots alternately; the tail ash-coloured, the outmost feather on each side white; the legs of a bluish grey; and the toes as a special mark, divided to the very bottom; the weight four ounces and a half.—These birds, when fattened, are preferred by some to the ruffs themselves. They are taken in great numbers on the coasts of Lincolnshire, in nets such as are employed in taking ruffs; with two or three dozens of fakes of wood painted like the birds, placed within; 14 dozens have been taken at once. Their season is from the beginning of August to that of November. They disappear with the first frosts. Camden says, they derive their name from King Canute, Knute, or Knout, as he is sometimes called; probably because they were a favourite dish with that monarch. We know that he kept the feast of the purification of the Virgin Mary with great pomp and magnificence at Ely; and this being one of the fen birds, it is not unlikely but he met with it there.

4. The *hypoleucos*, or common sandpiper, except in pairing time, is a solitary bird: it is never found near the sea, but frequents rivers, lakes, and other fresh waters. Its head is brown, streaked with downward black lines; the neck an obscure ash-colour; the back and coverts of the wings brown, mixed with a glossy green, elegantly marked with transverse dusky lines; the breast and belly are of a pure white; the quill feathers and the middle feathers of the tail are brown; the legs of a dull pale green.

5. The *alpina*, or dunling sandpiper, is at once distinguished from the others by the singularity of its colours. The back, head, and upper part of the neck, are ferruginous; marked with large black spots; the lower part of the neck white, marked with short dusky streaks; the coverts of the wings ash-colour; the belly white, marked with large black spots, or with a black crescent pointing towards the thighs; the tail is ash-coloured; legs black; toes divided to their origin. In size it is superior to that of a lark. These birds are found on our sea-coasts: but may be reckoned among the more rare kinds. They lay four eggs of a dirty white colour, blotched with brown round the thicker end, and marked with a few small spots of the same colour on the smaller end. They are common on the Yorkshire coasts, and esteemed a great delicacy.

6. The *cinclus*, purr, or stint, is in length $7\frac{1}{2}$ inches; the head and hind part of the neck are ash-coloured, marked with dusky lines; a white stroke divides the bill and eyes; the back is of a brownish ash-colour; the breast and belly white; the coverts of the wings and tail a dark brown, edged with light ash-colour or white; the upper part of the quill feathers dusky, the lower white; the legs of a dusky green; the toes divided to their origin. The bill an inch and a half long, slender and black; irides dusky.—These

birds come in prodigious flocks on our sea-coasts during the winter: in their flight they perform their evolutions with great regularity; appearing like a white or a dusky cloud, as they turn their backs or their breasts towards you. They leave our shores in spring, and retire to some unknown place to breed. They were formerly a well known dish at our tables.

TRINIDAD, an Island in the gulf of Mexico, separated from New Andalusia, in Terra Firma, by a strait, about three miles over. The soil is fruitful, producing sugar, cotton, Indian corn, fine tobacco, and fruits; but the air is unhealthy. It is about 62 miles in length, and 45 in breadth; and was discovered by Christopher Columbus in 1498. There is a bituminous lake in this island.

TRINITARIANS, those who believe in the Trinity: those who do not believe therein being called *Antitrinitarians*.

TRINITY, in theology, the ineffable mystery of three persons in one God; Father, Son, and Holy Spirit. See **THEOLOGY**.

TRINITY-House. See **LONDON**.

TRINITY-Sunday, a festival observed on the Sunday next after WhitSunday, in honour of the holy Trinity. The observation of this festival was first enjoined in the council of Arles, anno 1260.

TRINOANTES (anc. geog.) a people of Britain, supposed to have occupied Middlesex and Essex.

TRIO, in music, a part of a concert wherein three persons sing; or more properly, a musical composition consisting of three parts.

TRIPHTHONG, in grammar, an assemblage or concurrence of three vowels in one syllable; as *que*.

TRIPLE, in music, is one of the species of measure or time. See **MUSIC**.

TRIPOD, in antiquity, a famed sacred seat or stool, supported by three feet, whereon the priests and sibyls were placed to render oracles. It was on the tripod that the gods were said to inspire the Pythias with that divine fury and enthusiasm wherewith they were seized at the delivery of their predictions.

TRIPOLI, a country of Africa, in Barbary: bounded on the north by the Mediterranean sea; on the south, by the country of the Berberies; on the west, by the kingdom of Tunis, Biledulgerid, and a territory of the Gadamis; and on the east, by Egypt. It is about 925 miles along the sea coast; but the breadth is various. Some parts of it are pretty fruitful; but that towards Egypt is a sandy desert. It had the title of a *kingdom*; but is now a republic governed by a dey. He is not absolute, for a Turkish bashaw resides here, who receives his authority from the grand seignior, and has a power of controlling the dey, and levying taxes on the people. The dey is elected by the soldiers, who make no scruple of deposing him when they please.

TRIPOLI, a considerable town of Africa, and capital of a republic of the same name in Barbary, and under protection of the grand seignior, with a castle and a fort. It is pretty large, and the inhabitants are noted pirates. It was taken by Charles V. who settled the knights of Malta there; but they were driven away by the Turks in 1551. It was formerly very flourishing; and has now some trade in stuffs, saffron, corn, oil, wool, dates, ostrich feathers, and skins: but they make more of the Christian slaves which they take at sea; for they either set high ransoms upon them, or make them perform all sorts of work. It is seated on the coast of the Mediterranean, in a sandy soil, and surrounded by a wall, strengthened by other fortifications. E. Long. 13. 12. N. Lat. 32. 34.

TRIPOLI, called *Tripolis of Syria*, to distinguish it from Tripoli in Barbary, received its name from its being anciently formed of three cities at a small distance from each other, one of which belonged to the Aradians, or ancient kingdom of Arad, the second to the Sidonians, and the third to the Tyrians, perhaps as a common mart to those maritime powers. The present town of Tripoli is built at the distance of a mile and a half from the other, upon the declivity of a hill facing the sea, in 34° 20' north latitude, and in 35° 50' east longitude from Greenwich. It is surrounded with walls, fortified with seven high strong towers, and a castle, all of Gothic architecture; but the streets are narrow, and the houses low. The city contains about 8000 houses, and near 60,000 inhabitants, consisting of Turks, Christians, and Jews. The basha, or pacha, who resides in the castle, where there is a garrison of 200 janizaries, governs the adjacent territory, in which there is plenty of fruit, and a great number of mulberry-trees, which enable the inhabitants to carry on a silk manufacture, from which they draw considerable profit.

All the environs of Tripoli are laid out in orchards, where the mopal grows spontaneously, and the white-mulberry is cultivated for the silk-worm; the pomegranate, orange, and lemon trees, for their fruit, which is here very fine. The country, though delightful to the eye, is unhealthy; from July to September, epidemic fevers, like those of Scanderoon and Cyprus, prevail, and are principally caused by the artificial inundations made for the purpose of watering the mulberry trees, to enable them to throw out their second leaves, and from a want of free circulation of air, the city being open only to the westward.

TRIPOLI, a genus of argillaceous earth, much used in the polishing of metals. It has its name from Tripoli in Barbary, from whence it was formerly brought to us, and has the following properties: 1. It does not effervesce with any of the acids. 2. It hardens in the fire; and by a considerable heat, its surface becomes vitrified. 3. Every kind of it, excepting that found in England, becomes red by calcination. 4. It is fusible by mixture with calcareous earth, as well as by means of borax and microcosmic salt. 5. Generally no salt can be extracted by washing, though sometimes the marine and vitriolic acid may be extracted by distillation. 6. When crude it imbibes water, but is not diffusible in it. 7. It tastes like common-chalk, and feels sandy between the teeth, though no sand can by any means be extracted from it.

Tripoli is found of two different kinds: 1. Solid, and of a rough texture; brown yellowish, and spotted like marble. 2. Friable and compact; granulated, brown or yellowish; this last being the kind met with in England. This last kind has also been found in Scotland; but the rotten stone found in Derbyshire, and likewise much used in polishing, is quite another substance. According to Ferber, the rotten stone is tripoli mixed with a calcareous earth. In the memoirs of the academy at Paris, for 1769, it is asserted, that tripoli is a volcanic product. In proof of this, we are there informed, that a coal mine at St. Etienne having accidentally taken fire, and the fire having extended to some beds of schistus and bitumen, tripoli was found in the burnt parts of the strata, but no where else. Cronstedt is of opinion, that 100 parts of it contain 90 of siliceous earth, 7 of argill, and 3 of iron; but the red sort probably contains more iron.

TRIPTOLEMUS, laws of. See **MYSTERIES**.

TRIQUETROUS, among botanists, expresses a fruit or leaf that has three sides or faces all flat.

TRIREMIS, in antiquity, a galley with three ranks of oars on a side.

TRISMEGISTUS, an epithet or surname given to one of the two Hermes. See THOTH.

TRISMUS, the LOCKED JAW. See MEDICINE.

TRISSYLLABLE, in grammar, a word consisting of three syllables.

TRITICUM, WHEAT, in botany: a genus of plants belonging to the class of *triandria*, and order of *dignia*; and in the natural system ranging under the 4th order, *Gramina*. The calyx is bivalve, solitary, and generally containing three florets; the corolla is bivalve, one valve being bluntnish, the other acute. There are 15 species; the *astrivum*, summer or spring wheat; *hybernum*, winter Lammas, or common wheat; *compositum*, *turgidum*, or cone-wheat; *polonium*, or Polish wheat; *spelta*, or spelt wheat; *monococcum*, or one-grained wheat; *prostratum*, or trailing wheat-grass; *pumilum*, or dwarf wheat-grass; *juncum*, or rush wheat-grass; *repens*, or couch-grass; *tenellum*, or tender wheat-grass; *maritimum*, or sea wheat-grass; *unilaterale*, or spiked fca-wheat; *uniloides*, or linear spiked wheat-grass.—Of what country the first six species are natives, cannot now be determined: the prostratum is a native of Siberia; the juncum, repens, unilaterale, and maritimum, are natives of Britain; the tenellum is a native of Spain; and the uniloides is a native of Italy. It may also be observed, that the first nine are annuals, the rest are perennials. See HUSBANDRY.

Linnaeus comprehends the different kinds of wheat cultivated at present under six species; but cultivation has produced a great many varieties from these.

1. *Triticum astrivum*, or spring-wheat, hath four flowers in a calyx, three of which mostly bear grain. The calyces stand pretty distant from each other on both sides a flat smooth receptacle. The leaves of the calyx are keel-shaped, smooth, and they terminate with a short arista. The glumes of the flowers are smooth and belying, and the outer leaf of three of the glumes in every calyx is terminated by a long arista, but the three inner ones are beardless. The grain is rather longer and thinner than the common wheat. It is supposed to be a native of some part of Tartary. The farmers call it *Spring Wheat*, because it will come to the sickle with the common wheat, though it be sown in February or March. The varieties of it are: *Triticum astrivum spica et grana rubente*. Spring wheat, with a red spike and grain. *Triticum astrivum rubrum, spica alba*. Red spring wheat, with a white spike. *Triticum astrivum, spica et grana alba*. Spring wheat, with a white spike and grain.—2. *Triticum hybernum*, winter or common wheat, has also four flowers in a calyx, three of which are mostly productive. The calyces stand on each side a smooth flat receptacle, as in the former species, but they are not quite so far asunder. The leaves of the calyx are belying, and so smooth that they appear as if polished, but they have no arista. The glumes of the flowers too are smooth, and the outer ones near the top of the spike are often tipped with short arista. The grain is rather plumper than the former, and is the sort most generally sown in England; whence the name of *common wheat*. Its varieties are: *Triticum hybernum, spica et grana rubente*. Common wheat, with a red spike and grain. *Triticum hybernum rubrum, spica alba*. Common red wheat with a white spike. *Triticum hybernum, spica et grana alba*. Common wheat with a white spike and grain.—3. *Triticum turgidum*, thick spiked or cone-wheat: it is easily distinguished from either of the former; for though it has four flowers in a calyx after the manner of them, yet the whole calyx and the edges of the glumes are covered with soft hairs. The calyces too stand thicker on the receptacle, which make the spike appear more turgid. Some of the outer glumes near the top of the spike are terminated by short arista, like those

of the common wheat. The grain is shorter, plumper, and more convex on the back than either of the former species. Its varieties are numerous, and have various appellations in different counties, owing to the great affinity of several of them. Those most easily to be distinguished are: *Triticum turgidum conicum album*. White cone wheat. *Triticum turgidum conicum rubrum*. Red cone wheat. *Triticum turgidum arisiferum*. Bearded cone wheat. *Triticum turgidum spica multiplici*. Cone wheat, with many ears. The third variety is what the farmers call *clog wheat*, *square wheat*, and *riests*. The grain of this is remarkably convex on one side, and when ripe the awns generally break in pieces and fall off. This sort is very productive, but it yields an inferior flour to what the former two species do.—4. *Triticum Polonicum*, or Polish wheat, has some resemblance to the turgidum, but both grain and spike are longer. The calyx contains very long two flowers, and the glumes are furnished with very long arista; the teeth of the midrib are bearded. As this sort is seldom sown in England, there is no telling what varieties it produces.—5. *Triticum Spelta*, spelt or German wheat. At first view this has a great resemblance to barley, but it has no involucreum. The calyx is truncated; that is, it appears as if the ends were snipped off, and it contains four flowers, two of which are hermaphrodite and the glumes bearded, but the intermediate ones are neuter. There are two rows of grain as in barley, but they are shaped like wheat. It is much cultivated in France, Germany, and Italy. 6. *Triticum monococcum*, St Peter's corn, or one-grained wheat, has three flowers in each calyx alternately bearded, and the middle one neuter. The spike is shining, and has two rows of grain in the manner of barley. Where it grows naturally is not known, but it is cultivated in Germany; and in conjunction with spelt wheat is there made into bread, which is coarse, and not so nourishing as that made of common wheat. Malt made of any of our wheats is often put into beer, and a small quantity of it will give a large brewing a fine brown transparent tincture.

TRITON, a sea demigod, held by the ancients to be an officer or trumpeter of Neptune, attending on him, and carrying his orders from sea to sea.

TRITURATION, the act of reducing a solid body into a subtle powder; called also *pulverization* and *levigation*.

TRIUMPH, in Roman antiquity, a public and solemn honour conferred by the Romans on a victorious general by allowing him a magnificent entry in the city. The greater triumph, called also *curulis*, or simply the *triumph*, was decreed by the senate to a general, upon the conquering of a province or gaining a signal victory. The day appointed for the ceremony being arrived, scaffolds were erected in the forum and circus, and all the other parts of the city where they could best behold the pomp: the senate went to meet the conqueror without the gate called *Capena* or *Triumphalis*, and marched back in order to the Capitol; the ways being cleared and cleansed by a number of officers and tipstaffs, who drove away such as thronged the passage or straggled up and down. The general was clad in a rich purple robe, interwoven with figures of gold, setting forth his great exploits; his buskins were beset with pearl; and he wore a crown, which at first was only laurel, but afterwards gold; in one hand he bore a branch of laurel, and in the other a truncheon. He was carried in a magnificent chariot, adorned with ivory and plates of gold, drawn usually by two white horses; though sometimes by other animals, as that of Pompey, when he triumphed over Africa, by elephants; that of Marc Antony by lions; that of Helioagalbus by tigers; that of Aurelian by deer, &c. His children were at his feet,

and sometimes on the chariot-horses. The procession was led up by the musicians, who played triumphal pieces in praise of the general: these were followed by young men, who led the victims to the sacrifice, with their horns gilded, and their heads adorned with ribands and garlands; next came the carts and waggons, loaded with all the spoils taken from the enemy, with their horses, chariots, &c.; these were followed by the kings, princes, and generals, who had been taken captives, loaded with chains; after these appeared the triumphal chariot, before which, as it passed, they all along strewn flowers, and the people with loud acclamations called out *Io triumphe!* The chariot was followed by the senate, clad in white robes; and the senate by such citizens as had been set at liberty or ransomed; and the procession was closed by the priests and their officers and utensils, with a white ox led along for the chief victim. In this order they proceeded through the triumphal gate, along the via sacra, to the Capitol, where the victims were slain. In the mean time all the temples were open, and all the altars loaded with offerings and incense; games and combats were celebrated in the public places, and rejoicings appeared everywhere.

TRIUMVIR, one of three persons who govern absolutely, and with equal authority, in a state. It is chiefly applied to the Roman government: Cæsar, Pompey, and Crassus, were the first triumvirs who divided the government among them. There were also other officers so called; as the triumviri or tresviri capitales, who were the keepers of the public gaol: they had the office of punishing malefactors; for which purpose they kept eight lictors under them.

TROAS, a country of Phrygia in Asia Minor, of which Troy was the capital. When Troas is taken for the whole kingdom of Priam, it may be said to contain Mysia and Phrygia Minor; but if only applied to that part of the country where Troy was situated, its extent is confined within very narrow limits. Troas was anciently called Dardania. See **TROJA**.

TROCHEUS, in prosody, a foot consisting of a long and short syllable.

TROCHANTER, in anatomy. See **ANATOMY**.

TROCHE, in pharmacy, a sort of medicine made of glutinous substances into little cakes, and afterwards exsiccated. See **PHARMACY**.

TROCHILUS, **HUMMING BIRD**, a genus of birds belonging to the order of *picæ*. The rostrum is subulate, filiform, and longer than the head, the apex being tubular: the upper mandible sheaths the lower. The tongue is filiform and tubulous, the two threads coalescing; the feet are slender and fit for walking; the tail has ten feathers. There are 65 species, none of which are natives of Britain. They are all remarkable for the beauty of their colours, and most of them for the smallness of their size, though some are eight or nine inches in length.—They are divided into two families, viz. those with crooked bills, and those with straight bills. Of these we shall describe the four following species:

1. The *exilis*, or little humming-bird, has a crooked bill, is an inch and a half in length; frequently weighing less than 50 grains. The bill is black, and half an inch in length; the body greenish-brown, with a red, shining, inimitable gloss: the head is crested with a small tuft, green at bottom, but of a sparkling gold colour at top; quills and tail fine black. It is a native of Guiana; and the velocity of it in flying is so great, that the eye can scarce keep pace with its motion.

2. The *moschitus*, or ruby-necked humming-bird, according to Margrave is the most beautiful of the whole genus. Its length is three inches four lines; the bill straight, eight

lines long, and blackish: the top of the head and hind part of the neck are as bright as a ruby, and of the same colour: the upper parts of the body are brown, with a faint mixture of green and gold: the throat and fore part of the neck are the colour of the most brilliant topaz: the belly, sides, and thighs, are brown; but on the lower part of the belly, on each side, is a spot of white: the tail is rufous purple, inclining to violet at the ends; the two middle feathers are shortest: the legs and claws blackish. The female has only a dash of golden or topaz on the breast and fore part of the neck; the rest of the under parts are greyish white. This species is found in Brazil, Curassoa, Guiana, and Surinam.

3. The *minimus*, or least humming-bird, is exceeded, both in weight and dimensions, by several species of bees. The total length is one inch and a quarter; and when killed, weighs no more, according to Sir Hans Sloane, than 20 grains. The bill is straight and black, three lines and a half in length: the upper parts of the head and body are of a greenish gilded brown, in some lights appearing reddish: the under parts are greyish white; the wings are violet-brown; the tail of a bluish black, with a gloss of polished metal; but the outer feather, except one on each side, is grey from the middle to the tip, and the outer one wholly grey; legs and claws brown. The female is less than the male: the whole upper side of a dirty brown, with a slight gloss of green; the under parts of a dirty white. These birds are found in various parts of South America and the adjacent islands.—Our author received it from Jamaica.

4. *Superciliosus*, white shaft, or supercilious humming-bird, has a bill twenty lines long; the feathers of the tail next the two long shafts are also the longest, and the lateral ones continually decrease to the two outermost which are the shortest, and this gives the tail a pyramidal shape; its quills have a gold gloss on a grey and blackish ground, with a whitish edge at the point, and the two shafts are white through the whole projecting portions; all the upper side of the back and head gold colour; the wing violet-brown; and the under side of the body white-grey.

These birds subsist on the nectar or sweet juice of flowers: they frequent those most which have a long tube; particularly the *impatiens noli me tangere*, the *monarda* with crimson flowers, and those of the convolvulus tribe. They never settle on the flower during the action of extracting the juice, but flutter continually like bees, moving their wings very quick, and making a humming noise; whence their name. They are not very shy, suffering people to come within a foot or two of the place where they are, but on approaching nearer fly off like an arrow out of a bow. They often meet and fight for the right to a flower, and this all on the wing: in this state they often come into rooms where the windows stand open, fight a little, and go out again. When they come to a flower which is juiceless, or on the point of withering, they pluck it off as they were in anger, by which means the ground is often quite covered with them. When they fly against each other, they have, besides the humming, a sort of chirping noise like a sparrow or chicken. They do not feed on insects nor fruit: nor can they be kept long in cages, though they have been preserved alive for several weeks together by feeding them with water in which sugar had been dissolved.

This bird most frequently builds in the middle of a branch of a tree, and the nest is so small that it cannot be seen by a person who stands on the ground; any one therefore desirous of seeing it, must get up to the branch, that he may view it from above: it is for this reason that the nests are not more frequently found. The nest is of course very small, and quite round; the outside, for the most part, is composed of green

moths, common on old pales and trees; the inside of soft down, mostly collected from the leaves of the great mullein, or the silk grafs; but sometimes they vary the texture, making use of flax, hemp, hairs, and other soft materials: they lay two eggs of the size of a pea, which are white, and not bigger at one end than the other.

The above account of the manners will in general suit all the birds of this genus; for as their tongues are made for suction, it is by this method alone that they can gain nourishment: no wonder, therefore, they can scarcely be kept alive by human artifice. Captain Davies, however, informed our author, that he kept these birds alive for four months by the following method:—He made an exact imitation of some of the tubular flowers with paper, fastened round a tobacco-pipe, and painted them of a proper colour; these were placed in the order of nature, in the cage wherein these little creatures were confined; the bottoms of the tubes were filled with a mixture of brown sugar and water as often as emptied; and he had the pleasure of seeing them perform every action; for they soon grew familiar, and took the nourishment in the same manner as when ranging at large, though close under his eye.

TROGLODYTES, in the ancient geography, a people of Ethiopia, said to have lived in caves under ground. Pomponius Mela gives a strange account of the Troglodytes: he says, they did not so properly speak as murmur; and that they lived on serpents.

TROGUS, (Pompeius), Latin universal historian to the time of Augustus Cæsar, of whom we have only an abridgement by Justin, flourished about 41 B.C.

TROJA, the capital city of Troas, or, according to others, a country of which Ilium was the capital. It was built on a small eminence near mount Ida, and the promontory of Sigæum, at the distance of about four miles from the seashore. Dardanus the first king of the country built it, and called it *Dardania*, and from Tros one of his successors it was called *Troja*, and from Ilius *Ilium*. This city has been celebrated by the poems of Homer and Virgil; and of all the wars which have been carried on among the ancients, that of Troy is the most famous. A description of the plan of Troy has been lately published in French in the 3d volume of the Philosophical Transactions of the Royal Society of Edinburgh, written by M. Chevalier. The city of Troy, according to him, stood on the present site of the modern village of Bounarbachi, distant four leagues from the sea, and which is the residence of an Aga, ruling with absolute sway the inhabitants of the Trojan plain and the inferior Agas, to whom they are immediately subject. Bounarbachi is situated on the side of an eminence, exposed to every wind, at the termination of a spacious plain, the soil of which is rich and of a blackish colour. Close to the village is to be seen a marsh covered with tall reeds; and the situation is impregnable on all sides except at Erin (Homer's *pinos*), the *bill of wild fig trees*, which extended between the Scæan gate and the fountains of the Scamander. These circumstances, agreeing with Homer's descriptions, strongly support M. Chevalier's opinion concerning the situation of Troy. A very interesting part of this work is the account of conical mounds or barrows, several of them 100 feet in diameter at the base; and which the author maintains to be the identical tombs raised over the ashes of the heroes of the Trojan war; some of them he deems more ancient. He describes particularly the tombs of Eryetes, Ilius, Ajax, Hector, Achilles, Patroclus, and Antiochus. This dissertation, which runs to the length of 92 quarto pages, is replete with erudition and ingenious reasoning, and is illustrated and embellished by maps of the plan of Troy and several tables of inscriptions. It

has been translated with much accuracy and care by Mr. Dalzel professor of Greek in the University of Edinburgh, and accompanied with large notes and illustrations.

TROLLIUS, GLOBE-FLOWER, or *Luben Gowan*, in botany: a genus of plants belonging to the class of *polyandria*, and order of *polygynia*; and in the natural system ranging under the 26th order, *Mutisifluæ*. The calyx is wanting; there are about 14 petals; the capsules are very numerous, ovate, and monospermous. There are two species, the *asiaticus* and *europæus*; the latter of which is a British plant. The *europæus*, or European globe-flower, has its corollets connivent, and from 9 to 16 nectaria, of the length of the stamina, linear, plane, incurved, and perforated at the inside of the base. The leaves are divided first into five segments down to the base; the segments are again divided, each about half way, into two or three lobes, which are sharply indented on the edges. The stalk is a foot high, and scarcely branched; the flower is yellow, globose, and spacious. It grows at the foot of Mountains, and by the sides of rivulets. The country people in Sweden strew their floors and pavements on holidays with the flowers, which have a pleasant smell, and are ornamental in gardens.

TROMP (Martin Happertz Van), a celebrated Dutch admiral, was born at the Brille, in Holland. He raised himself by his merit, after having distinguished himself on many occasions, especially at the famous engagement near Gibraltar in 1607. He passed for one of the greatest seamen that had till that time appeared in the world; and was declared admiral of Holland, even by the advice of the prince of Orange. He in that character defeated a large Spanish fleet in 1630, and gained 32 other victories at sea; but was killed when under deck, in an engagement with the English in 1653. The states-general caused medals to be struck to his honour, and lamented him as one of the greatest heroes of their republic. Van Tromp, in the midst of the greatest glory, constantly discovered a remarkable modesty; for he never assumed a higher character than that of a burgher, and that of being the father of the sailors.

TRONAGE, an ancient customary duty or toll, for weighing of wool. According to Fleta, *trona* is a beam to weigh with, mentioned in the stat. Westm. 2. cap. 25. And trona was used for the weighing wool in a staple or public mart, by a common trona or beam; which, for the trona of wool in London, was fixed at Leaden-Hall. The mayor and commonalty of London are ordained keepers of the beams and weights for weighing merchants' commodities, with power to assign clerks and porters, &c. of the great beam and balance; which weighing of goods and wares is called *tronage*; and no stranger shall buy any goods in London before they are weighed at the king's beam, on pain of forfeiture.

TRONE-WRIGHT, the most ancient of the different weights used in Scotland; and, though now forbidden by several statutes, is still used by many for home-commodities, and that in a very irregular manner; for the pound varies in different places, and for different purposes, from 20 to 24 Dutch ounces. The common allowance is 2½ oz. for wool, 2½ for butter and cheese, 20 for tallow, lint, hemp, and hay. It is divided into 16 of its own ounces, and 16 pounds make a stone.

TROOP, a small body of horse or dragons, about 50 or 60, sometimes more, sometimes less, commanded by a captain, lieutenant, cornet, quarter-master, and three corporals, who are the lowest officers of a troop.

TROPE. See ORATORY.

TROPHONIUS CAVE, or *Oracle* (anc. geog.), a cave near Lebada in Bœotia, between Helicon and Charonea (Strabo): so called from Trophonius, an enthusiastic diviner; who, descending into this cave, pretended to give answers and pro-

nounce oracles; and was hence called *Jupiter Trophonius*. Such as went down to this cave never after smiled; hence the proverbial saying of a man who has lost his mirth, That he is come out of Trophonius's cave. Though Pausanias, who writes from experience, contradicts this; affirming that persons came out of the cave affected indeed with a stupor, but that they soon after recovered themselves. See ORACLE.

TROPHY (*Trophaean*), among the ancients, a monument of victory.

TROPIC-BIRD. See PHÆTON.

TROPHICS. See GEOGRAPHY.

TROUBADOURS, poets that flourished in Provence during the 12th century. They wrote poems on love and gallantry; on the illustrious characters and remarkable events of the times; satires which were chiefly directed against the clergy and monks; and a few didactic pieces. The troubadours were great favourites in different courts, diffused a taste for their language and for poetry over Europe, which was about that time sunk in ignorance and rudeness; they disappeared in the 14th century. A history of the troubadours, in 3 volumes 12mo, was begun by M. de Sainte Palaye, and finished by the Abbé Millot.

TROVER, in law, an action that a man hath against one that, having found any of his goods, refuseth to deliver them upon demand.

TROUT. See SALMO.

TROY. See TROJA.

TROY-WEIGHT, one of the most ancient of the different kinds used in Britain. The ounce of this weight was brought from Grand Cairo in Egypt, about the time of the crusades, into Europe, and first adopted in *Troyes* a city of Champagne; whence the name. The pound *English Troy* contains 12 ounces, or 5760 grains. It was formerly used for every purpose; and is still retained for weighing gold, silver, and jewels; for compounding medicines; for experiments in natural philosophy; and for comparing different weights with each other.

Scots Troy-Weight was established by James VI. in the year 1618, who enacted, that only one weight should be used in Scotland, viz. the French *Troy* stone of 16 pounds, and 16 ounces in the pound. The pound contains 7600 grains, and is equal to 17 oz. 6 dr. avoirdupois. The cwt. or 112 lb. avoirdupois, contains only 103 lb. 2½ oz. of this weight, though generally reckoned equal to 104 lb. This weight is nearly, if not exactly, the same as that of Paris and Amsterdam; and is generally known by the name of *Dutch weight*. Though prohibited by the articles of union, it is still used in weighing iron, hemp, flax, most Dutch and Baltic goods, meal, butcher-meat, unwrought pewter and lead, and some other articles.

TRUE-LOVE, in botany. See PARIS.

TRUFFLES. See LYCOPERDON.

TRUMPET, a musical instrument, the most noble of all portable ones of the wind kind; used chiefly in war, among the cavalry to direct them in the service. Each troop of cavalry has one. The cords of the trumpets are of crimson, mixed with the colours of the facings of the regiments. As to the invention of the trumpet, some Greek historians ascribe it to the Tyrrhenians; but others, with greater probability, to the Egyptians; from whom it might have been transmitted to the Israelites. The trumpet was not in use among the Greeks at the time of the Trojan war; though it was in common use in the time of Homer. According to Potter (*Arch. Græc.* vol. ii, cap. 9.), before the invention of trumpets, the first signals of battle in primitive wars were lighted torches; to these succeeded shells of fishes, which were sounded like trumpets. And when the trumpet became common in military use, it may well be imagined to have served at first only as a rough and noisy signal of battle, like that at present in Abyssinia and

New Zealand, and perhaps with only one sound. But, even when more notes were produced from it, it is noisy an instrument must have been an unfit accompaniment for the voice and poetry; so that it is probable the trumpet was the first solo instrument in use among the ancients.

TRUMPET, hearing, is an instrument invented by Joseph Landini, to assist the ear in hearing persons who speak at a great distance, without the assistance of any speaking-trumpet. Instruments of this kind are represented in Pl. 2. They are formed of tubes, with each wide mouths, terminating in a small canal, which is applied to the ear. The construction of these instruments evidently shews how they contribute to assist the hearing; for the weak and languid pulses of the air being received by the large end of the tube, and reflected several times from its sides in passing to the small end, are condensed, and entering the ear in this condensed state, strike the tympanum with a greater force than they could have done without the intervention of the tube. Hence it appears, that a *speaking-trumpet* may be applied to the purpose of a hearing-trumpet, by turning the wide end towards the sound, and putting the ear to the narrow end. Fig. 2. is an *ear-trumpet*, which answers the purpose in slighter cases of deafness, and may be conveniently carried in the pocket.

TRUMPET, speaking, is a tube from 6 to 15 feet long, made of tin, perfectly straight, and with a very large aperture; the mouth-piece being big enough to receive both lips. The mouth being applied to it, carries the voice to a very great distance, so that it may be heard distinctly a mile, or more; hence its use at sea. The invention of this trumpet is held to be modern, and is commonly ascribed to Sir Samuel Moreland. Of this instrument an account was published in 1671, in a work intitled *Tuba Stentoro-phonica*, wherein the author relates several experiments made by him with this instrument; the result of which was, that a *speaking-trumpet* constructed by him, 5 feet 6 inches long, 21 inches diameter at the greater end, and 2 inches at the smaller, being tried at Deal-castle, was heard at the distance of three miles, the wind blowing from the shore. But Ath. Kircher seems to have a better title to the invention; for it is certain he had such an instrument before ever Sir S. Moreland thought of his. Kircher, in his *Phonurgia Nova*, published in 1673, says, that the tromba, published last year in England, he invented twenty-four years before, and published in his *Musurgia*; he adds, that Jac. Albanus Ghibbini, and Fr. Eschinardus, ascribe it to him; and that G. Schottus testifies of him, that he had such an instrument in his chamber in the Roman college, with which he could call to, and receive answers from, the porter. Indeed, considering how famed Alexander the Great's tube was, wherewith he used to speak to his army, and which might be distinctly heard a hundred stadia or furlongs, it is somewhat strange the moderns should pretend to the invention; the stentorophonic horn, or tube of Alexander, whereof there is a figure preserved in the Vatican, being almost the same with that now in use. The principle upon which this instrument is constructed is obvious; for as sound is stronger in proportion to the density of the air, it must follow, that the voice passing through a tube or trumpet, must be greatly augmented by the constant reflection and agitation of the air through the length of the tube, by which it is condensed, and its action on the external air greatly increased at its exit from the tube. In order to estimate the effect of this instrument, let us suppose A B, Pl. 2. fig. 1. to be such a length of tube as admits one reflection of the sound, emitted by the speaker, from the side B B; let A F be another length, in which the sound or voice is reflected five times by the sides, viz. in B, C, D, E, and F: the sound striking the metal tube in B is the same as that at F; but the number of parts forming the pe-

riphery of the circle in B is to that in F, as the diameter B B is to the diameter F F; and therefore the intensities, with which the parts of the metal will be moved in these peripheries, will be in the inverse ratios of the peripheries, or of the diameters B B, F F. But the parts of the metal move the air contained within the peripheries of the circle, or constituting their respective areas, which are as the squares of the diameters: *i. e.* the air agitated in B is to that agitated in F, as B B² to F F²: and consequently, the intensity of the sound found in the tube of the length A B, is to that in the length A F, as B B² to F F²; and the inverse ratio of the diameter B to F: or, the intensity in A B is to that in A F: $FF \times BB : BB \times FF$, *i. e.* dividing the last ratio by B B $\times$ F F: $BB : FF$. But the intensity of the sound increases the more frequently it is reflected from the sides: let then the number of reflections of the sound in B be *n*, in F it will be *5n*, and therefore the whole intensity of the sound in B is to that in F as $n \times BB$ to $5n \times FF$. Consequently, the longer the tube the more numerous will be the reflections, and the greater will be the increase of the sound, and the farther may it be heard. A man, speaking through a tube 4 feet in length, may be understood at the distance of 500 geometrical paces; with a tube of 16 $\frac{1}{2}$ feet, at the distance of 1800 paces, and with a tube 24 feet long, at a greater distance than 2500 geometrical paces. The sound will be also heightened by having the remoter aperture of the tube wide, more than if it were narrow. However, the effect of the tube in magnifying sound, either for speaking or hearing, depends principally upon its length: nevertheless some advantage may be derived from its particular form and shape. Some have proposed the figure which is made by the revolution of a parabola about its axis, as the best; where the mouth-piece is placed in the focus of the parabola, and consequently the sonorous rays will be reflected parallel to the axis of the tube. But Mr. Martin observes, that this parallel reflection is by no means essential to the magnifying of sound; on the contrary, it prevents the infinite number of reflections and reciprocations of sound, in which, according to Sir I. Newton, its augmentation principally consists: the augmentation of the impetus of the pulses of air being proportional to the number of repercussions from the sides of the tube, and therefore to its length, and to such a figure as is most productive of them. Hence he infers, that the parabolic trumpet is the most unfit of any for this purpose. He observes, that there is one thing more which contributes to the augmentation of the agitations of air in the tube; viz. the proportion which the several portions of air bear to each other when divided by transverse sections, at very small, but equal distances, from one end of the tube to the other. Thus, let those several divisions be made at the points *a, b, c, d, e*, &c. (fig. 2.) in which let the right lines *n, k, b, l, c, m, d, n*, &c. be taken in geometrical proportion. Then will the portions of air contained between B and *a*, *a* and *b*, *b* and *c*, *c* and *d*, &c. be very nearly in the same proportion, as being in the same ratio with their bases, when the points of division are indefinitely near together. But it is known, that when any quantity of motion is communicated to a series of elastic bodies, it will receive the greatest augmentation when those bodies are in geometrical proportion. Therefore, since the force of the voice is impressed upon, and gradually propagated through a series of elastic portions of air in a geometrical ratio to each other, it easily receives the greatest augmentation possible. And since by construction $B = a = b = c = d$, &c. and $ak : bl :: bl : cm :: cm : d, n$, &c. the points *k, l, m, n, o, p, q, r, s*, A will form the *logarithmic* or *logistic* curve: whence Mr. Martin concludes, that a trumpet, formed by the revolution of this curve about its axis, will augment the sound in a greater degree than any other figured tube whatever. Cassegrain also is of opinion,

that an hyperbola, having the axis of the tube for an asymptote, is the best figure for this instrument. Mûschenb. *Int. ad Phil. Nat. tom. ii. p. 296, 4to.* Martin's *Phil. Brit. vol. ii. p. 248, 3d edit.*

For other constructions of speaking trumpets by Mr. Conyers, see *Phil. Trans. N° 141, for 1678.*

TRUMPET, Marine, is a musical instrument consisting of three tables, which form its triangular body. See pl. 2. It has a very long neck with one single firing, very thick, mounted on a bridge, which is firm on one side, but tremulous on the other. It is struck by a bow with one hand, and with the other the firing is pressed or stopped on the neck by the thumb. It is the trembling of the bridge, when struck, that makes it imitate the sound of a trumpet, which it does to that perfection, that it is scarce possible to distinguish the one from the other. And this is what has given it the denomination of trumpet-marine, though, in propriety, it be a kind of monochord. Of the six divisions marked on the neck of the instrument, the first makes a fifth with the open chord, the second an octave, and so on for the rest, corresponding with the intervals of the military trumpet.

TRUMPET-Flower. See **BIGNONIA**.

TRUMPETER. See **PSOPHIA**.

TRUNCATED, in general, is an appellation given to such things as have, or seem to have, their points cut off: thus, we say, a truncated cone, pyramid, leaf, &c.

TRUNCHEON, a short staff or baton used by kings, generals, and great officers, as a mark of their command.

TRUNDLE, a sort of carriage with low wheels, whereon heavy and cumbersome burdens are drawn.

TRUNK, among botanists, that part of the herb which arises immediately from the root, and is terminated by fructification; the leaves, buds, and auxiliary parts of the herb, not entering in its description.

TRUNNIONS, or **TRUNIONS**, of a piece of ordnance, are those knobs or bunches of metal which bear her up on the cheeks of the carriage.

TRUSS, a bundle, or certain quantity of hay, straw, &c. A truss of hay contains 56 pounds, or half an hundred weight: 36 trusses make a load.

TRUSS is also used for a sort of bandage or ligature made of steel, or the like matter, wherewith to keep up the parts in those who have hernias or ruptures.

TRUSS, in a ship, a machine employed to pull a yard home to its respective mast, and retain it firmly in that position.

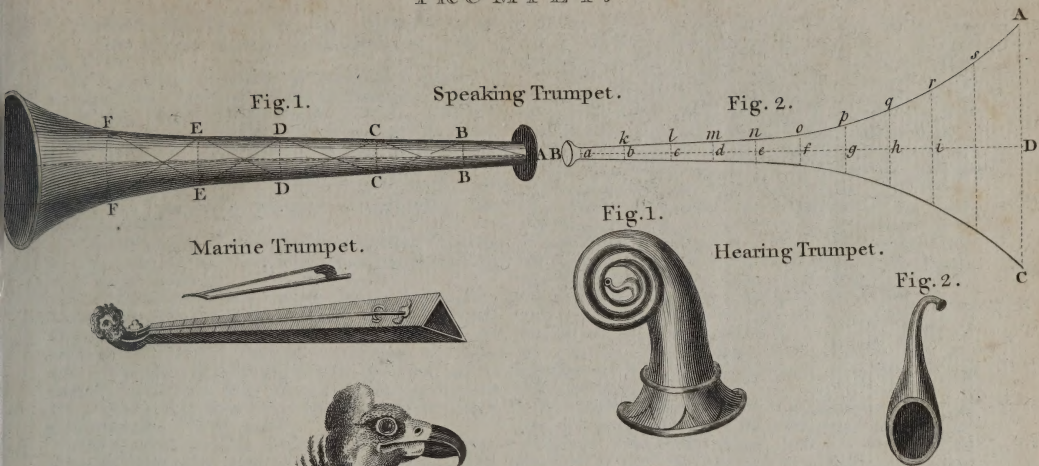
TRUSTEE, one who has an estate, or money, put or trusted in his hands for the use of another.

TRUTH, a term used in opposition to falsehood, and applied to propositions which answer or accord to the nature and reality of the thing whereof something is affirmed or denied.

TRYPHODORUS, an ancient Greek poet, who lived some time between the reigns of Severus and Anastasius. His writings were very numerous; yet none of them have come down to us, except an epic poem, on which Mr. Addison has made some entertaining remarks in the Spectator, N° 63. The first edition of this extraordinary work was published by Aldus at Venice, with Quintus Calaber's paraliomena, and Coluthus's poem on the rape of Helen. It has been since reprinted at several places, particularly at Francfort in 1580 by Frischlinus; who not only corrected many corrupt passages, but added two Latin versions, one in verse and the other in prose. That in verse was reprinted in 1742, with the Greek, at Oxford, in 8vo, with an English translation in verse, and Notes, by Mr. Merrick.

TUAM, a town of Ireland, in the province of Connaught, and county of Galway, with an archbishop's see. It was once a famous city, though now it is reduced to a village; yet it

TRUMPET.



still retains the title of a city, as being an archiepiscopal see. It is seven miles from the borders of Mayo. W. Long. 8. 46. N. Lat. 53. 33.

TUB, in commerce, denotes an indetermined quantity or measure: thus a tub of tea contains about 60 pounds; and a tub of camphor from 56 to 86 pounds.

TUBE, in general, a pipe, conduit, or canal; a cylinder, hollow within-side, either of lead, iron, glass, wood, or other matter, for the air or some other matter to have a free conveyance through it.

Auricular TUBE, or instrument to facilitate hearing. See **TRUMPET**, hearing.

TUBERCLES, in medicine, little tumors which suppurate and discharge pus; and are often found in the lungs, especially of consumptive persons.

TUCUMÁN, a province of South America, in Paraguay; bounded on the north by the provinces of Los-Chicas and Chaco; on the east by Chaco and Rio-de-la-Plata, on the south by the country of Chichitos and Pampas, and on the west by the bishopric of St. Jago. The air is hot, and the earth sandy; however, some places are fruitful enough, and the original natives have a good character. The Spaniards possess a great part of this country.

TUFA, a stone consisting of volcanic ashes concreted together with various other species of stone. It is of various colours, blackish grey, bluish grey, and yellow; every colour having a different mixture and solidity: but all of them have the bad quality of mouldering down on long exposure to the weather; notwithstanding which, they have been used in buildings both ancient and modern. The yellow kind resists the air less than any other.

TULIP, **TULIP**, in botany: a genus of plants belonging to the class of *hexandria*, and order of *monogynia*; and in the natural system ranging under the 10th order *Coronaria*. The corolla is hexapetalous and campanulate, and there is no style. The species of this genus are four; the *lytcestris*, or Italian yellow tulip, a native of the south of Europe; the *gesneriana*, or common tulip, a native of the Levant; the *brey-niana*, or cape tulip, a native of the Cape of Good Hope; and the *biflora*.

1. The *lytcestris*, or wild European tulip, hath an oblong bulbous root, sending up long narrow spear-shaped leaves; and a slender stalk, supporting at top a small yellow flower, nodding on one side, having acute petals.

2. The *gesneriana*, Gesner's Turkey tulip of Cappadocia, or common garden-tulip, hath a large, oblong, tunicated, solid, bulbous root, covered with a brown skin, sending up long oval spear-shaped leaves; an upright round stalk, from half a foot to a yard high, garnished with a few leaves, and its top crowned with a large bell-shaped erect hexapetalous flower, of almost all colours and variegations in the different varieties.

This tulip, and its vast train of varieties, is the sort so generally cultivated for the ornament of our gardens, and so much admired by all for its great variety and beautiful appearance: it grows freely in the open ground in any common foil of a garden, and proves a very great decoration to the beds and borders of the pleasure ground for six weeks or two months in spring, by different plantings of early and late sorts; planting the principal part in autumn, and the rest towards Christmas, and in January or February. The autumn plantings will come earliest into bloom, and flower the strongest: and the others will succeed them in flowering. In summer, when the flowering is past, and the leaves and stalks assume a state of decay, the bulbs of the choicest varieties are generally taken up, the offsets separated, and the whole cleaned from filth; then put up to dry till October or November, and then planted again for the future year's bloom.

VOL. X.

Of this species, which is the florist's delight, the varieties may be divided into two principal classes, viz. 1. Early or dwarf spring tulips (*præcocæ*). 2. Late flowering tall tulips (*serotina*). 1. *Early tulips*. The early tulips are among florists distinguished by the appellation of *præcocæ* (early), because they flower early in the spring, a month or more before the others; are much shorter stalked, and the flowers smaller; but are in greater reputation for their early bloom and their gay lively colours, both of self-colours, and broken into flaked variegations; such as reds, crimson, scarlet, carnation, violets, purples, yellow, &c. with flowers of each, edged and flaked with red, yellow, and white, in many diversities. 2. *Late flowering common tulips*.—This class is denominated *late flowering*, and by the florists called *serotina*, because they blow later in the spring, a month or more, than the *præcocæ*, i. e. not coming into flower before the end of April, May, and June. They are all of tall growth, supporting large flowers, and furnish an almost endless variety in the vast diversity of colours, after they break from whole blowers into variegations and stripes, exceeding all others of the tulip kind in beauty and elegance of flower.

Both these species of tulips are hardy perennials, durable in root, or at least, although the old bulb decays annually, it perpetuates its species by off-sets, and is annual in leaf and stalk; which rising from the bulb early in the spring, arrives to a flowering state in April and May. All the varieties are succeeded by plenty of ripe seed in July and August, contained in an oblong capsule of three cells, having the seeds placed on each other in double rows. By the seeds many new varieties may be raised, which however will not attain a flowering state till they are seven or eight years old; and after that will require two or three years or more to break into variegations, when the approved varieties may be marked, and increased by off-sets of the root, as directed in their propagation.

The colours in greatest estimation in variegated tulips are the blacks, golden yellows, purple-violets, rose, and vermillion, each of which being variegated various ways; and such as are striped with three different colours distinct and unmixed, with strong regular streaks, but with little or no tinge of the breeder, may be called the most perfect tulips. It is rare to meet with a tulip possessing all these properties.

As to the manner of obtaining this wonderful variety of colours in tulips, it is often accomplished by nature alone, but is sometimes assisted and forwarded by some simple operations of art; such as that, in the first place, when the seedling bulbs of the whole flower or breeder are arrived to full size, and have flowered once, to transplant them into beds of any poor dry barren foil, in order that, by a defect of nutriment in the earth, the natural luxuriance of the plant may be checked, and cause a weakness in their general growth, whereby they generally in this weakened or infirm state gradually change and break out into variegations, some the first year, others not till the second or third; and according as they are thus broke, they should be planted in beds of good earth.

Another method to assist nature in effecting the marvellous work of breaking the breeding tulips into diversified colours, is to make as great a change as possible in the foil; if they were this year in a light poor foil, plant them the next in a rich garden mould, and another year in a compost of different earths and dung; or transplant them from one part of the garden to another, or into different gardens, &c. or from one country to another; all of which contributes in assisting nature in producing this desirable diversity of colours and variegations.

The double tulip is also a variety of the common tulip, and is very beautiful, though not in such estimation among the florists as the common single variegated sorts, not possessing such

a profusion of variegations in the colours and regularity of stripes: they however exhibit an elegantly ornamental appearance, as they rise with an upright, tallish, firm stem, crowned with a very large double flower composed of numerous petals, multiplied in several series one within another like a double peony, but far more beautiful in their diversity of colours, variegations, and stripes of white and red, yellow and red, &c. so that they highly deserve culture, both in beds alone near the other sorts to increase their variety, also to plant in patches, about the borders, in assemblage with the late variegated tulips, as they blow nearly about the same time, *i. e.* April and May.

Tulip roots are sold in full collection, consisting of numerous varieties, at most of the nurseries and seeds-men, who both propagate them themselves by off-sets and seed, and import vast quantities annually from Holland; the Dutch being famous for raising the grandest collections of the finest tulips, and other bulbous flowers, in the greatest perfection.

TULIP-Tree. See **LIRIODENDRON**.

TULL (Jethro), an Oxfordshire gentleman who farmed his own land, and introduced a new method of culture, to raise repeated crops of wheat from the same land without the necessity of manure: the principles of which he published about 30 years since, in *A Treatise on Horse-hoeing Husbandry*.

TUMBRELL, TUMBRELLUM, or Turbichetum, is an engine of punishment, which ought to be in every liberty that hath the view of frank-pledge, for the correction of idlers and inquiet women.

TUMEFACATION, the act of swelling or rising into a tumor.

TUMOR, in medicine and surgery, a preternatural rising or eminence in any part of the body.

TUMORS, in farriery. See **FARRIERY**.

TUN, a large vessel or cask, of an oblong form, biggest in the middle, and diminishing towards its two ends, gri about with hoops, and used for stowing several kinds of merchandise for convenience of carriage; as brandy, oil, sugar, skins, hats, &c.

TUN is also the name of a measure. A tun of wine is four hogheads; of timber, a square of 40 solid feet; and of coals, 20 cwt.

TUN, or Ton, is also a certain weight whereby the burden of ships, &c. are estimated.

TUNERIDGE, a town of Kent in England, situated on a branch of the river Medway, over which there is a bridge. It is a large well built place, noted for the mineral waters four or five miles south of the town. E. Long. o. 20. N. Lat. 51. 34.

TUNE. See **MUSIC** and **TONE**.

TUNGSTEN, or LAPIS PONDEROSUS; a genus of calcareous earth. It contains about one half its weight of calcareous earth, and the remainder iron, and a peculiar acid of an earthy appearance, now known by the name of the *tungsten acid*. When pure, it is of a grey colour and lamellated texture; its specific gravity being from 4.99 to 5.8.

TUNICA, a kind of waistcoat or under garment, in use among the Romans. They wore it within doors by itself, and abroad under the gown. The common people could not afford the toga, and so went in their tunics; whence Horace calls them *populus tunicatus*.

TUNICA, in anatomy, is applied to the membranes which invest the vessels, and divers others of the less solid parts of the body; thus the intestines are formed of five tunics or coats.

TUNIS, a large and celebrated town of Africa, in Barbary, and capital of a kingdom of the same name. It is seated on the point of the Gulph of Goletta, about eight miles from the

place where the city of Carthage stood. It is in the form of a long square, and is about four miles in circumference, with ten large streets, five gates, and thirty-five mosques. The houses are all built with stone, though but one story high; but the walls are very lofty, and flanked with several strong towers. It has neither ditches nor bastions, but a good citadel, built on an eminence on the west side of the city. It is said to contain 300,000 inhabitants, of whom 30,000 are Jews. The divan, or council of state, assembles in an old palace; and the dey is the chief of the republic, who resides there. The harbour of Tunis has a very narrow entrance, through a small canal. In the city they have no water but what is kept in cisterns, except one well kept for the bathaw's use. It is a place of great trade, and is ten miles from the sea. E. Long. 10. 16. N. Lat. 36. 42.

TUNIS, a country of Africa, bounded on the north and east by the Mediterranean Sea and the kingdom of Tripoli, on the south by several tribes of the Arabs, and on the west by the kingdom of Algiers and the country of Elab; being 300 miles in length from east to west, and 250 in breadth from north to south. This country was formerly a monarchy; but a difference arising between a king and his son, one of whom was for the protection of the Christians, and the other for that of the Turks, in 1574 the inhabitants shook off the yoke of both. From this time it became a republic under the protection of the Turks, and pays a certain tribute to the bathaw who resides at Tunis. The air in general is healthy; but the soil in the eastern parts is indifferent for want of water. Towards the middle the mountains and valleys abound in fruits; but the western part is the most fertile, because it is watered with rivers. The environs of Tunis are very dry, upon which account corn is generally dear. The inroads of the Arabs oblige the inhabitants to sow their barley and rye in the suburbs, and to inclose their gardens with walls. However, there are plenty of citrons, lemons, oranges, dates, grapes, and other fruits. There are also olive-trees, roses, and odoriferous plants. In the woods and mountains there are lions, wild bees, ostriches, monkeys, camels, roebucks, hares, pheasants, partridges, and other sorts of birds and beasts. The most remarkable rivers are the Guadilcarbar, Magrida, Magerada, and Caps. The form of government is aristocratic; that is, by a council, whose president is the dey, not unlike the doge of Venice. The members of the divan or council are chosen by the dey, and he in his turn is elected by the divan; which is composed of soldiers, who have more than once taken off the dey's head. The bathaw is a Turk; residing at Tunis; whose business is to receive the tribute, and protect the republic: the common revenues are only 400,000 crowns a-year, because the people are very poor; nor can they feed above 40,000 men into the field; nor more than twelve men-of-war of the line to sea, even upon the most extraordinary occasions. There are generally about 12,000 Christian slaves in this country; and the inhabitants carry on a great trade in linen and woollen cloth. In the city of Tunis alone there are above 3000 clothiers and weavers. They also have a trade in horfes, olives, oil, soap, ostriches eggs and feathers. The Mahometans of this city have nine colleges for students, and eighty-six petty schools. The principal religion is Mahometanism; but the inhabitants consist of Moors, Turks, Arabs, Jews, and Christian slaves. However, the Turks, though fewest in number, domineer over the Moors, and treat them little better than slaves.

TUNKERS, a religious sect of baptists in Pennsylvania, so called from the word *tunker*, to put a morsel in sauce. They are also called *tumblers*, because in performing baptism they plunge the person into the water with the head first. As the Germans found the letters *t* and *d* like *d* and *p*, the

words *tunkers* and *tumblers*, have been sometimes written *dunkers* and *dumplers*. Their church-government and discipline are the same with those of the English baptists, except that every brother is allowed to speak in the congregation, and the best speaker is usually ordained to be their minister. They are a harmless, well-meaning people.

TUNNAGE. See **TONNAGE**.

TUNNY, in ichthyology. See **SCOMBER**.

TUNNY-FISHING. See **FISHERY**.

TURBAN, the head-dress of most of the eastern nations. It consists of two parts, a cap and sash of fine linen or taffety, artfully wound in divers plaits about the cap. The cap has no brim, is pretty flat, though roundish at top, and quilted with cotton; but does not cover the ears. There is a good deal of art in giving the turban a fine air; and the making of them is a particular trade. The sash of the Turk's turban is white linen; that of the Persian's red woollen. These are the distinguishing marks of their different religions. Sophi king of Persia, being of the sect of Ali, was the first who assumed the red colour, to distinguish himself from the Turks, who are of the sect of Omar, and whom the Persians esteem heretics.

TURBINATED, is a term applied by naturalists to shells which are spiral or wreathed conically, from a larger basis to a kind of apex.

TUREITH-MINERAL, a preparation of quicksilver, called in the new dispensatory of the London College *hydrargyrum vitriolatus*; and in that of Edinburgh, *mercurius flavus*.

TURBO, the **WREATH**, in zoology, a genus of insects belonging to the order of *vermes testacea*. The animal is of the snail kind; the shell consists of one spiral solid valve, and the aperture is orbicular. There are 116 species; of which the most remarkable are, 1. The *litoreus*, or periwinkle. This is abundant on moist rocks far above low-water mark. The Swedish peasants believe, that when these shells creep high up the rocks, they indicate a storm from the south. They are eaten by the poor people in moist parts of this kingdom. Young lobsters are said to take up their lodging in the empty shells of these animals, which has given occasion to a notion that periwinkles are changed into lobsters. 2. The *clatrus*, or barbed wreath, has a taper shell of eight spires, distinguished by elevated divisions running from the aperture to the apex. There is a variety pellicid, with very thin edges. It is analogous to that curious and expensive shell, the *scutella-trap*.

TURBOT, in ichthyology. See **PLEURONECTES**.

TURCÆ, or **TURCI** (Mela); supposed to be the *Turci* of Ptolemy; whom he places between Caucasus and the Montes Ceraunii. The name is said to denote, "to desolate, or lay waste." Herodotus places them among the wild or barbarous nations of the north. There is a very rapid river called *Turk*, running into the Caspian Sea, from which some suppose the Turks to take their name. They made no figure in the world till towards the 7th century; about the beginning of which they sallied forth from the Portæ Caspiæ, laid waste Persia, and joined the Romans against Chosroes king of Persia. In 1042 they subdued the Persians, in whose pay they served, and from whom they derived the Mahometan religion; and afterwards pouring forth, over-ran Syria, Cappadocia, and the other countries of the Hither Asia, under distinct heads or princes, whom Ottoman subduing, united the whole power in himself, which to this day continues in his family, and who fixed his seat of empire at Prusa in Bithynia. His successors subdued all Greece, and at length took Constantinople in 1453; which put a period to the Roman empire in the East, under Constantine the last emperor. It is a standing tradition or prophecy among the Turks, that their empire will at

length be overturned by the Franks or Christians; which seems now to be drawing on apace towards accomplishment.

TURCOISE. See **TURQUOISE**.

TURCOMANIA, a province of Asiatic Turkey, answering to the ancient kingdom of Armenia.

TURDUS, the thrush: a genus of birds belonging to the order of *passeres*. The bill is straightish, bending towards the point, and slightly notched near the end of the upper mandible. The nostrils are oval, naked or half covered with a membrane; the corners of the mouth are furnished with a few slender hairs, and the tongue is slightly jagged at the end. There are 136 species; of which seven are British, the *vici-vorus*, *pilaris*, *iliacus*, *muscus*, *rofeus*, *merula*, and *torquatus*.

1. The *vici-vorus*, or mistle, is the largest of the genus. Its length is 11 inches; its breadth 16½. The bill is shorter and thicker than that of other thrushes; dusky, except the base of the lower mandible, which is yellow. The irides are hazel. Head, back, and lesser coverts of the wings, are of a deep olive brown. The lower part of the back is tinged with yellow. The lowest order of lesser coverts, and the great coverts, are brown; the first tipped with white, the last both tipped and edged with the same colour. The inner coverts of the wings white. The tail is brown; the three outermost feathers tipped with white. The cheeks and throat are mottled with brown and white; the breast and belly are whitish yellow, marked with large spots of black; the legs are yellow. These birds build their nests in bushes, or on the side of some tree, generally an ash, and lay four or five eggs: their note of anger or fear is very harsh, between a chatter and shriek; from whence some of its English names. Its song, however, is very fine; which it begins sitting on the summit of a high tree, very early in the spring, often with the new-year, in blowing showery weather, which makes the inhabitants of Hampshire to call it the *storm-cock*. It feeds on insects, holly and mistletoe-berries, which are the food of all the thrush kind: in severe snowy weather, when there is a failure of their usual diet, they are observed to scratch out of the banks of hedges the root of arum, or the cuckoo pint; this is remarkably warm and pungent, and a provision suitable to the season.

2. The *pilaris*, or fieldfare, is in length ten inches, in breadth seventeen. The head is ash-coloured inclining to olive, and spotted with black; the back and greater coverts of the wings of a fine deep chestnut; the tail is black; the lower parts of the two middlemost feathers, and the interior upper sides of the outmost feathers, excepted, the first being ash-coloured, the latter white. The legs are black; the talons very strong. This bird passes the summer in the northern parts of Europe; also in Lower Austria. It breeds in the largest trees; feeds on berries of all kinds, and is very fond of those of the juniper. Fieldfares visit our islands in great flocks about Michaelmas, and leave us the latter end of February or the beginning of March.

These birds and the redwings were the *turdi* of the Romans, which they fattened with crumbs of figs and bread mixed together. Varro informs us that they were birds of passage, coming in autumn, and departing in the spring. They must have been taken in great numbers; for, according to Varro (lib. 3. c. 5.) they were kept by thousands together in their fattening aviaries. They do not arrive in France till the beginning of December.

3. The *muscus*, or throistle, is in length nine inches, in breadth 13½. In colour, it so nearly resembles the mistle-thrush, that no other remark need to be added, but that it is less, and that the inner coverts of the wings are yellow. The throistle is the finest of our singing birds, not only for the sweetness and variety of its notes, but for the long continu-

ance of its harmony; for it obliges us with its song for near three parts of the year. Like the mistle-bird, it delivers its music from the top of some high tree; but to form its nest defends to some low bush or thicket: the nest is made of earth, moss, and straw, and the inside is curiously plastered with clay. It lays five or six eggs, of a pale bluish green, marked with dusky spots.

4. The *iliacus*, or redwing, has a very near resemblance to the thrush; but is less: their colours are much the same; only the sides under the wings and the inner coverts in this are of a reddish orange, in the thrush yellow; above each eye is a line of yellowish white, beginning at the bill and passing towards the hind part of the head. These birds appear in Great Britain a few days before the fieldfare; they come in vast flocks, and from the same countries as the latter. With us they have only a disagreeable piping note; but in Sweden, during the spring, they sing very finely, perching on the top of some tree among the forests of maples. They build their nests in hedges, and lay six bluish-green eggs spotted with black.

5. The *merula*, or black-bird, when it has attained its full age, is of a fine deep black, and the bill of a bright yellow; the edges of the eyelids yellow. When young, the bill is dusky, and the plumage of a rusty black, so that they are not to be distinguished from the females; but at the age of one year they attain their proper colour. This bird is of a very retired and solitary nature; frequents hedges and thickets; in which it builds earlier than any other bird: the nest is formed of moss, dead grass, fibres, &c. lined and plastered with clay, and that again covered with hay or small straw. It lays four or five eggs of a bluish-green colour, marked with irregular dusky spots. The note of the male is extremely fine, but too loud for any place except the woods: it begins to sing early in the spring, continues its music part of the summer, desists in the moulting season, but resumes it for some time in September and the first winter months.

6. The *torquatus*, or ring-ouzel, is superior in size to the black-bird; the length is eleven inches, breadth seventeen. The bill in some is wholly black, in others the upper half is yellow; on each side the mouth are a few bristles; the head and whole upper part of the body are dusky, edged with pale brown; the quill-feathers and the tail are black. The coverts of the wings, the upper part of the breast, and the belly, are dusky, slightly edged with ash-colour. The middle of the breast is adorned with a white crescent, the horns of which point to the hind part of the neck. It some birds this is of a pure white, in others of a dirty hue. In the females and in young birds this mark is wanting, which gave occasion to some naturalists to form two species of them. The ring-ouzel inhabits the Highland hills, the north of England, and the mountains of Wales. They are also found to breed in Dartmoor, in Devonshire, and in banks on the sides of streams. The places of their retreat are not known. In Scotland and Wales they breed in the hills, but descend to the lower parts to feed on the berries of the mountain-ash. They migrate in France at the latter season; and appear in small flocks about Monthard in Burgundy, in the beginning of October, but seldom stay above two or three weeks.

To these we shall add the description of the *polyglottus*, or mocking thrush, which is a native of America. It is about the size of a thrush, of a white and grey colour, and a reddish bill. It is possessed not only of its own natural notes, which are musical and solemn, but it can assume the tone of every other animal in the wood, from the wolf to the raven. It seems even to sport itself in leading them astray. It will at one time allure the lesser birds with the call of their males,

and then terrify them when they have come near with the screams of the eagle. There is no bird in the forest but it can mimic; and there is none that it has not at times deceived by its call. But, unlike such as we usually see famed for mimicking with us, and who have no particular merit of their own, the mock bird is ever sure to please when it is most itself. At those times it usually frequents the houles of the American planters; and sitting all night on the chimney top, pours forth the sweetest and the most various notes of any bird whatever. It would seem, if accounts be true, that the deficiency of most other song-birds in that country is made up by this bird alone. They often build their nests in the fruit-trees about houses, feed upon berries and other fruits, and are easily rendered domestic.

TURENNE (Viscount). See TOUR.

TURF, peat, a blackish earth used in several parts of England, Holland, and Flanders, as fuel. Turf, as distinguished from peat, consists of mould interwoven with the roots of vegetables; when those roots are of the bulbous kind, or in a large proportion, they form the looser and worse kind of turf; but when mixed with a considerable proportion of peat, they form what is called *stone-turf*; it at first hardens, but at last crumbles by long exposure to the air.

TURGESCENCE, among physicians, denotes a swelling or growing bloated.

TURGOT (Anne Robert James), the famous financier, was born at Paris, May 10, 1727, of a very ancient Norman family. His father was for a long time provost of the corporation of merchants. During this period he was the object of general admiration; and the regularity and economy of his administration procured him the particular respect of the citizens. M. Turgot was the youngest of three brothers. The eldest was intended for the rank of magistracy, which had been the station of his family for several generations; the second was destined for the army; and Robert for the church. He had scarcely attained the age at which reflection commences, when he resolved to sacrifice all temporal advantages to liberty and conscience, and to pursue his ecclesiastical studies without declaring his repugnance to their proposed object. At the age of twenty-three years he took his degree, and was elected prior of the Sorbonne.

The time when it was necessary for him to declare that he would not be an ecclesiastic was now arrived. He announced this resolution to his father by letter, showing the motives which induced him to decline the clerical order. His father consented, and he was appointed master of requests. M. Turgot prepared himself for this office by particular application to those parts of science which are most connected with its functions and duties, viz. the study of natural philosophy, as far as it relates to agriculture and manufactures, to the subjects of merchandize, and the execution of public works, together with such parts of mathematical knowledge as lead to a practical application of natural philosophy, and facilitate the calculations that are frequently necessary in politics, commerce, and law.

About this period he wrote some articles for the *Encyclopédie*, of which the most capital were, *Etymology*, *Existence*, *Expansibility*, *Fair*, and *Foundation*. He had prepared several others, but these five only were inserted; the persecution set on foot against the *Encyclopédie* hindered him from continuing to write in it, being unwilling that his opinions should be published in a work which was received with disapprobation by some of the most distinguished people of that time.

In 1761 M. Turgot was appointed intendant of Limoges. In this office he did much good. He gave activity to the society of agriculture established at Limoges, by directing them

efforts to important objects : he opened a mode of public instruction for female professors of midwifery ; he procured for the people the attendance of able physicians during the raging of epidemic diseases : he established houses of industry, supported by charity (the only species of alms-giving which does not encourage idleness) : he introduced the cultivation of potatoes into his province, &c. &c. While M. Turgot proceeded with unremitting activity and zeal, in promoting the good of the people over whom he was placed, he mediated projects of a more extensive nature, such as an equal distribution of the taxes, the construction of the roads, the regulation of the militia, the prevention of a scarcity of provision, and the protection of commerce.

At the death of Louis XV. the public voice called M. Turgot to the first offices of government, as a man who united the experience resulting from habits of business to all the improvement which study can procure. After being at the head of the marine department only a short time, he was, August 24, 1774, appointed comptroller-general of the finances. During his discharge of this important office, the operations he carried on are astonishing. He suppressed twenty-three kinds of duties on necessary occupations, useful contracts, or merited compensations. He abolished the *corvée* for the highways, saving the nation thirty millions of livres annually.—He set aside another kind of *corvée*, which respected the carriage of military stores and baggage.—He abated the rigour in the administration of indirect impositions, to the great profit of the contributors, the king, and the financiers.—He softened the mode of collecting the territorial imposts.—He stopped the progress of a plague among cattle.—He suppressed a sedition conducted with art.—He provided for the equal distribution of subsistence.—He gave the utmost encouragement to the cultivation of the three chief productions of France, viz. wheat, cattle, and wine, and to the commerce thence resulting.—He reformed a number of abuses, some of which yielded a profit to the place he filled.—He abolished as much as he could the sale of offices.—He formed many useful establishments.—He paid the pensions of the poorer servants of the state, who were four years in arrear.—He supplied the expences of a coronation, the marriage of a prince, and the birth of a prince.—He facilitated payments as far as India.—He settled a part of the colony debts, and put the rest in order.—He found the public borrowing at five and a half per cent. and reduced the rate to four.—He lessened the public engagements 84 millions.—He found the revenue 19 millions deficient, and left a surplus of three millions and a half.—All these he accomplished within the space of twenty months, during seven of which severe fits of the gout totally incapacitated him for business.

At length, however, by the artifices of the courtiers, his office was taken from him ; but when removed to a private station, M. Turgot did not experience that frightful void which is the just but dreadful punishment of ambitious men when deserted by fortune. The sciences and the belles-lettres, which he had cultivated in his youth, afforded him consolation, while an active sphere of life was denied him. Natural philosophy and chemistry were his favourite pursuits ; yet he frequently entertained himself with poetry, especially with translating Virgil into French verse. " We know," says the Marquis de Condorcet, " but of one Latin verse composed by M. Turgot, and which was intended for a picture of Dr. Franklin, *Eripuit calo fulmen, mox sequestra tyranni.*"

The attacks of the gout, under which he had long laboured, becoming more frequent and excessive, forewarned him of the approaching moment, when, in conformity to the laws of nature, he was going to fill, in a higher order of beings, the

rank which these laws destined for him. He died March 20, 1781.

For a more ample account of this illustrious statesman, we refer the reader to the History of his Life, written by the Marquis de Condorcet.

TURIN, a city of Italy, and capital of Piedmont, situated at the conflux of the Po and the Grand Doria, about seven miles from the foot of the Cottian Alps, in the road from France to Italy, by the way of Mount Cenis : according to Pliny, the inhabitants derive their origin from the Ligurians, and were anciently called *Taurini*. Hannibal, the Carthaginian general, when he invaded Italy, took and destroyed the town, because the inhabitants would not take part with him ; which frightened the other people who inhabited the banks of the Po. It was erected into a Roman colony by Julius Cæsar, who gave it the name of *Julia*, and was called *Augusta Taurinorum* by his successor Augustus. It was successively subjected to the Goths, Huns, Eruli, and Burgundians, who ruined and destroyed it, but it was soon rebuilt, though not so large as before. When the Lombards became masters of the country, it became the capital of one of their principal duchies. Some of the dukes became kings of Italy. Such was Agilolph, or Acon, who, with his wife Theodelinga, built the cathedral consecrated to John the Baptist, which is at present the metropolitan, and endowed it with great revenues. After Charlemagne had abolished the kingdom of the Lombards, it appears that Turin became subject to the marquis of Susa, who had the charge of guarding the passages of the Alps, and continued in that family to the death of Uric Manfred, the last marquis of Susa, in 1302 ; whose daughter, Adelaide, married with Odo, comte de Maurienne and Savoy. Turin submitted to him and to his descendants, who have possessed it with little interruption to this time. Turin is the see of an archbishop, and contains 110 churches or chapels, several hospitals, and about 65,000 inhabitants. The approach to it is magnificent, and the environs beautiful, though thick fogs from the two rivers are frequent in autumn and winter ; so that the air of Turin is then very thick and moist. The four gates are highly ornamental ; the streets in the New Town are wide, straight, clean, having plenty of water running through them, well built, in a good taste, chiefly of brick stuccoed, and generally terminating in some agreeable object. No inhabitant can rebuild or repair his house but on an uniform plan, laid down by government, for the improvement of the city. The fortifications of Turin are regular, and kept in excellent repair. The citadel is a regular pentagon, consisting of five strong bastions, and is reputed one of the strongest in Europe. At the end next the new gate is the arsenal, which, besides the armories found in such places, contains a cabinet of minerals, a good chemical laboratory, a library of books in mineralogy and metallurgy, and furnaces for casting cannon : here, also, are mathematical, mechanical, and other masters, for the instruction of engineers, miners, &c. The garrison of Turin is always changed at the end of two years, and then there is a general review. The university was founded first in the year 1405, and consists of schools, wherein twenty-four professors read lectures, from the 3d of November to the 24th of June ; of the royal library, wherein are about 50,000 volumes of printed books, besides manuscripts : this is open every day, except holidays, both morning and afternoon. The royal museum has a good cabinet of medals, and a collection of antiquities, found chiefly in Piedmont or Sardinia, and elegantly arranged : also of natural history, as shells, and English minerals, polished marbles, and hard stones, petrifications, corals, zoophytes, and some minerals, collected by Donati, in the Adriatic ; also, some chests of natural curiosities, which

Donati, during his travels in Egypt and Arabia, sent from Goa. In the military academy, young gentlemen, both natives and strangers, may be instructed in the exercises at a moderate expence, the king defraying a part of the charge attending this institution. The king's palace is in a simple and noble style of architecture. The apartments are handsomely fitted up and furnished: the ceilings painted by Daniele di Santerre and others. They contain a great collection of pictures, among which are many good ones. The king's theatre, or great opera-house, is reckoned one of the finest in Europe. The buildings which are most esteemed in point of architecture, are, the palace of the duke of Savoy, called Castello Reale, by Filippo Giuvana; the Carignano palace, by Guarini; the buildings of the university, and the town-house. There is a literary society at Turin, who have published memoirs, under the title of *Miscellanea Philologica-Mathematica*. The chief trade of this city and country is in thrown silk, which is sent to England and Lyons; they manufacture, however, some of it into excellent stockings, and good silk for furniture. In the year 1536, Turin was taken by the French, and again in the year 1640, after a long siege. In the year 1706, the same enemy made another attempt, but after besieging it upwards of three months, under the conduct of the duke of Orleans, they were driven away, with great loss, by the duke of Savoy and prince Eugene. Long. 25. 19. E. Ferro. Lat. 44. 52. N.

TURKEY, in ornithology. See MELEAGRIS.

TURKEY, one of those great sovereignties which includes many countries and provinces, in Europe, Asia, and Africa, extending from Long. 16. to 66. E. Ferro, reckoning from the western part of Algiers, which is tributary to Baisora, on the Gulf of Persia, and from Lat. 13. to 45. N. including Arabia, and the provinces on the coasts of the Black Sea, from Aden to Otchakov. In Europe, may be reckoned, Romelia, which comprehends Greece, Macedonia, Albania, the Morea, and Thessaly, with the islands of the Archipelago or the Egean Sea; part of Slavonia, Croatia, Servia, Bosnia, Bulgaria, &c. In Asiatic Turkey are comprehended, Natolia, Caramania, Syria, Turcomania, Diarbekir, and the three Arabias, Felix, Petraea, and Deserta. In Africa, the countries subject to the Turks are, Barca and Egypt, and great part of Nubia. The states of Algiers, Tunis, and Tripoly, are under their protection: so likewise are the princes of Moldavia and Walachia; and the republic of Ragusa pays them a tribute. The whole is divided into twenty-five governments, of which two are under the care of beglerbegs, viz. Natolia and Romelia; the rest under pachas or bashas: 1. Egypt, or Cairo. 2. Aleppo. 3. Diarbekir. 4. Natolia. 5. Bosnia. 6. Buda, now belonging to Hungary. 7. Caffa (now Theodosia, and belonging to Russia). 8. Caramania, or Cogni. 9. Cars. 10. Candia. 11. Cyprus. 12. Damafcus. 13. Van. 14. Marasch. 15. Mosul. 16. That of the Captain Pacha. 17. Rica. 18. Romelia. 19. Sivas. 20. Scheheresul. 21. Bagdad. 22. Erzerum. 23. Temeisvar, now subject to Austria. 24. Tripoly. 25. Tripoly, in Syria. Happily situated in the centre of our continent, the Turks might easily acquire the trade, as well as the empire of the world, if not withheld by their indolence and their maxims of government. But though the Turks are no traders, being rather discouragers and destroyers of trade; yet, as they possess so great a part of the world, and some of the most fruitful countries, and productive of the best and choicest merchandizes, it will always induce the European parts of the world to send their merchants to traffic with them; and the Turks themselves, by their haughtiness, despising manufacturing, and not improving the products which they enjoy in many places, must necessarily be obliged to purchase of other nations the things they stand

in need of; which naturally encourages the merchants of the other nations to come among them. Those that settle among them from the Eastern part of the world, are generally Greeks, Jews, Armenians, and Georgians; those from the western parts are chiefly Venetians, French, and Dutch, with some Jews also, chiefly Italian. The principal places of trade on this side the Turkish dominions, respecting Europe, where the said merchants reside, are Constantinople, Smyrna, Aleppo, Alexandretta or Scanderoon, Alexandria, Tripoli, Antioch, and the islands on the coast. There are some Christian merchants in most of the islands belonging to the Turks, as at Cyprus, Candia, Rhodes, Zant, Cephalonia, and in most of the inhabited islands of the Archipelago. These merchants are generally French, though there are some Jews. The merchants of England, France, and Holland, chiefly furnish the Turks with fine woollen clothes, dyed scarlet, crimson, purple, blue, and green; the first three in grain, and as rich in colour as possible, which raises their value. The English, besides their cloth, send black-tin, lead, clock-work, and watch-work, both in gold and silver; and all put together, the value was formerly for upwards of 300,000. sterling, one year with another. The returns which the Franks (for so the European merchants are called in Turkey) make from the Turks, and which are the product of the Turkish and Persian dominions, are, raw silk, Caramania wool and wool of the islands, goats-hair, spun or twisted cotton wool, and yarn, oil, gums dragant, sandarac, fenega, arabic, farcocolla; Persian silks, carpets, burdets, callicoes, from the islands of Siphanto, Paros, &c. Morocco leather, cordovans, shagreen-skins, Galls, from Syria; coffee, from Mocha; by Alexandria, balm, natural balsam, rhubarb; from Persia, sal-ammoniac, turmeric, incense, pumices; from Santorini, storax; from Samos, scammony, myrrh, manna, galbanum, fena, aloes hepatica, oilibanum, zedoary, okre, emery, soaked earth, velani, coliquintida, euphorbium, mirabolans, frank-incense, mastic, opium, and other articles. Arrac, orange-flower-water, vermicelli, turpentine, worm-feed, clover-feed, garden-seeds, rice, pistachios, raisins of Smyrna, pomegranates, box and cypress wood, fustic, ebony, walnut-tree, &c. As the Turks have little or no trade but what is, as it were, forced by the Europeans and others, so they have but few ships, compared to the extent of their naval dominions. The chief of their shipping is among the Grecian islands, and these are such as belong to the Greeks. Also in the Morea, and in the Black Sea, they have some shipping; but, for the traffic between Egypt and the Porte, they generally hire English, Dutch, or Venetian ships, upon freight. The produce of the islands is exceedingly great, and assists the Turks in making returns for the goods they buy of the European merchants. From what has been said of the trade to Turkey, a judgment may be formed of its importance; but notwithstanding this, the English trade has for some years been greatly on the decline. The air of Turkey in Europe is healthy in itself, but the pestilence is often brought there, and has more than once swept away the fifth of the inhabitants of Constantinople; yet by the prevalence of custom, and of the Turkish doctrine of fatality, they give themselves no great concern about it. The provinces are universally fruitful, though with some difference; vast quantities of all kinds of excellent grain and fruits being exported every year. The number of its inhabitants is greatly disproportionate to the extent and goodness of the country, which may be chiefly attributed to pestilence, polygamy, and war. This accounts for such large tracts of fine soil lying waste. The Turks are stigmatized among the Christians as a slothful, stupid, and inhuman people; but they are by no means so wicked and dreadful a set of creatures as some writers have represented them. Turkey is not without



men of parts, probity, and honour; nor benevolent, liberal, temperate, conversible, and ingenious people. In short, there is here, as in all other countries and nations, a mixture of good and bad. Dricelich says, that, in compassion and love towards our neighbours, the Turks excel all the rest of mankind; and this assertion is confirmed by several other travellers. One striking mark of their charity, are the public inns, by the Asiatics called *Caravanferi*, which are to be met with almost in every little village. In these a traveller, of whatever religion or country he be, may continue three days gratis; and in not a few he is found also in victuals. The Turks are generally robust and well-shaped, of a good mien, and patient of hardships, which renders them fit for war, to which indeed they inure themselves from their youth. Persons of rank seldom train up their children to any thing else, out of a notion that no glory is comparable to that acquired in war. In their dress, manner of living, and customs, they are particular. They shave their heads, but wear long beards, of which they are extremely careful, except those in the seraglio, and military men, who wear only whiskers. The turban, or Turkish band, worn by the men, is white, and consists of long pieces of thin linen made up together in several folds. No one but a Turk must presume to wear a white turban. Their clothes are long and full. They sit, eat, and sleep, agreeably to the custom of the Orientals, on the floor, on cushions (*sophas*), mattresses, and carpets. Rice is their most general food, and coffee their usual drink, wine being interdicted. They expend great sums on fountains, and no country indeed affords so fine; and those not only in the towns, but in the country, and other solitary places, for the refreshment of travellers and labourers. Their most usual salutation is to bow the head a little, laying the right hand on their breast; but to persons of rank they stoop so low as to touch and kiss the border of their vest. In war time, the left hand is the place of honour among military men, but in time of peace this distinction ceases among the officers of state and relations. The fair sex here are kept under a rigorous confinement. The Arabic word *Haram*, which signifies a sacred or prohibited thing, is in its fullest sense, used both of the women's habitation, and of the women themselves. The seraglies are improperly termed *harams*, the word *seraglio* signifying no more than a palace. The nobility among the Turks are the chief military officers, judges, and ecclesiastics. The Turkish commonalty enjoy the greatest liberty; and to the orders of the Porte, which must be answered with the head, those only are exposed who hold considerable posts; or, as the phrase is in Turkey, "eat the sultan's bread." The Greeks, who are the ancient inhabitants of the country, live intermixed with the Turks, and in several places, particularly the islands, out-number them. In Constantinople alone it is computed there are no less than 400,000. They are accustomed to servitude, and prefer living under the Turkish exactions, to the spiritual tyranny of the pope: but they must be very cautious of not giving the least colour for suspicion of holding correspondence with the enemies of the Ottoman porte, or of meditating a sedition; in case also of a war with any of the Christian powers, it is usual, for the greater security, to disarm them. All Greeks, from the age of fourteen, pay annually, at the beginning of the Turkish feast of *Beiram*, a head money, in value about a ducat, and receive a note of it. The ecclesiastics are assessed higher: a deacon paying two ducats, and an archimandrite four; but the bishops, archbishops, and patriarchs, pay large sums, generally as much as the arbitrary avarice of the grand vizir and *bashas* shall think proper to require. The duties on traders are estimated to the value and price of the commodities they import. The Turks every-where lay hold of all opportunities of extorting money from the Greeks, but especially

from their clergy: in return for this tribute, they enjoy the protection of the Ottoman porte, and are maintained in the quiet possession of their properties; inasmuch that no Turk is to insult them, take any thing from them, or intrude themselves into their houses, against their will; and in case of any such injuries, they are certain of expeditious justice against the delinquents. The Greek women are exempt from all taxes, as are likewise great numbers of other Greeks, who serve in the navy, or elsewhere. It sometimes happens indeed, that a Greek girl, of distinguished beauty, is taken away, and carried to the seraglio; but Christian children are not in general forced away from their parents to be brought up in Mahometanism: and when any thing of that kind is done, it must be in the provinces which are at a distance from Constantinople. The Turks are of the Mahometan religion, and appropriate to themselves the name of *Moslemim*, which has been strangely corrupted into *Myslemian*, signifying persons professing the doctrine of Mahomet, which he calls *Islam*. Drinking wine is manifestly prohibited in the Koran, yet the Turks make use of it occasionally, without any scruple, though instead of it, they generally use sherbet, a liquor made of honey, spices, and the juice of fruits. Polygamy is indeed permitted, but the Koran enjoins that no man shall have more than four wives and concubines; and to exceed that number, is the particular privilege of the prophet and his successors; divorces are also allowed of, but no one may take back again the wife he has once repudiated, till she has been married to another, and afterwards divorced with him. Friday is the day set apart for divine worship. The churches of the Turks are called *mosches*, and the smaller ones *mesches*. The chief ecclesiastic is the mufti, which signifies an expounder of the law, and his office is of such dignity, that when he comes to court, the emperor himself rises from his seat, and advances seven steps to meet him. He alone has the honour of kissing the sultan's left shoulder; whereas the grand vizir, with a more profound inclination of body, kisses only the edge of the emperor's vest, who advances only three steps to meet him. By the law, the mufti is to be consulted on all emergencies, in those more particularly relating to peace and war. As the mufti of the Turks may be compared to the pope; so a *cadaliksir*, who is also a secular person, is not unlike a patriarch; a *mola* is an archbishop; a *cadie* is also a layman, may be accounted a bishop; and an *iman* a priest. The chief employment of the latter is praying. The Turks have also their convents and monks, under the general name of *dervises*. The head of the Greek church in Turkey in Europe, is the patriarch of Constantinople, who is chosen by the neighbouring archbishops and metropolitans, and confirmed by the emperor, or grand vizir; he is a person of great dignity, being the principal of the Greek patriarchs, and head and director of the Eastern church. His income amounts to no less than 120,000 guilders, of which he pays the one-half, by way of annual tribute, to the Ottoman porte, adding 6000 guilders besides, by way of present, at the feast of *Beiram*. Subordinate to him are seventy archbishops and metropolitans, and a much greater number of bishops. An archimandrite is the director of one or more convents, which are called *mandren*, and rank above an abbot, of which each convent has one. The monks, priests and students excepted, are obliged to follow some handicraft, and lead an austere life. The most celebrated are those of Mount Athos. The Greeks have but few nunneries at present. The secular clergy are subject to no rules, as the regulars are, who perform divine worship. They are allowed to marry, but that only before ordination, and then only once, and that with a virgin. These secular ecclesiastics never rise higher than an archpriest; the bishops, metropolitans, archbishops, and patriarchs, being

chosen from among the monks. The Armenians, the Roman-catholics, and Jews, have also the free exercise of their religion, and the Swedes have been permitted to build a Lutheran church at Constantinople. The Turks are not without all kinds of learning, having some schools, colleges, and academies. And, in this century, a Turkish printing office was set up, at Constantinople, by Ibrahim Effendi, who, after great opposition, obtained leave to print all kinds of books, except on matters of religion; accordingly, among others, he published some maps and books of history and geography. The Turks are of Tartarian, or Scythian extraction, this appellation being first given them in the middle ages, as a proper name, it being a general title of honour to all the nations comprehended under the two principal branches of Tartar and Mogul, and therefore never used as a proper name of any Scythian or Tartarian people; nor do even the Turks appropriate it peculiarly to themselves; the word Tur, as an adjective, signifying sublime and pre-eminent, and, as an appellation, a governor. Turci, therefore, may import both the governor of a hord (ki, among the Tartars, signifying a hord or company) as well as the hord itself. The Scythian or Tartarian nation, to which the name of Turks has been particularly given, dwell betwixt the Black and Caspian Seas; and became first known in the seventh century, when Heraclius, emperor of the East, took them into his service, under whom they so distinguished themselves, by their fidelity and bravery, in the conquest of Persia, that the Arabian and Saracen caliphs, not only had particular bodies of them for guards, but their armies were likewise filled with them. Thus they gradually got the power into their hands, and set up and dethroned caliphs at pleasure. Some governors also of this nation, have wholly revolted from the dominions of the caliphs. This happened about the ninth century. By this strict union of the Turks with the Saracens or Arabs, the former were brought to embrace the Mahometan religion; so that they are now become intermixed, and have jointly enlarged their conquests. The Turks, however, were superior, and subdued the Saracens. Jenghis Khan, or Zengis Chan, at the head of the Oguzinian hord, issued out of great Tartary, and made himself master of a great tract of land, near the Caspian Sea, and even of all Persia and Asia the Lesser. Incited by his example and success, Schah Soliman, prince of the town of Nera, on the Caspian Sea, in the year 1214, passed Mount Caucasus, with 50,000 men; he made his way through Aderbeitsan, or Media, as far as the borders of Syria; and though stopped there in his career, by the Jenghizian Tartars, yet, in the year 1219, he penetrated a second time into Asia the Lesser, as far as the Euphrates. The report of his conquests reaching the court of Persia, Soliman and his people were spoken of as Turks, a name common to all the Scythians, who came out of Tartary, under the command of Jenghis Khan. Othman, his grandson, made himself master of several countries and places in Lesser Asia, belonging to the Grecian empire; and having, in the year 1300, at the city of Karahissar, taken upon him the title of emperor of the Ottomans, called his people after his own name. His residence was fixed at Eskihehr, and, exclusive of many other towns, in the year 1326, he took Prusa, in Bithynia, now called *Bursa*, which his son and successor, Orchan, made the seat of his empire. Orchan sent his two sons, Solymán and Amurath, on an expedition into Europe; the former of whom reduced the city of Gallipoli, and the latter took Tynros. Amurath succeeding his father in the government, in the year 1360, conquered Anlyra, Adrianople, and Philippopolis. In the year 1362 he instituted the janizaries, over-run Servia and fell upon Macedonia and Albania. His son and successor, Bajazet, was successful both in Europe and Asia, defeating the Christians, near Nicopolis; but, in the year 1401, he himself was routed and taken

prisoner, by Tamerlane. His sons disagreed, but Mahomet I. held the sovereignty, and his son Amurath II. distinguished himself by several important enterprises; and, particularly, in the year 1444, gained a signal victory over the Hungarians, near Varna. Mahomet II. and the greatest of all the emperors, in the year 1453, made himself master of Constantinople, reducing the whole Grecian empire under his dominion. He subdued twelve kingdoms and 200 towns. Bajazet II. and Selim I. enlarged the Turkish empire in Europe, Asia, and Africa. Soliman I. is not more famous for his victories over the Hungarians, than for his body of laws. The succeeding emperors were not so fortunate: Mahomet IV. in the year 1669, subdued Candia; and in 1683, laid siege to Vienna, but in Hungary met ill success. In the reigns of Soliman II. Achmet II. and Mustapha, the Hungarians and Venetians were so successful against the Turks, that Mustapha II. in the year 1699, was glad to come to a peace at Karlowitz. Achmet III. in 1718, concluded the treaty of Passarowitz, and Mahomet V. by the peace of Belgrade, in the year 1739, reannexed Servia, a part of Walachia, and Choczim, to the empire. In the succession to the empire, no regard is paid to age or birthright, the Turks thinking it sufficient, if, in their elections, they keep to the Ottoman family. Women are excluded from the throne. The government is indeed purely monarchical; but, if the emperor indulges not the humours of the people, and especially of the mutinous janizaries, he is not only in danger of being deposed, but also of being put to death. The emperor's council of state is styled *galibé Divan*, or *Divan galibé*, and meets twice a-week in the emperor's palace, namely, on Sundays and Thursdays. The grand vizir sits as president, having the cadiliskar of Romelia at his right hand, and that of Natolia at his left. The musli also assists, when expressly summoned. All the others, lubbe vizirs, have likewise a seat here, and next to them stand on one side the tefterdar, or high treasurer, the reis-effendi, secretary of state, and other commissioners of the calem, or exchequer; but the military officers, such as the aga of the janizaries, the aga of the ipahis, the aga of the siluks, &c. fit within the divan. The sultan hears what passes from an adjoining chamber, which looks into the divan. When the sultan convenes a general council, to which are summoned all the great persons of the empire, the clergy, the military, and other officers, and even the old and experienced soldiers; such a divan is called *Ajak Divani*; the whole assembly standing. The highest officer, and next to the emperor, is the grand vizir, whose income, without any breach of probity, may amount to six hundred thousand dollars a-year, exclusive of presents and other perquisites. The high court of justice is held in a large hall of the grand vizir's palace, called *Divan-chane*. The grand vizir being president, is obliged four times a-week, namely, on Friday, Saturday, Monday, and Wednesday, to sit in the divan, and administer justice to the people; unless, which seldom happens, he be hindered by affairs of a very important nature. At Beglerbeg is a viceroi, with several provinces under his command; the name itself signifying a prince of princes; under these are the bashaws or governors, whose posts are very considerable but precarious; and subordinate again to these are the fangiaks, who may be termed deputy governors. The janizaries, properly jenghithier, a word compounded of *jengi* new, and *isçeri* a soldier, are the flower of the Turkish land forces; they are all infantry, and were first formed out of captive Christians by the emperor Amurath the First: their number is generally forty thousand, divided into one hundred and sixty-two companies, or chambers, called *Odaz*, in which they live together at Constantinople, as in a convent; the recruits are termed *yamagi*; the capis are also infantry; the ipahis, light-horse; and the timar, ipahi, or the old and preferred ipahis, instead of

pay, have villages in several of the provinces, and are obliged, according to their income, to bring at least three slaves with them into the field. The foot, under the command of a bathaw, are still called by the ancient name of *Segban*, and the horie *Seraje*. The tributary princes, as the princes of Moldavia and Walachia, are obliged also to send auxiliaries. The whole Turkish army makes above three hundred thousand men. The janizaries and spahi have their aga, or general. A *seraskier*, or commander in chief of the whole army, must be a bathaw of two or three horie-tails: these horie-tails are the insignia of grandeur in Turkey, and carried before the great men. It is only the principal bathaws, and other persons of the highest distinction, who are allowed three. The beglerbegs and fangiacs have also their several commands. The Turkish navy is laid up at Constantinople near the arsenal, and consists of about forty large ships; but in time of war, when the fleet is to be put to sea, the Turks receive auxiliary ships from Algiers, Tunis, and Tripoli: they buy up also or hire merchants' ships, and those rise a fleet of one hundred and fifty sail, exclusive of galleys of two, three, and four banks of oars: the admiral is styled capudan or capitan-bathaw.

TURNERIC, in botany. See *CURCUMA*.

TURNEBUS (Adrian), an eminent French critic, was born in 1512. His true name was Turnbull. He was the son of a Scotchman, an officer in the Scotch troop of guards, who married a Norman lady. The son, who is the subject of this article, changed his name into Turneboeuf; but this name giving occasion for puns, he varied it to Turnebe, in Latin Turnebus. He acquired so extensive a reputation by his learning, that he had great offers made him from Italy, Germany, and England; but we are told he preferred poverty in his own country to riches in any other. He taught polite literature first at Toulouse; but in 1547 went to be Greek professor at Paris, whither his name drew scholars to him from all parts of Europe: in 1552, he took upon him the care of the royal Greek press for three years, when he quitted it on being admitted into the number of royal professors. He died in 1565; and his works, which are all in Latin, were printed at Strasbourg, in one volume folio, 1600. His *Adversaria*, three volumes folio, had been printed at Paris before.

TURNER, in botany, a species of *BRASSICA*. For the culture of them, see *HUSBANDRY*.

TURNER-Bread. See *BREAD*.

TURNER-Fly. See *CHRYSMALA*.

TURNING, the art of forming hard bodies, as wood, ivory, iron, into a round or oval shape by means of a machine called a *lathe*. This art was well known to the ancients, and seems to have been carried by them to a very great degree of perfection; at least, if we believe the testimony of Pliny and several other authors, who tell us, that those precious vases enriched with figures in *half-relief*, which still adorn our cabinets, were turned on the lathe.

The art of turning is of considerable importance, as it contributes essentially to the perfection of many other arts. The architect uses it for many ornaments, both within and without highly finished houses. The mathematician, the astronomer, and the natural philosopher, have recourse to it, not only to embellish their instruments, but also to give them the necessary dimension and precision. In short, it is an art absolutely necessary to the goldsmith, the watchmaker, the joiner, the smith.

Turning is performed by the lathe, of which there are various kinds, and several instruments, as gonges, chisels, drills, formers, screw tales, used for cutting what is to be turned into its proper form as the lathe turns round. One of the most simple kinds of lathe is represented in Plate 2. fig. 1. in which *a* is the footstock, *b* the cord, *c* the frame of the lathe, *d* & *e* the puppets, *e* the points, *f* the spangning tree.

The lathe should be fixed in a place very well lighted; it should be immovable, and neither too high nor too low. The puppets should neither be so low as to oblige the workman to stoop in order to see his work properly, nor so high that the little chips, which he is continually driving off, should come into his eyes.

The piece to be turned should be rounded (if it be wood) before it be put on the lathe, either with a small hatchet made for the purpose, or with a plane, or with a file, fixing it in a vice, and flaying it down till it is every-where almost of an equal thickness, and leaving it a little bigger than it is intended to be when finished off. Before putting it on the lathe, it is also necessary to find the centres of its two end surfaces, and that they should be exactly opposite to each other; that when the points of the puppets are applied to them, and the piece is turned round, no side may belly out more than another. To find these two centres, lay the piece of wood to be turned upon a plank; open a pair of compasses to almost half the thickness of the piece; fix one of the legs in the plank, and let the point of the other touch one of the ends of the piece, brought into the same plane with the plank on which the compasses is fixed, and very near the fixed leg. Describe four arches on that end at equal distances from each other, at the circumference of the end, but intersecting one another within; the point of intersection is the centre of the end. In the same manner must the centre of the other end be found. After finding the two centres, make a small hole at each of them, into which insert the points of the puppets, and fix the piece so firmly as not to be shaken out, and yet loose enough to turn round without difficulty.

The piece being thus fixed, it is necessary in the next place to adjust the cord, by making it pass twice round the piece, and in such a manner, that the two ends of the cord, both that which is fixed to the *spang* and to the *foot-board*, come off on the side on which the turner stands, that the piece may move against the edge of the cutting-tool and be turned. If the lathe be moved by a wheel, the manner of adjusting the cord needs no directions.

If the workman does not choose to be at the trouble to find the two centres of the piece in the manner described above, let him lay, as nearly as he can, the centre of one end upon the point of the left hand puppet, and then let him push forward the right hand puppet, striking it with a mallet till its point is as near as he can in the centre of the other end of piece; and then fixing the right hand puppet by a gentle blow of the mallet on the key, let him turn round the piece to see by the eye if the centres have been properly found. If any part of it bellies out, let him strike that part gently with the mallet till it goes properly; then let him strike one of the puppets pretty smartly to drive the points into the piece, and afterwards fix the puppet by striking the key. If the workman cannot judge by the eye whether the piece be turning properly round its centres or not, he should apply gently the point of an instrument called a *triangular graver*, leaning it on the *rest*, and it will mark by a line the place where the piece is out of its centre; and by striking upon this line with a mallet, the piece can easily be placed properly. The *rest*, of which we have just spoken, ought to be placed upon the two arms of the lathe, and fixed with screws as near the piece as the workman pleases.

The piece being fixed between the two points of the puppets, the cord adjusted, and the *rest* fixed as near the work as possible without touching it; the workman is now to take a *gauge* (fig. 2. in which *a* is the mouth and *b* the handle) of a proper size in his left hand, and hold it by the handle a little inclined, keeping the back of the hand lowermost. With his right hand, the back of which is to be turned upwards, he is to grasp it as near the end as possible on this side of the *rest*.

then leaning the gouge on the *refl*, he is to present the edge of it a little higher than the horizontal diameter of the piece, so as to form a kind of tangent to its circumference; then putting the right foot on the foot-board, and turning round the wheel, and holding the gouge firmly on the *refl*, the piece will be cut neatly. In the same manner are the chisels, formers, and other instruments, to be used, taking care that the wood be cut equally, and that the instrument be not pushed improperly, sometimes stronger than at others; and taking care also that the instrument used do not follow the work, but that it be kept firmly in the hand without yielding.

The young turner ought to endeavour to acquire the management of the gouge and the chisel, which are the instruments by far the most frequently used, and the most necessary in this art: by them, almost entirely, are the soft woods turned; for as for hard woods and other things, as box, ebony, horn, ivory, and the metals, they are hardly ever turned except by *shaving off*. In that case gravers are to be used with square, round, or triangular mouths (fig. 3, 4, 5). They should be held horizontally while applied to the wood, and not obliquely as directed for the gouge and the chisel.

After the work is completely turned, it is next to be polished; and this cannot be done with the instruments hitherto mentioned. Soft woods, as pear-tree, hazel, maple, ought to be polished with shark-skin or Dutch rushes. There are different species of sharks; some of which have a greyish, others a reddish skin. Shark-skin is always the better to be a good deal used; at first it is too rough for polishing. The *Dutch-rush* is the *equisetum hyemale* of Linnaeus, which grows in moist places among mountains, and is a native of Scotland; it has a naked, simple, round stem, about the thickness of a writing pen. The oldest plants are the best. Before using them they should be moistened a little, otherwise they break in pieces almost immediately, and render it exceedingly difficult to polish with them. They are particularly proper for smoothing the hard woods, as box, lignum vitae, ebony, &c. After having cleaned up the piece well, it should be rubbed gently either with wax or olive-oil, then wiped clean and rubbed with its own raspings or with a cloth a little worn. Ivory, horn, silver, and brads, are polished with pumice-stone finely pounded and put upon leather or a linen cloth a little moistened: with this the piece is rubbed as it turns round in the lathe; and to prevent any dirt from adhering to any part of it, every now and then it is rubbed gently with a small brush dipt in water. To polish very finely, the workmen make use of tripoli, a particular kind of earth, and afterwards of putty or calx of tin. Iron and steel are polished with very fine powder of emery; this is mixed with oil, and put between two pieces of very tender wood, and then the iron is rubbed with it. Tin and silver are polished with a barnisher and that kind of red stone called in France *sanguine d'ore*. They may be polished also with putty, putting it dry into flammey-skin, or with the palm of the hand.

To succeed in turning iron, it is necessary to have a *lathe* exceedingly strong in all its parts, and exceedingly well fixed. The puppets should be short, and the *refl* well fixed very near the work: the back of the *refl* should be two or three lines lower than the iron to be turned.

The lathe and other instruments being prepared, it is necessary to determine the length and thickness of the iron to be turned according to the design which is to be executed, and to make a model of it in wood a little thicker than it ought to be: then, one exactly like this is to be forged of the best iron that can be procured; that is to say, it must not be new, but well prepared and well beaten with hammers; it must have no flaws, nor cracks, nor pimples. New iron, which has not been well beaten, often contains round drops of cast

iron, called by the workmen *grains*, which blunt the edges of the gouges, chisels, and other instruments used for cutting; break them, or make them slide. The iron being forged according to the model, it should be annealed, that is, heated red hot and allowed to cool slowly on the coals till the fire go out of itself. Some people, to soften the iron, cover it over with clay and allow it to cool. The iron cylinder being thus made, it is next to be put upon the lathe, finding the centres as formerly directed, and boring a small hole in them that the iron may not escape from the points.

The points should be oiled from time to time to prevent their being excessively heated and spoiled while the iron is turning. A *crotchet* is then to be applied to the iron to be turned, a little above its centre, pretty gently, and by this means the inequalities of the cylinder will be taken off. Other instruments are then to be applied to mould the iron according to the model; and whenever any of them grow hot, they are to be plunged into a basin of water lying beside the workman. If the iron, after being properly turned, is to be bored like a gun-barrel, one of the puppets is to be removed, and another substituted in its place, having a square hole through it, into which the collar of the iron is to be fixed firmly, so as not to shake; then borers are to be applied, like those which locksmiths use to bore keys; and beginning with a small one, and afterwards taking larger ones, the hole is to be made as wide and deep as necessary; great care must be taken to hold the borers firm on the *refl*, otherwise there is danger of not boring the hole straight. The borer must be withdrawn from time to time to oil it and to clean the hole. Since it is difficult to make a hole quite round with borers alone, it is necessary to have also an instrument a good deal smaller than the hole, one of the sides of which is sharp, very well tempered, and a little hollow in the middle. This instrument being fixed in a pretty long handle, is to be applied with steadiness to the inner surface of the hole, and it will entirely remove every inequality that may have been there before its application.

For turning ovals, a lathe of somewhat a different construction is used. The axis or spindle, having on it the pulley over which the band-cord passes for turning the lathe, is fixed between the two puppets so as to turn round easily; one end of it passes through one of the puppets, and to it is firmly fixed a circular plate of brass, so that it turns round along with the spindle. Upon this plate two brazen segments of circles are fastened, the circumferences of which correspond to the circumference of the plate: their chords are parallel, and equally distant from the centre of the plate, so that they leave a distance between them. They have a groove in each of them: in these grooves another plate is placed, which exactly fills up the space between the two grooves, but is shorter than the diameter of the larger circular plate on which it is laid. This plate is made to slide in the grooves. To its centre is fixed a short spindle, on which the piece of wood to be turned is fixed. When the lathe is set a-going, the circular plate moves round, and carries the piece along with it; the plate of brass on which the piece is fixed being fixed loosely in the grooves already described, slides down a little every time that the grooves become perpendicular to the floor (and there are particular contrivances to prevent it from sliding down too far); and by these two motions combined, the circular one of the large plate, and the straight one of the small, the circumference of the piece of wood to be turned necessarily describes an oval; and gouges or other tools being applied in the usual manner supported on the *refl*, it is cut into an oval accordingly. The small plate may be made to slide either more or less in the grooves; and by this contrivance the transverse diameter of the oval, or rather ellipse, may be made longer or shorter at pleasure. Another, and still simpler method, if pos-

fible, of turning ovals, is this : take two ovals of metal, exactly of the size of the oval which you intend to make ; fix them, firmly on the spindle of the lathe so as to turn round with it : fix between them the wood to be turned ; and then it is easy, by the help of chisels and other tools, to cut it, as the lathe goes into exactly the figure of the external ovals. Or an oval may be formed by placing the wood, or whatever is to receive that shape, obliquely on the lathe. There are several other ingenious methods of turning ; but our bounds do not permit us to enter upon them. We shall therefore conclude this article with a number of receipts, which every turner ought to know.

1. *The method of moulding boxes both of shell and horn.*—In the first place, form a proper mould, which must consist of two pieces, viz. of a circle about half an inch thick, which should slope a little in order to draw out the moulded shell the more easily ; and a ring fitted to the outside of the circle, so that both together make the shape of a box. These two pieces being adjusted, it is necessary to round the shell to be moulded of such a size, that, when moulded, it will be a little higher than the ring of the mould, that there may be no deficiency. The mould is then to be put into a press on a plate of iron, exactly under the screw of the press ; put then the shell upon the circle of the mould, so that its centre also is exactly opposite to the screw of the press : then take a piece of wood formed into a truncated cone, and not so thick as the diameter of the circle of the mould, nor so deep as the ring : then put a plate of iron above the cone, and screw down the press gently and cautiously till the whole is well fixed : then plunge the whole into a cauldron of boiling water placed above a fire. In eight or ten minutes the shell or horn will begin to soften ; screw the press a little firmer that the wooden cone may sink into the softened shell : repeat this from time to time till the cone is quite sunk in the mould ; then take out the press and plunge it into cold water. When it is cold, take the box now formed out of the mould, and put into the inside of it a new mould of tin exactly of the form you wish the inside of the box to be ; do the same with the outside, put it again into the press, and plunge it into boiling water ; screw the press gradually till the box be fashioned as you desire.

2. *Method of preparing green wood so that it will not split in the turning.*—Having cut your wood into pieces of a proper size, put it into a vessel full of a ley made with wood ashes. Boil it there about an hour ; then, taking the cauldron off the fire, allow the ley to cool ; then take out the wood and dry it in the shade.

3. *Method of giving an ebony-black to hard and fine woods.*—After forming the wood into the destined figure, rub it with aqua fortis a little diluted. Small threads of wood will rise in the drying, which you will rub off with pumice-stone. Repeat this process again, and then rub the wood with the following composition : Put into a glazed earthen vessel a pint of strong vinegar, two ounces of fine iron filings, and half a pound of pounded galls, and allow them to infuse for three or four hours on hot cinders. At the end of this time augment the fire, and pour into the vessel four ounces of copperas (sulphat of iron), and a chopin of water having half an ounce of bonax and as much indigo dissolved in it ; and make the whole boil till a froth rises. Rub several layers of this upon your wood ; and, when it is dry, polish it with leather, on which you have put a little tripoli.

4. *Method of giving to plum-tree the colour of brazil wood.*—Slack lime with urine, and deaub, the wood over with it while it is hot : allow it to dry ; then take off the coat of lime, and rub it with chamois skin well oiled. Or, steep your wood in water, having a quantity of alum dissolved in it : then, having allowed brazil wood to dissolve in water five or

six hours, steep your wood in it, kept luke-warm during a night ; and when it is dry, rub it, as before directed, with chamois skin well oiled.

5. *Method of giving a fine black colour to wood.*—Steep your wood for two or three days in luke-warm water in which a little alum has been dissolved ; then put a handful of logwood, cut small, into a pint of water, and boil it down to less than half a pint. If you then add a little indigo, the colour will be more beautiful. Spread a layer of this liquor quite hot on your wood with a pencil, which will give it a violet colour. When it is dry, spread on another layer ; dry it again, and give it a third : then boil verdigris at discretion in its own vinegar, and spread a layer of it on your wood : when it is dry, rub it with a brush, and then with oiled chamois skin. This gives a fine black, and imitates perfectly the colour of ebony.

6. *Method of cleaning and whitening bones before using them.*—Having taken off with a saw the useless ends of the bones, make a strong ley of ashes and quick-lime, and into a pailful of this ley put four ounces of alum, and boil the bones in it for an hour ; then take the vessel containing the ley off the fire and let it cool ; then take out the bones and dry them in the shade.

7. *Method of folding shells.*—Clean the two sides of the shells which you wish to join together ; then, having joined them, wrap them up in linen folded double and well moistened ; then heat two plates of iron pretty hot, that they may keep their heat for some time ; and putting your shells rolled up between them under a press, which you must screw very tight, leave them there till the whole is cold, and they will be folded. If you do not succeed the first time, repeat the process.

8. *Method of moulding shells.*—Put six pints of water into a kettle ; add to it an ounce of olive or other oil ; make the water boil ; then put in your shell, and it will grow soft. Take it out, and put it into a mould under a press, and it will take the figure you want. This must be done quickly ; for if the shell cool ever so little, the process will fail. It will not require much pressure.

9. *Method of tinging bones and ivory red.*—Boil shavings of scarlet in water. When it begins to boil, throw in a quarter of a pound of ashes made from the dregs of wine, which will extract the colour : then throw in a little rock alum to clear it, and pass the water through a linen cloth. Steep your ivory or bone in aqua fortis, and put it into the water. If you wish to leave white spots, cover the places destined for them with wax.

10. *To tinge ivory black.*—Steep the ivory during five or six days in water of galls with ashes made with dried dregs of wine and arsenic ; then give it two or three layers of the same black with which plum-tree is blackened, in order to imitate ebony. Or, dissolve silver in aqua fortis, and put into it a little rose water. Rub the ivory with this, and allow it to dry in the sun.

11. *Method of hardening wood to make pulleys.*—After finishing the pulley, boil it seven or eight minutes in olive oil, and it will become as hard as copper.

12. *To make Chinese varnish.*—Take of gum-lac in grains four ounces ; put it into a strong bottle with a pound of good spirit of wine, and add about the bulk of a hazel-nut of camphor : Allow them to mix in summer in the sun, or in winter on hot embers for twenty-four hours, shaking the bottle from time to time. Pass the whole through a fine cloth, and throw away what remains upon it. Then let it settle for twenty-four hours, and you will find a clear part in the upper part of the bottle, which you must separate gently and put into another vial, and the remains will serve for the first layers.

TURNSTONE, in ornithology. See *TALPOX*.

TURPENTINE, a transparent viscid substance, flowing either naturally or by incision from several unctuous or resinous trees; as the terebinthus, pine, larch, fir, &c. See **Pinus**.

Oil of TURPENTINE. An essential oil, procured from turpentine by distillation. It is of great use in the arts and in medicine.

TURPETH, the cortical part of the root of a species of convolvulus, brought from the East Indies. It is accounted a pretty strong cathartic; but it is very uncertain in its strength, for sometimes a dose from a scruple to a dram purges violently, while at other times a much greater dose produces very little effect.

TURQUOISE, is the tooth of an animal penetrated with the blue calx of copper: it loses its colour when heated; it is opaque, and of a lamellar texture, and susceptible of a fine polish; its specific gravity is from 2,5 to 2,908; some are of a deep blue, some of a whitish blue, but become of a deeper when heated. This substance is found in Persia and Languedoc. The copper may be extracted from it by distilled vinegar. According to Reamur (*Mem. Par.* 1715) nitrous acid will not dissolve that of Persia, though it will that of France, which shows a difference between them.

TURRETIN (Francis), minister and professor of divinity at Geneva, his native place, was born in 1623. Having studied at Geneva, Leyden, Saumur, Montauban, and Nismes, with great success, he was admitted into the ministry in 1648, and served at the same time the French and Italian churches at Geneva. Two years after, he was offered the professorship of philosophy, which he refused; but accepted the invitation of the church of Lyons. He was recalled to Geneva at a year's expiration, because he was wanted to give lectures in divinity; which he began in 1653. He was sent to Holland in 1661, to procure money which the city of Geneva had occasion for. He had in that journey all the success he could promise himself; and gained such a character there, that he was strongly importuned by the Walloon churches at the Hague and at Leyden to enter into their service. On his return he resumed the functions of his place, and continued there till his death with remarkable application. He died in 1687, with the character of a man of great merit; eloquent, judicious, laborious, learned, and zealous for orthodoxy. His works were published by his son John Alphonius, in 3 and in 4 vols. 4to.

TURMIS, **TOWER-MUSTARD**, in botany: a genus of plants belonging to the class of *tetradynamia*, and to the order of *siliculosæ*; and in the natural system ranging under the 39th order, *Siliculosæ*. The silicle is very long and angulated; the calyx connivent and erect; the corolla is also erect. There are three species; two of which are natives of Great Britain, the glabra and hirsuta.

TURTLE, in ichthyology. See **TESTUDO**.

TURTLE-DOVE, in ornithology. See **COLUMBA**.

TUSCAN ORDER, in architecture. See **ARCHITECTURE**.

TUSCAN Earth, a yellowish kind of bole dug in many parts of Italy, particularly about Florence, where there is a stratum of it eight or ten feet thick, at the depth of five or six feet from the surface. It is supposed to have an astringent property.

TUSCANY (Duchy of), a country of Italy, situated between the Mediterranean, the Tiber, and the Appennines; some parts of it are distributed among the territories of Modena, Lucca, and Genoa, which portions excepted, its extent from north to south is about 115 miles, and its breadth about eighty. The face of the country is beautifully varied with hills and valleys, and the soil rich and fertile, producing corn in abundance, with excellent fruit, oranges, lemons, olives, and grapes. The air, in several parts, is rendered unwholesome by fens and morasses: the salt-pits are rich. Manna is ga-

thered in the marshlands near the sea; and the mountainous parts are rich in mines and minerals. In some places are found amethysts, jaspers, cornelians, crystal, lapis-lazuli, chalcidony, marble, slate, alabaster, sulphur, alum, and quicksilver. Several medicinal springs have been discovered besides those of Pisa. The principal river is the Arno: Florence is the capital. This country was anciently called *Etruria*, and the inhabitants Etrurii, Tyrrheni, and Tuscani, though the present does not include the whole of Etruria: after several revolutions and changes, it became a republic, called, from its chief city, the republic of Florence. In this republic, the Medici family obtained, by commerce, the wealth and grandeur of princes; and Henry II. king of France, chose his consort, the famous Catharine, out of this family. The Emperor Charles V. in the year 1531, at the solicitation of Clement VII. created Alexander Medici duke of Florence; and afterwards gave him in marriage, Margaret, his natural daughter. His nephew and successor, Cosmo I. was, in the year 1569, declared great duke, by Pope Pius V. which title was at last ratified by the Emperor Maximilian II. in the year 1575, on condition of his enjoying and holding it as a fief of the empire. In 1699 the emperor conferred on the great duke the title of royal highness, to which the pope and the court of France readily acquiesced. The great duke, John Gaston, having no heirs, it was stipulated in the fifth article of the quadruple alliance, made in 1718, that the duchy should, by all the contracting parties, be for ever acknowledged a male fief of the Roman empire; and that, with the consent of the Germanic body, the emperor should confer it as a fief on the king of Spain's eldest son by the second marriage, from him to devolve to his male descendants, and on their failure to the younger brother and his heirs; but that Leghorn was always to remain a free port. This was not only confirmed in the treaty of Vienna, in 1725, but the great duke also, and his sister, in 1731, concluded with the king of Spain a family treaty of like import, and the infant Don Carlos was accordingly brought up at the great duke's court at Florence. New differences arising, and, in 1733, breaking out into a war, in which the emperor, in 1734, lost the kingdoms of Naples and Sicily, Don Carlos caused himself to be proclaimed king, and, by the peace of 1736, retained the possessions of these kingdoms. On the other hand it was stipulated, that the great duchy of Tuscany, after the demise of the possessor, should escheat to the House of Lorraine in lieu of that duchy, which was to be resigned to King Stanislaus. This took place in 1737, and by this means became annexed to the house of Austria.

TUSK, or **TORSK**, in ichthyology. See **GADUS**.

TUSSILAGO, **COIT'S ROOT**, in botany: a genus of plants belonging to the class of *jugonesia*, and order of *polygamia superflua*; and in the natural system ranging under the 49th order, *Compositæ*. The receptacle is naked; the pappus simple; the scales of the calyx equal, of the same height as the disk, and somewhat membranaceous. There are 12 species; three of which are indigenous to Britain, the *saxifraga*, *hybrida*, and *petasites*. The *saxifraga*, or common coit's foot, grows plentifully on the banks of rivulets, or in moist and clayey soils in England and Scotland.—The leaves are smoked in the manner of tobacco, or a syrup or decoction of them and the flowers stand recommended in coughs and other disorders of the breast and lungs. It seems now to be almost entirely rejected. The downy substance under the leaves, boiled in a lixivium with a little saltpetre, makes excellent tincture. The *petasites*, or common butter-bur, is frequent in wet meadows, and by the sides of rivers. Its leaves are the largest of any plant in Great Britain, and in heavy rains afford a seasonable shelter to poultry and other small animals. The root dug up

in the spring is refinous and aromatic. A drachm of it in a dole has been sometimes given as a fudorific and alexipharmic; but as it possesses those virtues only in a small degree, it has lost its reputation in the shops.

TUTENAGE, an ore of zinc, containing commonly from 60 to 90 per cent. of zinc, the remainder iron, and a small proportion of clay.

TUTOR, in the civil law, is one chosen to look to the persons and estate of children left by their fathers and mothers in their minority. The different kinds of *tutory* established among the Romans, and the powers and duties of tutors, are described in *Inst. Leg. i. T. XIII. sect. 1. and 2.* to which the reader is referred. See also the article **GUARDIAN**.—For the nature and effects of *tutory* in the Scotch law, which is founded on that of the Roman, see *Scotch Law*, Part III. sect. 7.

TUTOR is also used in the English universities for a member of some college or hall, who takes on him the instructing of young students in the arts and faculties.

TUTTY, an argillaceous ore of zinc, found in Persia, formed on cylindrical moulds into tubulous pieces, like the bark of a tree, and baked to a moderate hardness; generally of a brownish colour, and full of small protuberances on the outside, smooth and yellowish within, sometimes whitish, and sometimes with a bluish cast. Like other argillaceous bodies, it becomes harder in a strong fire; and after the zinc has been revived and dissipated by inflammable additions, or extracted by acids, the remaining earthy matter affords, with oil of vitriol, an aluminous salt. In medicine, *tutty* is celebrated as an opthalmic, and frequently employed as such in unguents and colliria.

TWEED, a river of Scotland, which rises on the confines of the shire of Clydesdale, and running eastward through Tweedale, and dividing the shire of Merse from Teviotdale and Northumberland, falls into the German Sea at Berwick. It abounds with salmon.

TWEEDALE, or **PEEBLESHIRE**, a county of Scotland, bounded on the north by Edinburghshire, on the East by Edinburghshire and Selkirkshire, on the south by Dumfriesshire, and on the west by Lanarkshire; twenty-five miles from north to south, and from ten to eighteen from east to west. The country in general rises in hills, many of which are covered with verdure to their very summits, and between them are pleasant fertile valleys, well watered and interspersed with gentlemen's seats. The principal grain is oats and barley, with few plantations, except round particular houses. This country is sometimes called *Tweedale*, from the river Tweed, which crosses a considerable part. Peebles is the capital.

TWELFTH-DAY, the festival of the Epiphany, or the manifestation of Christ to the Gentiles; so called, as being the twelfth day, exclusive, from the nativity or Christmas-day.

TWILIGHT, that light, whether in the morning before sun-rise, or in the evening after sun-set, supposed to begin and end when the least stars that can be seen by the naked eye cease or begin to appear.

TWINKLING of the STARS. See **OPTICS**.

TWINS, two young ones delivered at a birth, by an animal which ordinarily brings forth but one.

TWITE, in ornithology. See **FRINGILLA**.

TYGER, or **TIGER**, in zoology. See **FELIS**.

TYLE, or **TILE**, in building, a sort of thin laminated brick used on the roofs of houses: or, more properly, a kind of fat clayey earth kneaded and moulded of a just thickness, dried and burnt in a kiln like brick, and used in the covering and paving of houses.

TYMPAN, among printers, a double frame belonging to the press, covered with parchment, on which the blank sheets are laid in order to be printed off. See **PRINTING-Press**.

VOL. X.

TYMPANUM, in mechanics, a kind of wheel placed round an axis or cylindrical beam, on the top of which are two levers or fixed flaves for the more easily turning the axis in order to raise a weight required. The *tympanum* is much the same with the *peritrochium*; but that the cylinder of the axis of the *peritrochium* is much shorter and less than the cylinder of the *tympanum*.

TYMPANUM, in anatomy. See **ANATOMY**.

TYMPANY, in medicine. See **MEDICINE and SURGERY**.

TYNDALE (William), a zealous English reformer, and memorable for having made the first English version of the Bible, was born on the borders of Wales some time before 1500. He was of Magdalene-hall in Oxford, where he distinguished himself by imbibing early the doctrines of Luther, and by as zealously propagating those doctrines among others. Afterwards he removed to Cambridge, and from thence went to live with a gentleman in Gloucestershire in the capacity of tutor to his children.—While he continued there, he showed himself so furious for Luther, and so inveterate to the pope, that he was forced, merely for the security of his person, to leave the place. He next endeavoured to get into the service of Tonstall, bishop of Durham, but did not succeed. His zeal for Lutheranism made him desirous to translate the New Testament into English; and as this could not safely be done in England, he went into Germany, where, setting about the work, he finished it in 1527. He then began with the Old Testament, and finished the five books of Moses, prefixing discourses to each book, as he had done to those of the New Testament. At his first going over into Germany, he went into Saxony, and had much conference with Luther; and then returning to the Netherlands, made his abode chiefly at Antwerp. During his peregrinations from one country to another, he suffered shipwreck upon the coast of Holland, and lost all his books and papers. His translations of the Scriptures being in the mean time sent to England, made a great noise there; and, in the opinion of the clergy, did so much mischief, that a royal proclamation was issued out, prohibiting the buying or reading such translation or translations. But the clergy were not satisfied with this, they knew Tyndale capable of doing infinite harm, and therefore thought of nothing less than removing him out of the way. For this purpose one Philips was sent over to Antwerp, who insinuated himself into his company, and under the pretext of friendship betrayed him into custody. He was sent to the castle of Kilford, about 18 miles from Antwerp; and though the English merchants at Antwerp did what they could to procure his release, and letters were also sent from Lord Cromwell and others out of England, yet Philips beset him so heartily, that he was tried and condemned to die. He was first strangled by the hands of the common hangman, and then burned near Kilford castle, in 1536. While he was tying to the stake, he cried with a fervent and loud voice, "Lord, open the King of England's eyes."

TYPE (τύπος), an impression, image, or representation of some model, which is termed the *antitype*. In this sense the word occurs often in the writings of divines, who employ it to denote that prefiguration of the great events of man's redemption which they have found or fancied in the principal transactions recorded in the Old Testament.

That the death of Christ for the sins of men, and his resurrection from the dead for their justification, were prefigured in the ritual worship instituted by Moses, is indeed incontrovertible; but when divines consider as a type every thing mentioned in the Hebrew Scriptures, in which an active imagination can discover the slightest resemblance or analogy to any circumstance in the life, or death, or resurrection, of Christ, they expose the whole doctrine of *types*

to the ridicule of unbelievers, and do a real injury to that cause which it is their professed intention to serve. To contend as some of them have done, that the extraction of Eve from the side of Adam, while he was in a deep sleep, was intended as a type of the Roman soldier's piercing our Saviour's side while he slept the sleep of death; or that the envy of the sons of Jacob to their brother Joseph, was typical of the envy of the Scribes and Pharisees to Jesus the Messiah, is to burlesque the Scriptures, and insult reason. The nature of types seems indeed to be very little understood even by those who pretend to have studied them with care. They are generally compared to prophecies having a double sense, and are thought to have been so contrived as to give information of the future events to which they pointed; but the information which they gave of Christianity must have been exceedingly obscure, to those who lived before the coming of Christ, however plain it may appear to us who can now compare the type with the antitype. A different opinion has indeed been maintained, not only by mystical cabalists, who will maintain any thing from which common sense revolts, but also by writers who, when treating of other subjects, have shown that they possessed very sound understandings.

TYPE, among letter-founders and printers, the same with letter. See LETTER.

TYPE, is also used to denote the order observed in the intension, and remission of fevers, pulses, &c.

TYPHA, CAT'S TAIL, in botany: a genus of plants belonging to the class of *monoclea*, and order of *triandra*; and in the natural system ranging under the 3d order, *Calamaria*. The amentum of the male flower is cylindrical; the calyx is tripetalous, but scarcely distinguishable; there is no corolla. The female has a cylindrical amentum below the male; the calyx is composed of villous hair; there is no corolla, and only one seed fixed in a capillary pappus. There are two species, both natives of Britain; the *latifolia* and *angustifolia*. 1. *Latifolia*, great cat's tail, or reed mace, is frequent in ponds and lakes. The stalk is six feet high; the leaves a yard long, hardly an inch wide, convex on one side; the amentum, or cylindrical club, which terminates the stalk, is about six inches long, of a dark brown or fuscous colour. Cattle will sometimes eat the leaves, but Schreber thinks them noxious: the roots have sometimes been eaten in fallads, and the down of the amentum used to stuff cushions and mattresses. Linnaeus informs us, that the leaves are used by the coopers in Sweden to bind the hoops of their casks. 2. *Angustifolia*, narrow-leaved cat's tail, is found in pools and ditches. The leaves are semi-cylindrical, and the male and female spike are remote and slender.

TYPHON. See WHIRLWIND.

TYPHON, the devil of the ancient Egyptians. See POLYTHEISM.

TYPOGRAPHY, the art of printing. See PRINTING.

TYRANNION, a celebrated grammarian in Pompey's time, was of Amisus in the kingdom of Pontus. He was the scholar of Dionysius of Thrace at Rhodes. He fell into the hands of Lucullus, when that general of the Roman army defeated Mithridates, and seized his dominions. This captivity of Tyrannion was no disadvantage to him,

since it procured him an opportunity of being illustrious at Rome, and raising a fortune. He spent it, among other things, in making a library of above 30,000 volumes. He died very old, being worn out with the gout. His care in collecting books contributed very much to the preservation of Aristotle's works.

TYRANT, among the ancients, denoted simply a king or monarch; but the ill use which several persons invested with that sacred character made of it, has altered the import of the word; and tyrant now carries with it the idea of an unjust or cruel prince, who invades the people's liberty, and rules in a more despotic manner than the laws of nature or of the country allow.

TYRE, formerly a celebrated city of Asia, on the coast of Syria, situated under the 34th degree of east longitude, and 32d of north latitude. It was built, according to some writers, 2760 years before the christian era. There were two cities of that name; the one called *Palætyrus*, situated on the continent; and the other the city of *Tyre*, built on an island about half a mile from the shore. It was about 19 miles in circumference, including *Palætyrus*; the town on the island was about four miles round. The buildings of Tyre were very magnificent; the walls were 150 feet high, and broad in proportion. This city was at one period the most famous commercial city in the world. Of its commercial transactions, the most particular account that is to be found in any ancient writer has been given by the prophet Ezekiel, which at the same time conveys a magnificent idea of the extensive power of that state. It resisted Nebuchadnezzar king of Babylon for 13 years; at the end of which, wearied with endless efforts, the inhabitants resolved to place the sea between them and their enemy, and passed accordingly into the island. The new city stood out against Alexander the Great for seven months; and before he could take it, he was obliged to fill up the strait which separated the island from the continent. It was repaired afterwards by Adrian, and became the metropolis of the province. It afterwards fell into the hands of the Arabs; and after being taken by Baldwin II. king of Jerusalem, it was destroyed by the sultan of Egypt in 1289, and abandoned, never more to rise from its ruins. An excellent account of its situation and modern state may be found in Volney's Travels, vol. ii. It now consists of a small village, composed of wretched huts, containing about 50 or 60 poor families. The words of Ezekiel are literally fulfilled, "And they shall make a sport of their riches" (Ezek. xxvi. 12, 13, 14.) Mr. Bruce saw this queen of the nations converted into a place for filth to dry their nets in. Its harbour, formerly so famous for its shipping, is now almost choked up. It is called *Sour* or *Tfour* by the Orientals.

TYRIAN DYE. See MUREX and PURPURE.

TYRONE, a county of Ireland, in the province of Ulster, 46 miles in length and 37 in breadth; bounded on the north by Londonderry, on the east by Armagh and Lough-Neagh, on the south by Fermanagh, and on the west by Donnegal. It is a rough and rugged country, but tolerably fruitful; contains 12,683 houses, 30 parishes, 4 baronies, 4 boroughs, and sends 10 members to parliament. The principal town is Dungannon.

U, V.

U or **u**, the 20th letter and 5th vowel of our alphabet, is formed in the voice by a round configuration of the lips, and a greater extrusion of the under one than in forming the letter **o**, and the tongue is also more cannulated. The sound is short in *curst, must, tun, tub*; but is lengthened by a final *e*, as in *tune, tube*, &c. In some words it is rather acute than long; as in *brute, flute, lute*, &c. It is mostly long in polysyllables; as in *union, curious*, &c. but in some words it is obscure, as in *nature, venture*, &c. This letter in the form of **V**, or **v**, is properly a consonant, and as such is placed before all the vowels; as in *vacant, venal, vibrate*, &c. Though the letters **v** and **u** had always two sounds, they had only the form **v** till the beginning of the fourth century, when the other form was introduced, the inconvenience of expressing two different sounds by the same letter having been observed long before. In numerals **V** stands for five; and with a dash added at top, thus **V̄**, it signifies 5000. In abbreviations, amongst the Romans, **V. A.** stood for *veterani assignati*; **V. B.** *viro bono*; **V. B. A.** *virī boni arbitrati*; **V. B. F.** *vir bonæ fidei*; **V. C.** *vir consularis*; **V. C. C. F.** *vale conjux charissimæ, feliciter*; **V. D. D.** *voto dedicatur*; **V. G.** *verbi gratia*; **Vir. Ve.** *virgo vestalis*; **VL.** *videlicet*; **V. N.** *quinto monarum*.

VACCINIUM, the WHORTLE-BERRY, or *Bilberry*, in botany; a genus of plants of the class of *œlandria*, and order of *monogynia*; and arranged in the natural system under the 18th order, *Bicornes*. The calyx is superior; the corolla monopetalous; the filaments inserted into the receptacle; the berry quadrilocular and polypermous. There are 15 species; the most remarkable of which are, 1. The *myrtillus*, black-whort, whortle-berries, or bilberries, growing in woods and on heaths abundantly. The flowers frequently vary, with five segments at the rim, and with ten stamina. The berries when ripe are of a bluish black colour, but a singular variety, with white berries, was discovered by the duke of Athol, growing in the woods, about mid-way between his two seats of Dunkeld and Blair. The berries have an astringent quality. In Arran and the Western Isles they are given in diarrhoeas and dysenteries with good effect. The Highlanders frequently eat them in milk, which is a cooling agreeable food; and sometimes they make them into tarts and jellies, which last they mix with whisky, to give it a relish to strangers.—They dye a violet colour; but it requires to be fixed with alum. The grouse feed upon them in the autumn. 2. The *uliginosum*, or great bilberry bush, is found in low moist grounds, and almost at the summits of the Highland mountains. The leaves are full of veins, smooth and glaucous, especially on the under side; the berries are eatable, but not so much esteemed as the preceding; as they are apt, if eaten in any quantity, to give the headach. 3. The *vitis idæa*, or red whortle-berries, frequent in dry places, in heaths, woods, and on mountains. The berries have an acid cooling quality, useful to quench the thirst in fevers. The Swedes are very fond of them made into the form of a rob or jelly, which they eat with their meat as an agreeable acid, proper to correct the animal alkali. 4. The *oxyccoccus*, cran-berries, moss-berries, or moor-berries, frequent on peat-bogs in the Lowlands, but not so common in the Highlands of Scotland. The stalks are long, slender, woody, weak, and trailing; the leaves are stiff,

acutely oval, glaucous underneath, their edges turned back, and grow alternate; two or three flowers grow singly on long red footstalks out of the extremity of the branches the flowers are red, divided deeply into four acute segments, which are reflexed quite backwards; the filaments are downy; the antheræ ferruginous and longer than the filaments; the berries red, and about the size of the hawthorn berries. At Longtown, on the borders of Cumberland, they are made for considerable an article of commerce; that, at the season when they are ripe, not less than 20l. or 30l.'s worth are sold by the poor people each market-day for five or six weeks together, which are afterwards dispersed over different parts of the kingdom for making the well-known cranberry tarts.

VACUUM, in philosophy, denotes a space empty or devoid of all matter or body. It has been a matter of much dispute among philosophers whether there be in nature a perfect vacuum, or space void of all matter; but if bodies consist of material solid atoms, it is evident that there must be vacuities, or motion would be impossible. (See *METAPHYSICS*.) We can even produce something very near a vacuum in the receiver of an air-pump and in the Torricellian tube (see *PNEUMATICS, passim*); and it is very doubtful whether the particles of the densest bodies known be in perfect contact. See *OPTICS*.

VADIUM, a pledge in law, is either *vivum* or *mortuum*:

VADIUM Vivum, or *Living Pledge*, is when a man borrows a sum (suppose 200l.) of another; and grants him an estate, as of 20l. *per annum*, to hold till the rents and profits shall repay the sum so borrowed. This is an estate conditioned to be void as soon as such sum is raised. And in this case the land or pledge is said to be living: it subsists, and survives the debts; and, immediately on the discharge of that, results back to the borrower.

VADIUM Mortuum, or *Dead Pledge*. See *MORTGAGE*:

VAGABOND, or *VAGRANT*, one who wanders illegally, without a settled habitation. Such persons are cognizable by the laws. See *IDLENESS*.

VAGINA, properly signifies a sheath or scabbard; and the term *vagina*, is used in architecture for the part of a terminus, because resembling a sheath out of which the statue seems to issue.

VAGINA, in anatomy, a canal reaching from the external orifice, or, os ostendit, of women, to the uterus.

VAILLANT (John Foy), a physician and great medalist, to whom, according to Voltaire, France was indebted for the science of medals, and Louis XIV. for one half of his cabinet, was born at Beauvais in 1632. Through the means of the minister Colbert he travelled into Italy, Greece, Egypt, and Persia, to collect medals for the royal cabinet; and returned with so many as made the king's cabinet superior to all in Europe. In one of his voyages the ship he sailed in was fallen upon and taken by an Algerine corsair. After a captivity of near five months he was permitted to return to France, and received at the same time 20 gold medals which had been taken from him. He embarked in a vessel bound for Marseilles, and was carried on with a favourable wind for two days, when another corsair appeared, which in spite of all the fail they could make, bore down upon them within the reach of cannon-shot. Mrs.

Vaillant, dreading the miseries of a fresh slavery, resolved, however, to secure the medals which he had received at Algiers, and in order thereto swallowed them. But a sudden turn of the wind freed them from this adversary, and cast them upon the coasts of Catalonia; where after expecting to run aground every moment, they at length fell among the sands at the mouth of the Rhone. Mr. Vaillant got to shore in a skiff, but felt himself extremely incommoded with the medals he had swallowed, which might weigh altogether five or six ounces, and therefore did not pass like Scarborough waters. He had recourse to a couple of physicians, who were a little puzzled with the singularity of his case; however, nature relieved him from time to time, and he found himself in possession of the greatest part of his treasure when he got to Lyons. Here he explained, with much pleasure to his friends, those medals which were already come to hand, as well as those which were daily expected; among which last was an Otho, valuable for its rarity.—He was much careased on his return; and when Louis XIV. gave a new form to the Academy of Inscriptions in 1701, Mr. Vaillant was first made associate, and then pensionary. He wrote several works relating to ancient coins, and died in 1706.

VAIR, or **VAIRE**, a kind of fur, formerly used for lining the garments of great men and knights of renown. It is represented in engraving by the figures of little bells reversed, ranged in a line. See **HERALDRY**, Chap. II. sect. 2.

VAIRY, in heraldry, expresses a coat, or the bearings of a coat, when charged or chequered with vairs.

VALAIS, a valley in Switzerland, which extends from the source of the river Rhone to the lake of Geneva. It is near 100 miles in length, but the breadth is very unequal. It is bounded on the north by the Alps, which separate it from the cantons of Bern and Uri, on the east by the mountains of Forche, on the south by the duchy of Milan and the Val d'Aoste, and on the west by Savoy and the republic of Geneva. The inhabitants profess the Roman-catholic religion, and are subject to the swelling of the throat called *bronchocele*; and ideots are said to abound among them more than in any other place of the globe. They are naturally hardy, enterprising, and good-natured. It is surrounded on all sides by very high mountains, most of which are covered with snow and ice that never thaw. However the soil is fertile in corn, wine, and good fruit. The muscat wine, which is produced here, is excellent, and well known all over Europe. There are mineral waters, plenty of game, and some mines. This country comprehends 55 large parishes, to which one bishop only belongs, whose see is at Sion the capital. The mountains afford good pasture for their cattle in summer, and their harvest continues from May to October; it being sooner or later according to the situation of the place.

VALANTIA, in botany: a genus of plants in the order *monœcia*, of the class *polygamia*, and in the natural system arranged under the 41st order, the *Aperifloriæ*. There is scarcely any calyx; the corolla is monopetalous, flat, four-parted; the stamina four, with small antheræ: the hermaphrodite flowers have a pistillum with a large germen, a bifid style, the length of the calyx, and one feed; the pistilla of the male flowers are hardly discernible. There are eight species, only one of which is a native of Britain, the *cruciata*; the stalks of which are square, the whole plant hairy, the leaves oval and verrucillate, four in a whirl; the flowers are yellow, and grow on short peduncles out of the axæ of the leaves. The roots, like those of the galiums, to which it is nearly related, will dye red. It is astringent, and was once used as a vulnerary.

VALENCIA, a province of Spain, which has the title of a kingdom; and is bounded on the east and south by the Mediterranean sea, on the north by Catalonia and Arragon, and on the west by New Castile and the kingdom of Murcia. It is about 165 miles in length, and 63 in breadth. It is one of the most populous and agreeable parts of Spain, and where they enjoy almost a perpetual spring. The great number of rivers wherewith it is watered renders it extremely fertile, particularly in fruits and wine. There are very rugged mountains in it, which contain mines of alum and other minerals.

VALENCIA, a city of Spain, and capital of the kingdom of the same name. It contains about 12,000 houses, besides those of the suburbs and the summer-houses round it. It has an university, and an archbishop's see; and was taken from the Moors by the Christians in the 13th century. The town is handsome, and adorned with very fine structures. It is not very strong, though there are some bastions along the sides of the walls. They have manufactures in wool and silk, which bring in great sums to the inhabitants. It is seated on the river Guadalaviar, over which there are five handsome bridges; and it is about three miles from the sea, where there is a harbour: 110 miles north of Murcia, and 165 east by south of Madrid. This city surrendered to the earl of Peterborough in the year 1705; but it was lost again in 1707. W. Long. 6. 10. N. Lat. 39. 23.

VALENCIENNES, an ancient, strong, and considerable city of France, in the department of the North and late province of Hainault. It contains about 20,000 souls. The Scheld divides it into two parts. It is a very important place; the citadel and fortifications, the work of Vauban, were constructed by order of Louis XIV. who took this town from the Spaniards. It was confirmed to him by the treaty of Nimegue, in 1678. In 1793 it surrendered to the allies after a severe siege, but was afterwards abandoned; and is now in the possession of the French republicans. Besides lace, this city is noted for manufactories of woollen stuffs and very fine linens. It is 20 miles west-south-west of Mons, 17 north-east of Cambray, and 120 north-east by north of Paris. E. Long. 3. 37. N. Lat. 50. 21.

VALENS (Flavius), emperor of the East, a great patron of the Arians. Killed by the Goths in the year 379.

VALENTINIAN I. emperor of the West, a renowned warrior, but a tyrant over his subjects. The exploits of this monarch are amply detailed in the Roman History.

VALENTINIAN II. emperor of the West, a prince celebrated for his virtues, and above all for his moderation; yet a conspiracy was formed against him by Arbogastes, the commander in chief of his armies; and he was strangled in the year 392.

VALENTINIANS, in church history, a sect of Christian heretics, who sprung up in the second century, and were so called from their leader Valentinus. The Valentiniens were only a branch of the Gnostics, who realized or personified the Platonic ideas concerning the Deity, whom they called *Pleroma* or *Plenitude*. Their system was this: the first principle is Bythos, i. e. Depth, which remained many ages unknown, having with it Ennoe or Thought, and Sige or Silence; from these sprung the Nous or Intelligence, which is the only son, equal to and alone capable of comprehending the Bythos; the sister of Nous they called *Altheia* or *Truth*; and these constituted the first quaternity of æons, which were the source and original of all the rest: for Nous and Altheia produced the World and Life; and from these two proceeded Man and the Church. But besides these eight principal æons, there were 22 more; the last of which, called *Sophia*, being desirous to arrive at the knowledge of

Bythos, gave herself a great deal of uneasiness, which created in her Anger and Fear, of which was born Matter. But the Horas or Bounder stopped her, preferred her in the Pleroma, and restored her to Perfection. Sophia then produced the Christ and the Holy Spirit, which brought the aëons to their last perfection, and made every one of them contribute their utmost to form the Saviour. Her Enthymese, or Thought, dwelling near the Pleroma, perfected by the Christ, produced every thing that is in the world by its divers passions. The Christ sent into it the Saviour, accompanied with angels, who delivered it from its passions without annihilating it: from thence was formed corporeal matter. And in this manner did their romance concerning God, nature, and the mysteries of the Christian religion.

VALERIAN, or VALERIANUS (Publius Licinius), emperor of Rome, remarkable for his captivity and cruel treatment by Sapor I. king of Persia. See the histories of Rome.

VALERIANA, in botany: a genus of plants belonging to the class *triandria* and order *monogamia*, and in the natural system arranged under the 45th order, *Aggregatæ*. There is hardly any calyx; the corolla is monopetalous, gibbous at the base, situated above the germen; there is only one seed. There are 21 species, only four of which are natives of Britain, the *officinalis*, the *locusta*, the *rubra*, the *divica*; of these only the *officinalis* is useful. The root of this plant is perennal: the stalk is upright, smooth, channelled, round, branched, and rises from two to four feet in height: the leaves on the stem are placed in pairs upon short broad sheaths; they are composed of several lance-shaped, partially dentated, veined, smooth pinnae with an odd one at the end, which is the largest: the floral leaves are spear-shaped and pointed; the flowers are small, of a white or purplish colour, and terminate the stem and branches in large bunches. It flowers in June, and commonly grows about hedges and woods.

It is supposed to be the *œ* of Dioscorides and Galen, by whom it is mentioned as an aromatic and diuretic: it was first brought into estimation in convulsive affections by Fabius Columna, who relates that he cured himself of an epilepsy by the root of this plant: we are told, however, that Columna suffered a relapse of the disorder; and no further accounts of the efficacy of valerian in epilepsy followed till those published by Dominicus Panarolus fifty years afterwards, in which three cases of its success are given. To these may be added many other instances of the good effects of valerian root in this disease, since published by Cruger, Schuchmann, Riverius, Sylvius, Marchant, Chomel, Sauvages, Tissot, and others.

The advantages said to be derived from this root in epilepsy caused it to be tried in several other complaints termed *nervous*, particularly those produced by increased mobility and irritability of the nervous system, in which it has been found highly serviceable. Bergius states its virtues to be antispasmodic, diaphoretic, emmenagogue, diuretic, antelmintic. The root in substance is most effectual, and is usually given in powder from a scruple to a dram: its unpleasant flavour may be concealed by a small addition of mace. A tincture of valerian in proof spirit and in volatile spirit are ordered in the London Pharmacopœia.—Cats are very fond of the smell of this root, and seem to be intoxicated by it.

VALERIUS MAXIMUS, a Latin historian, sprung from the families of the Valerii and Fabii, which made him take the name of *Valerius Maximus*. He studied polite literature, and afterwards followed Sextus Pompey to the wars. At his return he composed an account of the actions and remarkable sayings of the Romans and other great men; and dedicated that work to the emperor Tiberius. Many of the learned think that this is the same that is now extant, and bears the name of Valerius Maximus; but others maintain, that what

we have now is only an abridgment of the work written by this celebrated historian, and that this abridgment was made by one Nepotian of Africa. However, this work is well written, and contains a great number of memorable actions performed by the Greeks and Romans that are worthy of being read.

VALET, a French term, used as a common name for all domestic men-servants employed in the more servile offices, as grooms, footmen, coachmen, &c. But with us it is only used in the phrase *valet de chambre*, which is a servant whose office is to dress and undress his master, &c.

VALETTA, a city of Malta, and capital of the island (see Malta). It is situated in E. Long. 14. 34. N. Lat. 35. 54.

VALETUDINARY, among medical writers, denotes a person of a weak and sickly constitution, and frequently out of order.

VALID, in law, an appellation given to acts, deeds, transactions, &c. which are clothed with all the formalities requisite to their being put into execution, and to their being admitted in a court of justice.

VALLADOLID, a town of Spain, in the province of Leon, on a small river called *Esguava*, near the Pisuerga. The see of a bishop, and an university, founded in the year 1346. Several of the churches of Valladolid, those especially of the Dominicans and of San Benito, are elegant, agreeably to the Spanish taste, that is handsome, and full of altars richly gilt. Valladolid is not wholly without manufactures, some fruffs and coarse cloths are made there from the wool of the sheep which are kept in the neighbourhood. There are also gold and silver-smiths; and one street is entirely inhabited by jewellers. This is very lively, and full of business, as are all the others, which terminate in the great square. An academy of the Belles Lettres was established here, in the year 1752: eighty-four miles NNW. Madrid. Long. 11. 57. E. Peak of Teneriff. Lat. 41. 42. N.

VALVE, in hydraulics, pneumatics, &c. is a kind of lid or cover of a tube or vessel so contrived as to open one way, but which, the more forcibly it is pressed the other way, the closer it shuts the aperture; so that it either admits the entrance of a fluid into the tube or vessel, and prevents its return; or admits its escape, and prevents its re-entrance.

VALVE, in anatomy, a thin membrane applied on several cavities and vessels of the body, to afford a passage to certain humours going one way, and prevent their reflux towards the place from whence they came.

VAMPYRE, a species of bat. See VESPERTILIO.

VAN, a term derived from the French *avant*, or *avant*, signifying before or foremost of any thing; thus we say, the van-guard of the army, &c.

VANBRUGH (Sir John), a celebrated English dramatic writer and architect, was descended of a family in Cheshire which came from France, though by his name he appears to have been originally of Dutch extraction. He was born about the middle of the reign of Charles II. and received a liberal education. His first comedy, called *the Relapse*, or *Virtue in Danger*, was acted in the year 1697 with great applause; which gave him such encouragement, that he wrote eleven more comedies. He was the friend of Mr. Congreve, whose genius was naturally turned for dramatic performances; and these two gave new life to the English stage, and restored its reputation, which had been for some time sinking; but their making vicious persons their most amiable and striking characters, and their bordering too much on obscenity, could be of no service to the cause of virtue; and therefore it was not without reason that they were attacked by Mr. Collier, in his piece on the Immorality and Profaneness of the Stage. However, the reputation Sir John gained by his come-

dies, or his skill in architecture, procured him very considerable advantages. He was appointed Clarencieux king at arms, which he afterwards disposed of. In 1716 he was appointed surveyor of the works at Greenwich hospital: he was likewise made comptroller-general of his majesty's works, and surveyor of all the gardens and waters. He was an able architect; but his performances in that way are esteemed heavy. Under his direction were raised Blenheim-house in Oxfordshire, Claremont in Surrey, and his own house at Whitehall. He died of a quinsy in 1726.

VANDELLIA, in botany: a genus of plants belonging to the class *didymia* and order *angiosperma*. The calyx is subquadriid; the corolla ringent; the two exterior filaments proceed from the disc of the lip of the corolla; the antheræ are connected; the capsule is unilocular and polyspermous. There is only one species known, the *diffusa*.

VAN-DIEMEN'S LAND. See **DIEMEN**.

VAN DYCK (Sir Anthony), a most illustrious painter, was born at Antwerp in 1599, and trained under the no less illustrious Rubens. Afterwards he went to Italy, staid a short time at Rome, and then removed to Venice; where he attained the beautiful colouring of Titian, Paul Veronese, and the Venetian school: proofs of which appeared in the pictures he drew at Genoa, where he left behind him many excellent pieces. After a few years spent abroad, he returned to Flanders, with a manner of painting so noble, natural, and easy, that Titian himself was hardly his superior; and no other master in the world equal to him in portraits. The Prince of Orange, hearing of his fame, sent for him to draw the pictures of his princes and children. Cardinal Richelieu invited him to France; where, not liking his entertainment, he staid but a little time. Then he came over to England, soon after Rubens had left it, and was entertained in the service of Charles I. who conceived a marvellous esteem for his works; honoured him with knighthood; presented him with his own picture, set round with diamonds; assigned him a considerable pension; staid very often to him for his portrait; and was followed by most of the nobility and gentry of the kingdom. He acquired great riches by his profession; married one of the fairest ladies of the English court, a daughter of the lord Ruthen earl of Gowry; and, though he had little with her except her beauty and her quality, lived in a state and grandeur answerable to her birth. He grew weary, towards the latter end of his life, of the continued trouble that attended face-painting; and, being desirous of immortalizing his name by some more glorious undertaking, went to Paris, in hopes of being employed in the grand gallery of the Louvre. Not succeeding there, he returned to England; and proposed to the king, by his friend Sir Kenelm Digby, to make cartoons for the Banqueting-house at Whitehall. The subject was to have been the institution of the order of the garter, the procession of the knights in their habits, with the ceremony of their installment, and St. George's feast: but his demand of 8000*l.* being thought unreasonable, while the king was treating with him for a less sum, the gout and other distempers put an end to his life. He died in 1641, aged forty-two years; and was buried in St. Paul's cathedral, where his monument, whatever it was, perished by the fire.

VANE, a thin slip of bunting hung to the mast-head, or some other conspicuous place in the ship, to shew the direction of the wind. It is commonly sewed upon a wooden frame called the *stock*, which contains two holes whereby to slip over the spindle, upon which it turns about as the wind changes.

VANILLA, or **VANILLO**. See **EPIDENDRUM**.

VAPOUR, in philosophy, the particles of bodies rarefied by heat, and thus rendered specifically lighter than the atmo-

sphere, in which they rise to a considerable height. See **EVAPORATION**, **DAMP**, **GAS**, &c. Many kinds of vapour are unfriendly to animal life, but the most noxious are those which arise from metallic substances. In the smelting and refining of lead, a white vapour arises, which, falling upon the grass in the neighbourhood, imparts a poisonous quality to it, so that the cattle which feed there will die; and in like manner stagnant waters impregnated with this vapour will kill fish. In some places the earth exhales vapours of a very noxious quality; such as the Grotto del Cani, and other places in Italy, where a mephitic vapour constantly hovers over the surface of the ground, proving instantly fatal to such animals as are immersed in it. In some parts of the world there have been instances of people killed, and almost torn to pieces, by a vapour suddenly bursting out of the earth under their feet. Of the *aqueous* vapour raised from the earth by the sun's heat are formed the clouds; but though these are commonly at no great distance from the earth, we cannot from thence determine the height to which the vapours ascend. Indeed, considering the great propensity of water, and even quicksilver, to evaporate in the most perfect vacuum we can make, it is by no means probable that any limit can be fixed for this ascent. See **WEATHER**.

VAPOURS, *noxious*, method of dissipating. The following ingenious method of dissipating the noxious vapours commonly found in wells and other subterraneous places, is related in the Trans. Philadel. by Mr. Robinson of Philadelphia the inventor. "After various unsuccessful trials (says he), I was led to consider how I could convey a large quantity of fresh air from the top to the bottom of the well, supposing that the foul would necessarily give way to the pure air. With this view I procured a pair of smith's bellows, fixed in a wooden frame, so as to work in the same manner as at the forge. This apparatus being placed at the edge of the well, one end of a leathern tube (the hose of a fire-engine) was closely adapted to the nose of the bellows, and the other end was thrown into the well, reaching within one foot of the bottom. At this time the well was so infected, that a candle would not burn at a short distance from the top; but, after blowing with my bellows only half an hour, the candle burned bright at the bottom; then, without farther difficulty, I proceeded in the work, and finished my well. Wells are often made in a very slight manner, owing to the difficulty of working in them, and there have been several fatal instances of the danger attending the workmen; but, by the above method, there is neither difficulty nor danger in completing the work with the utmost solidity. It is obvious, that in cleansing vaults, and working in any other subterraneous place, subject to damps as they are called, the same method must be attended with the same beneficial effect."

VAPOURS, in medicine, a disease properly called *hyp*, or the *hypochondriacal disease*; and in men particularly, the *spleen*. See **MEICINE**.

VAPOUR-BATH, in chemistry, a term applied to a chemist's bath or heat, wherein a body is placed so as to receive the fumes of boiling water. It consists of two vessels, disposed over one another in such manner as that the vapour raised from the water contained in the lower heats the matter included in the upper. It is very commodious for the distilling of odiferous waters, and the drawing of spirit of wine. We also use the term *vapour-bath*, when a sick person is made to receive the vapours arising from some liquid matter placed over a fire. Many contrivances have been proposed for this purpose; and their expediency and utility are best known to those who are conversant in this business. A late writer has suggested a new construction of vapour-baths; and the whole

apparatus is reduced to a tin-boiler, tin pipes wrapped in flannel, and a deal box with a cotton cover, for the reception of the body and circulation of the vapour.

VARI, in medicine, little, hard, and ruddy tumors, which frequently infect the faces of young persons of a hot temperament of body.

VARIATION of the *Compass*, is the deviation of the magnetic or mariner's needle from the meridian or true north and south line. On the continent it is called the *declination* of the magnetic needle; and this is a better term. Our readers know, that the needle of a mariner's compass is a small magnet, exactly poised on its middle, and turning freely in a horizontal direction on a sharp point, so that it always arranges itself in the plane of the magnetic action. We need not add any thing on this head to what has been delivered in the articles *COMPASS* and *Azimuth Compass*.

After the discovery of that most useful property of the magnet, or loadstone, namely, the giving hardened iron and steel a polarity, the compass was for many years used without knowing that its direction in any-wise deviated from the poles of the world; and about the middle of the 16th century, to certain were some of its inflexibly pointing to the north, that they treated with contempt the notion of the variation, which about that time began to be suspected. However, careful observations soon discovered, that in England and its neighbourhood, the needle pointed to the eastward of the true north; but the quantity of this deviation being known, mariners became as well satisfied as if the compass had none; because they imagined that the true course could be obtained by making allowance for the true variation.

From successive observations made afterwards, it was found, that the deviation of the needle from the north was not a constant quantity, but that it gradually diminished; and at last, about the year 1660, it was found at London that the needle pointed due north, and has ever since been getting to the westward; and now the variation is more than 20° to the westward of the north: so that in any one place it may be suspected the variation has a kind of libratory motion, traversing through the north to unknown limits eastward and westward. But the settling of this point must be left to time.

During the time of the said observations it was also discovered, that the variation of the needle was different in different parts of the world, it being west in some places when it was east in others; and in places where the variation was of the same name, yet the quantity of it greatly differed. It was therefore found necessary, that mariners should every day, or as often as they had opportunity, make during their voyage proper observations for an amplitude or azimuth; whereby they might be enabled to find the variation of the compass in their present place, and thence correct their courses.

Dr. Halley published in the last century a theory of the variations of the compass. In this work he supposes there are four magnetic poles in the earth; two of which are fixed and two moveable, by which he explains the different variation of the compass at different times in the same place. But it is impossible to apply exact calculations to so complicated an hypothesis. M. Euler, son of the celebrated geometrician of that name, has however shown, that two magnetic poles placed on the surface of the earth will sufficiently account for the singular figure assumed by the lines which pass through all the points of equal variation in the chart of Dr. Halley.

M. Euler first examines the case wherein the two magnetic poles are diametrically opposite; second, he places them in the two opposite meridians, but at unequal distances from the poles of the world; third, he places them in the same meridians. Finally, he considers them situated in two different

meridians. These four cases may become equally important; because, if it is determined that there are only two magnetic poles; and that these poles change their situations, it may some time hereafter be discovered that they pass through all the different positions.

Since the needle of the compass ought always to be in the plane which passes through the place of observation and the two magnetic poles, the problem is reduced to the discovery of the angle contained between this plane and the plane of the meridian. M. Euler, after having examined the different cases, finds that they also express the earth's magnetism, represented in the chart published by Messrs. Montaine and Dodson in 1744, particularly throughout Europe and North America, if the following principles are established.

Between the arctic pole and the magnetic pole $14^\circ 53'$.

Between the antarctic pole and the other magnetic pole $29^\circ 23'$.

$53^\circ 18'$ the angle at the north pole, formed by the meridian's passing through the two magnetic poles.

250° the longitude of the meridian, which passes over the northern magnetic pole.

As the observations which have been collected with regard to the variation are for the most part loose and inaccurate, it is impossible to represent them all with precision; and the great variations observed in the Indian Ocean seem to require, says M. Euler, that the three first quantities should be 14 , 35 , and 65 degrees. In the mean time, the general agreement is sufficiently satisfactory.

The high reputation of Dr. Halley's magnetical chart renders it more particularly necessary to point out the errors contained therein. There is evidently too little distance between the lines of no variation, of which one crosses the equator 17° westward of London, and the other 119° to the eastward. This makes 136° only; whereas it should necessarily exceed 180 , and even 200 , inasmuch as the pole of the world is supposed further distant from the magnetic pole towards the south than in the north, as is required by the other phenomena. Again, upon the coasts discovered by Diemen, there was no variation in 1642; and Dr. Halley also supposes there was none in 1700. Meanwhile, by the alteration observed at Paris, the line of no variation should be advanced 60° towards the south, which will agree better with the calculations, and prove that the distance of the two intersections was really greater than Dr. Halley had established.

The table of variation of Messrs. Montaine and Dodson is accompanied with several interesting particulars, which equally deserve to be inserted here.

At Barbadoes (says Captain Snow), the variation seems very nearly at a stand: for in the road I observed 5° east; and by Dr. Halley's draught, in the year 1701, $5\frac{1}{2}^\circ$. In 1747, at Port Royal keys, Jamaica, I observed the variation $7^\circ 20' E.$; and on the coast of Carthagena, the same week, off the high land of Santa Martha, $7^\circ 45'$ nearly south of Port Royal. Therefore these curves are not much altered: the curve at Jamaica is nearly at a stand, as though tied, and the fourth part of them with the rest dropping to the westward.

Under the equator, in longitude $40^\circ E.$ of London, the highest variation during the whole 56 years appears to be $17^\circ 4' W.$ and the least $16^\circ \frac{1}{4}' W.$; and in latitude $15^\circ N.$ longitude $60^\circ W.$ from London, the variation has been constantly $5^\circ E.$ But in other places the case has been widely different. For in the latitude of $10^\circ S.$ longitude $60^\circ E.$ from London, the variation has decreased from $17^\circ W.$ to $7^\circ \frac{1}{4}' W.$; and in latitude $10^\circ S.$ longitude $50^\circ W.$ from London, from $2^\circ \frac{1}{4}' W.$ to $12^\circ \frac{1}{4}' W.$; and in latitude $15^\circ N.$ longitude 20° , it has increased from $1^\circ W.$ to $9^\circ W.$

But there is still a more extraordinary appearance in the Indian sea. For instance, under the equator:

LONGITUDE E. from London.	MAGNETICAL VARIATION	
Degrees.	in 1700. Degrees.	in 1756. Degrees.
40	164 West.	164 West.
45	174 W.	144 W.
50	174 W.	114 W.
55	164 W.	84 W.
60	154 W.	6 W.
65	134 W.	44 W.
70	114 W.	34 W.
75	94 W.	1 W.
80	74 W.	04 East.
85	54 W.	14 E.
90	44 W.	1 E.
95	34 W.	01 West.
100	24 W.	1 W.

Where the west variation, in the longitude 40° E. is the same in both the above years; and in 1700 the west variation seemed to be regularly decreasing from longitude 50° E. to the longitude 100° E.: but in 1756, we find the west variation decreasing so fast, that we have east variation in the longitude 80°, 85°, and 90° E. and yet in the longitude 95° and 100° E. we have west variation again.

To these remarks may be joined the following extracts from the *Exposition du calcul astronomique*, by M. de la Lande.

"At the royal observatory in Paris, a magnetical needle of four inches deviated from the N. 18° 10' towards the west, on the 15th of February 1759: and on the 22d of April 1760, the same needle varied 18° 20'. It is indeed natural to conceive, that nothing can be precisely ascertained by 10' upon a circle whose diameter is only four inches. It is nevertheless sufficiently evident, that this variation continues to increase at Paris. In 1610 the needle declined 8° towards the east, so that the variation has changed 26° 20' in the space of 150 years; and this appears particularly since 1740: for the same needle, which has always been used by M. Maraldi, is more than 3° advanced towards the west, beyond what it was at that period; and this makes 9' in one year."

We see the needle frequently disturbed both from its general annual position, and from the change made on it by the diurnal variation. This is probably the effect of auroræ boreales which are inviolable, either on account of thick weather or day-light. Van Swinden says, he seldom or never failed to observe auroræ boreales immediately after any anomalous motion of the needle; and concluded that there had been one at the time, though he could not see it. Since no needle but a magnetic one is affected by the aurora borealis, we may conclude, that there is some natural connection between this meteor and magnetism. This should farther incite us to observe the circumstance formerly mentioned, viz. that the south end of the dipping needle points to that part of the heavens where the rays of the aurora appear to converge. We wish that this were diligently observed in places which have very different variation and dip of the mariner's needle.

For the diurnal and this irregular variation, consult the Disquisitions of Cellius and of Hiorter, in the *Memoirs of Stockholm*; Wargentin, *Philosophical Transactions*, vol. 48. Braun (*Comment. Petropol. Novæ*, T. V. VII. IX.); Graham and Canton as above.

VARIETY, in botany, is a change in some less essential part or quality; as colour, size, pubescence or age.—Externally; by the plaiting or interweaving of the branches—by bundling or uniting of several stalks into one broad flat one; by the greater

breadth, or narrowness, or curling of leaves—by becoming awnless, or smooth, or hirsute. Internally; by becoming mutilated in the corolla; or having one larger than ordinary—by luxuriance, multiplication, or fulness—by becoming prolific, or crested—by bearing bulbs instead of seeds—or being viviparous. The usual causes of variation are, climate, soil, exposure, heat, cold, winds, culture.

VARIOLA, the SMALL-POX. See MEDICINE.

VARIX, in pathology, the dilatation of a vein, arising from the laxity of its coats. A common instance of this occurs in the legs of persons who are afflicted with ulcers; which often arise from varices, and require, for their cure, a bandage or laced stocking.

VARNISH, a clear limpid fluid, capable of hardening without losing its transparency, used by painters, gilders, &c. to give a lustre to their works, to preserve them and defend them from the air.

A coat of varnish ought to possess the following properties: 1. It must exclude the action of the air; because wood and metals are varnished to defend them from decay and rust. 2. It must resist water; for otherwise the effect of the varnish could not be permanent. 3. It ought not to alter such colours as are intended to be preserved by these means. It is necessary therefore that a varnish should be easily extended or spread over the surface, without leaving pores or cavities; that it should not crack or scale; and that it should resist water. Now resins are the only bodies that possess these properties. Resins consequently must be used as the bases of varnish. The question which of course presents itself must then be, how to dispose them for this use? and for this purpose they must be dissolved, as minutely divided as possible, and combined in such a manner that the imperfections of those which might be dissolved to scale may be corrected by others.

Resins may be dissolved by three agents. 1. By fixed oil. 2. By volatile oil. 3. By alcohol. And accordingly we have three kinds of varnish: the fat or oily varnish, essential varnish, and spirit varnish. Before a resin is dissolved in a fixed oil, it is necessary to render the oil drying. For this purpose the oil is boiled with metallic oxides; in which operation the mucilage of the oil combines with the metal, while the oil itself unites with the oxygen of the oxide. To accelerate the drying of this varnish, it is necessary to add oil of turpentine. The essential varnishes consist of a solution of resin in oil of turpentine. The varnish being applied, the essential oil flies off, and leaves the resin. This is used only for paintings. When resins are dissolved in alcohol, the varnish dries very speedily, and is subject to crack; but this fault is corrected by adding a small quantity of turpentine to the mixture, which renders it brighter, and less brittle when dry.

We shall now give the method of preparing a number of varnishes for different purposes.

A Varnish for Toilet-boxes, Cases, Fans, &c.—Dissolve two ounces of gum mastic and eight ounces of gum sandarach in a quart of alcohol; then add four ounces of Venice turpentine.

A Varnish for Waincoats, Cane chairs, Iron-chairs, Grates.—Dissolve in a quart of alcohol eight ounces of gum sandarach, two ounces of seed lac, four ounces of resin; then add six ounces of Venice turpentine. If the varnish is wished to produce a red colour, more of the lac and less of sandarach should be used, and a little dragon's blood should be added. This varnish is so thick that two layers of it are equal to four or five of another.

A Varnish for Fiddles, and other Musical Instruments.—Put four ounces of gum sandarach, two ounces of lac, two ounces

of gum mastic, an ounce of gum elemi, into a quart of alcohol, and hang them over a slow fire till they are dissolved; then add two ounces of turpentine.

Varnish in order to employ Vermilion for painting Equipages.—Dissolve in a quart of alcohol six ounces of sandarach, three ounces of gum lac, and four ounces of rosin; afterwards add six ounces of the cheapest kind of turpentine; mix with it a proper quantity of vermilion when it is to be used.

Gold-coloured Varnish.—Pound separately four ounces of stick lac, four ounces of gamboge, four ounces of dragon's blood, four ounces of annotta, and one ounce of saffron: put each of them separately into a quart of alcohol, and expose them for five days in a narrow-mouthed bottle to the sun, or keep them during that time in a very warm room, shaking them every now and then to hasten the solution. When they are all melted, mix them together. More or less of each of these ingredients will give the different tints of gold according as they are combined. In order to make silver imitate gold exactly when covered with this varnish, the quantity of ingredients must be somewhat greater. The method of gilding silver-leaf, &c. with this varnish is as follows: The silver-leaf being fixed on the subject, in the same manner as gold-leaf, by the interposition of proper glutinous matters, the varnish is spread upon the piece with a brush or pencil. The first coat being dry, the piece is again and again washed over with the varnish till the colour appears sufficiently deep. What is called *gilt leather*, and many picture frames, have no other than this counterfeit gilding. Washing them with a little rectified spirit of wine affords a proof of this; the spirit dissolving the varnish, and leaving the silver-leaf of its own whiteness. For plain frames, thick tin-foil may be used in stead of silver. The tin-leaf, fixed on the piece with glue, is to be burnished, then polished with emery and a fine linen cloth, and afterwards with putty applied in the same manner: being then lacquered over with the varnish five or six times, it looks very nearly like burnished gold. The same varnish, made with a less proportion of the colouring materials, is applied also on works of brass; both for heightening the colour of the metal to a resemblance with that of gold, and for preserving it from being tarnished or corroded by the air.

Oil Varnishes.—Gum copal and amber are the substances principally employed in oil varnishes; they possess the properties necessary for varnishes, solidity, and transparency.—The copal being whitest, is used for varnishing light, the amber for dark colours. It is best to dissolve them before mixing them with the oil, because by this means they are in less danger of being scorched, and at the same time the varnish is more beautiful. They should be melted in a pot on the fire; they are in a proper state for receiving the oil when they give no resistance to the iron spatula, and when they run off from it drop by drop. The oil employed should be a drying oil, and perfectly free from greases.—It should be poured into the copal or amber by little and little, constantly stirring the ingredients at the same time with the spatula. When the oil is well mixed with the copal or amber, take it off the fire; and when it is pretty cool, pour in a greater quantity of the essence of turpentine than the oil that was used. After the varnish is made, it should be passed through a linen cloth. Oil varnishes become thick by keeping; but when they are to be used, it is only necessary to pour in a little essence of turpentine, and to put them for a little on the fire. The turpentine is necessary in oil varnishes to make them dry properly; generally twice as much of it is used as of oil. Less is necessary in summer than in winter. Too much oil hinders the varnish from drying; but when too little is used, it cracks and does not spread properly. We shall subjoin the most useful oil varnishes:

White Copal Varnish.—On sixteen ounces of melted copal

pour four, six, or eight ounces of linseed oil, boiled and quite free from grease. When they are well mixed, take them off the fire (not forgetting to stir them properly); and when pretty cool, pour in sixteen ounces of the essence of Venice turpentine. Pass the varnish through a cloth.—Amber varnish is made in the same way.

Black Varnish for Coaches and Iron Work.—This varnish is composed of bitumen of Palestine, rosin, and amber, melted separately, and afterwards mixed; the oil is then added, and afterwards the turpentine, as directed above. The usual proportions are, twelve ounces of amber, two ounces of rosin, two ounces of bitumen, six of oil, and twelve of the essence of turpentine.—Golden-coloured varnish may be made also by substituting linseed oil for alcohol.

Essential Oil Varnishes.—The only essential oil varnishes used are for pictures. Picture varnishes should be white, light, and quite transparent, which will preserve the colours without giving them any disagreeable tint; and it should be possible to take them off the picture without injuring it. They are usually made of gum mastic and turpentine dissolved together in some essential oil. The varnish is passed through a cloth, and allowed to clarify. It is applied cold to the picture.

Varnish for Glazs, in order to preserve it from the Rays of the Sun.—Pulverise a quantity of gum adragant, and let it dissolve for twenty-four hours in the white of eggs well beat up; then rub it gently on the glazs with a brush.

Varnishes before they are used should be carefully kept from dust, which would spoil them; and they should be kept in a vessel quite clean and dry. When used, they should be lifted lightly with a brush, and spread upon a ground altogether free from dirt and moisture. The substance, after being varnished, should be exposed to the heat of the sun, or placed in a warm room covered with a glass case, to keep out all filth. Oil varnishes require more heat than alcohol varnishes. The varnish should be put on very quickly, making great strokes with the pencil or brush, taking care that these strokes never cross one another; it should be spread equally, and never thicker than a leaf of paper; a second coat should not be put on till the first is quite dry. If the varnish, after being put on, becomes dull and uneven, it must be taken off entirely, and new varnish put on.

When wainscot is to be varnished, it is first painted of a wooden colour. This colour is made by infusing in water either red or yellow ochre (according to the colour wished for), terra ombria (a kind of ochre), and white lead; into this as much as necessary is put of *parlament paste*. Two thin coats of this are to be put on, and, after they are quite dry, the varnish.

Varnishes are polished with pumice-stone and tripoli earth. The pumice-stone must be reduced to an impalpable power, and put upon a piece of serge moistened with water; with this the varnished substance is to be rubbed lightly and equally. The tripoli must also be reduced to a very fine powder, and put upon a clean woollen cloth moistened with olive oil, with which the polishing is to be performed. The varnish is then to be wiped with soft linen, and, when quite dry, cleaned with starch or Spanish white, and rubbed with the palm of the hand or with a linen cloth.

To recover colours or varnish, and to take off the dirt and filth which may adhere to them, a ley is used made of potash and the ashes of lees of wine. Take forty-eight ounces of potash, and sixteen of the above-mentioned ashes, and put them into six quarts of water, and the ley is made: instead of the ashes an equal quantity of potash would probably do as well.—To clean dirty colours, dilute some of this ley with four times its quantity of water, and rub the picture with it.

then wash it with river water; and when dry, give it a coat or two of varnish. In order to take off a varnish, wash it with the above-mentioned ley, then with water, and then lift it off the substance on which it was with any iron instrument.—We shall finish this article with a description of the famous Chinese varnish.

The Chinese varnish is not a composition, but a resin which exudes from a tree called in China *tsi-chu*, “varnish-tree.” This tree grows in several provinces of the southern parts of China. The Chinese take the following method of propagating this tree: in spring they choose a vigorous shoot about a foot in length, which proceeds immediately from the trunk; and coat over the lower part, by which it adheres to the tree, with a kind of yellow earth, at least three inches in thickness. This coat is carefully covered with a mat, to defend it from rain and the injuries of the air. Towards the autumnal equinox they detach a little of the earth, to observe in what condition the small roots are, which begin to spring forth from the shoot. If they find that the filaments which compose them are of a reddish colour, they judge it is time to make an amputation; but they defer it if the roots are white, because this colour shows that they are yet too tender: they then close up the coat again, and wait till the spring following. When the shoot is separated from the trunk of the tree, it is put into the earth; but in whatever season it is planted, whether in spring or autumn, great care must be taken to put plenty of cinders into the hole prepared for it; without this precaution the ants would destroy the yet tender roots, or at least deprive them of all their moisture, and cause them to decay.

The Chinese do not procure varnish from the *tsi-chu* until its trunk is nearly five inches in diameter, which size it seldom attains to before seven or eight years. Varnish extracted from a tree smaller or of less age would not have the same body and splendor. This liquor distils only in the night-time, and during the summer season. To cause the gum to flow, they make several rows of incisions round the trunk, the number of which is proportioned to the vigour of the tree. The first row is seven inches from the earth, and the rest are at the same distance one from the other, and continue to the top of the trunk, and even sometimes on the boughs which are of a sufficient strength and size. The Chinese use a crooked iron for making these incisions, which must run a little obliquely, and be equal in depth to the thickness of the bark; they make them with one hand, and with the other hold a shell, the edges of which they insert into the opening, where it remains without any support. These incisions are made towards evening, and next morning they collect the varnish which has fallen into the shells; the following evening they are again inserted, and this operation is continued until the end of summer. A thousand trees yield almost in one night twenty pounds of varnish.

While the varnish distils, it exhales a malignant vapour, the bad effects of which can only be prevented by preservatives and great precaution. The merchant who employs the workmen is obliged to keep by him a large vase filled with rape-oil, in which a certain quantity of those fleshy filaments have been boiled that are found in hog's lard, and which do not melt. When the workmen are going to fix the shells to the trees, they carry some of this oil along with them, and rub their face and hands with it, which they do with greater care when they collect in the morning the varnish that has distilled during night. After eating, they wash their whole bodies with warm water, in which the bark of the chestnut-tree, fir-wood, crystallised saltpetre, and some other drugs, have been boiled. When they are at work near the trees, they put upon their heads a small cloth bag in which there are two holes, and cover the fore-part of their bodies with a kind of

apron made of doe-skin, which is suspended from their necks with strings, and tied round them with a girdle. They also wear boots, and have coverings on their arms, made of the same kind of skin. The labourer who should attempt to collect varnish without using this precaution, would soon be punished for his rashness, and the most dreadful effects would ensue. The disorder shows itself by tetters, which become of a bright red colour, and spread in a very short time; the body afterwards swells, and the skin bursts and appears covered with an universal leprosy. The unhappy wretch could not long endure the excruciating pains which he feels; did he not find a speedy remedy in those preservatives which are used against the malignant and noxious exhalations of the varnish.

The season of collecting varnish being ended, the merchant puts it into small casks closely stopped. A pound of it newly made costs him about one shilling and eight pence sterling; but he gains *cent. per cent.* upon it, and sometimes more, according to the distance of the place to which he transports it.

Besides the lustre and beauty which that varnish gives to many of the Chinese manufactures, it has also the property of preserving the wood upon which it is laid, especially if no other matter be mixed with it. It prevents it from being hurt either by dampness or worms.

Every workman has a particular art and method of using the varnish. This work requires not only much skill and dexterity, but also great attention, to observe the proper degree of fluidity which the gum ought to have, as it must be neither too thick nor too liquid when it is laid on. Patience above all is necessary in those who wish to succeed. To be properly varnished, a work must be done at leisure; and a whole summer is scarcely sufficient to bring it to perfection. It is therefore rare to see any of those cabinets which are imported to us from Canton so beautiful and durable as those manufactured in Japan, Tong-king, and Nang-king, the capital of the province of Kiang-nan: not that the artists do not employ the same varnish; but as they work for Europeans, who are more easily pleased, they do not take the trouble of giving the pieces which come from their hands all the polish they are capable of receiving.

There are two methods of laying on the varnish; the simplest is, when it is immediately laid on the wood. The work is first polished, and then daubed over with a kind of oil which the Chinese call *tong-yau*. When this oil is dry, it receives two or three coats of varnish; which remain so transparent, that all the shades and veins of the wood may be seen through them. If the artist is desirous of entirely concealing the substance on which they are laid, nothing is necessary but to add a few more coats; these give the work a shining surface, the smoothness of which equals that of the most beautiful ice. When the work is dry, various figures are painted upon it in gold and silver, such as flowers, birds, trees, temples, dragons, &c. A new coat of varnish is then sometimes laid over these figures, which preserves them, and adds much to their splendor. The second method requires more preparation. The Chinese workmen fix to the wood by means of glue a kind of pasteboard, composed of paper, hemp, lime, and other ingredients, well beaten, that the varnish may incorporate with them. Of this they make a ground perfectly smooth and solid, over which the varnish is laid in thin coats, that are left to dry one after the other.

It often happens, that the lustre of varnished tables and other pieces of furniture is insensibly destroyed by tea and warm liquors. “The secret of restoring to varnish its shining black colour (says a Chinese author), is to expose it for one night to a white hoar-frost, or to cover it some time with

"snow." For a method of imitating *Chinese varnish*, see TURNING.

VARNISH, among medalists, signifies the colours antique medals have acquired in the earth. The beauty which nature alone is able to give to medals, and art has never yet attained to counterfeit, enhances the value of them; that is, the colour which certain soils in which they have a long time lain tinges the metals withal: some of which are blue, almost as beautiful as the turquoise; others with an imitable vermilion colour; others with a certain shining polished brown, vastly finer than Brazil figures. The most useful varnish is a beautiful green, which hangs to the finest strokes without effacing them, more accurately than the finest enamel does on metals. No metal but brass is susceptible of this; for the green rust that gathers on silver always spoils it, and it must be got off with vinegar or lemon juice.

Falsifiers of medals have a varnish, which they use on their counterfeits, to give them the appearance of being antique. But this may be discovered by its softness; it being softer than the natural varnish, which is as hard as the metal itself. Some deposit their spurious medals in the earth for a considerable time, by which means they contract a sort of varnish, which may impose upon the less knowing; others use sal ammoniac, and others burnt paper.

VARRO (Marcus Terentius), the most learned of all the Romans, was born 28 years B.C. He was a senator of the first distinction, both for birth and merit; and bore many great offices. He was an intimate friend of Cicero: and this friendship was confirmed and immortalized by a mutual dedication of their learned works to each other. Thus Cicero dedicated his Academic Questions to Varro; and Varro dedicated his treatise on the Latin tongue to Cicero. In the civil wars he was zealously attached to Pompey; but after his defeat soon submitted to Cæsar, who was reconciled to him. Afterwards he applied his whole time to letters, and had the charge of the Greek and Latin libraries at Rome. He was above seventy when Antony proscribed him; however, he found means to escape and save his life, though he could not save some of his works and his library from being plundered by the soldiers. After this storm was over, he pursued his studies as usual; and Pliny relates, that he continued to study and to write when he was eighty-eight years of age. He was eighty when he wrote his three books *De re Rustica*, which are still extant. Five of his books *De lingua Latina*, which he addressed to Cicero, are also extant. There remain too, divers fragments of his works, particularly of his Menippean Satires, which are medleys of prose and verse; and Scaliger has collected some of his epigrams from among the *Catalecta Virgili*. His books *De lingua Latina* and *De re Rustica*, were printed with the notes of Joseph Scaliger, Turnebus, and Victorius, by Henry Stephens, at Paris, 1573, in 8vo. and have been published separately since among the *Auctores de lingua Latina*, and the *Auctores de re Rustica*.

There was another Varro of antiquity, called *Atacinus*, who was born about ten years after the first, at a small town near Narbonne. Though infinitely below the Roman in learning, he was at least as good, if not a better, poet; which perhaps has made Lilius Gyraldus and other critics confound them. He composed many works in verse; some fragments of which were collected, and published with those of other ancient poets, at Lyons in 1603. His chief works were, A poem on the war with the Sequani, a people of Gaul; and the *Astronomics*, that went under the name of *Planciades* the grammarian. But the *Argonautics*, in four books, was what gained him the greatest reputation: and though indeed nothing but a translation of Apollonius Rhodius, yet was so well done as to be commended by Quintilian.

VARRONIA, in botany: a genus of plants belonging to the class of *pentandria*, and to the order of *monogynia*; and arranged in the natural system under the 41st order, *Asperifolia*. The corolla is quinquefid; the fruit a drupa, with a quadrilocular kernel. There are six species; none of which are natives of Britain.

VASE, a term frequently used for ancient vessels dug from under ground, or otherwise found, and preserved in the cabinets of the curious. In architecture, the appellation *vase* is also given to those ornaments placed on corniches, foches, or pedestals, representing the vessels of the ancients, particularly those used in sacrifice, as incense-pots, flower-pots, &c. See *PORTLAND-Vase*.

VASSAL, in our ancient customs, signified a tenant or feudatory; or person who vowed fidelity and homage to a lord, on account of some land, &c. held of him in fee; also a slave or servant, and especially a domestic of a prince.—*Vassalus* is said to be *quasi inferior focius*; as the vassal is inferior to his master, and must serve him; and yet he is in a manner his companion, because each of them is obliged to the other. See *FEDAL System*.

VATICAN, a magnificent palace of the pope, in Rome, which is said to consist of several thousand rooms: but the parts of it most admired are the grand staircase, the pope's apartment, and especially the library, which is one of the richest in the world, both in printed books and manuscripts.

VAUBAN (Sebastien le Prestre, seigneur de), marshal of France, and the greatest engineer that country ever produced, was born in 1633. He displayed his knowledge of fortification in the course of many sieges, and his services were rewarded with the first military honours. He was made governor of Lille in 1668, commissary-general of the fortifications of France in 1678, governor of the maritime parts of Flanders in 1689, and a marshal of France in 1703. He died in 1707, after having brought the arts of attacking and defending fortified places to a degree of perfection unknown before. His writings on these subjects are in the highest esteem.

VAUDOIS, **VALDENSES**, or *Waldenses*, in ecclesiastical history, a name given to a sect of reformers, who made their first appearance about the year 1160. This famous sect, according to Mosheim, arose from Peter, an opulent merchant of Lyons, surnamed *Valdensis*, or *Validisius*, from Vaux or Waldum, a town in the marquisate of Lyons.

Their rules of practice were extremely austere; for they adopted as the model of their moral discipline the sermon of Christ on the mount, which they interpreted and explained in the most rigorous and literal manner, and consequently prohibited and condemned in their society all wars, and suits of law, and all attempts towards the acquisition of wealth, the inflicting of capital punishments, self-defence against unjust violence, and oaths of all kinds.

During the greatest part of the 17th century, those of them who lived in the valleys of Piedmont, and who had embraced the doctrine, discipline, and worship of the church of Geneva, were oppressed and persecuted, in the most barbarous and inhuman manner, by the ministers of Rome. This persecution was carried on with peculiar marks of rage and enormity in the years 1655, 1656, and 1696, and seemed to portend nothing less than the total extinction of that unhappy nation. The most horrid scenes of violence and bloodshed were exhibited in this theatre of papal tyranny; and the few Waldenses that survived were indebted for their existence and support to the intercession made for them by the English and Dutch governments, and also by the Swiss cantons, who solicited the clemency of the Duke of Savoy in their behalf.

VAULT, in architecture, an arched roof, so contrived that

the stones which form it sustain each other. Vaults are on many occasions to be preferred to soffits or flat ceilings, as they give a greater height and elevation, and are besides more firm and durable.

VAYER. See MOTHE.

VAYVODE, or VAIVODE. See WAYVODE.

VEBES (St.), a sea-port town of Portugal, in the province of Estramadura, seated on a bay of the Atlantic Ocean, twenty-one miles south of Lisbon. It stands on an eminence, with a very strong castle built on a rock. The soil about it is fertile in corn, wine, and fruits; and it is furnished with good fish from the sea, and a small lake in the neighbourhood. Here they make great quantities of fine salt, which is carried to the American plantations. E. Long. 8. 54. N. Lat. 38. 22.

UBIQUITARIANS, formed from *ubique*, "every-where," in ecclesiastical history, a sect of Lutherans which rose and spread itself in Germany; and whose distinguishing doctrine was, that the body of Jesus Christ is every-where, or in every place. Brentius, one of the earliest reformers, is said to have first broached this error, in 1560. Luther himself, in his controversy with Zuinglius, had thrown out some unguarded expressions, that seemed to imply a belief of the omnipresence of the body of Christ; but he became sensible afterwards, that this opinion was attended with great difficulties, and particularly that it ought not to be made use of as a proof of Christ's corporeal presence in the eucharist. However, after the death of Luther, this absurd hypothesis was renewed, and dressed up in a specious and plausible form by Brentius, Chemnitzius, and Andraas, who maintained the communication of the properties of Christ's divinity to his human nature. It is indeed obvious, that every Lutheran who believes the doctrine of consubstantiation, whatever he may pretend, must be an Ubiquitarian.

UBIQUITY, OMNIPRESENCE; an attribute of the Deity, whereby he is always intimately present to all things; gives the *esse* to all things; knows, preserves, and does all in all things.

UDDER, in comparative anatomy, that part in brutes wherein the milk is prepared, answering to the mammae or breasts in women. See COMPARATIVE ANATOMY.

VEDAS, the sacred books of the Hindoos, believed to be revealed by God, and called *immortal*. They are considered as the fountain of all knowledge human and divine, and are four in number; of which we have the following account in the first volume of the Asiatic Researches: the *Rigveda* consists of five sections; the *Tajurveda* of eighty-six; the *Sama-veda* of a thousand; and the *At'haraveda* of nine; with eleven hundred *śākhās*, or branches, in various divisions and subdivisions. The *Vedas* in truth are infinite; but have been long reduced to this number and order: the principal part of them is that which explains the duties of man in a methodical arrangement; and in the fourth is a system of divine ordinances. From these are reduced the four *Upavedas*, the first of which was delivered to mankind by BRAHMA, INDRA, DHANWANTARI, and five other deities; and comprises the theory of disorders and medicines, with the practical methods of curing diseases. The second consists of music, invented for the purpose of raising the mind by devotion to the felicity of the divine nature: the third treats of the fabrication and use of arms; and the fourth of *fifty-four* mechanical arts. Of however little value we may esteem the mechanical arts of the Hindoos, and however despicable their theological system may really be, the *Upaveda*, which treats of diseases and the method of curing them, surely deserves to be studied by every European physician practising in India. There are indeed a great number of medical books in the Sanscrit language worthy of attention;

for though the theories of their authors may be groundless and whimsical, they contain the names and description of many Indian plants and minerals, with their uses, discovered by experience, in the cure of diseases.

VEDETE, in war, a sentinel on horseback, with his horse's head towards the place whence any danger is to be feared, and his carbine advanced, with the butt-end against his right thigh. When the enemy has encamped, there are vedettes posted at all the avenues, and on all the rising grounds, to watch for its security.

To VEER and HAUL, to pull a rope tight, by drawing it in and slackening it alternately, till the body to which it is applied acquires an additional motion, like the increased vibrations of a pendulum, so that the rope is strained to a greater tension with more facility and dispatch. This method is particularly used in hauling the bowlines. The wind is said to *veer* and *haul* when it alters its direction, and becomes more or less fair. Thus it is said to veer aft and to haul forward.

VEER, *Ter-Veer*, anciently *Camp-Veer*, a town of Zealand in the United Provinces, standing at the mouth of the East Schelde, about four miles from Middleburgh, and eight from Flushing. Veer, in Dutch, signifies a passage or ferry over an arm of the sea or a river; and as there was once a ferry here over the Schelde to the village of Compen, on the island of North Bevelann, the town thereby got the name of *Veer*, *Camp-Veer*, and *Ter-Veer*. It is well fortified, and formerly enjoyed a good trade, especially to Scotland; the natives enjoying particular privileges here. The harbour is very good, and the arsenal the best furnished in the world. Hence the Veres, anciently earls of Oxford, are said to have derived both their origin and name.

VEERING, or WEARING, the operation by which a ship, in changing her course from one board to the other, turns her stern to windward. Hence it is used in opposition to TACKLING, wherein the head is turned to the wind and the stern to leeward. See SEAMANSHIP.

VEGA (Lopez de), a celebrated Spanish poet. He was the son of Felix de Vega and Franciscan Fernandez, who were both descended from honourable families, and lived in the neighbourhood of Madrid. Our poet was born in that city on the 25th of November, 1562. He was, according to his own expression, a poet from his cradle; and beginning to make verses before he had learned to write, he used to bribe his elder school-fellows with part of his breakfast, to commit to paper the lines he had composed. Having lost his father while he was yet still a child, he engaged in a frolic very natural to a lively boy, and wandered with another lad to various parts of Spain, till, having spent their money, and being conducted before a magistrate at Segovia for offering to sell a few trinkets, they were sent home again to Madrid. Soon after this adventure, our young poet was taken under the protection of Geronimo Manrique, bishop of Avila, and began to distinguish himself by his dramatic compositions, which were received with great applause by the public, though their author had not yet completed his education; for, after this period, he became a member of the university of Alcalá, where he devoted himself for four years to the study of philosophy. He was then engaged as secretary to the Duke of Alva, and wrote his Arcadia in compliment to that patron: who is frequently mentioned in his occasional poems. He quitted that employment on his marriage with Isabel de Urbina, a lady (says his friend and biographer Perez de Montalvan) beautiful without artifice, and virtuous without affectation. His domestic happiness was soon interrupted by a painful incident:—having written some lively verses in ridicule of a person who had taken some injurious freedom with his character, he received a challenge in consequence of his wit; and happening, in the

duel which ensued, to give his adversary a dangerous wound, he was obliged to fly from his family, and shelter himself in Valencia. He resided there a considerable time; but consubstantial affection recalled him to Madrid. His wife died in the year of his return. His affliction on this event led him to relinquish his favourite studies, and embark on board the Armada which was then preparing for the invasion of England. He had a brother who served in that fleet as a lieutenant; and being shot in an engagement with some Dutch vessels, his virtues were celebrated by our afflicted poet, whose heart was peculiarly alive to every generous affection. After the ill success of the Armada, the disconsolate Lopez de Vega returned to Madrid, and became secretary to the Marquis of Malpica, to whom he has addressed a grateful sonnet. From the service of this patron he passed into the household of the Count of Lemos, whom he celebrates as an imitable poet. He was once more induced to quit his attendance on the great, for the more inviting comforts of a married life. His second choice was Juana de Guardio, of noble birth and singular beauty. By this lady he had two children, a son who died in his infancy, and a daughter named *Feliciana*, who survived her father. The death of his little boy is said to have hastened that of his wife, whom he had the misfortune to lose in about seven years after his marriage. Having now experienced the precariousness of all human enjoyments, he devoted himself to a religious life, and fulfilled all the duties of it with the most exemplary piety: still continuing to produce an astonishing variety of poetical compositions. His talents and his virtues procured him many unsolicited honours. Pope Urban VIII. sent him the cross of Malta, with the title of Doctor in Divinity, and appointed him to a place of profit in the Apostolic Chamber; favours for which he expressed his gratitude by dedicating his *Corona Tragica* (a long poem on the fate of Mary Queen of Scots) to that liberal pontiff. In his seventy-third year he felt the approaches of death, and prepared himself for it with the utmost composure and devotion. His last hours were attended by many of his intimate friends, and particularly his chief patron the Duke of Seña, whom he had made his executor; leaving him the care of his daughter *Feliciana*, and of his various manuscripts. The manner in which he took leave of those he loved was most tender and affecting. He said to his disciple and biographer Montalvan, That true fame consisted in being good; and that he would willingly exchange all the applauses he had received to add a single deed of virtue to the actions of his life. Having given his dying benediction to his daughter, and performed the last ceremonies of his religion, he expired on the 25th of August, 1635.

VEGETATION, in physiology, the act whereby plants receive nourishment and growth. The process of nature in the vegetation of plants is very accurately delivered by Malpighi: The egg or seed of the plant being excluded out of the ovary, called *pod* or *bursa*, and requiring further fostering and brooding, is committed to the earth; which having received it into her fertile bosom, not only does the office of incubation by her own warm vapours and exhalation, joined with the heat of the sun, but by degrees supplies what the seed requires for its further growth; as abounding everywhere with canals and sinuses, wherein the dew and rain water, impregnated with fertile salts, glide, like the chyle and blood in the arteries, &c. of animals. This moisture meeting with a new-deposited seed, is percolated, or strained through the pores or pipes of the outer rind or husk, corresponding to the fecundines of the fetuses, on the inside whereof lies one or more, commonly two, thick seminal leaves, answering to the placenta in women, and the cotyledons in brutes.

These seed-leaves consist of a great number of little vesicles,

or bladders, with a tube corresponding to the navel-string in animals. In these vesiculae is received the moisture of the earth, strained through the rind of the seed; which makes a slight fermentation with the proper juice before contained therein. This fermented liquor is conveyed by the umbilical vessel to the trunk of the little plant; and to the germ or bud which is contiguous thereto: upon which a vegetation and increase of the parts succeed.

Such is the procedure in the vegetation of plants: which the illustrious author exemplifies in a grain of wheat, as follows: The first day the grain is sown it grows a little turgid; and the fecundine, or husk, gapes a little in several places; and the body of the plant, being continued by the umbilical vessel to the conglobated leaf (which is called the *pulp* or *flesh* of the seed, and is what constitutes the flower) swells; by which means, not only the germ or sprout (which is to be the future stem) opens, and waxes green, but the roots begin to bunch out; whence the placenta, or seed-leaf, becoming loose, gapes. The second day, the fecundine or husk, being broke through, the stem, or top of the future straw, appears on the outside thereof, and grows upward by degrees; in the mean time, the seed-leaf guarding the roots becomes turgid with its vesiculae, and puts forth a white down. And the leaf being pulled away, you see the roots of the plants bare; the future buds, leaves, and rest of the stalk, lying hid. Between the roots and the ascending stem the trunk of the plant is knit by the navel-knot to the flower-leaf, which is very moist, though it still retains its white colour and its natural taste. The third day, the pulp of the conglobated, or round leaf, becomes turgid with the juice which it received from the earth fermenting with its own.

Thus the plant increasing in bigness, and its bud or stem becoming taller, from whitish turns greenish; the lateral roots also break forth greenish and pyramidal from the gaping sheath, which adheres chiefly to the plant; and the lower root grows longer and hairy, with many fibres shooting out of the same.

Indeed there are hairy fibres hanging all along on all the roots, except on their tips; and these fibres are seen to wind about the saline particles of the soil, little lumps of earth, &c. like ivy; whence they grow curled. Above the lateral roots there now break out two other little ones.

The fourth day, the stem mounting upwards, makes a right angle with the seminal leaf: the last roots put forth more; and the other three growing larger, are clothed with more hairs, which finally embrace the lumps of earth; and where they meet with any vacuity, unite into a kind of network.

From this time forward the root pushes with more regularity downward, and the stalk upward, than before. There is, however, this great difference in their growth, that the stalk and branches find no resistance to their shooting up, while the roots find a great deal to their shooting downward, by means of the solidity of the earth; whence the branches advance much faster and farther in their growth than the roots; and these last often finding the resistance of a tough earth unmountable, turn their course, and shoot almost horizontally.

From a number of experiments made by Mr. Gough, and related by him in the fourth volume of the *Manchester Transactions*, it appears, that seeds will not vegetate without air; and that during their vegetation, they absorb oxygen, part of which they retain, and that carbonic acid is formed with the rest. These facts were ascertained in the following manner: He put several parcels of steeped peas and barley, at different times, into phials, which were left to stand for three or four minutes in spring water, of the heat of 45, 50, to reduce them to a known temperature. They were then

securely corked, and removed into a room, the temperature of which was never less than 53°. After remaining from four to six days in this situation, they were again placed in the same spring water, and opened in an inverted position, care being taken that the barometer stood at the time nearly where it did at first. When a cork was thus drawn, a quantity of water rushed in immediately, more than was sufficient to fill the neck. The air being pulled through lime water, contracted very sensibly, and precipitated the lime. The residuum, freed in this manner from carbonic acid, extinguished a lighted taper like water, and this it did repeatedly. He made one of these experiments with more attention than the rest, from which it appeared, that four ounces one dram forty grains, by measure, of atmospheric air, lost one-sixth of its original bulk, by being confined five days with one ounce of steeped barley. It is plain, from this experiment, that seeds in the act of vegetation take oxygen from the atmosphere, part of which they retain, and reject the rest charged with carbon. The substance of the feed-lobes is hereby changed, an additional quantity of oxygen being introduced into their composition; and a part of their carbon lost. This change, in the proportion of their alimentary principles, generates sugar, as is evident from the process of mauling. But sugar and carbonic acid are more soluble in water than the farinaceous oxyd. They therefore combine with the humidity in the capillary tubes of the feed, and find a ready passage to the germ, the vegetative principle of which they call into action by a stimulus suited to its nature. A nutritious liquor being thus prepared by the decomposition of the feed-lobes, and distributed through the infant plant, its organs begin to exert their specific actions, by decomposing the nourishment conveyed to them, and forming new oxyds from the elementary principles of it, for the increase of the vessels and fibres; and in this manner the first stage of vegetation commences.

Mr. Gough has ascertained, that a germ in the act of vegetation requires to be continually excited by the stimulus of oxygen; but as soon as the feed lobes are exhausted, the young plant is in a state to derive its nutrition from the ground; and then (and not till then) it finds itself in a situation capable of making future advances, unassisted by the stimulus of respirable air.

The infant sprout at first suffers only a suspension of its energy from the absence of pure air; but if this necessary support be withheld too long, it perishes by the putrefactive fermentation.

The lively green which the stems and leaves of plants receive from the action of light, cannot be imparted to them, provided the energy of the vegetative principle in them be suspended: for after permitting a number of peas to produce both extremities of their sprouts in wet sand covered from the light by an earthen pot, Mr. Gough placed five of them, on the 20th of April, in an inverted glass jar, containing azot confined by water; and three in another jar, in which a portion of common air was also enclosed by the same means. On the 30th the upper extremities of the sprouts of the parcel last mentioned were green; but though the experiment was prolonged to the 2d of May, those in the other glass did not exhibit any perceptible alteration in size or colour. Two of them were now placed in a glass filled with atmospheric air, where they were left unobserved to the fifth, at the end of which time the germs had vegetated considerably; the lower parts of them still remained white, but their opposite extremities had changed to their proper green. Hence it may be safely inferred, that greenness cannot be imparted to the sprouts of seeds without the joint action of light and oxygen; in which they are very different from the shoots that frequently

proceed from maturer plants, when secluded from the atmosphere: for, as these grow freely in close glass vessels, placed in a window, and containing water and azot, the parts which are recently produced continue to vegetate, in consequence of their connection with the parent flock, and acquire the colour in question without the assistance of respirable air. See PLANT, TREE, GERMINATION, BOTANY, &c.

VEGETATIVE SOUL, among philosophers, denotes that principle in plants by virtue of which they vegetate, or receive nourishment and grow. See the preceding article.

VEHICLE, in general, denotes any thing that carries or bears another along; but is more particularly used in pharmacy for any liquid serving to dilute fume medicine, in order that it may be administered more commodiously to the patient.

VEII (anc. geog.), a city of Etruria, the long and powerful rival of Rome; distant about 100 stadia, or twelve miles, to the north-west; situated on a high and steep rock. Taken after a siege of ten years by Camillus, six years before the taking of Rome by the Gauls: and thither the Romans, after the burning of their city, had thoughts of removing; but were dissuaded from it by Camillus (Livy). It remained standing after the Punic war; and a colony was there settled, and its territory assigned to the soldiers. But after that it declined gradually, as not to leave a single trace standing. Famous for the slaughter of the 300 Fabii on the Cremera (Ovid). The spot on which it stood lies near Isole, in St. Peter's patrimony (Holfenius).

VEIL, a piece of stuff, serving to cover or hide any thing. In the Romish churches, in time of Lent, they have veils or curtains over the altar, crucifix, images of saints, &c. A veil of crape is wore on the head by nuns, as a badge of their profession: the novices wear white veils, but those who have made the vows black ones. See the article NUN.

VEIN, in anatomy, is a vessel which carries the blood from the several parts of the body to the heart. See ANATOMY.

VEIN, among miners, is that space which is bounded with woughs, and contains ore, spar, canck, clay, chert, croil, brownhen, pitcher-chert, cur, which the philosophers call the *mother of metals*, and sometimes *foil of all colours*. When it bears ore, it is called a *quick vein*; when no ore, a *dead vein*.

VELA, a remarkable cape on the coast of Terra Firma, in South America. W. Long. 71. 25. N. Lat. 12. 30.

VELARIUS, in antiquity, an officer in the court of the Roman emperors, being a kind of usher, whose post was behind the curtain in the prince's apartment, as that of the chancellor's was at the entry of the ballustrade; and that of the ostiarii at the door. The velarii had a superior of the same denomination, who commanded them.

VELEZ-DE-GOMARA, a town of Africa, in the kingdom of Fez, and in the province of Eriff. It is the ancient ACARTH. With a harbour and a handsome castle, where the governor resides. It is seated between two high mountains, on the coast of the Mediterranean Sea. W. Long. 4. o. N. Lat. 35. 10.

VELITES, in the Roman army, a kind of ancient soldiery, who were armed lightly with a javelin, a cask, cuirass, and shield.

VELLEIUS PATERCULUS. See PATERCULUS.

VELLUM, is a kind of parchment, that is finer, evenner, and more white than the common parchment. The word is formed from the French *velin*, of the Latin *vitulinus*, "belonging to a calf."

VELOCITY, in mechanics, swiftness; that affection of motion whereby a moveable is disposed to run over a certain space in a certain time. It is also called *celerity*, and is always

proportional to the space moved. Huyghens, Leibnitz, Bernoulli, Wolfius, and the foreign mathematicians, hold, that the momenta or forces of falling bodies, at the end of their falls, are as the squares of their velocities into the quantity of matter; the English mathematicians, on the contrary, maintain them to be as the velocities themselves into the quantity of matter. See QUANTITY.

VELVET, a rich kind of stuff, all silk, covered on the outside with a close, short, fine, soft flay, the other side being a very strong close tissue. The nap or flay, called also the *velveting*, of this stuff, is formed of part of the threads of the warp, which the workman puts on a long narrow-channelled ruler or needle, which he afterwards cuts, by drawing a sharp steel tool along the channel of the needle to the ends of the warp. The principal and best manufactories of velvet are in France and Italy, particularly in Venice, Milan, Florence, Genoa, and Lucca: there are others in Holland, set up by the French refugees; whereof that at Haerlem is the most considerable: but they all come short of the beauty of those in France, and accordingly are sold for ten or fifteen per cent. less. There are even some brought from China; but they are the worst of all.

VENEERING, VANEERING, or *Finccring*, a kind of marquetry, or inlaying, whereby several thin slices or leaves of fine wood, of different kinds, are applied and fastened on a ground of some common wood. There are two kinds of inlaying: the one, which is the more ordinary, goes no farther than the making of compartments, of different woods; the other requires much more art, and represents flowers, birds, and the like figures. The first kind is what we properly call *vaneering*; the latter we have already described under MARQUETRY. The wood intended for veneering is first sawed out into slices or leaves, about a line thick: in order to faw them, the blocks or planks are placed upright in a kind of vice or sawing press: the description of which may be seen under the article just referred to. These slices are afterwards cut into slips, and fashioned divers ways, according to the design proposed; then the joints being carefully adjusted, and the pieces brought down to their proper thickness, with several planes for the purpose, they are glued down on a ground or block of dry wood, with good strong English glue. The pieces thus joined and glued, the work, if small, is put in a press; if large, it is laid on the bench, covered with a board, and pressed down with poles, or pieces of wood, one end whereof reaches to the ceiling of the room, and the other bears on the boards. When the glue is quite dry, they take it out of the press and finish it; first with little planes, then with divers scrapers, some whereof resemble rasps, which take off dents, &c. left by the planes. When sufficiently scraped, the work is polished with the skin of a sea-dog, wax, and a brush and polisher of slave-grass: which is the last operation.

VENEREAL, something belonging to venery; as the lues venerea, &c. See MEDICINE.

VENERY, is used for the act of copulation, or coition, of the two sexes.

VENESECTION, or PHLEBOTOMY, in surgery. See SURGERY.

VENETIAN BOLE, a fine red earth used in painting, and called in the colour shops *Venetian red*.—It is dug in Carinthia, and sent from Venice to all parts of the world; but the use of it here is very much superfluous by a bright colcothar of vitriol.

VENICE, a city of Italy, and capital of a republic. This city makes a very grand appearance at a distance, as seeming, from its being built on a multitude of islands, to float on the sea; or rather, with its stately buildings and steeples, as it were, rising out of it. The number of these islands is uncer-

tain; some reckoning sixty; others seventy-two; and others again making them amount to one hundred and thirty-eight; but the latter must comprehend, in their calculation, all those places which have gradually been raised in the Laguna; and by diving piles in the ground, fitted for building on. The Laguna, or marshy lake, which lies between the city and the continent, and five Italian miles in breadth, is too shallow for large ships; but, by the attention of the republic, is prevented from becoming part of the continent, and from being ever frozen, so as to bear an army. Towards the sea, the access to the city is also difficult; but the safe and navigable parts are indicated by piles; which, at the approach of an enemy's fleet, can be cut away. Besides, as a considerable number of galleys and men-of-war may be fitted out very expeditiously for sea from the docks, which contain vast quantities of naval stores, the city is strong without fortifications. The fish, which are caught even at the very doors of the houses, may be reputed a good preservative against famine. The several canals, leading to the city among the sand banks and marshy shallows, are, though at a vast expence, kept clear of the mud and slime the flood brings with it. The return of the sea is something later here than every sixth hour, and it generally rises between four and five feet, keeping the water between the islands of the city in continual motion. Some of these canals being very narrow, the mud is not so effectually carried off as to prevent ill smells in hot water. The great canal, which winds through the city, and divides it into two parts, is thirteen hundred paces long. The best way of going up and down the city is in gondolas, which, indeed, strike the eye with a mournful appearance, being all lined either with black cloth or serge, or painted black. Over the several canals are laid four hundred and fifty (some say upwards of five hundred) bridges, great and small, and the better part of them stone: the highest and longest is the Rialto, which, in the middle of the city, crosses the great canal at its narrowest part, where it is but forty paces broad. This bridge consists only of one single arch, whose foundation takes up ninety feet, resting on twelve thousand elm-piles, and every-where incrustated with marble. It is said to have cost the republic two hundred and fifty thousand ducats. In the upper part, it is thirty-seven common paces broad, with two rows of shops, forming as it were three freets, of which that in the middle is the widest. At each end is an ascent of fifty-six steps. The city may, indeed, every-where be traversed on foot; but the freets are very narrow, and the free-stone pavement very slippery in wet weather. The many small bridges, with their steps, are also not a little troublesome. The whole city is said to be six Italian miles in circumference, and to make the tour of it in a gondola takes up somewhat more than two hours. Venice contains seventy parish churches, besides others, fifty-four convents of monks, twenty-six nunneries, seventeen rich hospitals, eighteen oratories, forty religious fraternities, with their chapels: among which are six called Scuole Grandi, fifty-three squares, one hundred and sixty-five marble, and twenty-three half statues. The buildings, indeed, are all of stone; but the greater part make so mean a figure, that this city, in point of beauty and elegance, can in no-wise stand the test with many others. St. Mark's square, it is true, is very fine, and so are the several stately marble palaces that border upon the great canal, though most of them are of Gothic architecture. In the churches and convents, the most admirable part are the paintings; and indeed Venice, highly renowned for fine paintings, far surpasses, in this very respect, even Rome itself. Venice, from the fertility of its neighbourhood, and the facility of carriage, enjoys a constant plenty of all kinds of provisions. The spring-water being very indifferent in most places, almost every house has a cistern, into which the

rain water is conveyed from the roof, and clarified by being filtrated through sand. Water is also brought from the river Brenta, and preserved in cisterns. Among the diversions of Venice, the carnival is accounted the chief. It usually begins the second day of Christmas, and continues till Shrove-Tuesday; consisting chiefly of mascherades and ridottos. The Venetians are passionately fond of mascherades; during the carnival, St. Mark's place is the general rendezvous. The other diversions are plays and operas; mascherades are also permitted at other times, particularly about Ascension-day, at which time there is a fair at St. Mark's place, which begins the Sunday before that festival, and lasts till Whitfuntide. Among the most rational and agreeable diversions of this city, are the concerts. The trade in cloth, especially scarlet, silk goods, and looking-glasses, is still very considerable. Here also gold and silver stuffs are manufactured; which, though not so beautiful as those of France, have a very good sale in the Levant. The Brocatellas (a kind of stuff like brocade), made of coarse silk, are much used for carpets. The invention of public banks is owing to the Venetians; those erected in the several states of Europe being modelled after theirs. The bank of Venice belongs to the state, and pays no interest for any funds lodged in it. Venice is divided into six parts, called *Schierie, Sestieri*. S. Marco contains the piazza di S. Marco, with the adjacent buildings. This square, the pride of the city, forms a right angle, the shortest side of which, two hundred and forty paces long, and seventy-five broad, reaches along the ducale palace. The ducale palace, towards the water-side and St. Mark's place, is entirely Gothic; but on the side of the small canal, and in the court, of modern architecture, and mostly of marble. It not only serves for the residence of the Doge, but also for the meeting of the council. The finest ornaments of the council-chamber and other apartments, are the paintings of famous ancient masters. In the palace, is a little arsenal, where a considerable number of loaded muskets are always kept in readiness, that, in case of an insurrection of the people, the Doge and the nobility may have recourse to this defence; and it is for this purpose, that the council-chamber has a communication through a door with this armoury; every three months the pieces are loaded afresh. In one side of the palace, towards the canal, Rio di palazzo, dark prisons, strongly secured with iron grates, present themselves to view. The lower gallery, or arched walk, on the side of St. Mark's square, together with the opposite hall, is called Broglio. Here, at a certain hour of the day, the nobles take their walks; and, at this time, no Venetian, of an inferior rank, must be seen on it, though a foreigner, as supposed unacquainted with the custom, is not desired to quit the place. That part of St. Mark's square, between these two buildings and the piazza, receives an additional ornament from two pillars of oriental granate, on one of which stands St. Mark's lion in brass, and on the other, a marble statue of St. Theodore. Between these is the place for the public execution of malefactors, through which no nobleman is ever seen to pass. A galley completely rigged and armed, lies close to the Broglio, for the defence of the ducale palace on any sudden emergency. Contiguous to the north part of the Doge's palace, is St. Mark's church, which is also styled the Doge's chapel. Its materials justly entitle it to be called magnificent, being, both on the out and in-side, covered with fine marble: but the architecture is entirely Gothic. The best part of it are the Mosaic paintings, and the four brass horses, formerly gilt, standing over the great door, and said to have been brought here from Constantinople. They are universally allowed to be master-pieces, which very few of the kind can equal. The church treasury is, for the greater part, old fashioned, but very rich in gold and jewels. In it is kept a

very famous manuscript of the gospel of St. Mark, pretended to be autographical; but the dampness of the place where it lies, has spoiled it to such a degree, that no part of it is any longer legible, and it is not so much as certain whether it be written in Latin or Greek. In the Sestiera di Castello, is the so much celebrated arsenal or dock, two Italian miles and a half in circuit, walled and moated in, with twelve towers along its walls; and within the enclosure a great variety of buildings, in which every thing requisite for a land or sea armament is kept in readiness. These buildings consist of an armoury, store-houses for iron-work, oars, cordage, bullets, tar, canvas, guns, &c. a rope-house, a saltpetre-house, smith's forges, a foundry, batons and slips for ship-building, &c. Within it lie the men-of-war, frigates, galleys, and other vessels, with the Bucintauri, which is also laid up here. In the Sestiera di Canale Regio is the theatre; and in this quarter the Jews live, to the amount of fifteen hundred. They must wear a scrap of red cloth in their hats, by way of distinction from Christians. Sestiera di S. Paolo contains the exchange, the bank, &c. On the invasion of Italy, in the fifth century, by the Huns, under their king Attila, and the general desolation that every-where appeared, great numbers of the people, who lived near the Adriatic, took shelter in those islands where now stands the famous city of Venice; and which islands, about the year 421, particularly Rialto, had, in some measure, been built upon by the Paduans, for the advantage of commerce. Here having settled their small places or states, they were at first governed by consuls; afterwards by tribunes, and formed a kind of republic, the council of which was represented by the persons of these magistrates. These islands became still better inhabited on the succeeding incursions of the Goths and Longobardi into Italy; multitudes from Rome and other large cities repairing thither, so that this state became soon able to make head against these bold invaders. At length the chiefs of the islands and the Longobardi came to an agreement, whereby the former were to remain unmolested. This was the commencement of the city and state of Venice. About the beginning of the eighth or the end of the seventh century, the former government of these islands was abolished, and an unlimited power conferred on Paulucio Anafesto, with the title of duke. Under this sovereignty the state greatly increased, till the people, justly becoming weary of the ills of domestic despotism, chose, in the year 1171, another duke, but curtailed his power, by assigning him a council of two hundred and forty persons, composed of commons as well as nobles. Duke Ziani sided with Pope Alexander III. against the Emperor Frederick, and obtained over him such a signal victory at sea, that the pope presented him with a ring, which he was to drop into the Adriatic, as a sign of his marriage with, and perpetual sovereignty over it. The Venetians, who had already extended their dominion into Istria, Dalmatia, Syria, Lombardy, and other places, made a very considerable acquisition, in the beginning of the thirteenth century, by possessing themselves of the principal islands in the Archipelago and Mediterranean, particularly that of Candia. From this time they alone carried on, at an immense profit, the trade for East-India goods, which they imported from Alexandria in Egypt, to which place they were brought across the Red Sea, and by the way of Suez. Under Duke Marino Morosini, was introduced the present form of electing the Doge; and it was at this juncture that jealousy and envy fomented the war with Genoa, which, after continuing 130 years, was at last put an end to by a treaty, in 1381. During this war, Duke Peter Gradenigo, in the year 1296, ordained, that the nobility alone should be capable of sitting in the grand council. Thus the government became aristocratical. In the fourteenth century, the Venetians extended their possessions in

Lombardy; and, in 1473, the last king of Cyprus appointed the state of Venice his heir. Towards the end of the fifteenth century, the Venetian commerce, and, consequently, power, began to decline, when the Portuguese discovered a route by sea to the East Indies, which opened the trade to all nations. In the sixteenth century, the pope, the emperor, France and Spain, joining in a league against them, they were dispossessed of all their towns and places in the kingdom of Naples, the ecclesiastical state, and the Milanese. They received another severe blow from the Turks, who drove them out of the kingdom of Cyprus. In the seventeenth century, a sharp contest arose between the state, the clergy, and the pope, in which, however, they had the advantage. They were also long engaged in troublesome wars with the Turks, losing Candia, and gaining part of Dalmatia and all Morea; but even the greater part of these have been lost in the wars of the last century. Thus has the republic of Venice continued now upwards of 1300 years, amidst many foreign wars, and intestine commotions. Its grandeur was chiefly owing to trade and liberty; and since the decline of the former, its strength, of consequence, must have suffered a considerable diminution. The power is lodged in the hands of the nobility, who are said to be near 2000, including those whom public employments in the provinces oblige to reside out of Venice. On the birth of a nobleman's son, his name is entered in the golden book, otherwise he forfeits his nobility. Every noble is, indeed, a member of the senate; and, on this account, it is a received maxim, that they all are equal in dignity. But the difference, notwithstanding, between the interest and authority of families, is very considerable. To the first class belong the ancient houses, whose ancestors chose the first duke, and who, from thence, are called *Le Case Elettorali*. These are the Contarini, Morosini, Badovari, Tiepoli, Michieli, Sanudi, Gradenighi, Memmi, Faleri, Dandali, Polani, and Barozzi; and on them, preferable to others, are conferred the higher offices; the Giustiniani, Cornari, Bragadini, and Bembi, pretend to an equality with the foregoing, being very little inferior to them in point of antiquity. Next follow eight houses almost as ancient; among which the most distinguished are Quirini, Delfini, Soranzo, Zorzi, and Marcetti. The second class has its origin from the Serrar del Consiglio; Duke Grandinigo having passed a law that the council should perpetually consist of the families which then composed it, and some others which he ennobled. This produced a second class of nobility, who, accordingly, were then registered in the golden book. It consists of upwards of eighty families, and some of great wealth and reputation, as the Mocenighi, Capoli, Foscarini, Foscare, Grimani, Gritti, Gossioni, Loredani, Donati, Malipieri, Nani, Pisani, Pefari, Priuli, &c. with these are also included those families that were raised to nobility after the Genoese war, on account of their large contributions towards carrying it on with vigour. Many of this degree are now extinct, and the principal among the surviving are, the Trevisani, Vandramini, Renieri, Giusti, and Pasqualighi. The third and last class is composed of the Cittadini, or citizens, whose nobility was purchased for 100,000 Venetian ducats, a resource of the republic for raising money in necessitous times. Crowned heads, German and other princes, have not thought it any degradation to be made nobles of Venice. The habit of the nobility, whilst at Venice, is a black furred gown reaching to their heels, with a belt about three inches broad, and plated with silver. Instead of hats they have long caps. The head of the republic is the doge, or duke, who, on the demise of the former, is chosen in the following manner: all the nobili above thirty years of age meet in the palace of St. Mark, where an equal number of balls to those present are put into an urn. Thirty of these are gilded, and the others silvered over. Every noble, in his turn, takes out a ball; and they who have drawn

the thirty gilt balls, retire into a chamber, to continue the election. But that there may be but one person of a family among the electors, the relations of him who draws a golden ball immediately withdraw from the council; and the same number of white balls are taken out of the urn. The thirty electors again draw from another urn, in which are twenty-one silvered, and nine gilded balls: they who draw the gilded, choose forty other electors of quite different families, though they may nominate themselves; and every one of the four first has a right of nominating five; but the five others can name only four each. These electors are again, by lots, reduced to twelve, who name twenty-five: the first nominating three, and each of the other, two. These twenty-five draw lots a second time to be reduced to nine; and of these nine each chooses five others, and, from the total forty-five, eleven are separated again by lot, who choose forty-one others; the eight first nominating four, and the three last only three. These forty-one are, according to the form in all preceding elections, confirmed by the grand council; and, being shut up in a chamber of the ducal palace, there remain till they have chosen a new doge. To the due and legal election of a doge, it is required that out of the forty-one he should have twenty-five votes. His election is followed by a kind of coronation; the ducal cap, the forepart of which projects, as a mark of the unlimited power of the republic, being placed with great ceremony on his head. This is performed at his public entrance into St. Mark's church, where he is received, by the illustrious Signoria, on the great steps, called *Lascala de Giganti*, and afterwards conducted to the upper step, where the cap is placed on his head. The doge has been very justly defined to be, in habit and state, a king; in authority a counsellor; in the city, a prisoner; and out of it, a private person. He is not so much as to stir from the city without the council's permission. At present his privileges consist in the following principal particulars: That the coin be stamped with his name, but not his image. That all the credentials of the republic's ministers to foreign courts be made out in his name, though without either his signature or seal, and his family is not to be subject to any sumptuary laws. His yearly income is 12,000 Venetian ducats. Of this sum he must spend one half on the four grand entertainments, which he is obliged to give every year; and, to live up to his dignity, he must also spend considerably of his own fortune. Among the restrictions, are the following: during his life, none of his children or brethren can hold any of the great honorary offices, nor be sent on embassies. He is not so much as to ask the pope for any benefice, nor to accept of any when offered, the purple only excepted. He is not to marry the sister or relation of a prince, without the consent of the great council. He cannot resign, but may be deposed. He is not to receive any present whatever from a foreign prince. In state affairs, he cannot transact the least matter without the council. During his life, he is subject to the council of ten, who keep a watchful eye over his whole administration, and, at any time, can come and search his most private apartments. In general, his authority, essentially considered, is no greater than that of a private person, unless he be of such abilities as to influence the whole council; then, indeed, his authority bears the sway; but it seldom happens that such persons are chosen. On his death, a formal enquiry is made, whether he has abused his power; whether, from a care of his own concerns, he neglected those of the public; whether he lived agreeably to his dignity, &c. If found guilty of any thing alleged to his charge, his heirs are fined in proportion to the nature of the crime. However, the ducal dignity is solicited, and the person duly elected is not to decline it. On ascension-day, the doge, or, in case of illness, the vice-doge, who is always one of the six consiglieri, performs the annual frivolous ceremony of marrying the Adriatic Sea, in a barge pompously gilt and

carved, called the Bucentauro, on board of which are also the Signoria and all foreign ministers. The patriarch having poured into it a quantity of holy water, which is said to prevent or allay any storms, the doge, through an aperture near his seat, drops into the sea a golden ring, of a few dollars' value, saying these words, *Deponamus te, mare, in signum veri perpetue dominii*: That is, We epouse thee, O sea, in token of a real and perpetual dominion over thee. In the grand council, all nobles of the age of twenty-five years, may take their place, though some younger find means to obtain admittance. It usually meets on Sundays and holidays, in the large hall of the ducal palace, and, when all the nobility are present, consists of near 2000 persons. The senate, or *pregadi*, are a committee of the grand council, by whom they are also chosen. This senate has the management of the most secret and important state affairs, as the making alliances and peace, declaring war, sending ambassadors, coining money, filling up offices, imposing taxes, &c. Next is the collegium, in which all public instruments directed to the state and doge, are read, audiences given to foreign ministers, and other matters of importance transacted. It consists of the doge, six counsellors, &c. the three *capidella* *quarantia criminale* (or presidents of the *quarantia*, or court of forty), the six *savi-grandi* (or the chief-officers of state), the five *savi di terra firma* (or the military officers), the five *savi degli ordini* (who, though conductors of sea affairs, are here little more than mute spectators). Of these three great assemblies, the presidentship is lodged in the signoria, or *il configlietto*, composed of the doge and his six counsellors, who are, as it were, the wardens of the people, one being chosen from every *fetteria*, or sixth part of the city. The procurators of St. Mark have not only the inspection of the church of St. Mark, its library, and the records of the republic, but likewise manage all affairs relating to the poor, together with wills, guardianships, redemption of christian slaves, and bringing over-rigid creditors to a reasonable composition. Their number never exceeds nine: their office is of great authority and during life, and it is out of them that the doge is generally chosen. Titular, or extraordinary procurators of St. Mark, are more numerous; the republic gladly selling these titles in a public scarcity of money. *Il configlio di dieci* is a high penal court, which consists of ten counsellors, the doge, who is president, and his six *configliieri*. With regard to the state of religion and the clergy in the countries of the republic, the established religion is the Roman-catholic; but Greeks, Armenians, and Jews, are allowed the public exercise of their worship, and protestants, observing privacy, remain unmolested. At the head of the church-government is the patriarch of Venice, the chief ecclesiastic in the republic. He is always a noble Venetian, and chosen by the senate; and though confirmed by the pope, must, in all other respects, be independent of the papal chair. The territories of the republic are under governors chosen out of the nobility, who are changed at the expiration of a certain term of years. The commander in chief of an entire province, is called *proveditore generale*, or governor. In a large town is a *podesta* and *castellano*; and the military affairs are managed by a *capitano*. Appeals from the inferior courts in the town are carried to the *quarantia civile* at Venice, or civil court of forty persons. The annual revenue of the republic is computed at 8,200,000 ducats, and is under the direction of three *governatori dell'Entrate*. In war-time, both the nobles and the other subjects, even the doge, contribute proportionably to their incomes towards defraying the public expenses. The states of Italy subject to the Venetians, are the Dogado, the Paduan, the Polceine di Rovigo, the Veronese, the Vicentin, the Bresian, the Bergamasco, the Cremasco, the Trevigiano, the Feltrin, the Bellunese, the Cadorian; great part of Friuli and Istria. To these may be added a part of Dalmatia, the islands of Corfu, Zante, Cephalonia, Paxu, Anti-

paxu, and some others. The number of inhabitants in the city of Venice is estimated at 160,000, and, of the whole state, at 2,500,000: Venice is situated 216 miles N. Rome. Long. 30. E. Ferro. Lat. 45. 28. N.

VENIRE FACIAS, in law, is a judicial writ lying where two parties plead and come to issue, directed to the sheriff, to cause twelve men of the same neighbourhood to meet and try the fame, and to say the truth upon the issue taken.

VENTER, signifies the belly; but it is also used for the children by a woman of one marriage: there is in law a first and second venter, &c. where a man hath children by several wives; and how they shall take in descents of lands.

VENTER Inpiciendo, is a writ to search a woman that faith she is with child, and thereby withholdeth lands from the next heir: the trial whereof is by a jury of women.

VENTILATOR, a machine by which the noxious air of any close place, as an hospital, gaol, ship, chamber, &c. may be discharged and changed for fresh.

The noxious qualities of bad air have been long known; and no one has taken greater pains to set the mischief arising from foul air in a just light than Dr. Hales; who has also proposed an easy and effectual remedy by the use of his ventilators; his account of which was read to the Royal Society in May 1741. In the November following, M. Triewald, military architect to the king of Sweden, informed Dr. Mortimer, secretary to the Royal Society, that he had in the preceding spring invented a machine for the use of his majesty's men-of-war, in order to draw out the bad air from under their decks, the least of which exhausted 36,172 cubic feet of air in an hour, or at the rate of 21,732 tons in twenty-four hours. In 1742 he sent one of them, formed for a 60-gun ship, to France; which was approved of by the Royal Academy of Sciences at Paris; and the king of France ordered all the men-of-war to be furnished with the like ventilators.

The ventilators invented by Dr. Hales consist of a square box ABCD (Pl. 3. fig. 1.) of any size; in the middle of one side of this box a broad partition or midriff is fixed by hinges X, and it moves up and down from A to C, by means of an iron rod ZR, fixed at a proper distance from the other end of the midriff, and passing through a small hole in the cover of the box up to R. Two boxes of this kind may be employed at once, and the two iron rods may be fixed to a lever FG (fig. 2.) moving on a fixed centre O; so that by the alternate raising and pressing down of the lever FG, the midridfs are also alternately raised and depressed, whereby these double bellows are at the same time both drawing in air, and pouring it out, through apertures with valves made on the same side with, and placed both above and below, the hinges of the midridfs. In order to render the midridfs light, they are made of four bars lengthwise, and as many across them breadthwise, the vacant spaces being filled up with thin panels of fir-board; and that they may move to and fro with the greater ease, and without touching the sides of the boxes, there is an iron regulator fixed upright to the middle of the end of the box AC (fig. 1.) from N to L, with a notch cut into the middle of the end of the midriff at Z; so that the midridfs, in rising and falling, suffer no other friction than what is made between the regulator and the notch. Moreover, as the midriff ZX moves with its edges only one-twentieth of an inch from the sides of the box ABCDEF, very little air will escape by the edges; and, therefore, there will be no need of leathern sides as in the common bellows. The end of the box at AC is made a little circular, that it may be better adapted between A and C to the rising and falling midriff; and at the other end X of the midriff a slip of leather may be nailed over the joints if needful. The eight large valves through which the air is to pass, are placed at the hinge-end of the boxes BK (fig. 2.) as at 1, 2, 3, &c. The valve v opens inward to admit the air to enter, when the midriff is depressed at the other end by means of,

Fig. 2.

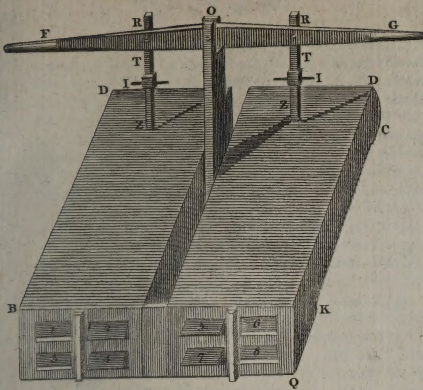


Fig. 1.

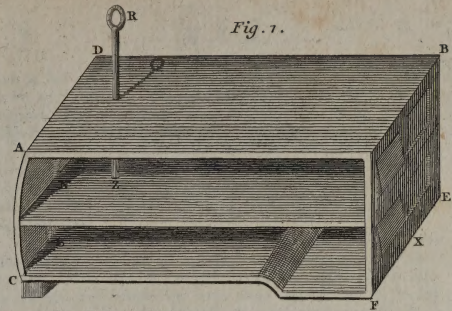


Fig. 3.

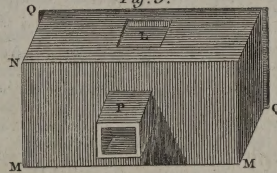


Fig. 1.

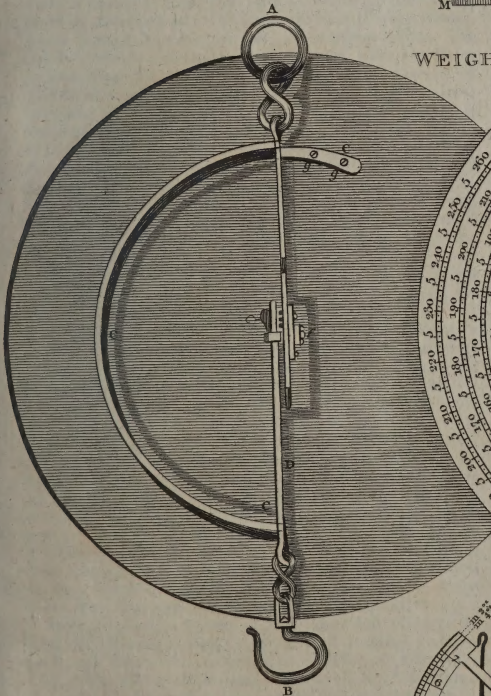
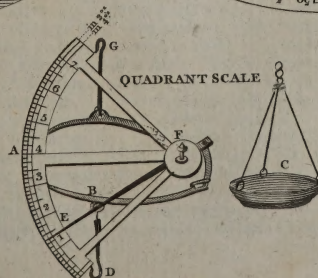
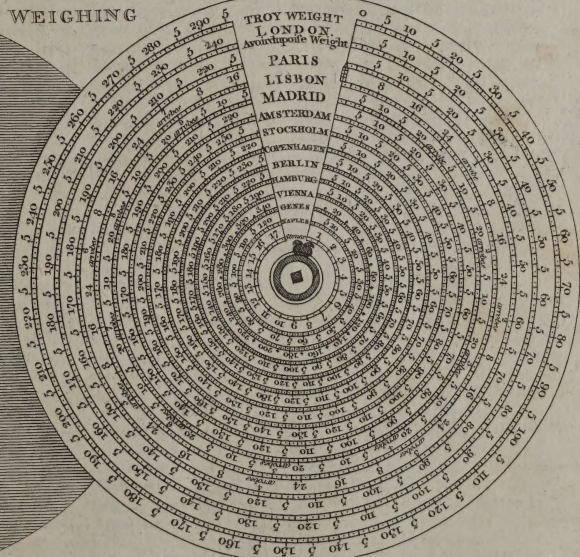


Fig. 2.

WEIGHING



The lever FG. And at the same time the valve 3 in the lower ventilator is shut by the compressed air which passes out at the valve 4. But when that midriff is raised, the valve 1 shuts, and the air passes out at the valve 2. And it is the same with the valves 5, 6, &c. of the other box; so that the midriffs are alternately rising and falling, and two of the ventilators drawing in air, and two blowing it out; the air entering at the valves 1, 3, 6, 8, and passing out at the valves 2, 4, 5, 7. Before these last valves there is fixed to the ventilators a box QQNM (fig. 3) as a common receptacle for all the air which comes out of these valves; which air passes off by the trunk P, through the wall of a building. For a farther account of this machine we refer to the author himself, who gives a full detail of it and of its manner of working. See Description of Ventilators by Stephen Hales, D.D. Lond. 1743, 8vo.

The ventilators in large ships, since the order for ventilating the fleet issued by the lords of the admiralty in 1756, are fixed in the gunner's fore-store-room, and generally a-head of the sail-room. The foul air is carried up through the decks and fore-castle near the fore-mast, sometimes above it, and sometimes abaft it, but more frequently on its starboard side; the lever, by which the ventilators are worked, is under the fore-castle in two-deck ships, and between the upper and middle decks in three-deckers; sometimes the lever is hung athwart ships; in some ships afore and aft, and in others oblique. The iron rod, which communicates the motion from the lever, passes through the partners of the fore-mast, and is connected with another lever, suspended at or near the middle; in some ships over the ventilators, in others under them, when it is found necessary to fix them up to the deck. The best method to save room is to place the ventilators over one another with their circular ends together; the air-trunk should be so high above deck, that the men on deck may not be incommoded by the foul air which blows out of it; and therefore the trunk comes through the upper deck, near and behind the fore-mast. For the method of freeing mines, ships, prisons, &c. from noxious air by means of fire-pipes, see PNEUMATICS.

VENTRICLE, properly denotes any little cavity; but is more particularly used by physicians and anatomists for the stomach and certain cavities of the heart and brain.

VENTRILOQUISM, an art by which certain persons can so modify their voice, as to make it appear to the audience to proceed from any distance, and in any direction. Some faint traces of this art are to be found in the writings of the ancients; and it is the opinion of M. de la Chapelle, who in the year 1772 published an ingenious work on the subject, that the responses of many of the oracles were delivered by persons thus qualified, to serve the purposes of priest-craft and delusion. As the ancient ventriloquists, when exercising their art, seemed generally to speak from their own bellies, the name by which they were designed was abundantly significant: but it is with no great propriety that modern performers are called *ventriloquists*, and their art *ventriloquism*, since they appear more frequently to speak from the pockets of their neighbours, or from the roof or distant corners of the room, than from their own mouths or their own bellies.

From Brodeau, a learned critic of the 16th century, we have the following account of the feats of a capital ventriloquist and cheat, who was valet de chambre to Francis the First. The fellow, whose name was *Louis Brabant*, had fallen desperately in love with a young, handsome, and rich heiress; but was rejected by the parents as an unsuitable match for their daughter, on account of the lowliness of his circumstances. The young lady's father dying, he made a visit to the widow, who was totally ignorant of his singular talent. Suddenly, on his first appearance, in open day, in her own house, and in the presence of several persons who were with her, she heard herself accosted, in a voice perfectly resembling

that of her dead husband, and which seemed to proceed from above, exclaiming, "Give my daughter in marriage to Louis Brabant: He is a man of great fortune, and of an excellent character. I now endure the inexpressible torments of purgatory, for having refused her to him. If you obey this admonition, I shall soon be delivered from this place of torment. You will at the same time provide a worthy husband for your daughter, and procure everlasting repose to the soul of your poor husband."

The widow could not for a moment resist this dread summons, which had not the most distant appearance of proceeding from Louis Brabant; whose countenance exhibited no visible change, and whose lips were close and motionless, during the delivery of it. Accordingly, she consented immediately to receive him for her son-in-law. Louis's finances, however, were in a very low situation; and the formalities attending the marriage contract rendered it necessary for him to exhibit some show of riches, and not to give the ghost the lie direct. He accordingly went to work upon a fresh subject, one Cornu, an old and rich banker at Lyons; who had accumulated immense wealth by usury and extortion, and was known to be haunted by remorse of conscience on account of the manner in which he had acquired it.

Having contracted an intimate acquaintance with this man, he, one day while they were sitting together in the usurer's little back parlour, artfully turned the conversation on religious subjects, on demons and spectres, the pains of purgatory, and the torments of hell. During an interval of silence between them, a voice was heard, which to the astonished banker seemed to be that of his deceased father, complaining, as in the former case, of his dreadful situation in purgatory, and calling upon him to deliver him instantly from thence, by putting into the hands of Louis Brabant, then with him, a large sum for the redemption of Christians then in slavery with the Turks; threatening him at the same time with eternal damnation if he did not take this method to expiate likewise his own sins. The reader will naturally suppose that Louis Brabant affected a due degree of astonishment on the occasion; and further promoted the deception, by acknowledging his having devoted himself to the prosecution of the charitable design imputed to him by the ghost. An old usurer is naturally suspicious. Accordingly the wary banker made a second appointment with the ghost's delegate for the next day; and, to render any design of imposing upon him utterly abortive, took him into the open fields, where not a house, or a tree, or even a bush, or a pit, were in sight, capable of screening any supposed confederate. This extraordinary caution excited the ventriloquist to exert all the powers of his art. Wherever the banker conducted him, at every step his ears were saluted on all sides with the complaints and groans not only of his father, but of all his deceased relations, imploring him for the love of God, and in the name of every saint in the calendar, to have mercy on his own soul and theirs, by effectually seconding with his purse the intentions of his worthy companion. Cornu could no longer resist the voice of Heaven, and accordingly carried his guest home with him, and paid him down 10,000 crowns; with which the honest ventriloquist returned to Paris, and married his mistress.—The catastrophe was fatal. The secret was afterwards blown, and reached the usurer's ears, who was so much affected by the loss of his money, and the mortifying ralleries of his neighbours, that he took to his bed and died.

This trick of Louis Brabant is even exceeded by an innocent piece of wagery played off not forty years ago by another French ventriloquist on a whole community. We have the story from M. de la Chapelle, who informs us, that M. St. Gill, the ventriloquist, and his intimate friend, returning home from a place whither his business had carried him, sought for

shelter from an approaching thunder-storm in a neighbouring convent. Finding the whole community in mourning, he enquired the cause, and was told that one of their body had died lately, who was the ornament and delight of the whole society. To pass away the time, he walked into the church, attended by some of the religious, who showed him the tomb of their deceased brother, and spoke feelingly of the scanty honours they had bestowed on his memory. Suddenly a voice was heard, apparently proceeding from the roof of the quire, lamenting the situation of the defunct in purgatory, and reproaching the brotherhood with their lukewarmness and want of zeal on his account. The friars, as soon as their astonishment gave them power to speak, consulted together, and agreed to acquaint the rest of the community with this singular event, so interesting to the whole society. M. St. Gill, who wished to carry on the joke still farther, dissuaded them from taking this step; telling them that they would be treated by their absent brethren as a set of fools and visionaries. He recommended to them, however, the immediately calling of the whole community into the church, where the ghost of their departed brother might probably reiterate his complaints. Accordingly all the friars, novices, lay-brothers, and even the domestics of the convent, were immediately summoned and collected together. In a short time the voice from the roof renewed its lamentation and reproaches, and the whole convent fell on their faces, and vowed a solemn reparation. As a first step, they chanted a *De profundis* in a full choir; during the intervals of which the ghost occasionally expressed the comfort he received from their pious exercises and ejaculations on his behalf. When all was over, the prior entered into a serious conversation with M. St. Gill; and on the strength of what had just passed, sagaciously inveighed against the absurd incredulity of our modern sceptics and pretended philosophers on the article of ghosts or apparitions. M. St. Gill thought it now high time to disabuse the good fathers. This purpose, however, he found it extremely difficult to effect, till he had prevailed upon them to return with him into the church, and there be witnesses of the manner in which he had conducted this ludicrous deception.

A ventriloquist, who performed feats somewhat similar to these, made his appearance in Edinburgh; and many of the other towns of Scotland, a few months before the writing of this article. He imitated successfully the voice of a squeaking child, and made it appear to proceed from whatever place he chose; from the pockets of the company, from a wooden doll, with which he held many spirited conversations; from beneath a hat or a wine-glass, and out of any person's foot or hand. When the voice seemed to come from beneath a glass or hat, it was dull and on a low key, as sounds confined always are; and what evinced his dexterity was, that when the glass was raised from the table during the time of his speaking, the words or syllables uttered afterwards were on a higher key, in consequence, one would have thought, of the air being readmitted to the speaker. This part of the experiment failed, however, when the management of the glass was at a distance committed to any of the company; but as the room was not well illuminated, they are inclined to attribute this failure to the ventriloquist's not being able to perceive at what precise instant of time the glass was removed from the table. The same artist imitated the tones of a scolding old woman, disturbed at unreasonable hours by a person demanding admission into her house; but this exhibition did not to us appear masterly. The tones of the old woman and the child were not accurately discriminated: the child was a young scold, and the scold spoke like an angry child. We have heard that, when in Edinburgh, the same practitioner astonished a number of persons in the Fishmarket, by making a fish appear to speak, and give the lie to its vender, who affirmed that it was fresh, and caught in the

morning; and whether this fact was really performed or not, we cannot doubt, from what we saw and heard him do, but that he was fully equal to its performance.

Our ventriloquist was an illiterate man; and though sufficiently communicative, could not make intelligible to us the manner in which he produced these acoustic deceptions. Indeed if he had, we should hardly have described the practical rules of the art to the public; for though it is proper to make the existence of such an art universally known, it will readily occur to every reflecting mind, that the attainment of it should not be rendered easy to those who, like Louis Brabant, might make it subservient to the purposes of knavery and deception. The speculative principles on which it is founded must be obvious to every man who has studied the philosophy of the human mind, and has ever witnessed the feats of mimicry.

It is undoubtedly true, that, previous to experience, we cannot refer sound to any external cause; that it does not therefore give immediate indication of the place or distance of the sonorous body; and that it is only by the association of place with sound that the latter becomes an indication of the former. This being admitted, nothing seems requisite to fit a man for becoming an expert ventriloquist but a delicate ear, flexibility of the organs of speech, and long practice of those rules which repeated trials would enable him to discover. A delicate ear perceives every difference which change of place produces in the same sound; and if a person possessed of such an ear have sufficient command over his organs of speech, to produce by them a sound in all respects similar to another proceeding from any distant object, it is evident that to the audience the sound which he utters must appear to proceed from that object. If this be the true theory of ventriloquism, it does not seem to be possible for the most expert ventriloquist to speak in his usual tones of conversation, and at the same time make the voice appear to come from a distance; for these tones must be supposed familiar to his audience, and to be in their minds associated with the ideas of his figure, place, and distance. Hence the ventriloquist whom we saw appeared to speak from various places only in the tones of the squeaking child, while Louis Brabant and M. St. Gill, in their great feats, imitated the voices of ghosts, to which no man could be familiar, and where terror would greatly contribute to the deception. There can, however, be no doubt, but that if, by a peculiar modification of the organs of speech, a sound of any kind can be produced, which in faintness, tone, body, and in short every other sensible quality, perfectly resembles a sound delivered from the roof of an opposite house; the ear will naturally, without examination, refer it to that situation and distance, the sound which the person hears being only a sign, which he has from his infancy been constantly accustomed, by experience, to associate with the idea of a person speaking from a house-top. It is evident too, that when there is no particular ground of suspicion, any small disparity between the two sounds will not be perceptible. But if our theory be just, that experience or habit which misleads a person who has seldom heard the ventriloquist, and is a stranger to his powers, at length finds another person right who is acquainted with them, and has been a frequent witness of their effects. This was actually the case of M. de la Chapelle, with whom the illusion at length ceased, in consequence of repeated visits to M. St. Gill: so that while others, ignorant of his talent, and possessed only of their old or habitual experience with regard to articulate sounds, considered his voice as coming from the top of a tree, or from a deep celler under ground; our author, well acquainted with the powers of the ventriloquist, and having acquired a new kind of experience, at once referred it directly to the mouth of the speaker.

VENUS, in Pagan worship, the goddess of love and beauty.

Cicero mentions two other deities of this name. *Venus, fyled Urania and Celestis*; and the *Venus Pandemos* or *Populæris*, the wife of Vulcan, and the goddess of wanton and effeminate love. To the first the Pagans ascribed no attributes but such as were agreeable to the strictest chastity and virtue; and of this deity they admitted no corporeal resemblance, the being only represented by the form of a globe, ending conically. Her sacrifices were termed *nephalia*, on account of their sobriety. To her, honey and wine were offered, and no animal except the heifer; and on her altars the wood of figs, vines, or mulberries, were not suffered to be burnt. The Romans dedicated a temple to this goddess, to whom they gave the name of *Vetricordia*; because she turned the hearts of lewd women, and inspired modesty and virtue.

But the most famous of these goddesses is the wife of Vulcan; who is represented as springing from the froth raised by the genitals of Saturn, when cut off by Jupiter and thrown into the sea. As soon as the foam was formed, she was laid in a beautiful shell embellished with pearl, and wafted by gentle zephyrs to the isle of Cythera, whence she sailed to Cyprus. At her landing, flowers rose beneath her feet; she was received by the Hours, who braided her hair with golden fillets; and then wafted her to heaven, where her charms appeared so attractive, that most of the gods desired her in marriage; but Vulcan, by the advice of Jupiter, gained possession by putting poppies into her nectar. As Venus was the goddess of love and pleasure, the poets have been lavish in the description of her beauties; and the painters and statuary have endeavoured to give her the most lovely form. Sometimes she is represented clothed in purple, glittering with gems, her head crowned with roses, and drawn in an ivory car by swans, doves, or sparrows; at others she stands attended by the Graces; but in all positions, her son Cupid is her inseparable companion. She was honoured as the mother of Hymeneus, Cupid, Æneas, and the Graces, and was passionately fond of Adonis and Anchises.

This goddess was principally worshipped at Paphos and Cyprus; and the sacrifices offered to her were white goats and swine, with libations of wine, milk, and honey. Her victims were crowned with flowers, or wreaths of myrtle.

VENUS, in astronomy. See **ASTRONOMY** and **PNEUMATICS**.

VENUS's Fly-trap. See **DIONÆA Muscipula**.

VENUS, in zoology, a genus of insects belonging to the order of vermes testacea. This animal is a tethys: the shell is bivalve; the hinge with three teeth near each other, one placed longitudinally and bent inwards. There are a great many species; of which the most remarkable is the *merenaria*, or commercial, with a strong, thick, weighty shell, covered with a brown epidermis; pure white within; slightly striated transversely. Circumference above eleven inches.—These are called in North America *clams*; they differ from other species only in having a purple tinge within. Wampum, or Indian money, is made of them.

VEPRECULÆ, diminutive from *vepre*, "a briar or bramble;" the name of the 31st order in Linnaeus's Fragments of a Natural Method. See **BOTANY**.

VERA-CRUZ, a sea-port town in North America, in New Spain, with a very secure and commodious harbour, defended by a fort. Here the Flotilla annually arrives from Spain to receive the produce of the gold and silver mines of Mexico; and at the same time a fair is held here for all manner of rich merchandize brought from China and the East Indies by way of the South Sea, and for the merchandize of Europe by the way of the Atlantic Ocean. This town is not two miles in circumference; and about it there is a wall of no great strength

on the land-side. The air is unwholesome; and there are very few Spaniards here unless when the Flotilla arrives, and then it is crowded with people from all parts of Spanish America. It is 200 miles south-east of Mexico. W. Long. 37. 25. N. Lat. 19. 12.

VERAGUA, a province of New Spain, bounded on the east by that of Costa Rica, on the west by Panama, on the north by Darien and the Gulf of Mexico; and on the south by the South Sea. It is about 125 miles in length from east to west, and 60 in breadth from north to south. It is a mountainous barren country; but has plenty of gold and silver. Conception is the capital town.

VERATRUM, in botany: a genus of plants of the class of *polygamia*, and order of *monœcia*; and in the natural system arranged under the 10th order, *Coronariæ*. There is no calyx; the corolla has six petals; there are six stamina: the hermaphrodite flowers have three pistils and three capsules. There are three species, none of which are natives of Britain. The most important is the *album*, or hellebore, the root of which is perennial, about an inch thick, externally brown, internally white, and beset with many strong fibres; the stalk is thick, strong, round, upright, hairy, and usually rises four feet in height: the leaves are numerous, very large, oval, entire, ribbed, plaited, without footstalks, of a yellowish green colour, and surround the stem at its base; the flowers are of a greenish colour, and appear from June to August in very long, branched, terminal spikes.

It appears from various instances, that every part of the plant is extremely acrid and poisonous, as its leaves and even seeds prove deleterious to different animals. Greding employed it in a great number of cases of the maniacal and melancholic kind; the majority of these, as might be expected, derived no permanent benefit; several, however, were relieved, and five completely cured by this medicine. It was the bark of the root, collected in the spring, which he gave in powder, beginning with one grain: this dose was gradually increased according to its effects. With some patients one or two grains excited nausea and vomiting, but generally eight grains were required to produce this effect, though in a few instances a scruple and even more was given.

Veratrum has likewise been found useful in epilepsy, and other convulsive complaints; but the diseases in which its efficacy seems least equivocal, are those of the skin; as scabies and different prurient eruptions, herpes, morbus pediculofus, lepra, scrophula, &c. and in many of these it has been successfully employed both internally and externally.

As a powerful stimulant, and irritating medicine, its use has been resorted to only in desperate cases, and then it is fit to be tried in very small doses in a diluted state, and to be gradually increased according to the effects.

VERB, in grammar. See **GRAMMAR**.

VERBASCUM, in botany: a genus of plants of the class of *pentandria*, and order of *monogynia*; and in the natural system arranged under the 28th order, *Luridæ*. The corolla is rotated, and rather unequal: the capsule is monolocular and bivalved. There are 12 species, five of which are natives of Britain; 1. The *thapsus*, or great mullein, which has a stem single, simple, erect, covered with leaves, about six feet high. Leaves large, broad, white, woolly on both sides, sessile, decurrent. Flowers terminal, in a long spike, sessile, yellow. Catarrhal coughs and diarrheas are the complaints for which it has been internally prescribed. Dr. Home tried it in both, but it was only in the latter disease that this plant succeeded. He relates four cases in which a decoction of verbascum was given; and from which he concludes, that it "is useful in diminishing or stopping diarrheas of an old standing, and

often in easing the pains of the intestines. These acquire a great degree of irritability; and the ordinary irritating causes, aliment, bile, distension from air, keep up a quicker peristaltic motion. This is obviated by the emollient and perhaps gentle astringent qualities of this plant." 2. The *nigrum*, or black mullein, having a stem beset with hairs that are beautifully branched; the blossoms yellow, with purple tips. It is a beautiful plant, and the flowers are grateful to bees. Swine eat it; there are not found of it; cows, horses, and goats, refuse it. The other British species are the *lychnitis*, *nigrum*, *blattai*, and *virgatum*.

VERBENA, in botany: a genus of plants of the class of *diandria*, and order of *monogynia*; and in the natural system arranged under the 40th order, *Personate*. There are 17 species, only one of which is a native of Britain; the *officinalis*, or common vervain, which grows on the road-sides near towns and villages. The leaves have many jagged clefts, the blossoms are pale blue. It manifests a slight degree of astringency, and was formerly much in vogue as a deobstruent; but is now disregarded. Mr. Millar says, that it is never found above a quarter of a mile from a house; whence the common people in England call it *Simpler's joy*, because, wherever it is found, it is a certain sign of a house being near. Sheep eat it; cows, horses, and goats, refuse it.

VERD (Cape), a promontory on the west coast of Africa, forty miles north-west of the mouth of the river Gambia. W. Long. 17. 38. N. Lat. 14. 45. The islands of Cape de Verd are seated in the Atlantic Ocean, about 400 miles west of the Cape. They are between the 13th and 19th degree of latitude; and the principal are ten in number, lying in a semicircle. Their names are, *St. Anthony*, *St. Vincent*, *St. Lucia*, *St. Nicholas*, the *Ile of Sal*, *Bona Vista*, *Mayo*, *St. Jago*, *Fuego*, and *Brava*.

VERDICT (*Vere dictum*), is the answer of the jury given to the court concerning the matter of fact, in any case civil or criminal, committed by the court to their trial and examination. See LAW and TRIAL.

VERDIGRISE, the acetite of copper, much used by painters as a green colour. It is chiefly manufactured at Montpellier; the vines of Languedoc being very convenient for this purpose. The following process for making verdigrise is described by Mr. Monet of the Royal Society of Montpellier, and is published among the memoirs of the academy for the years 1750 and 1753.

Vine-stalks well dried in the sun are steeped during eight days in strong wine, and afterwards drained. They are then put into earthen pots, and upon them wine is poured. The pots are carefully covered. The wine undergoes the acetous fermentation, which in summer is finished in seven or eight days; but requires a longer time in winter, although this operation is always performed in cellars. When the fermentation is sufficiently advanced, which may be known by observing the inner surface of the lids of the pots, which during the progress of the fermentation is continually wetted by the moisture of the rising vapours, the stalks are then to be taken out of the pots. These stalks are by this method impregnated with all the acid of the wine, and the remaining liquor is but a very weak vinegar. The stalks are to be drained during some time in baskets, and layers of them are to be put into earthen pots with plates of Swedish copper, so disposed that each plate shall rest upon and be covered with layers of stalks. The pots are to be covered with lids; and the copper is thus left exposed to the action of the vinegar, during three or four days, or more, in which time the plates become covered with verdigrise. The plates are then to be taken out of the pots, and left in the cellar three or four days; at the end of which time they are to be moistened with water, or with the weak

vinegar above mentioned, and left to dry. When this moistening and drying of the plates has been thrice repeated, the verdigrise will be found to have considerably increased in quantity; and it may then be scraped off for sale.

A solution or erosion of copper, and consequently of verdigrise, may be prepared by employing ordinary vinegar instead of wine, as is directed in the above process. But it would not have the unctuality of ordinary verdigrise, which quality is necessary in painting. Good verdigrise must be prepared by means of a vinous acid, or solvent half acid and half spirituous. Accordingly, the success of the operation depends chiefly on the degree of fermentation to which the wine employed has been carried: for this fermentation must not have been so far advanced that no sensibly vinous or spirituous parts remained in the liquor.

Verdigrise is employed externally for detegering foul ulcers, and as an escharotic. It is rarely or never given internally. Some recommend it indeed in the dose of a grain or two as an emetic, which operates almost as soon as received into the stomach, and which may therefore be of use where poisonous substances have been taken, to procure their immediate rejection.

VERDITER, or VERDATER, a preparation of copper, sometimes used by the painters, &c. for a blue; but more usually mixed with a yellow for a green colour. See COLOUR-Making.

VERE (Sir Francis), a renowned English general, was the second son of Geoffrey de Vere, a branch of the ancient family of that name, earls of Oxford, and was born in the year 1554. Concerning his education we are uninformed. About the age of thirty-one he began his military career in Holland, in the courts of which Queen Elizabeth declared him the *worthiest captain of her time*. (See *Letters of the Sidney Family*, vol. ii. p. 104.) But the last and most glorious achievement of his life was his gallant defence of Otford, with about 1600 men, against an army of 12,000, from July 1601 until March 1602, when he resigned the government, and returned to Holland. He died in 1608, in the 54th year of his age; and was buried in St. John's chapel in Westminster abbey, where a splendid monument was erected to his memory. He married the daughter of a citizen of London, named Dent, by whom he had three sons and two daughters, none of whom survived him. He will ever be remembered by posterity as one of the greatest heroes of our most heroic age. A military work of his, entitled, "The Commentaries of Sir Francis Vere, being diverse pieces of service wherein he had command; written by himself by way of commentary," will afford ample information respecting his exploits. It was printed at Cambridge, 1657, in folio, elegantly adorned with prints of Sir Francis, Sir Horace Vere, Sir John Ogke, maps, and plans of battles, &c.

VERGE (*Virgata*), in law, signifies the compass of the king's court, which bounds the jurisdiction of the lord steward of the household; and which is thought to have been twelve miles round. The term *verge* is also used for a stick or rod, whereby one is admitted tenant to a copyhold estate, by holding it in his hand, and swearing fealty to the lord of the manor.

VERGERS, certain officers of the courts of king's bench and common pleas, whose business it is to carry white wands before the judges. There are also vergers of cathedrals, who carry a rod tipped with silver before the bishop, dean, &c.

VERGIL (Polydore). See VIRGIL.

VERJUICE, a liquor obtained from grapes or apples, unfit for wine or cyder; or from sweet ones, whilst yet acid and unripe. Its chief use is in sauces, ragouts, &c. though it is also an ingredient in some medicinal compositions, and is used by the wax-chandlers to purify their wax.

VERMES, the sixth class of animals in the Linnæan system, comprehending five orders. See **NATURAL HISTORY**, and **ZOOLOGY**.

VERMICELLI, or **VERMICHELLY**, a composition of fine flour and eggs, reduced to a paste, and formed into long slender threads or strings, by forcing it with a piston through a number of little holes. It was first brought from Italy, where it is in great vogue: it is chiefly used in soups, and is an excellent article of food.

VERMIFORMIS, in anatomy, a term applied to various parts in the human body, bearing some resemblance to worms: as the appendix vermiformis of the intestines.

VERMILION, a very bright and beautiful red colour, composed of quicksilver and sulphur, in great esteem among the ancients under the name of *minium*; but what goes by the name of minium amongst us, is a preparation of lead, known also by the name of *red-lead*. This substance is well known to artists.

VERMIN, a collective name, including all kinds of little animals and insects, which are hurtful or troublesome to mankind, beasts, or fruits, &c. as worms, lice, fleas, caterpillars, ants, flies, &c.

VERNIER SCALE, a scale excellently adapted for the graduation of mathematical instruments, thus called from its inventor Peter Vernier, a person of distinction in the Franche Comté. See **NONIUS**. Vernier's method is derived from the following principle. If two equal right lines, or circular arcs, A, B, are so divided, that the number of equal divisions in B is one less than the number of equal divisions of A, then will the excess of one division of B above one division of A be compounded of the ratios of one of A to A₁, and of one of B to B₁.

For let A contain 11 parts, then one of A to A is as 1 to 11, or $\frac{1}{11}$. Let B contain 10 parts, then one of B to

B is as 1 to 10, or $\frac{1}{10}$. Now $\frac{1}{10} - \frac{1}{11} = \frac{11 - 10}{10 \times 11} =$

$$\frac{1}{10 \times 11} = \frac{1}{10} \times \frac{1}{11}.$$

Or if B contains n parts, and A contains $n + 1$ parts; then $\frac{1}{n}$ is one part of B, and $\frac{1}{n+1}$ is one part of A.

$$\text{And } \frac{1}{n} - \frac{1}{n+1} = \frac{n+1-n}{n \times n+1} = \frac{1}{n} \times \frac{1}{n+1}.$$

The most commodious divisions, and their aliquot parts, into which the degrees on the circular limb of an instrument may be supposed to be divided, depend on the radius of that instrument.

Let R be the radius of a circle in inches; and a degree to be divided into n parts, each being $\frac{1}{n}$ th part of an inch.

Now the circumference of a circle, in parts of its diameter 2 R inches, is $3,1415926 \times 2$ R inches.

Then $360^\circ : 3,1415926 \times 2$ R :: $1^\circ : \frac{3,1415926}{360} \times 2$ R inches.

Or, $0,01745329 \times R$ is the length of one degree in inches.

Or, $0,01745329 \times R \times p$ is the length of 1° , in p th parts of an inch.

But as every degree contains n times such parts, therefore $n = 0,01745329 \times R \times p$.

The most commodious perceptible division is $\frac{1}{8}$, or $\frac{1}{10}$ of an inch.

Example. Suppose an instrument of 30 inches radius, into how many convenient parts may each degree be divided? how many of these parts are to go to the breadth of the vernier, and to what parts of a degree may an observation be made by that instrument?

Now $0,01745 \times R = 0,5236$ inches, the length of each degree: and if p be supposed about $\frac{1}{8}$ of an inch for one division; then $0,5236 \times p = 4,188$ shows the number of such parts in a degree. But as this number must be an integer, let it be 4, each being $15'$: and let the breadth of the vernier contain 31 of those parts, or $74'$, and be divided into 30 parts.

Here $n = \frac{1}{4}$; $m = \frac{1}{30}$; then $\frac{1}{4} \times \frac{1}{30} = \frac{1}{120}$ of a degree, or $30'$, which is the least part of a degree that instrument can show.

If $n = \frac{1}{5}$, and $m = \frac{1}{36}$; then $\frac{1}{5} \times \frac{1}{36} = \frac{60}{5 \times 36}$ of a minute, or $20''$.

The following table, taken as examples in the instruments commonly made from 3 inches to 8 feet radius, shows the divisions of the limb to nearest tenths of inches, so as to be an aliquot of $60'$'s, and what parts of a degree may be estimated by the vernier, it being divided into such equal parts, and containing such degrees as their columns show.

Rad inches.	Part in a deg.	Parts in vernier.	Breadth of vernier.	Parts observed.
3	1	15	$15\frac{1}{2}$	4 0'
6	1	20	$20\frac{1}{4}$	3 0
9	2	20	$10\frac{1}{2}$	1 30
12	2	24	$12\frac{1}{3}$	1 15
15	3	20	$6\frac{1}{2}$	1 0
18	3	30	$10\frac{1}{3}$	0 40
21	4	30	$7\frac{1}{2}$	0 30
24	4	36	$9\frac{1}{3}$	0 25
30	5	30	$7\frac{1}{2}$	0 20
36	6	30	$5\frac{1}{2}$	0 20
42	8	30	$3\frac{1}{2}$	0 15
48	9	40	$4\frac{1}{2}$	0 10
60	10	36	$3\frac{1}{3}$	0 10
72	12	30	$2\frac{1}{2}$	0 10
84	15	40	$2\frac{1}{4}$	0 6
96	15	60	4	0 4

By altering the number of divisions, either in the degrees or in the vernier, or in both, an angle can be observed to a different degree of accuracy. Thus, to a radius of 30 inches, if a degree be divided into 12 parts, each being five minutes, and the breadth of the vernier be 21 such parts, or $15'$, and divided into 20 parts, then $\frac{1}{12} \times \frac{1}{20} =$

$$\frac{1^\circ}{240} = 15'' \text{ or taking the breadth of the vernier } 21 \times 2, \text{ and divided into 30 parts; then } \frac{1}{12} \times \frac{1}{30} = \frac{1^\circ}{360}, \text{ or } 10'' :$$

Or $\frac{1}{12} \times \frac{1}{50} = \frac{1^\circ}{600} = 6''$; where the breadth of the vernier is $4\frac{1}{2}$.

VERONA, a city of Italy, capital of the Veronese, in the territory of Venice, situated near the mountains, on the river

Adige, in E. Long. 11. 24. N. Lat. 45. 26. It is seven miles in compass; was fortified by the Venetians; and contains 57,400 inhabitants.

VERONESÉ, a territory of Italy, in the republic of Venice, bounded on the north by the Trentino, on the east by the Vicentino and Paduano, on the south by the Mantuano, and on the west by the Bresciano. It is about 35 miles in length, and 27 in breadth; and is one of the most fertile countries in Italy, abounding in corn, wine, fruits, and cattle.

VERONESÉ. See **CAGLIARI**.

VERONICA, in botany: a genus of plants of the class of *diandria*, and order of *monogynia*; and in the natural system arranged under the 40th order, *Personate*. There are forty species; 15 are natives of Britain, only two of which have been applied to any use. 1. The *officinalis*, common male speed-well, or fluellin; a native of Britain, growing on heaths and barren grounds. The blossoms are blue, the leaves elliptical, serrated, and hairy. The leaves have a small degree of astringency, and are somewhat bitter. An infusion of them is recommended by Hoffman as a substitute for tea; but is more astringent and less grateful. The herb was formerly esteemed in medicine for various disorders, but is now almost totally disused. Cows, sheep, goats, and horses, eat it; swine refuse it. 2. The *buccabunga*, or common brook-lime, the flowers of which are blue, in loose lateral spikes; leaves sessile, oval, opposite, thick, notched. This plant was formerly considered as of much use in several diseases, and was applied externally to wounds and ulcers; but if it have any peculiar efficacy, it is to be derived from its antiscorbutic virtue.

VERSAILLES, a town of France, and principal place of a district, in the department of the Seine and Oise. In the beginning of the last century, it was a small village, when Louis XIII. built here a hunting-seat, which Louis XIV. enlarged into a palace, in a forest ten leagues in circumference, which became a place of frequent residence of the royal family till the revolution. The palace is magnificent, with beautiful gardens, adorned with statues, canals, fountains, &c. and a park, five miles in circumference, surrounded with a wall. Since the revolution, it has been erected into a bishop's see: three posts SW. Paris. Long. 19. 48. E. Ferro. Lat. 48. 49. N.

VERSE, in poetry, a line consisting of a number of long and short syllables, which run with an agreeable cadence.

VERSE is also used for a part of a chapter, section, &c.

VERSIFICATION, the art or manner of making verse; also the tune and cadence of verse. See **POETRY**.

VERSION, a translation of some book or writing out of one language into another. See **TRANSLATION**.

VERT, in heraldry, the term for a green colour. It is called *vert* in the blazon of the coats of all under the degree of nobles; but in coats of nobility it is called *emerald*; and in those of kings *verus*. In engraving it is expressed by diagonals, or line drawn athwart from right to left, from the dexter chief corner to the sinister base.

VERTEBRÆ, in anatomy. See **ANATOMY**.

VERTEX, in anatomy, denotes the crown of the head. Hence vertex is also used figuratively for the top of other things: thus we say, the vertex of a cone, pyramid, &c.

VERTEX, is also used in astronomy for the point of the heaven directly over our heads, properly called the *zenith*.

VERTICILLATÆ, the name of a class in Ray's and Boerhaave's Methods, consisting of herbaceous vegetables, having four naked seeds, and the flowers placed in whorls round the stalk. The term is synonymous to the *labiati*, or lip-flowers of Tournefort; and is exemplified in mint, thyme, and Savory. Verticillate is also the name of the 42d order in Linnæus's Fragments of a Natural Method, consisting of plants which answer the above description.

VERTICILLUS, a mode of flowering, in which the flowers are produced in rings at each joint of the stem, with very short foot-stalks. The term is exemplified in mint, horehound, and the other plants of the natural order described above.

VERTICITY, is that property of the loadstone whereby it turns or directs itself to one particular point.

VERTIGO, in medicine. See **MEDICINE**.

VERTUMNUS, in mythology, a god who presided over gardens and orchards, honoured among the Etruscans, from whom the worship of this deity was transmitted to the Romans. Ovid has described the various forms assumed by this deity, in order to obtain the love of Pomona. Some have supposed that Vertumnus, whose name they derive a *vertendo*, because he had power to change his form at pleasure, marked the year and its variations; and thus they say he pleased Pomona, by bringing the fruits to maturity. Accordingly, Ovid says, that he assumed the form of a labourer, reaper, vine-dresser, and old woman, to represent the four seasons, spring, summer, autumn, and winter. Vertumnus had a temple near the market-place at Rome, being represented as one of the tutelary deities of the merchants. The commentators on Ovid say, that he was an ancient king of Hetruria, who, by his diligent and successful cultivation of fruits and gardens, obtained the honour of being ranked among the gods.

VERUMONTANUM, in anatomy, a small eminence near the passages where the semen is discharged into the urethra.

VERVAIN, in botany. See **VERBENA**.

VERTOT d'AUBOEF (Rene Aubert de), a celebrated historian, was descended from a noble and ancient family in Normandy, and born in 1655. At sixteen years of age, he became a Franciscan friar; afterwards he entered into the order of the Premonstratensians, in which he had several benefices; and at length was a secular ecclesiastic. He became secretary to the dukes of Orleans, member of the Academy of Inscriptions, and historiographer of Malta. He died at Paris in 1735. His principal works are: 1. The History of the Revolutions of Sweden. 2. The Revolutions of Portugal. 3. The Revolutions of the Romans. 4. The History of Malta. These works are written in elegant French, and translated into most of the languages of Europe.

VERULAM. See **BACON**.

VESALIUS (Andreas), a celebrated physician and anatomist, was born at Brussels about the year 1512. He studied physic at Paris under James Sylvius; but applied himself chiefly to anatomy, which was then very little known, dissections being esteemed unlawful and impious; and it appears from his work, *De humani corporis fabrica*, that he perfected himself in this useful knowledge very early. About the year 1537, the republic of Venice made him professor in the university of Padua, where he taught anatomy for seven years; Charles V. called him to be his physician, as he was also to Philip II. king of Spain. Vesalius was now at the height of his glory, when all of a sudden he formed the design of taking a journey to Palestine; concerning which journey we are told the following story. A young Spanish nobleman he attended, being believed to be dead, Vesalius obtained leave to open him to explore the true cause of his illness; but when he opened the breast, he perceived symptoms of life, and saw the heart beat. The parents, not satisfied with prosecuting him for murder, accused him of impety to the inquisition, in hopes that tribunal would punish him with greater rigour; but the king interposing, saved him on condition of his making a pilgrimage to the Holy Land. He was shipwrecked on his return, and thrown upon the island of Zante, where he perished, in 1564. He was the author of several works, the principal of which is that above mentioned.

VESICATORIUM, a BLISTER; an application of an acrid nature made to any part of the body, in order to draw a flux of humours to that part, and thus elevate the scarf-skin into a blister.

VESPA, the WASP: a genus of insects belonging to the order of hymenoptera. The mouth consists of two jaws without any proboscis; the superior wings are plaited; the eyes are lunar; and there is a sharp sting in the tail. There are 159 species; only three of which are natives of Britain, the *crabro*, the *vulgaris*, and the *coarctata*.

1. *Crabro*, the hornet. It has tawny antennæ; the segments of the abdomen are black on the anterior part and yellow on the posterior, with two black spots on each. Its length is an inch; it builds in hollow trees. Its cakes or combs are composed of a substance like coarse paper, or rusty parchment. It is very voracious, devouring other insects, and even bees.

2. *Vulgaris*, the common wasp. The male has seven yellow segments of the abdomen, with a black triangle on each: the head is yellow, and the antennæ long. The upper lip of the female is yellow, the antennæ short; there are six segments of the abdomen, with two lateral black spots on each. M. Reaumur and Dr. Derham agree in distinguishing three sorts of wasps; viz. the queens or females, the males, and the common labouring wasps, called *mules*, which, according to Reaumur, are neither males nor females, and consequently barren. The queens, of which there is a great number, are much longer in the body, and larger than any other wasp: they have a large heavy belly, corresponding in size to the prodigious quantity of eggs with which they are charged. The males are less than the queens, but longer and larger than the common wasps, which are the smallest of the species: they have no stings, with which both the queens and common wasps are furnished. There are in one nest two or three hundred males, and as many females: but their number depends on the size of the nest; and Dr. Derham observed, that the males were bred, or at least mostly reared, in the two cells or partings, between the combs, next to the uppermost cell. The antennæ or horns of the male wasps are longer and larger than those of either of the other sorts: but the chief difference, says Dr. Derham, consists in their parts of generation, which are altogether different from those of other wasps.

The mules are the labourers belonging to a nest, and are employed in procuring materials for the nests, and in constructing them, and also in furnishing the other wasps, and the young, with provisions.

At the beginning of winter, the wasps destroy all the eggs, and all the young ones without exception: all the mules and males, which have been employed in this work, being unfurnished with provisions, perish; and none survive except some few females, which, according to Reaumur, were fecundated in October, and raise a new colony in the beginning of spring. In spring a new commonwealth is founded by a single female impregnated during the autumn, and that has weathered out the severity of the winter. It digs a hole in a dry soil, contrives itself a sinuous inlet, or else it takes up with the dwelling place of a mole, where it hastily builds a few cells and deposits its eggs. Within the space of twenty days, they have gone through the different states of larvae, chrysalids, and turned to wasps. Nature all-wise provides for every thing. The mule-wasps are the only ones that labour at laying the foundation of the republic. The first eggs that are hatched prove to be neuter-wasps. No sooner are they come into existence, but they fall to work, enlarge the hole, and go about upon wood, lattice-work, and window sashes, in search of materials for building. With their teeth they cut, hack, and tear off small fibres of wood, which they moisten with a

liquor they disgorge, and then convey them to the work-shop. Other labourers are in waiting for them, who with those materials set about the construction of the wasp-nest, which is commonly round, and made of materials resembling fine paper. The common covering of it, which is formed of several leaves or layers, with intermediate spaces, is pierced by two holes at a distance from one another, one of which is used for the entrance of the wasps, and the other only for their exit. The space within this covering is cut by a number of horizontal planes, with intervals between them of the size of about half an inch; they are suspended from one another by ligaments, and attached to the covering by their edges: they all have hexagonal cells in their lower surface.

The eggs of the wasp are of an oblong form, and resemble those of a common fly, but they are larger; they are always fastened to the angles of a cell, never to the sides of it. They are usually placed single; it is very rare to find two in one cell; and, if they are laid so, it seems that only one succeeds; for there is never found more than one worm in a cell.

The heads of all the nymphs are turned toward the centre of the comb, and their tails go obliquely downward toward the base of the cell. They are continually seen opening their mouths, and moving their forceps, seeming ever hungry, and impatiently waiting for food from their parents. The cells are left open till the nymph is at its full growth; and then the wasps cover it over with a thin lid, under which the worm undergoes its transformation; and as soon as it is arrived at the wasp-state, it eats its way through this thin cover, and comes to work with the rest. The elder brothers, or first hatched insects, take amazing care of those born after them, by proportioning their food to the delicacy of their stomach. First, it consists of the juice of fruits and meats; afterwards it is the carcasses of insects. The caterers provide for the labourers. Each one takes his own portion; there is no dispute, no fighting. The republic grows daily more numerous, living in profound peace. Every individual, as soon as he has acquired sufficient strength, flies away to the fields. They then become a gang of banditti; they pillage our wall-trees, break into our fruit before its maturity, dart with the fierceness of hawks upon our bees, cut their throats to possess themselves of their honey, plunder and lay waste their commonwealth, riot on the fruits of their labour, and oblige them to remove. During the period of plenty, the wasps bring all the booty to the nest, and share it amongst them. There is nothing then goes forwards but feasting, rioting, and good fellowship; but concord cannot be lasting among robbers. Towards the month of October provisions begin to run short: the neuters and males tear from their cradles the eggs, the larvae, the chrysalids, and the new-born insects, without showing mercy to any. They next fight against one another. Frosts and rains throw the citizens into a state of languor, and they almost all perish, luckily for us and our bees, some few females alone excepted, which in the ensuing spring become founders of new republics.

3. *Coarctata*, the small wasp; has black antennæ, yellowish at the base; the head is black with a yellow spot between the antennæ, and another at the base of the upper lip. Each segment of the abdomen is bordered with yellow. It is about half an inch long. The history, as well as the manners of this species, are the same as those of the common wasp; but their buildings are on a different construction. Their nest is fastened to the branch of a tree with a kind of band; and is in bigness from the size of an orange down to that of an egg. Wood reduced to paper is the material part of it; which if it were of a ruddy colour, might be taken for a large opening rose. It is covered over with a varnish impenetrable

by water. One of those nests was neither mollified nor impaired by that element.

VESPASIAN, the tenth emperor of Rome; remarkable for his clemency and other virtues. See the Roman History.

VESPER, in the church of Rome, denotes the afternoon service; answering in some measure to the evening prayers of the church of England.

VESPERTILIO, the BAT; a genus of quadrupeds, belonging to the order of *primates*. All the teeth are erect, pointed, near each other; and the first four are equal. The fore-feet have the toes connected by a membrane expanded into a kind of wings by which the creature is enabled to fly. There are twenty-eight species, of which four are natives of Britain. The most remarkable are,

1. The *vampyrus*, vampire, or Ternate bat (see Pl. 1.) with large canine teeth; four cutting teeth above, the same below; sharp black nose; large naked ears; the tongue is pointed, terminated by sharp aculeated papillæ; talons very crooked, frong, and compressed sidewise; no tail: the membrane divided behind quite to the rump: head of a dark ferruginous colour; on the neck, shoulder, and under-side, of a much lighter and brighter red; on the back the hair shorter, dusky, and smooth: the membranes of the wings dusky. They vary in colour; some being entirely of a reddish brown, others dusky.

These monsters inhabit Guinea, Madagascar, and all the islands from thence to the remotest in the Indian Ocean. They fly in flocks, and perfectly obscure the air with their numbers; they begin their flight from one neighbouring island to another immediately on sunset, and return in clouds from the time it is light till sun-rise. They live on fruits; and are so fond of the juice of the palm-tree, that they will intoxicate themselves with it till they drop on the ground. It is most likely, from the size of their teeth, they are carnivorous. Mr. Edwards relates, that they will dip into the sea for fish. They swarm like bees; hanging by one another from the trees in great clusters. The Indians eat them, and declare the flesh to be very good: they grow exceedingly fat at certain times of the year. The French who live in the Isle de Bourbon boil them in their bouillon, to give it a relish. The negroes hold them in abhorrence. Many are of an enormous size: Beckman measured one, whose extent from tip to tip of the wings was five feet four inches; and Dampier another, which extended farther than he could reach with out-stretched arms. Their bodies are from the size of a pullet to that of a dove; their cry is dreadful, their smell rank, their bite, resistance, and fierceness, great when taken.

The ancients had some knowledge of these animals. Herodotus mentions certain winged wild beasts like bats, that molested the Arabs who collected the cassia, to such a degree, that they were obliged to cover their faces, all but their eyes, with skins. It is very probable, as M. de Buffon remarks, it was from such relations that poets formed their fictions of Harpies.

Linnaeus gives this species the title of *vampyre*; conjecturing it to be the kind which draws blood from people in their sleep. M. de Buffon denies it; ascribing that faculty only to a species found in South America. But there is reason to imagine that this thirst after blood is not confined to the bats of one continent nor to one species: for Bontius and Nieuhoff informs us, that the bats of Java seldom fail of attacking persons who lie with their feet uncovered, whenever they can get access; and Gumilla, after mentioning a greater and less species found on the banks of the Oronoque, declares them to be equally greedy after human blood. Persons thus attacked have been known to be near passing from a sound sleep into

eternity. The bat is so dexterous a bleeder, as to infuse its aculeated tongue into a vein without being perceived, and then suck the blood till it is fatiated; all the while fanning with its wings, and agitating the air in that hot climate in so pleasing a manner, as to fling the sufferer into a still sounder sleep. It is therefore very unsafe to rest either in the open air, or to leave open any entrance to these dangerous animals: but they do not confine themselves to human blood; for M. Condamine says, that in certain parts of America they have destroyed all the great cattle introduced there by the missionaries.

2. The *spectrum*, or spectre, with a long nose; large teeth; long, broad, and upright ears: at the end of the nose a long conic erect membrane, bending at the end, and flexible: hair on the body cinereous, and pretty long: wings full of ramified fibres: the membrane extends from hind leg to hind leg: no tail; but from the rump extend three tendons, terminating at the edge of the membrane. By Seba's figure the extent of the wings are two feet two inches; from the end of the nose to the rump, seven inches and an half. Inhabits South America; lives in the palm-trees; grows very fat; called *vampyre* by M. de Buffon, who supposes it to be the species that sucks the human blood: but neither Piso, nor any other writer who mentions the fact, gives the least description of the kind.

3. The *Peruvian* bat hath a head like a pug dog; large straight-pointed ears; two canine teeth, and two small cutting teeth between each, in each jaw: the tail is inclosed in the membrane which joins to each hind-leg, and is also supported by two long cartilaginous ligaments involved in the membrane: colour of the fur, iron grey: body equal to that of a middle-sized rat: extent of the wings two feet five inches.

4. The *noctule* hath the nose slightly bilobated; ears small and rounded; on the chin a minute verruca; hair reddish ash-colour; length of the rump two inches eight-tenths; tail one inch seven-tenths; extent of wings thirteen inches. Inhabits Great Britain and France; flies high in search of food, not skimming near the ground. A gentleman informed Mr. Pennant of the following fact relating to those animals, which he was witness to: that he saw taken under the eaves of Queen's College, Cambridge, in one night, 185; the second night, sixty-three; the third night, two; and that each that was measured had fifteen inches extent of wings.

5. The *marinus*, common bat; has a tail: the lips and nose are simple; and the ears are smaller than the head. It inhabits Europe, and is found in Britain. This animal flies only during the night, living chiefly on moths: when it lights on the ground it is unable to rise again till it has crawled to some height: it remains torpid during winter, revives in the beginning of the spring, and comes abroad in the dusk of the evening. This species is two inches and a half long, when full grown, and about nine inches in extent; the fur is of a mouse-colour, tinged with reddish; it generally skims near the ground, with an uneven jerking flight; and often seeking for gnats and other aquatic insects, flies close by the surface of water. It breeds in the summer season, and is preyed on by owls.

Bats are very voracious, if proper food is to be had; and though moths and other insects be their natural and common food, yet if flesh, whether raw or roasted, fresh or corrupted, comes in their way, they devour it with greediness. In this country they appear abroad early in the spring, flying about only in the evenings; but are sometimes roused from their torpidity by a warm day or two during winter, and will then venture out in quest of food, but recommence their state of hybernation whenever the cold returns: they retire at the end

of summer into caves, ruined houses, or the roofs and caves of houses, where they remain suspended by the hind legs, and enveloped in their wings, generally in large numbers. Bats may be caught by means of the flower cups of bur-dock, whitened and thrown up in the way of their flight; they are attracted by the whiteness, and the hooks of the bur, sticking to their membranous wings, make them fall to the ground.

VESSEL, a general name given to the different sorts of ships which are navigated on the ocean, or in canals and rivers. It is, however, more particularly applied to those of the smaller kind, furnished with one or two masts. See SHIP.

VESTA, in pagan worship, the same with Cybele. See CYBELE.

VESTA the Younger, in pagan worship, the goddess of Fire, was the daughter of Saturn and Cybele, and the sister of Ceres. She was so much in love with chastity, that on Jupiter's ascending the throne and offering to grant whatever she asked, she only desired the preservation of her virginity, which she obtained.—Vesta was not represented in her temple by any image.

VESTALIA, in Roman antiquity, a festival celebrated in honour of the goddess Vesta, on the 5th of the ides of June; that is, on the ninth of the month.

VESTALS, among the ancient Romans, were priestesses of the goddess Vesta, and had the perpetual fire committed to their charge: they were at first only four in number, but afterwards increased to fix; and it does not appear that their number ever exceeded six, among whom was one superior to the rest, and called *vestalis maxima*. The vestals were chosen from six to ten years of age, and obliged to strict continency for thirty years; the first ten of which were employed in learning the ceremonies of religion, the next ten in the performance of them, and the ten last in teaching them to the younger vestals. The habit of the vestals consisted of an head-dress, called *infula*, which sat close to the head, and from whence hung certain laces called *vitta*: a kind of surplice made of white linen, and over it a purple mantle with a long train to it.

VESTIBLE, in architecture, a kind of entrance into a large building; being an open place before the hall, or at the bottom of the staircase.

VESTRY, a place adjoining to a church, where the vestments of the minister are kept; and also a meeting at such place, consisting of the minister, church-wardens, and chief men of most parishes, who make a parish vestry or meeting. By custom there are select vestries, being a certain number of persons chosen to have the government of the parish, make rates, and take the accounts of church-wardens, &c.

VESUVIUS, a volcanic mountain of Italy, in the kingdom of Naples, remarkable for its eruptions, recorded both in ancient and modern history. One which happened in the seventy-ninth year of the christian æra, overwhelmed the cities of Herculaneum and Pompeia, when the elder Pliny lost his life. The principal eruptions of modern times, which have been recorded, happened in the years 1538, 1631, 1707, 1717, 1737, 1760, 1761, 1766, 1767, 1779, and 1794; of these, the first in 79, in 1631, and the last in 1794, appear to have been the most tremendous. In the year 1794, the mischief was considerable: the lava covered, and totally destroyed, 5000 acres of rich vineyards and cultivated land, and drove the inhabitants of Torre del Greco from the town, most of the houses being either buried, or so injured, as to be uninhabitable: the damage done to the vineyards by the ashes likewise was immense: seven miles east of Naples. See VOLCANO, and (in the SUPPLEMENT) ÆTNA.

VETCH, in botany. See VICTA.

VETERAN, among the ancient Romans, an appellation given to a *soldier* grown old in the service, or who had made a certain number of campaigns.

VETERINARY ART. See FARRIERY.

VEXILLUM, in botany; the upper petal of a pea-bloom, or butterfly-shaped flower, which is generally larger than any of the others.

VIALES, in mythology, a name given among the Romans to the gods who had the care and guard of the roads and highways.

VIATICUM, in Roman antiquity, an appellation given in common to all officers of any of the magistracies, as *licitors*, *accensi*, *scribes*, *criers*.

VIBEX, is sometimes used, by physicians, for a black and blue spot in the skin occasioned by an afflux or extravasation of blood.

VIBRATION, in mechanics, a regular, reciprocal motion of a body, as a pendulum.

VIBURNUM, in botany: a genus of plants of the class *pentandria*, order *trigynia*, and in the natural system arranged under the 43d order, *Dunoglr*. The calyx is quinquepartite and above; the corolla divided into five laciniæ; the fruit a monoepermous berry. There are 19 species; two of which, the *lantana* and *opulus*, are natives of Britain. 1. The *lantana*, common viburnum, wayfaring, or plant mealy tree, rises with a woody stem, branching twenty feet high, having very pliant shoots covered with a lightish-brown bark; large heart-shaped, veined, serrated leaves, white and hoary underneath; and the branches terminated by umbels of white flowers, succeeded by bunches of red berries, &c. 2. The *opulus*, or gelder rose; consisting of two varieties, one with flat flowers, the other globular. The former grows eighteen or twenty feet high, branching opposite, of an irregular growth, and covered with a whitish bark; large lobated or three-lobed leaves on glandulose foot-stalks, and large flat umbels of white flowers at the ends of the branches, succeeded by red berries. The latter grows fifteen or eighteen feet high, branching like the other, garnished with large lobated or three-lobed leaves, on glandular footstalks; and large globular umbels of white flowers at the ends of the branches, in great abundance. This tree when in bloom exhibits a singularly fine appearance; the flowers, though small, are collected numerously into large globular umbels round like a ball; hence it is sometimes called *snow-ball-trees*. 3. The *tinus*, common laurustinus, or evergreen viburnum; grows eight or ten feet high or more, branching numerously from the bottom upwards, assuming a close bushy growth, with the branches somewhat hairy and glandulous; very closely garnished with oval, wholly entire leaves, of a strong green colour, placed in pairs opposite; and whitish and red flowers, collected numerously in large umbellate clusters all over the plant, at the sides and ends of the branches, from January until March or April, exhibiting a most beautiful appearance. There are a great many varieties. All the different species of viburnum, both deciduous and evergreen kinds, being of the tree kind, are woody and durable in root, stem, and branches. They may all be propagated by layers; and are of such hardy temperature, as to grow freely in the open ground all the year, in shrubberies, and other hardy plantations.

VICAR, a person appointed as deputy to another, to perform his functions in his absence, and under his authority.

VICAR, in the canon-law, denotes a priest of a parish, the predial tithes whereof are impropriated or appropriated; that is, belong either to a chapter, religious house, &c. or to a layman who receives them, and only allows the vicar the

small tithes, or a convenient salary. See the article *PARSON* and *Vicar*.

VICE, in ethics, is ordinarily defined an elective habit, denoting either an excess or defect from the just medium wherein virtue is placed.

VICE, in smithery and other arts conversant in metals, a machine or instrument serving to hold fast any thing they are at work upon, whether it is to be beat, filed, or rivetted.

VICE is also used in the composition of divers words to denote the relation of something that comes instead or in the place of another; as vice-admiral, vice-chancellor, &c. are officers who take place in the absence of admirals, &c.

VICEROY, a governor of a kingdom, who commands in the name and instead of a king, with full and sovereign authority.

VICIA, in botany: a genus of plants of the class *diadelphia*, and order of *decandria*; and in the natural system arranged under the 32d order, *Papilionacea*. The stigma is bearded transversely on the lower side. There are 20 species, seven of which are natives of Britain. The most important of these are, 1. The *fatia*, common vetch, or tare. The stalks are round, weak, branched, about two feet long. Pinnæ five or seven pair, a little hairy, notched at the end. Stipulæ dentated. Flowers light and dark purple, on short pedicles, generally two together; pods erect; seeds black. It is known to be an excellent fodder for horses. 2. The *cracca*, tufted vetch. It has a stem branched, three or four feet long. Leaves pinnated; pinnæ generally ten or twelve pairs, lance-shaped, downy. Stipulæ entire. Flowers purple, numerous, pendulous, in imbricated spikes. It is also reckoned an excellent fodder for cattle. 3. The *faba*, or common garden bean. It is a native of Egypt. It is too well known to require description.

VICTIM, denotes a sacrifice offered to some deity, of a living creature, as a man or beast, which is slain to appease his wrath, or to obtain some favour.

VICTOR (Sextus Aurelius), a Roman historian, who flourished under the emperors Constantine and Julian; as we learn from many passages in his own writings, and also from Ammianus Marcellinus. This historian relates, that Constantine made him consul, and honoured him with a brazen statue, on account of his excellent qualifications; although, as he owns of himself, he was born in an obscure village, and of poor and illiterate parents. It is commonly believed that he was an African: it is certain, that he dwells much upon the praises of that country, which he calls the glory of the earth; *decus terrarum*. Two books of his are extant in the historical way: one, *De viris illustribus urbis Romæ*; the other, *De Casaribus*; to which is prefixed *Libellus de origine gentis Romanæ*. The whole makes an abridged history of Rome, from its foundation down to the reign of Julian inclusive.

VICTORY, in pagan worship, is represented by Hædod as the daughter of Styx and Pallas; and Varro calls her the daughter of Heaven and Earth. The Romans erected a temple to her, where they prayed to the gods to give success to their arms. They painted her in the form of a woman, clad in cloth of gold. In some medals, she is represented with wings flying through the air, holding a laurel crown in one hand, and a palm in the other; but in other medals, she is seen standing upon a globe, with the same crown and branch of palm.

VIDA (Marcus Hieronymus), bishop of Alva, in Mount-ferrat, and one of the most excellent Latin poets that have appeared since the Augustan age, was born at Cremona in 1470. Having distinguished himself by his learning and taste for literature, he was made bishop of Alva in 1552. After

continuing two years with Pope Clement VII. at Rome; he went to reside upon his see; where, for thirty years, he performed all the offices of a good bishop and a good man; and though he was mild, gentle, and full of goodness, he was so far from wanting spirit, that when the city of Alva was besieged by the French, he used all possible means to prevent its being given up, by strenuously exhorting the people, and, when provisions were scarce, by supplying them at his own expence. His poetics, and poem on the silk-worm, pass for his masterpiece; his poem on the game of chess is also greatly admired. He also wrote hymns, eclogues, and a poem entitled *Christados*, in six books; all which are in Latin, and have gained him a great reputation. His works in prose consist of dialogues, synodical constitutions, letters, and other pieces. He died in 1566, soon after his being made bishop of Cremona.

VIENNA, the capital of the circle of Austria, in Germany, and of the whole German empire, is the place where the emperor resides. The city itself is not of very great extent; nor can it be enlarged, it being limited by a very strong fortification; but it is very populous. The streets, in general, are narrow, and the houses built high. Some of the public buildings are magnificent; but they appear externally to no great advantage, on account of the narrowness of the streets. The chief of them are the imperial palace, the library, and the museum; the palaces of the princes Lichtenstein, Eugene, &c. Vienna was twice ineffectually besieged by the Turks; namely, in 1589 and 1683. At the latter period, the siege was raised by John Sobieski, king of Poland, who totally defeated the Turkish army before the walls of this place. There is no great danger that Vienna will ever again be subject to the inconveniences of a siege. Yet, in case this should happen, a measure has been taken, which will prevent the necessity of destroying the suburbs; namely, no houses without the walls are allowed to be built nearer to the glacis than 600 yards; so that there is a circular field of that breadth all round the town, which, exclusive of the advantage above mentioned, has a very beautiful and salutary effect. These magnificent suburbs, and the town together, are said to contain above 300,000 inhabitants; yet the former are not near so populous, in proportion to their size, as the town; because many houses in the suburbs have extensive gardens belonging to them, and many families, who live during the winter within the fortifications, spend the summer in the suburbs. The cathedral is built of free-stone, is 114 yards long, and forty-eight broad, and the steeple is 447 feet high. Instead of a weather-cock there was a Turkish crescent, in memory of the siege in 1589; but after the second siege in 1683, they changed it for a golden cross, which three months after was thrown down by a storm. At present there is a black spread eagle, over which is a gilded cross. Joining to this church is the archbishop's palace, the front of which is very fine. The university had several thousand students, who, when this city was besieged, mounted guard, as they did also in 1741. Besides this, there is the academy of Lower Austria; and the archducal library is much frequented by foreigners, as it contains above 100,000 printed books, and 10,000 manuscripts. The academy of painting is remarkable for the fine pictures it produces. The archducal treasury, and a cabinet of curiosities of the house of Austria, are great rarities. The inhabitants, in general, live in a splendid manner; and people of distinction have all sorts of wines at their tables, which they are very free with to foreigners. There is a fort of harbour on the Danube, where there are magazines of naval stores, and ships have been fitted out to serve on that river against the Turks. Vienna is an archbishop's see. It is seated

at the place where the river Vienna, or Wien, falls into the Danube, thirty miles west of Presburgh, 350 north-north-east of Rome, 520 south-east by south of Amsterdam, 565 east of Paris, and 680 east-south-east of London. E. Long. 16. 28. N. Lat. 48. 13.

VIGIL, in church-history, is the eve or next day before any solemn feast; because then Christians were wont to watch, fast, and pray in their churches.

VIGILS of Plants, a term under which botanists comprehend the precise time of the day in which the flowers of different plants open, expand, and shut. As all plants do not flower in the same season, or month; in like manner, those which flower the same day, in the same place, do not open and shut precisely at the same hour. Some open in the morning, as the lip-flowers, and compound flowers with flat spreading petals; others at noon, as the mallows; and a third let in the evening, or after sun-set, as some geraniums and opuntias: the hour of shutting is equally determined. Of those which open in the morning, some shut soon after, while others remain expanded till night.

The hours of opening, like the time of flowering, seem to vary, according to the species of the plant, the temperature of the climate, and that of the season. Flowers, whose extreme delicacy would be hurt by the strong impressions of an ardent sun, do not open till night; those which require a moderate degree of heat to elevate their juices; in other words, whose juices do not rise but in the morning or evening, do not expand till then; whilst those which need a more lively heat for the same purpose, expand at noon, when the sun is in his meridian strength. Hence it is, that the heat of the air being greater betwixt the tropics than elsewhere, plants which are transported from those climates into the cold or temperate climates of Europe, expand their flowers much later than in their native soil. Thus, a flower which opens in summer at six o'clock in the morning at Senegal, will not open at the same season in France and England till eight or nine, nor in Sweden till ten.

Linnæus distinguishes by the general name of *solar* (*flores solares*) all those flowers which observe a determinate time in opening and shutting. These flowers are again divided, from certain circumstances, into three species, or kinds:

Equinoctial flowers (*flores æquinoxiales*) are such as open or shut at all seasons, at a certain fixed or determinate hour.

Tropical flowers (*flores tropicæ*) are such whose hour of opening is not fixed at all seasons, but accelerated or retarded according as the length of the day is increased or diminished.

Meteorous flowers (*flores meteoricæ*) are such whose hour of expansion depends upon the dry or humid state of the air, and the greater or less pressure of the atmosphere. Of this kind is the Siberian fow-thistle, which shuts at night if the ensuing day is to be clear and serene, and opens if it is to be cloudy and rainy. In like manner the African marigold, which in dry or serene weather opens at six or seven in the morning, and shuts at four o'clock in the afternoon, is a sure indication that rain will fall during the course of the day, when it continues that after seven.

VIGO, a sea-port town of Spain, in Galicia, with an 'old castle and a fort. It is seated in a fertile country by the sea-side. It was rendered famous by a sea-fight between the confederate fleet commanded by Sir George Rook, and a squadron of French men-of-war, while the Duke of Ormond with a body of land-forces drove the Spaniards from the castles which defended the harbour. Admiral Hopson having with infinite danger broke through the boom made across the mouth of the harbour, the English took four galleons and five large men-of-war, and the Dutch five galleons and one man-of-war. Four

galleons, with fourteen men-of-war, were destroyed, with abundance of plate and other rich effects. W. Long. 8. 21. N. Lat. 42. 3.

VILLA FRANCA, the name of several towns; one in Piedmont, three miles east of Nice; another of Catalonia, eighteen miles west of Barcelona; a third, the capital of St. Michael, one of the Azores; and a fourth, a town of Efremadura in Spain, fifty-seven miles south-east of Salamanca.

VILLAGE, an assemblage of houses inhabited chiefly by peasants and farmers, and having no market, whereby it is distinguished from a town. The word is French, formed of *vil*, or *vilis*, "low, mean, contemptible;" or rather, from the Latin *villa*, a country-house or farm.

VILLAIN, or **VILLEIN**, in our ancient customs, denotes a man of servile or base condition, viz. a bond-man or servant.

VILLARS (Lewis Hector duke de), marshal of France, grandee of Spain, &c. and a very brave general, was the son of Peter marquis de Villars, of a noble and ancient family. He was at first aid-de-camp to Marshal de Bellefons, his cousin; and distinguished himself in several sieges and battles till the year 1702, when having obtained the victory at Fredlingham from the Prince of Baden, he was made marshal of France. The marshal de Villars took the fort of Kell the year following, and gained a battle at Hochstet in concert with the Elector of Bavaria. In 1707 he forced the lines of Stolhoffen, and raised large contributions from the enemy: but in 1709, he, in conjunction with Marshal Bouffers, was entirely defeated by the Duke of Marlborough, at the battle of Malplaquet, when Marshal Villars was wounded at the beginning of the action. In 1712 he gained much glory by forcing the intrenchments at Denain on the Scheld; which was followed by the taking of Marchiennes, Douay, Bouchain, Landau, Friburg, &c. and by the peace concluded at Rastatt, between the emperor and France in 1714. The Marshal de Villars, who had been plenipotentiary at the treaty of Rastatt, was made president of the council of war in 1715, then counsellor of the regency, and minister of state. In 1733 he was nominated to command in Italy under the King of Sardinia, and the French king declared him marshal general of his camps and armies; a title which had not been granted to any one since the Marshal Turenne, who appears to have been the first who was ever honoured with it. The Marshal de Villars made himself master of Pishgirona, Milan, Novara, and Tortona. But having opened the following campaign, he fell sick, and died at Turin, in 1734, aged eighty-two. The Memoirs of M. de Villars have been published in Holland, the first volume of which was written by himself.

VILLENAGE, in law. The folk-land or estates held in villenage, was a species of tenure neither strictly feudal, Norman, or Saxon; but mixed and compounded of them all; and which also, on account of the heriots that usually attend it, may seem to have somewhat Danish in its composition. Under the Saxon government there were, as Sir William Temple speaks, a sort of people in a condition of downright servitude, used and employed in the most servile works, and belonging, both they, their children, and effects, to the lord of the soil, like the rest of the cattle or stock upon it. These seem to have been those who held what was called the *folk-land*, from which they were removeable at the lord's pleasure. On the arrival of the Normans here, it seems not improbable, that they, who were strangers to any other than a feudal state, might give some sparks of enfranchisement to such wretched persons as fell to their share, by admitting them, as well as others, to the oath of fealty; which conferred a right of protection, and raised the tenant to a kind of estate superior to

downright slavery, but inferior to every other condition. This they called *villengage*, and the tenants *villains*.

These villains, belonging principally to lords of manors, were either villains *regardant*, that is, annexed to the manor or land; or else they were in *grafs*, or at large, that is, annexed to the person of the lord, and transferable by deed from one owner to another. They could not leave their lord without his permission; but, if they ran away, or were purloined from him, might be claimed and recovered by action, like beasts or other chattels. They held indeed small portions of land by way of sustaining themselves and families: but it was at the mere will of the lord, who might dispossess them whenever he pleased; and it was upon villain services, that is, to carry out dung, to hedge and ditch the lord's demesnes, and any other the meanest offices: and their services were not only base, but uncertain both as to their time and quantity.

A villain could acquire no property either in lands or goods: if he purchased either, the lord might seize them to his own use: unless he contrived to dispose of them again before the lord had seized them, for the lord had then lost his opportunity.

In many places also a fine was payable to the lord, if the villain presumed to marry his daughter to any one without leave from the lord: and, by the common law, the lord might also bring an action against the husband for damages in thus purloining his property. For the children of villains were also in the same state of bondage with their parents; whence they were called in Latin *nativi*, which gave rise to the female appellation of a villain, who was called a *neise*. In case of a marriage between a freeman and a wife, or a villain and a freewoman, the issue followed the condition of the father, being free if he was free, and villain if he was villain; contrary to the maxim of the civil law, that *partus sequitur ventrem*. But no bastard could be born a villain, because by another maxim of our law he is *nullius filius*; and as he can gain nothing by inheritance, it was hard that he should lose his natural freedom by it. The law, however, protected the persons of villains against atrocious injuries of the lord: for he might not kill or maim his villain; though he might beat him with impunity.

Villains might be enfranchised by manumission. In process of time they gained considerable ground on their lords; and in particular strengthened the tenure of their estates to that degree, that they came to have in them an interest in many places full as good, in others better than their lords. For the good-nature and benevolence of many lords of manors having, time out of mind, permitted their villains and their children to enjoy their possessions without interruption, in a regular course of descent, the common law, of which custom is the life, now gave them title to prescribe against their lords: and, on performance of the same services, to hold their lands, in spite of any determination of the lord's will. For though in general they are still said to hold their estates at the will of the lord, yet it is such a will as is agreeable to the custom of the manor; which customs are preserved and evidenced by the rolls of the several courts-baron in which they are entered, or kept on foot by the constant immemorial usage of the several manors in which the lands lie. And as such tenants had nothing to show for their estates but these customs, and admissions in pursuance of them, entered on those rolls, or the copies of such entries witnessed by the steward, they now began to be called *tenants by copy of court-roll*, and their tenure itself a *copyhold*.

Privileged VILLENAGE, a species of tenure otherwise called *villain-tenage*. See **TENURE**. Ancient demesne consists of those lands or manors which, though now perhaps granted out to private subjects, were actually in the hands of the crown

in the time of Edward the Confessor, or William the Conqueror; and so appear to have been, by the great survey in the exchequer, called *doomday-book*. The tenants of these lands, under the crown, were not all of the same order or degree. Some of them, as Britton testifies, continued for a long time pure and absolute villains, dependent on the will of the lord; and common copyholders in only a few points. Others were in a great measure enfranchised by the royal favour; being only bound in respect of their lands to perform some of the better sort of villain-services: but those determinate and certain; as, to plough the king's land for so many days, to supply his court with such a quantity of provisions, and the like; all of which are now changed into pecuniary rents: and in consideration hereof they had many immunities and privileges granted to them; as, to try the right of their property in a peculiar court of their own, called a *court of ancient demesne*, by a peculiar process denominated a writ of right close: not to pay toll or taxes; not to contribute to the expenses of knights of the shire; not to be put on juries, and the like.

These tenants therefore, though their tenure be absolutely copyhold, yet have an interest equivalent to a freehold: for though their services were of a base and villenous original, yet the tenants were esteemed in all other respects to be highly privileged villains; and especially for that their services were fixed and determinate, and that they could not be compelled (like pure villains) to relinquish those tenements at the lord's will, or to hold them against their own: *et ideo* (says Bracton) *dicuntur liberi*.

Lands holding by this tenure are therefore a species of copyhold, and as such preserved and exempted from the operation of the statute of Charles II. Yet they differ from common copyholds, principally in the privileges before mentioned; as also they differ from freeholders by one especial mark and distinction of villenage, noted by Bracton, and remaining to this day; viz. that they cannot be conveyed from man to man by the general common-law conveyances of feoffment, and the rest; but must pass by surrender to the lord or his steward, in the manner of common copyholds; yet with this difference, that, in the surrenders of these lands in ancient demesne, it is not used to say, "to hold at the will of their lord," in their copies; but only, "to hold according to the custom of the manor."

VILLI, among botanists, a kind of down like short hair, with which some trees abound.

VILLIERS (George duke of Buckingham), an ingenious and witty nobleman, whose mingled character rendered him at once the ornament and disgrace, the envy and ridicule, of the court he lived in, was son to that famous statesman and favourite of king Charles I. who lost his life by the hands of lieutenant Felton. He was born in 1637, the year before the fatal catastrophe of his father's death. The early parts of his education he received from various domestic tutors, after which he was some time at the university of Cambridge.

As to his personal character, it is impossible to say any thing in its vindication; for though his severest enemies acknowledge him to have possessed great vivacity and a quickness of parts peculiarly adapted to the purposes of ridicule, yet his warmest advocates have never attributed to him a single virtue. His generosity was profane, his wit malevolence, the gratification of his passions his sole aim through life, his very talents caprice, and even his gallantry the mere love of pleasure. But it is impossible to draw his character with equal beauty, or with more justice, than in that given of him by Dryden, in his *Abdalom* and *Achitophel*, under the name of *Zimri*, to which the reader is referred.

As a **WRITER**, however, he stands in a quite different point

of view. There we see the wit, and forget the libertine.—His poems, which indeed are not very numerous, are capital in their kind; but what will immortalize his memory while language shall be understood, or true wit relished, is his celebrated comedy of *The Rehearsal*.

VILLOSE, or VILLOUS, something abounding with villi or fibres like short hair; such is one of the coats of the stomach.

VINCA, in botany: a genus of plants of the class *pentandria*, and order of *monogynia*; and in the natural system arranged under the 30th order, *Contortæ*. The corolla is twisted; there are two erect foliicles; the seeds are naked. There are five species; only two of which are natives of Britain: 1. The *major*, great periwinkle. It has a woody, erect stem; leaves broader and sharper pointed; pedicles of the flowers straight, and calyx as long as the tube; otherwise like the former. 2. The *minor*, small periwinkle, has a woody, creeping, slender, crooked stem; leaves long, oval, entire, pointed, opposite, glossy. Flowers single, on long curved pedicles from the axæ of the leaves, which are large and blue.

ST. VINCENT, an island in the West Indies, about forty miles in length, and ten in breadth. This island was only inhabited by native Caribbs till, in the latter part of the last century, a ship from Guinea, with a large cargo of slaves, was either wrecked or run ashore upon the island of St. Vincent, into the woods and mountains of which great numbers of the negroes escaped, whom the Indians suffered to remain. Partly by the accession of runaway slaves from Barbadoes, and partly by the children they had by the Indian women, these Africans became very numerous; so that about the beginning of the last century they constrained the Indians to retire into the north-west part of the island. These people, as may be reasonably supposed, were much dissatisfied with this treatment; and complained of it occasionally both to the English and to the French, that came to wood and water amongst them. The latter at length suffered themselves to be prevailed upon to attack these invaders. After much deliberation, in the year 1719, they came with a considerable force from Martinico, and landing without much opposition, began to burn the negro huts, and destroy their plantations, supposing that the Indians would have attacked them in the mountains, which if they had done, the blacks had probably been extirpated, or forced to submit, and become slaves. But either from fear or policy, the Indians did nothing, and the negroes falling in the night, and retreating to inaccessible places in the day, destroyed to many of the French (amongst whom was Mr. Paulian, major of Martinique, who commanded them), that they were forced to retire. When by this experiment they were convinced that force would not do, they had recourse to fair means, and by dint of persuasions and presents, patched up a peace with the negroes as well as the Indians, from which they received great advantage. Things were in this situation, when captain Uring came with a considerable armament to take possession of St. Lucia and this island, in virtue of a grant from King George I. to the Duke of Montague. When the French had dislodged this gentleman, by a superior force from St. Lucia, he sent Captain Braithwaite to try what could be done at the island of St. Vincent, in which he was not at all more successful. After this the country became a theatre of savage hostilities between the negroes and the Charaibes; in which it is believed that the former were generally victorious; it is certain that they proved so in the end, their numbers, in 1763, being computed at 2000; whereas of the red or native Charaibes, there were not left more than 100 families, and most of these are by this time said to be exterminated. It is, however, worthy of remark, that the African intruders have adopted most of the Charaibeian man-

ners and customs; among the rest, the practice of flattening the foreheads of their infants; and, perhaps, it was chiefly from this circumstance that they acquired the appellation of the black Charaibes. St. Vincent being ceded to the English by the peace of Paris, in the year 1763, the first measure of the English government was to dispose of the lands, without any regard to the claims of the Charaibes of either race; which in truth, were considered as of no consequence or validity. This gave rise to a war with the Charaibes, in the course of which, it became the avowed intention of government to exterminate those miserable people altogether, or by conveying them to a barren island on the coast of Africa, consign them over to a lingering destruction. By repeated protests and representations from the military officers employed in this disgraceful business, and the dread of parliamentary enquiry, administration at length thought proper to desist, and the Charaibes after surrendering part of their lands, were permitted to enjoy the remainder unmolested. On the 10th of June 1779, St. Vincent shared the common fate of most of the British West-Indian possessions, in that unfortunate war with America, which swallowed up all the resources of the nation, being captured by a small body of troops from Martinico, consisting of only 450 men, commanded by a lieutenant in the French navy. It contained at that time sixty-one sugar estates, 500 acres in coffee, 200 acres in cacao, 400 in cotton, 50 in indigo, and 500 in tobacco, besides land appropriated to the raising provisions, such as plantains, yams, maize, &c. All the rest of the country, excepting the few spots that had been cleared from time to time by the Charaibes, retained its native woods. St. Vincent contains about 84,000 acres, which are everywhere well watered, but the country is very generally mountainous and rugged; the intermediate valleys, however, are fertile in a high degree, the soil consisting chiefly of a fine mould, composed of sand and clay, well adapted for sugar. The extent of country at present possessed by British subjects is 23,605 acres, and about as much more is supposed to be held by the Charaibes. All the remainder is thought incapable of cultivation or improvement. The governor's salary is 2000l. sterling, one half of which is raised within the island, the other half is paid him out of the exchequer of Great Britain. The number of inhabitants appears, by the last returns to government, to be 1450 whites, and 11,853 negroes. During the present war, the Caribs revolted; and, assisted by the French, spread desolation over the whole island. By the exertions of the governor, however, and the British forces in the West Indies, the revolt is in a great measure quelled, though it will be long before things are restored to their former state. Long 61. W. Greenwich. Lat. 13. 10. N.

VINCI (Leonardo da), an illustrious Italian painter, descended from a noble Tuscan family, was born in the castle of Vinci near Florence in 1445. He was placed under Andrea Verocchio, a celebrated painter in that city; but soon surpassed him and all his predecessors so much, as to be reputed the master of the third or golden age of modern painting. But his studies were far from terminating here; no man's genius was more universal; he applied himself to arts, to literature, and to the accomplishments of the body; and he excelled in every thing which he attempted. Lewis Sforza duke of Milan prevailed on him to be director of the academy for architecture he had just established; where Leonardo soon banished all the Gothic fashions, and reduced every thing to the happy simplicity of the Greek and Roman style. By the duke's order, he constructed the famous aqueduct that supplies the city of Milan with water: this canal goes by the name of *Mortefiana*, being above 200 miles in length, and conducts the water of the river Adda quite to the walls of the city. In 1479 he was desired to construct some new device for the

entertainment of Louis XII. of France, who was then to make his entrance into Milan. Leonardo accordingly made a very curious automaton in the form of a lion, which marched out to meet the king, reared up on its hinder legs before him, and opening its breast, displayed an escutcheon with fleurs de lys quartered on it. The disorders of Lombardy, with the misfortunes of his patrons the Sforzi, obliging Leonardo to quit Milan, he retired to Florence, where he flourished under the Medici; here he raised the envy of Michael Angelo, who was his contemporary; and Raphael, from the study of his works, acquired his best manner of designing. At length, on the invitation of Francis I. he removed to France when above 70 years of age; where the journey and change of climate threw him into his last sickness: he languished for some months at Fontainebleau, where the King came frequently to see him; and one day rising up in his bed to acknowledge the honour done him, he fainted, and Francis supporting him, Leonardo died in his arms. His death happened in 1520. Some of his paintings are to be seen in England and other countries, but the greatest part of them are in Florence and France. He composed a great number of discourses on curious subjects; but none of them have been published but his treatise on the Art of Painting.

VINCULUM, in algebra, a character in form of a line, or stroke drawn over a factor, divisor, or dividend, when compounded of several letters or quantities to connect them, and shews that they are to be multiplied or divided, &c. together by the other terms.

Thus $d \times a + b - c$ shews that d is to be multiplied into $a + b - c$.

VINE, in botany. See VITIS.

VINEGAR, ACETUM, an agreeable acid and penetrating liquor, prepared from wine, cyder, beer, and other liquors; of considerable use, both as a medicine and a sauce. The word is French, *vinaigre*; formed from *vin*, "wine;" and *aigre*, "sour." See ACETUM, and CHEMISTRY.

The process indicated by Boerhaave for making vinegar is still the most frequently used. It consists in fixing two casks in a warm room or place. Two false bottoms of basket-work are fixed at a certain distance from the bottom, upon which the refuse of grapes and vine twigs are placed. One of these tuns is filled with wine, and the other only half filled. The fermentation begins in this last: and, when it is in full action, it is checked by filling the cask up with wine out of the other. The fermentation then takes place in the last mentioned cask, that remained half filled; and this is checked in the same manner by pouring back the same quantity of liquid out of the other: and in this way the process is continued till the vinegar is made, which is usually in about 15 days. When the fermentation develops itself, the liquid becomes heated and turbid: a great number of filaments are seen in it; it emits a lively smell; and much air is absorbed, according to the observation of the Abbé Rozier. A large quantity of lees is formed, which subsides when the vinegar becomes clear. This lees is very analogous to the fibrous matter.

Vinegar is purified by distillation. The first portions which pass over are weak; but soon afterwards the acetous acid rises, and is stronger the later it comes over in the distillation. This fluid is called *distilled vinegar*; and is thus cleared of its colouring principle, and the lees, which are always more or less abundant. Vinegar may likewise be concentrated by exposing it to the frost. The superabundant water freezes, and leaves the acid more condensed.

A pound of the coarsest sugar added to a gallon of water, and placed in the sun without being corked, will, in the

course of a few weeks, make very good vinegar. Gooseberries, apples, or other recent fruits, also make very good vinegar.

EELS in VINEGAR. See ANIMALCULE.

VINEYARD, a plantation of vines. The best situation of a vineyard is on the declivity of a hill facing the south.

VIO (Thomas de). See CAJETAN.

VIOL, a musical instrument of the same form with the violin, and, like that, struck with a bow.

VIOLA, in botany: a genus of plants of the class *syngenesia*, order *monogynia*; in the natural system arranged under the 20th order, *Campanulacæ*. The calyx is pentaphyllous; the corolla five petaled, irregular, with a nectarium behind, horn-shaped; the capsule is above the germen, three-valved, monolocular. There are 28 species; six of which are natives of Britain. The most important of these are, 1. The *palustris*, marsh violet. The leaves are smooth, reniform, two or three on each footstalk: flowers pale blue, small, inodorous. An infusion of the flowers is an excellent test of the presence of acids and alkalis. 2. The *odorata*, purple sweet violet, has leaves heart-shaped, notched: flowers deep purple, single; creeping scions. The flowers of this plant taken in the quantity of a dram or two are said to be gently purgative or laxative, and, according to Bergius and some others, they possess an anodyne and pectoral quality. 3. *Tricolor*, pansies, heart-s-ease, or three faces under a hood. The stems are diffuse, procumbent; triangular; the leaves oblong, cut at the edges; stipule dentated: the flowers purple, yellow, and light blue; inodorous. This elegant little plant merits culture in every garden, for the beauty and great variety of its three-coloured flowers; and it will succeed any-where in the open borders, or other compartments, disposed in patches towards the front; either by sowing the seed at once to remain, or by putting in young plants previously raised in a seed-bed: they will begin flowering early in summer, and will continue shooting and flowering in succession till winter; and even during part of that season in mild weather. The common violet is propagated by parting the roots, sometimes by seed.

VIOLATION, the act of violating, that is, forcing a woman, or committing a rape upon her.—This term is also used in a moral sense, for a breach or infringement of a law, ordinance, or the like.

VIOLET, in botany. See VIOLA.

VIOLET-Crab, in zoology. See CANCEL.

VIOLIN, or FIDDLE, a musical instrument mounted with four strings or guts, and struck or played with a bow. The style and sound of the violin is the gayest and most sprightly of all other instruments; and hence it is of all others the fittest for dancing. Yet there are ways of touching it, which render it grave, soft, languishing, and fit for church or chamber music. It generally makes the treble or highest parts in concerts. Its harmony is from fifth to fifth. Its play is composed of bass, counter-tenor, tenor, and treble; to which may be added, a fifth part: each part has four-fifths, which rise to a greater seventeenth.

VIOLONCELLO, of the Italians, is properly our fifth violin; which is a little bass violin half the size of the common bass violin, and the strings bigger and longer in proportion: consequently its sound is an octave lower than our bass violin; which has a noble effect in concert.

VIPER, in zoology. See COLUBER, POISON, and SERPENT; in which last article every thing concerning the poison of the viper, for which we referred from POISON, is already diffused.

VIRAGO, a woman of extraordinary stature and courage; and who, with the female sex, has the mien and air of a man, and performs the actions and exercises of men.

VIRGIL, in Latin PUBLIUS VIRGILIUS MARO, the most excellent of all the ancient Roman poets, was born Oct. 15, U. C. 684, in the consulship of Pompey and Crassus, at a village called Andes, not far from Mantua. His father was undoubtedly of low birth and mean circumstances, but by his industry so much recommended himself to his master, that he gave him his daughter, named Maia, in marriage, as a reward of his fidelity. Our poet, discovering early marks of a very fine genius, was sent at twelve years old to study at Cremona, where he continued till his seventeenth year. He was then removed to Milan, and from thence to Naples, being the residence of several teachers of philosophy and polite learning; and applied himself heartily to the study of the best Greek and Roman writers. But physic and mathematics were his favourite sciences, which he cultivated with much care. He learned the Epicurean philosophy under the celebrated Syro. His acquaintance with Varus, his first patron, commenced by his being fellow-student with him under this philosopher. We have no certain knowledge of the time and occasion of Virgil's going to Rome, how his connections with the wits and men of quality began, nor how he was introduced to the court of Augustus.

In the warmth of early youth, he formed a noble design, of writing an heroic poem "On the Wars of Rome;" but, after some attempts, was discouraged from proceeding, by the roughness and asperity of the old Roman names. He turned himself, therefore, to pastoral; and, being captivated with the beauty and sweetness of Theocritus, was ambitious to introduce this new species of poetry among the Romans. His first performance in this way is supposed to have been written U. C. 709, the year before the death of Julius Cæsar, when the poet was in his 25th year: it is entitled, "Alexis." Possibly "Palæmon" was his second. Mr. Warton places "Silenus" next; which is said to have been publicly recited on the stage by Cytheris, a celebrated comedian. Virgil's fifth eclogue is composed in allusion to the death and deification of Cæsar. The battle of Philippi in 712, having put an end to the Roman liberty, the veteran soldiers began to murmur for their pay; and Augustus, to reward them, distributed among them the lands of Mantua and Cremona. Virgil was involved in this common calamity, and applied to Varus and Pollio, who warmly recommended him to Augustus, and procured for him his patrimony again. Full of gratitude to Augustus, he composed the "Tityrus," in which he introduces two shepherds: one of them, complaining of the distraction of the times, and of the havoc the soldiers made among the Mantuan farmers; the other, rejoicing for the recovery of his estate, and promising to honour the person who restored it to him as a god. But, our poet's joy was not of long continuance; for, we are told, that when he returned to take possession of his farm, he was violently assaulted by the intruder, and would have certainly been killed by him, if he had not escaped by swimming hastily over the Mincio. Upon this unexpected disappointment, melancholy and dejected, he returned to Rome, to renew his petition; and, during his journey, seems to have composed his ninth eclogue. The celebrated eclogue, entitled, "Pollio," was composed in 714, upon the following occasion. The consul Pollio on the part of Anthony, and Mæcenæ on the part of Cæsar, had made up the differences between them; by agreeing, that Octavia, half-sister to Cæsar, should be given in marriage to Antony. This agreement caused an universal joy; and Virgil, in this eclogue, testified his. It is dedicated to Pollio by name, who was at that time consul; and therefore we are sure of the date of this eclogue, as it is known that he enjoyed that high office in 714. In 715, Pollio was sent against the Parthini, a people of Illyricum; and during this

Vol. X.

expedition, Virgil addressed to him a beautiful eclogue, called "Pharmaceutria." His tenth and last eclogue is addressed to Gallus.

Being in his 34th year, he retired to Naples; and laid the plan of his inimitable "Georgics," which he undertook at the entreaties of Mæcenæ, to whom he dedicated them. They are divided into four books; and the subjects of them are particularly specified in the four first lines of the first book. Corn and ploughing are the subject of the first book, vines of the second, cattle of the third, and bees of the fourth.

He is supposed to have been in his 45th year, when he began to write the "Æneid." This poem may very well be considered as a political work. Virgil wrote in defence of the new usurpation of the state; and all that can be offered in his vindication, which however seems enough, is, that the Roman government could no longer be kept from falling into a single hand, and that the usurper he wrote for was as good a one as they could have. But, whatever may be said of his motives for writing it, the poem has in all ages been highly applauded. Augustus was eager to peruse it before it was finished; and entreated him by letters to communicate it. The poet at length complied, and read himself the sixth book to the emperor, when Octavia, who had just lost her son Marcellus, the darling of Rome, and adopted son of Augustus, made one of the audience. Virgil had artfully inserted a beautiful lamentation for the death of young Marcellus; upon hearing which, Octavia could bear no more, but fainted away, overcome with surprise and sorrow. When she recovered, she made the poet a present of ten sesterces for every line, which amounted in the whole to above 2000l.

The "Æneid" being brought to a conclusion, but not to the perfection our author intended to give it, he resolved to travel into Greece, to correct and polish it at leisure. Augustus, returning victorious from the East, met with Virgil at Athens, who thought himself obliged to attend the emperor to Italy, but the poet was suddenly seized with a fatal distemper, which, being increased by the agitation of the vessel, put an end to his life as soon as he landed at Brundisium. He died September 22d, in his 52d year. He had ordered in his will, that the "Æneid" should be burnt as an unfinished poem; but Augustus forbade it, and had it delivered to Varius and Tucca, with the strictest charge to make no additions, but only to publish it correctly. He died with such steadiness and tranquillity, as to be able to dictate his own epitaph. His bones were carried to Naples, according to his earnest request; and a monument was erected at a small distance from the city.

The genuine and undisputed works of this poet are ten "Eclogues, or Bucolics," four books of "Georgics," and the "Æneid" in twelve books. The "Culex," the "Ceiris," and some smaller pieces, called "Catalecta," are subjoined to some editions of his works.

VIRGIL (Polydore), an English historian, born at Urbino in Italy, was sent in the beginning of the 16th century, by pope Alexander VI. as sub-collector of the Papal tax, called *Petence*, in this kingdom. He had not been long in England before he obtained preferment in the church; for in 1503 he was promoted to the rectory of Church-Langton in the archdeaconry of Leicester. In 1507 he was collated to the prebend of Scamley in the church of Lincoln; and in the same year was made archdeacon of Wells, and prebendary of Hereford. In 1513 he resigned his prebend of Lincoln, and was collated to that of Oxgate in St. Paul's, London. We are told, that on his preferment to the archdeaconry of Wells, he resigned the office of sub-collector to the pope, and determined to spend the remainder of his life in England, the History of which kingdom he began in the year 1505, at the command of Henry VII. That work cost him 12 years'

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labour. In 1528 he finished his treatise on Prodigies. Polydore continued in England during the whole reign of Henry VIII. and part of that of Edward VI. whence it is concluded that he was a moderate Papist. In 1550, being now an old man, he requested leave to revisit his native country. He was accordingly dismissed with a present of 300 crowns, together with the privilege of holding his preferments to the end of his life. He died at Urbino in the year 1555. As an historian, he is accused by some as a malignant slanderer of the English nation; yet Jovius remarks, that the French and Scotch accuse him of having flattered that nation too much: (See his *Elog.* cap. 137. p. 179). Besides the above, he wrote, 1. *De rerum inventioribus*; of which an English translation was published by Tangle in 1663. It was also translated into French and Spanish. 2. *De prodigiis et fortibus*. 3. *Episcoporum Angliæ catalogus*. Manuscript. 4. *De vita perfecta*, Basil, 1546, 1553, 8vo. 5. *Epistole eruditæ*; and some other works.

VIRGINIA, one of the United States of America, bounded on the north by Pennsylvania and Maryland, on the east by Maryland, the Chesapeake, and the Atlantic Ocean, on the south by North Carolina, on the west by Kentucky, and on the north-west by the river Ohio, which separates it from the Indians; about 300 miles from east to west, and 180 from north to south; several ridges of mountains cross this country from north to south, a little inclining westerly as they advance towards the south; they extend from the state of New York as far as Georgia, under different names: in Virginia, they are called the Blue Mountains, North Mountains, Warmspring or Jackson's Mountains, Allegany Mountains, and Laurel Mountains; the most easterly at least one hundred miles from the Atlantic; the soil of the land, free from the mountains, is in general tolerably good, and capable of bearing the different kinds of corn and pulse, cotton, flax, and hemp; and in the marshy land rice has been lately cultivated. Before the revolution, the chief object was tobacco, but since that time corn has more engaged the attention of the Virginia farmers. In the south-west parts of the state, near the Kanaway rivers, are mines of lead: mines of copper also have been found, and mines of iron; and in several places, coals. Marble is found in considerable quantities, and limestone; and many medicinal springs have been discovered in different parts. The principal rivers are James river, York, Potomack, Roanoke, and Kanaway Great and Little. Virginia is divided into eighty-two counties. There are but few towns of consequence in the state, the principal are Williamburgh, Norfolk, Alexandria, and Richmond. The number of inhabitants, in the year 1790, amounted to 747,610. By the declaration of rights, in May 1776, a free toleration of religious worship is allowed to all: the principal denominations of Christians are episcopalians who are the most ancient settlers, presbyterians, methodists, and baptists. Before the war with England, the Virginians imported almost the whole of their clothing, of which they now manufacture three-fourths; the manufacture of iron and lead are both very considerable, but agriculture seems to be the principal employment. In the year 1586, Sir Walter Raleigh procured several merchants and gentlemen to advance large sums of money towards carrying on the design he had formed, of making farther discoveries in the West Indies: and, in the year following, he obtained letters patent from the queen, to possess, plant, and enjoy for himself and such persons as he should nominate, themselves, and their successors, all such lands, territories, &c. as they should discover not in the possession of any Christian nation. In April following, the merchants and gentlemen, by Sir Walter's directions, fitted out two small vessels, under the command of Captain Philip Amidas, and Captain Arthur Barlow, two of Sir Walter's servants, who knowing no better course, sailed away

to the Canaries; from thence to the Caribbee Islands, and crossing the Gulf of Mexico made the coast of Florida. They were so ignorant of navigation, that, by the computation of able seamen, they went above a thousand leagues out of their way. Their voyage, however, was prosperous and they anchored in an inlet by the Roanoke. They landed upon certain islands on the coast, between Cape Fear and the Bay of Chesapeake. They saw none of the natives till the third day after their landing, when they espied three in a canoe. One of them went ashore, and waited without any sign of fear till the English rowed to him. He spoke much to them in his own language, and then went boldly aboard their vessels. They gave him a shirt, a hat, wine and meat, with which he was much pleased. Having attentively viewed every thing, he went away; and within half an hour, he had loaded his canoe with fish, which he brought and divided between the ship and the bark. The next day several canoes came, and in one of them the king's brother. His name was Granganameo; the king was called Wingina, and the country Wingandacoo. The king himself, at that time, lay at his chief town ill of the wounds which he had lately received in a battle. Granganameo, leaving his canoes at some distance, went to the point of land where the English had gone to the Indian the day before. Having spread a mat, he sat down upon it; and when the English came to him well armed, he showed no fear, but made signs to them to sit down, stroking his own head and breast, and then theirs, to express his love. The natives were a proper well-proportioned people, very civil in their behaviour, and highly respectful to Granganameo; for none of them sat down, or spoke a word in his presence, except four; on whom the English also bestowed presents. But Granganameo took them all from them, and made signs that every thing belonged to him. After some small traffic, he went away, but returning in two days, he ate and drank very merrily with them. Not long after, he brought his wife and children on board. After this there came down from all parts great numbers of people, with leather, coral, and divers kind of dyes. But when Granganameo was present, none durst trade but himself, and those who wore red copper on their heads as he did. He would have given a bag of pearls for a suit of armour; but the English refused, as not regarding them, that they might thereby the better learn where they grew. He was very just to his promise, for they often trusted him, and he never failed to come within his day to the place which he promised. He commonly sent the English every day a brace of bucks, rabbits, hares, and fish; and sometimes melons, walnuts, cucumbers, peas, and divers kinds of roots. And the English, to try the strength and goodness of the soil, put some of their peas into the ground, which grew wonderfully, and were found, in ten days' time, fourteen inches high. They returned to England about the middle of September, carrying with them two of the natives, Manteo and Wanchefe; and their discovery was so welcome there, that the queen herself named the country *Virginia*. The advantageous accounts which these first adventurers gave of the fertility, pleasantness, and wholesomeness of the country, induced Sir Richard Grenvil himself to make a voyage thither the next year: and he accordingly set out from Plymouth, the 9th of April, with seven ships. Having made the usual circuit of the Canaries and West Indies, where they took two rich Spanish prizes, and forced a profitable trade, they fell in with the continent of America, near Cape Fear, and were in great danger of being lost upon it. But having happily escaped, they came to an anchor off the island of Wocoon, the 26th of May. They immediately sent to the isle of Roanoke to Wingina the king: and Mr. Arundel went to the main, with Manteo, who proved, throughout their whole stay, very faithful and useful to them. Soon after, the

general, Sir Richard Grenvil, went himself to the main, with a select body of men, and ranging about, discovered several Indian towns. At one of them the Indians stole a silver cup, for which they burnt their town, and destroyed their corn, and so returned to their ships at Wococon. At Hatteras, whither they went soon after, Granganameo, the king's brother, came aboard the admiral, with Manteo. This is the last visit he made to the English, for some time this year he died, and in him they lost a sincere and hearty friend. Sir Richard Grenvil having only made that small excursion on the continent, returned to England: but he left behind him 108 persons, as a colony, to keep possession of, and inhabit the country. Of these he constituted Mr. Ralph Lane governor, a military man of note, who was afterwards knighted, and applying himself to the sea-service was of eminent command in the English navy. With them remained Captain Philip Amidas as admiral, one of the commanders-in-chief in the first adventure, Mr. Thomas Harriot, Captain Stafford, Mr. Kendal, with several others of name in the expedition. This colony chose Roanoke, an island at the mouth of Albemarle Sound, for the place of their habitation, and their chief employment was to reconnoitre and view the country. Their farthest discovery to the southward, was Secotan, an Indian town, by their reckoning, eighty leagues from Roanoke, lying up between the rivers Pampticoe and Neus, in North Carolina. Disputes with the Indians and other circumstances induced Mr. Lane and the rest to return to England, in the year 1586. Sir Walter Raleigh was not idle at home: he provided a ship of 100 tons, and loaded her with plenty of all things necessary for the settlement: but it being Easter before she departed, Mr. Lane and his company had shipped themselves for England in Sir Francis Drake's fleet, a few days before her arrival. Having, therefore, spent some time in seeking them up the country without effect, they returned that summer to England, with all their provision. About a fortnight after the departure of this ship, Sir Richard Grenvil arrived with three ships more, well provided; but he neither found that ship according to his expectation nor could hear any news of the colony which he, himself, had left there the year before. Therefore, after travelling in vain up and down to seek them, finding their habitation abandoned, and being unwilling to lose the possession of the country, he landed fifty men on the island of Roanoke, plentifully furnished with all provisions for two years, and so returned to England. The next year three ships were sent, under the command of Mr. John White, who was appointed governor of the colony, with twelve assistants, as a council. To these Sir Walter Raleigh gave a charter, and incorporated them by the name of the governor and assistants of the city of Raleigh, in Virginia, with express directions to settle at Chesapeake; which, however useful and important, they, nevertheless, disobeyed and neglected. Having taken the old route by the West Indies, they had like to have been cast away upon Cape Fear, through the error or design of Simon Ferdinando. He had been with the Captain Amidas in the first expedition; and being made pilot in this, was suspected of a design to ruin the whole voyage; but being prevented by the vigilance of Captain Stafford, they arrived all safe at Hatteras the 22d of July. Soon after, there arose a dispute between the governor and his assistants or council, concerning a person to be sent to England to solicit supplies; all refused, except one, who was thought very unequal to the business; at last they unanimously pitched upon the governor, as the fittest person; and having signed a paper, testifying his unwillingness to leave the colony, they at length prevailed upon him, with much importunity, to undertake it. Leaving, therefore, above a hundred persons on one of the islands of Hatteras, to form a plantation, he departed, and after many

crosses and difficulties, got first to Ireland, and from thence went to England. At this time the nation was in great commotion, and apprehension of the Spanish invasion; however, having laid a plan of operations, and made proper dispositions for the defence of the nation, Sir Walter found leisure to fit out a small fleet for the relief of the colony, at Bideford, early the next year, which was put under the command of Sir Richard Grenvil, and only waited for a fair wind; but the alarm of the vast and formidable armament, made by the king of Spain, entreating all ships of force, then in any readiness, received orders from the state, to stay in their harbours, for the defence of their own country; and Sir Richard Grenvil was personally commanded not to depart out of Cornwall; however Governor White laboured so strenuously with them, that he obtained two small barks, and put to sea from Bideford, the 22d of April, 1588; but these vessels, though of little force, being more intent on a gainful voyage, than the relief of the colony, ran in chase of prizes; till at last, one of them meeting with two ships of war, was, after a bloody fight, overcome, boarded, and riddled; in this maimed, ransacked, and ragged condition, he returned to England in a month's time; and in about three weeks after, the other also returned, without performing her intended voyage, to the distress, and, as it proved, the utter destruction of the colony in Virginia, and to the great displeasure of their patron at home: these disappointments gave much vexation to Sir Walter Raleigh, who had, by this time, expended, as we are authentically assured, no less than forty thousand pounds upon the enterprise, for which, and other reasons, Sir Walter Raleigh made an assignment to Thomas Smith, with other merchants and adventurers of London, and to Governor White, and other gentlemen, for continuing the plantation of Virginia; but the new assignees were not so diligent and careful of the business, as they ought to have been; for it was a year after before any thing was undertaken by them for the relief of the colony: then Mr. White, with three ships, set sail from Plymouth; and passing by the West Indies, they staid some time there, to perform some exploits, as they called them, which was to attack and plunder the Spaniards, among whom they got a considerable booty. Neither did the colony at all advance before the arrival of Lord Delaware, in the year 1610, from which time it gradually began to flourish.

VIRGO, in astronomy, one of the signs or constellations of the zodiac. See ASTRONOMY.

VIRGULA DIVINITORIA, divining rod. See MINE.

VIRTUE, a term used in various significations. In the general it denotes power, or the perfection of any thing, whether natural or supernatural, animate or inanimate, essential or accidental. But, in its more proper or restrained sense, virtue signifies a habit, which improves and perfects the possessor and his actions. See MORAL PHILOSOPHY.

VIRTUOSO, an Italian term lately introduced into the English, signifying a man of curiosity and learning, or one who loves and promotes the arts and sciences. But among us the term seems to be appropriated to those who apply themselves to some curious and quaint rather than immediately useful art or study; as antiquaries, collectors of rarities of any kind, microscopical observers, &c.

VISCERA, in anatomy, a term signifying the same with entrails; including the heart, liver, lungs, spleen, intestines, and other inward parts of the body.

VISCOUNT (*Vice Comes*), was anciently an officer under an earl, to whom, during his attendance at court, he acted as deputy to look after the affairs of the country. But the name was afterwards made use of as an arbitrary title of honour, without any shadow of office pertaining to it, by Henry VI.; when, in the 18th year of his reign, he created John Beauchamp

mont a peer by the name of *Vifcount Beaumont*; which was the first instance of the kind. A viscount is created by patent as an earl is; his title is *Right Honourable*; his mantle is two doublings and a half of plain fur; and his coronet has only a row of pearls close to the circle.

VISCUM, in botany : a genus of plants of the class *diccia*, order *tetrandria*, and in the natural system arranged under the 48th order, *Aggregate*. The male calyx is quadripartite; the anthers adhere to the calyx : the female calyx consists of four leaves; there is no style: the stigma is obtuse. There is no corolla; the fruit is a berry with one seed. There are nine species; only one of which is a native of Britain, viz. the *album*, or common mistletoe. It is a shrub growing on the bark of several trees: the leaves are conjugate and elliptical, the stem forked; the flowers whitish in the axils of the leaves. This plant was reckoned sacred among the druids.

VISHNOU, that person in the triad of the Bramins who is considered as the *preserver* of the universe. *Brahma* is the creator, and *Siva* the destroyer: and these two, with Vishnou, united in some inexplicable manner, constitute *Brahme*, or the supreme numen of the Hindoos. See **POLYTHEISM**.

VISIER, an officer or dignitary in the Ottoman empire, whereof there are two kinds; one called by the Turks *Vizier-azem*, that is, "grand visier," is the prime minister of state in the whole empire. He commands the army in chief, and presides in the divan or great council. Next to him are six other subordinate visiers, called *visiers of the bench*; who officiate as his counsellors or assessors in the divan.

VISION, in optics, the act of seeing or perceiving external objects by means of the organ of sight, the eye. See **ANATOMY** and **OPTICS**.

VISTULA, or **WEISEL**, a large river of Poland, which taking its rise in the mountains south of Silesia, visits Cracow, Warsaw, &c. and continuing its course northward, falls into the Baltic sea below Dantzic.

VITAL, in physiology, an appellation given to whatever ministers principally to the constituting or maintaining life in the bodies of animals: thus the heart, lungs, and brain, are called *vital parts*; and the operations of these parts by which the life of animals is maintained are called *vital functions*.

VITALIANO (Donati), an eminent naturalist, was born in Padua the 8th of September, 1717. He showed from his childhood the greatest inclination for botany and natural history; and, at the age of twelve years, knew all the medicinal plants, and had made a collection of natural productions. When some years older, he profited by the friendship of the celebrated Ponteder, and was generously furnished with books and informations by the living professor Vallisneri, junior. His best masters were, however, his own mountain and maritime peregrinations; which he began in Dalmatia in 1743, and continued for five years. He was chosen for adjutant to the marquis Poleni, public professor of experimental physics, and cultivated under so great a master all the parts of physico-mathematics. With him he made a journey to Rome, and there became an intimate friend of Leprotti the papal physician, to whom he afterwards dedicated his *Saggio della flora naturale dell' Adriatico*; a work of great merit, which count Ginanni of Ravenna endeavoured to depreciate, though with little success. The essay of Donati was published in 1750, and was afterwards translated into French. The fame which our author acquired induced his Sardinian majesty to appoint him professor of botany and natural history at Turin. He went there very willingly; made many excursions among the mountains of Savoy and Genoa, and would have been happy could he always have conversed with the mountaineers, who generally are harmless people. The king his master sent him out of the way of his

enemies, whose envy and hatred his merit alone had raised; he commanded him to set out on a voyage to Egypt, and from thence to visit Syria, Palestine, Arabia, and the East Indies, to make observations and to collect the rarest productions of nature. In 1759 he was in Alexandria, saw Egypt as far as the great cataract of the Nile, and a great part of Palestine, Arabia, and Chaldea; and in all those travels was exposed to suffer the cruel consequences of a bad choice which he had made of his companions. While he laid at Balfora, waiting for orders from court, he fell ill of a putrid fever, and died in a few days. The news of his death came to Turin about the end of October 1763. He left in manuscript two volumes in folio.

VITELLUS, the yolk of an egg. See **EGG**.

VITIS, in botany : a genus of the class *pentandria*, order *monogymia*; and in the natural system arranged under the 46th order, *Pectoracea*. The petals cohere at the top, and are withered; the fruit is a berry with five seeds. There are 11 species; the most important of which is the *vinifera* or common vine, which has naked, lobed, sinuated leaves. There are a great many varieties; but a recital of their names would be tiresome without being useful. All the sorts are propagated either from layers or cuttings, the former of which is greatly practised in England, but the latter is much preferable.

In choosing the cuttings, you should always take such shoots of the last year's growth as are strong and well ripened; these should be cut from the old vine, just below the place where they were produced, taking a knot, or piece of the two years' wood to each, which should be pruned smooth; then you should cut off the upper part of the shoots, so as to leave the cutting about sixteen inches long. When the piece or knot of old wood is cut at both ends, near the young shoot, the cutting will resemble a little mallet; from whence Columella gives the title of *malleolus* to the vine cuttings. In making the cuttings after this manner, there can be but one taken from each shoot; whereas most persons cut them into lengths of about a foot, and plant them all: which is very wrong, for various reasons too tedious to mention.

When the cuttings are thus prepared, if they are not then planted, they should be placed with their lower part in the ground in a dry soil, laying some litter upon their upper parts to prevent them from drying: in this situation they may remain till the beginning of April (which is the best time for planting them); when you should take them out, and wash them from the filth they have contracted; and if you find them very dry, you should let them stand with their lower parts in the water six or eight hours, which will defend their vessels, and dispose them for taking root. If the ground be strong and inclined to wet, you should open a trench where the cuttings are to be planted, which should be filled with lime rubbish, the better to drain off the moisture: then raise the borders with fresh light earth about two feet thick, so that it may be at least a foot above the level of the ground: then you should open the holes at about six feet distance from each other, putting one good strong cutting into each hole, which should be laid a little sloping, that their tops may incline to the wall; but it must be put in so deep, as that the uppermost eye may be level with the surface of the ground; for when any part of the cutting is left above ground, most of the buds attempt to shoot, so that the strength of the cuttings is divided to nourish so many shoots, which must consequently be weaker than if only one of them grew; whereas, by burying the whole cutting in the ground, the sap is all employed on one single shoot, which consequently will be much stronger; besides, the sun and air are apt to dry that part of the cutting which remains above ground, and so often prevents their buds from shooting.

Having placed the cutting into the ground, fill up the hole gently, pressing down the earth with your foot close about it, and raise a little hill just upon the top of the cutting, to cover the upper eye quite over, which will prevent it from drying. Nothing more is necessary but to keep the ground clear from weeds, until the cuttings begin to shoot: at which time you should look over them carefully, to rub off any small shoots, if such are produced, fastening the first main shoot to the wall, which should be constantly trained up, as it is extended in length, to prevent its breaking or hanging down. You must continue to look over these once in about three weeks during the summer season, constantly rubbing off all lateral shoots which are produced; and be sure to keep the ground clear from weeds, which, if suffered to grow, will exhaust the goodness of the soil and starve the cuttings. The Michaelmas following, if your cuttings have produced strong shoots, you should prune them down to two eyes. In the spring, after the cold weather is past, you must gently dig up the borders to loosen the earth; but you must be very careful, in doing this, not to injure the roots of your vines: you should also raise the earth up to the stems of the plants, so as to cover the old wood, but not so deep as to cover either of the eyes of the last year's wood. After this they will require no farther care until they begin to shoot; when you should rub off all weak dangling shoots, leaving no more than the two produced from the two eyes of the last year's wood, which should be fastened to the wall. From this time till the vines have done shooting, you should look them over once in three weeks or a month, to rub off all lateral shoots as they are produced, and to fasten the main shoots to the wall as they are extended in length; about the middle or latter end of July, it will be proper to nip off the tops of these two shoots which will strengthen the lower eyes. During the summer season you must constantly keep the ground clear from weeds: nor should you permit any sort of plants to grow near the vines, which would not only rob them of nourishment, but shade the lower parts of the shoots, and thereby prevent their ripening; which will not only cause their wood to be spongy and luxuriant, but render it less fruitful.

As soon as the leaves begin to drop in autumn, you should prune these young vines again, leaving three buds to each of the shoots, provided they are strong: otherwise it is better to shorten them down to two eyes if they are good; for it is a very wrong practice to leave much wood upon young vines, or to leave their shoots too long, which greatly weakens the roots: then you should fasten them to the wall, spreading them out horizontal each way, that there may be room to train the new shoots the following summer, and in the spring the borders must be dugged as before.

The uses of the fruit of the vine for making wine, &c. are well known. The vine was introduced by the Romans into Britain, and appears formerly to have been very common. From the name of vineyard yet adhering to the ruinous sites of our castles and monasteries, there seem to have been few in the country but what had a vineyard belonging to them. The county of Gloucester is particularly commended by Malmsbury in the twelfth century, as excelling all the rest of the kingdom in the number and goodness of its vineyards. In the earlier periods of our history, the title of Ely was expressly denominated the *Isle of Vines* by the Normans. Vineyards are frequently noticed in the descriptive accounts of doomsday; and those of England are even mentioned by Bede as early as the commencement of the eighth century.

Doomsday exhibits to us a particular proof that wine was made in England during the period preceding the conquest. And after the conquest the bishop of Ely appears to have

received at least three or four tuns of wine annually, as tythes, from the produce of the vineyards in his diocese; and to have made frequent reservations in his leases of a certain quantity of wine for rent. A plot of land in London, which now forms East-Smithfield and some adjoining streets, was withheld from the religious house within Aldgate by four successive constables of the Tower, in the reigns of Rufus, Henry, and Stephen, and made by them into a vineyard to their great emolument and profit. In the old accounts of rectorial and vicarial revenues, and in the old registers of ecclesiastical suits concerning them, the title of wine is an article that frequently occurs in Kent, Surry, and other counties. And the wines of Gloucestershire, within a century after the conquest, were little inferior to the French in sweetness. The beautiful region of Gaul, which had not a single vine in the days of Cæsar, had numbers so early as the time of Strabo. The fourth of it was particularly stocked with them; and they had even extended themselves into the interior parts of the country: but the grapes of the latter did not ripen kindly. France was famous for its vineyards in the reign of Vespasian, and even exported its wines into Italy. The whole province of Narbonne was then covered with vines; and the wine-merchants of the country were remarkable for all the knavish dexterity of our modern brewers, tinging it with smoke, colouring it (as was suspected) with herbs and noxious dyes, and even adulterating the taste and appearance with aloe. And, as our first vines would be transplanted from Gaul, so were in all probability those of the Allobroges in Franche Compté. These were peculiarly fitted for cold countries. They ripened even in the frosts of the advancing winter. And they were of the same colour, and seem to have been of the same species, as the black Mulcades of the present day, which have lately been tried in the island, and found to be fittest for the climate. These were pretty certainly brought into Britain a little after vines had been carried over all the kingdoms of Gaul, and about the middle of the third century; when the numerous plantations had gradually spread over the face of the latter, and must naturally have continued their progress into the former.

The Romans, even nearly to the days of Lucullus, were very seldom able to regale themselves with wine. Very little was then raised in the camps of Italy. And the foreign wines were so dear, that they were rarely produced at an entertainment; and when they were, each guest was indulged only with a single draught. But in the seventh century of Rome, as their conquests augmented the degree of their wealth, and enlarged the sphere of their luxury, wines became the object of particular attention. Many vaults were constructed, and good stocks of liquor deposited in them. And thus naturally gave encouragement to the wines of the country. The Palernian rose immediately into great repute; and a variety of others, that of Florence among the rest, succeeded it about the close of the century. And the more westerly parts of the European continent were at once subjected to the arms, and enriched with the vines, of Italy.

But the scarcity of the native, and dearth of the foreign wines in that country, several ages before the conquest of Lancashire, had called out the spirit of invention, and occasioned the making of fictitious wines. These were still continued by the Romans, and naturally taught to the Britons. And they were made of almost all the products of the orchard and garden, the pear, the apple, mulberry, service, and rose. Two of them, therefore, were those agreeable liquors which we still denominate *cyder* and *perry*. The latter would be called *pyrum* by the Romans, and is therefore called *perry* or *pear-water* by us. And the former assumed among the

Romans the appellation of *ficera*, which was colloquially pronounced by them *fidera*, as the same pronunciation of it among the present Italians shows; and retains therefore the denomination of *cyder* among ourselves.

VITREOUS HUMOUR OF THE EYE. See ANATOMY.

VITRIFICATION, in chemistry, the conversion of a body into glass by means of fire. See GLASS.

VITRIOL, a compound salt, formed by the union of iron, copper, or zinc, with the sulphuric acid. It is of three colours, white, blue, and green, according to the metal.

VITRIOLATED, among chemists, something impregnated, or supposed to be so, with vitriol or its acid.

VITRIOLIC ACID. See SULPHURIC ACID and CHEMISTRY.

VITRUVIUS POLLIO (Marcus), a very celebrated Roman architect, was, according to the common opinion, born at Verona, and lived in the reign of Augustus, to whom he dedicated his excellent treatise on architecture, divided into ten books. William Philander's edition of this celebrated work is esteemed. Claudius Perrault has given an excellent translation of it in French, with learned notes. There are also several English translations of Vitruvius.

VITUS'S DANCE (St.). See MEDICINE.

VIVERRA, THE WEASEL: a genus of quadrupeds belonging to the order of feræ. They have six fore-teeth, the intermediate ones being shorter, and more than three grinders, and the claws are exerted. There are twenty-seven species, the principal of which are,

1. The *ichneumon*, with the tail tapering to a point, and the toes distinct from each other; inhabits Egypt, Barbary, India, and its islands. It is there a most useful animal, being an inveterate enemy to the serpents and other noxious reptiles which infest the torrid zone; it attacks without dread that most fatal of serpents the *Naja*, or *Cobra de Capello*; and should it receive a wound in the combat, instantly retires, and is said to obtain an antidote from a certain herb (according to Sparmann the *ophiorhiza*); after which it returns to the attack, and seldom fails of victory: it is a great destroyer of the eggs of crocodiles, which it digs out of the sand; and even kills multitudes of the young of those terrible reptiles: it was not therefore without reason that the ancient Egyptians ranked the *ichneumon* among their deities. This animal is at present domesticated and kept in houses in India and in Egypt, for it is more useful than a cat in destroying rats and mice; and grows very tame. It is very active; springs with great agility on its prey; will glide along the ground like a serpent, and seem as if without feet. It fits up like a squirrel, and eats with its fore-feet, catching any thing that is flung to it. It is a great enemy to poultry, and will draw itself dead till they come within reach: loves fish; drains its prey, after sucking the blood, to its hole. Its excrements are very fetid; when it sleeps, it brings its head and tail under its belly, appearing like a round ball, with two legs sticking out. Rumphius observes how skillfully it seizes the serpents by the throat, so as to avoid receiving any injury; and Lucan beautifully describes the same address of this animal in conquering the Egyptian asp.

2. The *ulpescula*, or sliding weasel, has a short slender nose; short ears and legs; black body, full of hair; the tail long, of a black and white colour; length from nose to tail about eighteen inches. It inhabits Mexico, and perhaps other parts of America. This and some other species are remarkable for the pestiferous, suffocating, and most fetid vapour they emit from behind, when attacked, pursued, or frightened: it is their only means of defence. Some turn their tail to their enemy, and keep them at a distance by a frequent crepus; and others ejaculate their urine, tainted

with the horrid effluvia, to the distance of eighteen feet. The pursuers are stopped with the terrible stench. Should any of this liquor fall into the eyes, it almost occasions blindness: if on the clothes, the smell will remain for several days, in spite of all washing; they must even be buried in fresh foil, in order to be sweetened. Dogs that are not true bred, run back as soon as they perceive the smell: those that have been used to it, will kill the animal; but are often obliged to relieve themselves by thrusting their noses into the ground. There is no bearing the company of a dog that has killed one for several days. Professor Kalm was one night in great danger of being suffocated by one that was pursued into a house where he slept; and it affected the cattle so, that they belched through pain. Another, which was killed by a maid-servant in a cellar, so affected her with its stench, that the lay ill for several days; all the provisions that were in the place were so tainted, that the owner was obliged to throw them away. Notwithstanding this, the flesh is reckoned good meat, and not unlike that of a pig; but it must be skinned as soon as killed, and the bladder taken carefully out. It breeds in hollow trees, or holes under ground, or in clefts of rocks; climbs trees with great agility; kills poultry; eats eggs, and destroys young birds.

3. The *zibetha*, or civet-cat, has short rounded ears; the back and sides cinerous, tinged with yellow, marked with large dusky spots disposed in rows; the hair coarse; that on the top of the body longest, standing up like a mane; the tail sometimes wholly black; sometimes spotted near the base; length, from nose to tail, about two feet three inches; the tail fourteen inches: the body pretty thick. It inhabits India, the Philippine Isles, Guinea, Ethiopia, and Madagascar. The famous drug musk, or civet, which is produced from an aperture between the privities and the anus, in both sexes, is secreted from certain glands. The persons who keep them procure the musk by scraping the inside of this bag twice a-week with an iron spatula, and get about a dram each time: but it is seldom sold pure, being generally mixed with suet or oil, to make it more weighty. The males yield the most, especially when they are previously irritated. They are fed, when young, with pap made of millet, with a little flesh or fish; when old, with raw flesh. In a wild state, they prey on fowl. These animals seem not to be known to the ancients: it is probable the drug was brought without their knowing its origin; for it is certain the fine gentlemen in Rome used perfumes.

VIVES, in farrery. See FARRIERY.

VIVIPAROUS, in natural history, an epithet applied to such animals as bring forth their young alive and perfect; in contradistinction to those that lay eggs, which are called *oviparous* animals.

UKRAINE, a large country of Europe, lying on the borders of Turkey in Europe, Poland, Russia, and Little Tartary. Its name properly signifies a *frontier*. By a treaty between Russia and Poland in 1693, the latter remained in possession of all that part of the Ukraine lying on the west side of the river Dnieper, which is but indifferently cultivated; while the country on the east side, inhabited by the Cossaks, is in much better condition. The Russian part is comprised in the government of Kiof; and the empress of Russia having obtained the Polish palatinate of Kiof, by the treaty of partition in 1793, the whole of the Ukraine, on both sides of the Dnieper, belongs now to that ambitious and formidable power. The principal town is Kiof.

ULCER, in surgery. See SURGERY.

ULCER, in farrery. See FARRIERY.

ULEX, in botany: a genus of plants of the class of *diadelphia*, and order of *decandria*; and in the natural system

arranged under the 32d order, *Papilionaceæ*. The calyx consists of two leaves quinquefoliate: pod almost covered by the calyx. There are two species; one of which, the *Europæus*, the furze, gorse, or whin, is a native of Britain; it is too well known to need description. Its uses, however, are many; as a fuel where wood and coals are scarce; and as hedge-wood upon light barren land: its use as horie provender too seems to be fully proved, though not yet established. See FENCE.

ULIATEA, one of the Society Islands, in the South Pacific Ocean. On the east and west coasts of this island, are some good harbours. The land is hilly, broken, and irregular, except on the sea coast; yet the hills are green and pleasant, and in many parts abound with wood: the productions and manners of the inhabitants are similar to those of Otaheite. The fourth extremity of the island lies in Long. 181. 20. W. Greenwich. Lat. 16. 55. S.

ULIGINOUS, in agriculture, an appellation given to a moist, moorish, and fenny soil.

ULLAGE, in gauging, is so much of a cask or other vessel as it wants of being full.

ULM, a free and imperial city of Germany, in the circle of Swabia, seated on the river Iller. It is a pretty large place, defended by fortifications; and the inhabitants are Protestants. Here the archives of the circle are deposited, and it carries on a very great trade. The elector of Bavaria became master of it, in 1702, by a stratagem; but, in 1704, the French being vanquished at the battle of Hochstet, the Bavarians surrendered it by capitulation. The Roman-catholics have but two churches, all the rest belonging to the Protestants. E. Long 10. 12. N. Lat. 48. 25.

ULMUS, in botany: a genus of plants belonging to the class of *pentandria*, and order of *dignia*; and in the natural system arranged under the 53d order, *Scabridæ*. The calyx is quinquefid; there is no corolla. The fruit is a dry, compressed, membranaceous berry. There are three species, one of which is a native of Britain. The *campestris*, common elm. The leaves are rough, oval, pointed, doubly serrated, unequal at the base. Bark of the trunk cracked and wrinkled. Fruit membranous. The *montana*, or wych elm, is generally reckoned a variety of this species. All the sorts of elm may be either propagated by layers or suckers taken from the roots of the old trees, the latter of which is generally practised by the nursery-gardeners: but as these are often cut up with indifferent roots, they often miscarry; and render the success doubtful; whereas those which are propagated by layers are in no hazard, and always make better roots, and come on faster than the other, and do not send out suckers from their roots in such plenty, for which reason this method should be more universally practised. The elm delights in a stiff strong soil. It is observable, however, that here it grows comparatively slow. In light land, especially if it be rich, its growth is very rapid; but its wood is light, porous, and of little value, compared with that which grows upon strong land; which is of a closer stronger texture, and, at the heart, will have the colour, and almost the heaviness and the hardness, of iron: on such soils the elm becomes profitable, and is one of the trees which ought in preference to all others to engage the planter's attention.

ULSTER, a province of Ireland, containing the northern counties of Donegal, Londonderry, Antrim, Tyrone, Fermanagh, Monaghan, Armagh, Down, and Cavan.

ULTERIOR, in geography, is applied to some part of a country or province, which, with regard to the rest of that country, is situated on the farther side of the river, mountain, or other boundary, which separates the two countries.

ULTRAMARINE, a beautiful blue colour used by the painters, prepared from the lapis lazuli by calcination.

ULTRAMONTANE, something beyond the mountains. The term is principally applied in relation to France and Italy, which are separated by the Alps.

ULVA, in botany: a genus of plants of the class of *cryptogamia*, and order of *Algae*. The fructification is inclosed in a diaphanous membrane. There are seventeen species; twelve of which are British plants. They are all sessile, and without roots, and grow in ditches and on stones along the sea-coast. None of them are applied to any particular use different from the rest of the algae, except perhaps the *umbilicatis*, which in England is pickled with salt and preserved in jars, and afterwards stewed and eaten with oil and lemon-juice. This species, called in English the *navel laver*, is flat, orbicular, sessile, and coreaceous.

ULUG BEIG, a Persian prince and learned astronomer, was defended from the famous Tamerlane, and reigned at Samarcand about forty years; after which he was murdered by his own son in 1449. His catalogue of the fixed stars, rectified for the year 1434, was published at Oxford by Mr. Hyde, in 1665, with learned notes. Mr. Hudson printed in the English Geography Ulug Beig's Tables of the Longitude and Latitude of Places; and Mr. Greaves published, in Latin, his Astronomical Epochas, at London, in 1650.

ULYSSES, king of Ithaca, the son of Laertes, and father of Telemachus, and one of those heroes who contributed most to the taking of Troy. After the destruction of that city, he wandered for ten years; and at last returned to Ithaca, where, with the assistance of Telemachus, he killed Antinous and other princes who intended to marry his wife Penelope and seize his dominions. He at length resigned the government of his kingdom to his son Telemachus; and was killed by Telegonus, his son by Circe, who did not know him. This hero is the subject of the *Odyssey*.

UMBELLA, an UMBEL, in botany: a species of receptacle; or rather a mode of flowering, in which a number of slender footstalks proceed from the same centre, and rise to an equal height, so as to form an even and generally round surface at top. See BOTANY.

UMBELLATE, the name of a class in Ray's and Tournefort's methods, consisting of plants whose flowers grow in umbels, with five petals that are often unequal, and two naked seeds that are joined at top and separated below. The same plants constitute the 45th order of Linnæus's Fragments of a Natural Method. See BOTANY.

UMBELLIFEROUS PLANTS, are such as have their tops branched and spread out like an umbrella.

UMBER, or UMBRE, in natural history, a fossil brown or blackish substance, used in painting; so called from *Ombria*, the ancient name of the duchy of Spoleto in Italy, whence it was first obtained; diluted with water, it serves to make a dark brown colour, usually called with us an *hair colour*. Dr. Hill and Mr. da Costa consider it as an earth of the ochre kind. It is found in Egypt, Italy, Spain, and Germany; in Cyprus also it is found in large quantities; but what we have brought into England is principally from different parts of the Turkish dominions. But it might be found in considerable plenty also in England and Ireland, if properly looked after, several large masses of it having been thrown up in digging on Mendip hills in Somersetshire, and in the county of Wexford in Ireland: it is also sometimes found in the veins of lead-ore both in Derbyshire and Flintshire.

UMBILICAL, among anatomists, something relating to the umbilicus or navel.

UMBRELLA, a moveable canopy, made of silk or other cloth spread out upon ribs of whale-bone, and supported by a staff, to protect a person from rain, or the scorching beams of the sun.

UNCIA, in general, a Latin term, denoting the twelfth part of any thing; particularly the twelfth part of a pound, called in English an *ounce*; or the twelfth part of a foot, called an *inch*.

UNCTION, the act of anointing or rubbing with oil or other fatty matter.

UNCTION, in matters of religion, is used for the character conferred on sacred things by anointing them with oil. Unctions were very frequent among the Hebrews. They anointed both their kings and high-priests at the ceremony of their inauguration. They also anointed the sacred vessels of the tabernacle and temple, to sanctify and consecrate them to the service of God. The unction of kings is supposed to be a ceremony introduced very late among the Christian princes. It is said that none of the emperors were ever anointed before Justinian or Justin. The emperors of Germany took the practice from those of the eastern empire: King Pepin of France was the first who received the unction. In the ancient Christian church, unction always accompanied the ceremonies of baptism and confirmation. Extreme unction, or the anointing persons in the article of death, was also practised by the ancient Christians, in compliance with the precept of St. James, chap. v. 14th and 15th verses; and this extreme unction the Romish church has advanced to the dignity of a sacrament. It is administered to none but such as are affected with some mortal disease, or in a decrepit age. It is refused to impenitent persons, as also to criminals. The parts to be anointed are the eyes, the ears, the nostrils, the mouth, the hands, the feet, and the loins. The laity are anointed in the palms of the hands, but priests on the back of it; because the palms of their hands have been already consecrated by ordination. The oil with which the sick person is anointed represents the grace of God, which is poured down into the soul, and the prayer used at the time of anointing expresses the remission of sins thereby granted to the sick person; for the prayer is this: "By this holy unction, and his own most pious mercy, may the Almighty God forgive these wretched sins thou hast committed *by the fight*," when the eyes are anointed; *by the bearing*, when the ears are anointed; and so of the other senses.

UNDECAGON, is a regular polygon of eleven sides.

UNDECEMVIR, a magistrate among the ancient Athenians, who had ten other colleagues or associates joined with him in the same commission. The functions of the undecemviri at Athens were much the same as those of the late *prevois de marebaisse* in France. They took care of the apprehending of criminals; secured them in the hands of justice; and when they were condemned, took them again into custody; that the sentence might be executed on them. They were chosen by the tribes, each tribe naming its own; and as the number of the tribes after Callisthenes was but ten, which made ten numbers, a scribe or notary was added, which made the number eleven.

UNDERSTANDING. See **METAPHYSICS** and **LOGIC**.

UNDERWALD, a canton of Switzerland, and the fifth in rank. It is bounded on the north by the canton of Lucern and by the Lake of the Four Cantons, on the east by the high mountains which separate it from the Canton of Bern, and on the west by the canton of Bern. The religion of this canton is the Roman-catholic.

UNDERWOOD, is coppice, or any wood that is not accounted timber.

UNDULATION, in physics, a kind of tremulous motion or vibration observable in a liquid, whereby it alternately rises and falls like the waves of the sea.

UNGUENT, in medicine and surgery, a topical remedy

or composition, chiefly used in the dressing of wounds or blisters.

UNICORN, an animal famous among the ancients, and thought to be the same with the rhinoceros. See **RHINOCEROS**. Sparmann informs us, that the figure of the unicorn described by the ancients has been found delineated by the Senee Hotentots on the plain surface of a rock in Caffraria; and therefore conjectures, that such an animal either does exist at present in the internal parts of Africa, or at least once did so. Father Lobo affirms that he has seen it.

UNICORN-fish. See **MONODON**.

UNIFORM, denotes a thing to be similar, or consistent either with another thing, or with itself, in respect of figure, structure, proportion, or the like; in which sense it stands opposed to difform.

UNIFORMITY, regularity, a similitude or resemblance between the parts of a whole. Such is that we meet with in figures of many sides, and angles respectively equal, and answerable to each other. A late ingenious author makes beauty to consist in uniformity, joined or combined with variety. Where the uniformity is equal in two objects, the beauty, he contends, is as the variety; and where the variety is equal, the beauty is as the uniformity.

UNIFORMITY, is particularly used for one and the same form of public prayers, and administration of sacraments, and other rites, &c. of the church of England, prescribed by the famous stat. 1. Eliz. and 13 and 14 Car. II. cap. 4. called the *Act of Uniformity*. See **LITURGY**.

UNION, a junction, coalition, or assemblage, of two or more different things in one.

UNION, or *The Union*, by way of eminence, is more particularly used to express the act by which the two separate kingdoms of England and Scotland were incorporated into one, under the title of *The kingdom of Great Britain*. This union, in vain attempted by King James I. was at length effected in the year 1707, 6 Annæ, when 25 articles were agreed to by the parliament of both nations; the purport of the most considerable being as follows: 1. That on the first of May 1707, and for ever after, the kingdoms of England and Scotland shall be united into one kingdom, by the name of *Great Britain*. 2. The succession to the monarchy of Great Britain shall be the same as was before settled with regard to that of England. 3. The united kingdom shall be represented by one parliament. 4. There shall be a communication of all rights and privileges between the subjects of both kingdoms, except where it is otherwise agreed. 9. When England raises 2,000,000 l. by a land-tax, Scotland shall raise 48,000 l. 16, 17. The standards of the coin, of weights, and of measures, shall be reduced to those of England throughout the united kingdoms. 18. The laws relating to trade, customs, and the excise, shall be the same in Scotland as in England. But all the other laws of Scotland shall remain in force; but alterable by the parliament of Great Britain. Yet with this caution, that laws relating to public policy are alterable at the discretion of the parliament; laws relating to private right are not to be altered but for the evident utility of the people of Scotland. 22. Sixteen peers are to be chosen to represent the peerage of Scotland in parliament, and 45 members to sit in the house of commons. 23. The 16 peers of Scotland shall have all privileges of parliament; and all peers of Scotland shall be peers of Great Britain, and rank next after those of the same degree at the time of the union, and shall have all privileges of peers, except sitting in the house of lords, and voting on the trial of a peer.

These are the principal of the 25 articles of union, which are ratified and confirmed by statute 5 Ann. c. 8. in which

statute there are also two acts of parliament recited; the one of Scotland, whereby the church of Scotland, and also the four universities of that kingdom, are established for ever, and all succeeding sovereigns are to take an oath inviolably to maintain the same; the other of England, 5 Anne, c. 6. whereby the acts of uniformity of 13 Eliz. and 13 Car. II. (except as the same had been altered by parliament at that time), and all other acts then in force for the preservation of the church of England, are declared perpetual; and it is stipulated, that every subsequent king and queen shall take an oath inviolably to maintain the same within England, Ireland, Wales, and the town of Berwick upon Tweed. And it is enacted, that these two acts "shall for ever be observed as fundamental and essential conditions of the union."

Ireland has been recently united to Great Britain under certain specific articles, adapted to the convenience and welfare of both countries.

UNISON, in music. See INTERVAL.

UNIT, or UNITY, in arithmetic, the number one; or one single individual part of discrete quantity.

UNITARIANS, in ecclesiastical history, a name given to those who confine the glory and attribute of divinity to the One only great and supreme God, and Father of our Lord Jesus Christ.

UNITED BRETHREN, or UNITAS Fratrum, in ecclesiastical history, a church of which an account has been given under the word HERRNUT. Though the church of the United Brethren is episcopal, they consider episcopal ordination as necessary to qualify the servants of the church for their respective functions, they allow to their bishops no elevation of rank or pre-eminent authority; their church having from its first establishment been governed by synods, consisting of deputies from all the congregations; and by other subordinate bodies, which they call *conferences*. The synods, which are generally held once in seven years, are called together by the elders who were in the former synod appointed to superintend the whole unity. In the first sitting a president is chosen, and these elders lay down their office; but they do not withdraw from the assembly, for they, together with all bishops, *seniores civiles*, or lay-elders, and those ministers who have the general care or inspection of several congregations in one province, have seats in the synod without any particular election. The other members are, one or more deputies sent by each congregation, and such ministers or missionaries as are particularly called to attend. Women approved by the congregations are also admitted as hearers; and are called upon to give their advice in what relates to the ministerial labour among their sex; but they have no decisive vote in the synod. The votes of all the other members are equal.

In questions of importance, or of which the consequences cannot be foreseen, neither the majority of votes nor the unanimous consent of all present can decide; but recourse is had to the *lot*. For adopting this unusual mode of deciding in ecclesiastical affairs, the Brethren allege as reasons the practices of the ancient Jews and the apostles; the insufficiency of the human understanding amidst the best and purest intentions to decide for itself in what concerns the administration of Christ's kingdom; and their own confident reliance on the comfortable promises that the Lord Jesus will approve himself the head and ruler of his church. The *lot* is never made use of but after mature deliberation and fervent prayer; nor is any thing submitted to its decision, which does not, after being thoroughly weighed, appear to the assembly eligible in itself.

In every synod the inward and outward state of the unity, and the concerns of the congregations and missions, are taken into consideration. If errors in doctrine or deviations in prac-

tice have crept in, the synod endeavours not only to remove them, but by salutary regulations to prevent them for the future. It considers how many bishops are to be consecrated to fill up the vacancies occasioned by death; and every member of the synod gives his vote for such of the clergy as he thinks best qualified. Those who have the majority of votes are taken into the *lot*, and they who are approved are consecrated accordingly; but by consecration they are vested with no superiority over their Brethren, since it behoves him who is the greatest to be the servant of all.

Our limits will not permit us to give a systematic view of the doctrinal tenets of the Brethren. Though they acknowledge no other standard of truth than the sacred Scriptures, they adhere to the Augsburg Confession, and speak respectfully of the thirty-nine articles of the church of England. They profess to believe that the kingdom of Christ is not confined to any particular party, community, or church; and they consider themselves, though united in one body or visible church, as spiritually joined in the bond of Christian love to all who are taught of God, and belong to the universal church of Christ, however much they may differ in forms, which they deem non-essentials. But the reader who wishes to have a fuller account of this society of Christians, we must refer to *Cranes Ancient and Modern History of the Protestant Church of the United Brethren*, printed in London, 1783; and to a work intitled, *An Exposition of Christian Doctrine as taught in the Protestant Church of the United Brethren*, London, 1784.

UNITED PROVINCES of the NETHERLANDS, a republic of Europe, consisting of seven provinces, which extend 150 miles from N. to S. and 100 from E. to W. They are bounded on the W. and N. by the German Ocean, on the S. by Brabant and the bishopric of Liege, and on the E. by Germany. They rank in the following order: Guelderland, Holland, Zealand, Utrecht, Friesland, Overysel, and Groningen. Besides these provinces, are the lands of the Generality (including Dutch Brabant, Flanders, and Limburg), in which are the towns of Bois-le-Duc, Breda, Bergen-op-Zoom, Maastricht, Venlo, Sluys, and Hulst. This republic (which is likewise called by the general name of Holland) affords a striking proof, that perverting industry is capable of conquering every disadvantage of climate and situation. The air and water are nearly equally bad; the soil produces naturally scarcely any thing but turf; and the possession of this very soil is disputed by the ocean, which, rising considerably above the level of the land, is prevented from overflowing it, only by expensive dikes. Yet the labours of the patient Dutchman have rendered this small and seemingly insignificant territory, one of the richest spots in Europe, with respect to population and property. In other countries, possessed of a variety of natural productions, it is not surprising to find manufacturers employed in augmenting the riches which the bounty of the soil bestows; but to see, in a country like Holland, large woollen manufactures, where there are scarcely any flocks; numberless artists employed in metals, where there is not a mine; thousands of saw-mills, where there is scarcely a wood; an immense quantity of corn exported from a country where there is not agriculture sufficient to support one half of its inhabitants, is what must strike every attentive observer with admiration. Among the most valuable natural productions of the United Provinces may be reckoned their excellent cattle; and large quantities of madder are exported, chiefly cultivated in Zealand. The most considerable revenue arises from the fisheries; but these are not so considerable as formerly. The number of vessels employed in the herring fishery, in particular, is reduced from upward of 2000 to less than 200; and yet it maintains, even

now, no less than 20,000 people. About 100 vessels are employed in the Greenland fishery, and 140 in the cod fishery near the Dogger Bank, and near the coast of Holland. The Dutch were formerly in possession of the carrying trade of almost all other trading nations; and were also the bankers for all Europe. But these advantages did not continue to be so lucrative, when the other European nations began to open their eyes so far as to employ their own shipping in their trade, and to establish banks of their own. The Dutch trade, however, is still very great. In consequence of their vast opulence, they still regulate the exchange for all Europe, and their country is, as it were, the universal warehouse of the commodities of every quarter of the globe. Among the monopolies of their East-India Company, the spice trade is the most valuable; comprehending cloves, mace, nutmegs, and cinnamon. Their Asiatic possessions are the coasts of the island of Java, the capital of which is Batavia, the seat of the governor-general of all their East-India settlements; some settlements on the coasts of Sumatra, Malabar, and Coromandel; the greatest part of the Moluccas or Spice Islands; settlements of factories in the island of Celebes, at Surat, and Petra, and in the gulf of Persia; with Colombo, Trincomalee, &c. in Ceylon. In Africa, the Dutch have the Cape of Good Hope, with several forts and factories in Guinea; in the West Indies, St. Eustatia, Saba, and Curaçoa; and in South America, the colonies of Ilesquibo, Demerary, Surinam, and Berbice. But they have lost the Cape and some others of these in the present war. In the United Provinces, the inland trade is greatly facilitated by canals, which cross the country in every direction. The number of their manufactures is astonishing. Saardam, a village in North Holland, for instance, containing 900 windmills; namely, cornmills, saw and paper mills, mills for the making of white lead, &c. Since the year 1579, the Seven United Provinces must be considered as one political body, united for the preservation of the whole. In consequence of the Union (see NETHERLANDS) the Seven Provinces guaranty each other's rights; they make war and peace, levy taxes, &c. in their joint capacity; but as to internal government, each province is independent. They send deputies (chosen out of the provincial states) to the general assembly, called the states-general, which is invested with the supreme legislative power of the confederation. At the head of this government there has usually been a prince stadtholder, who exercises a considerable part of the executive power. After the death of William II. (the fourth stadtholder) in 1667, this office was abolished by the states; but, in 1672, when Lewis XIV. invaded Holland, the most violent popular commotions compelled them to repeal the edict; to invest William III. prince of Orange, with the office, and to declare it hereditary. On his death, in 1702, it was again abolished; but, in 1745, some popular commotions compelled the states, not only to invest William IV. prince of Orange, with this office, but again to declare it hereditary in his family. There have constantly been two opposite parties in the state; one of which, called the patriots, or the Louvetstein party, is averse, and the other attached to the power of the stadtholders. In 1787, a civil war actually commenced, and the stadtholder (William V. the present prince of Orange) was deprived of the office of captain-general; but he was restored, the same year, by the interference of Great Britain and Prussia. When the whole country, however, was rapidly overrun by the French, in January 1795, the stadtholder and his family were compelled to seek an asylum in England; the anti-stadtholderian party, now triumphant, proceeded to new-model the government, and, in particular, to abolish the stadtholderate; and the French, treating the Dutch as an independent state, concluded with them a treaty of alliance, offensive and defensive.

The Calvinist religion is established in the United Provinces; but most other Christian sects, and the Jews, are tolerated. Amsterdam is the capital; but the seat of the states-general is at the Hague. See SCHELDT.

UNITY, in poetry. There are three unities to be observed, viz. the unity of action, that of time, and that of place. In the epic poem, the great, and almost the only, unity, is that of the action. Some regard indeed ought to be had to that of time; for that of place there is no room. The unity of character is not reckoned among the unities. See POETRY.

UNIVERSE, a collective name, signifying the whole world; or the assemblage of heaven and earth, with all things therein. See ASTRONOMY and GEOGRAPHY.

UNIVERSITY, is the name of a corporation formed for the education of youth in the liberal arts and sciences, and authorized to admit such as have studied in it, to certain degrees in different faculties, which not only serve as certificates of proficiency in science, but also confer on those who obtain them considerable privileges within the university, as well as some rank in the state without it. Universities generally comprehend within them one or more colleges; but this is not always the case; for the university of St. Andrew's was in being before either of its colleges was founded, and it would continue in being with all its privileges though both its colleges were levelled with the dust.

In every university with which we are acquainted, there are four faculties, viz. *Theology*, *Law*, *Physic*, and the *Arts and Sciences*, comprehending mathematics, natural and moral philosophy, &c.; and in Oxford, Cambridge, and some other universities, *Musick* is considered as a fifth faculty. In each of these there are two degrees, those of *Bachelor* and *Doctor*; for though in the universities of Great Britain and Ireland we have no such degree as *Doctor in Arts and Sciences*, our *Master of Arts* answers to the degree of *Doctor in Philosophy*, which is conferred by many of the universities on the candidate.

Universities in their present form, and with their present privileges, are institutions comparatively modern. They sprang from the convents of regular clergy, or from the chapters of cathedrals in the church of Rome, where young men were educated for holy orders, in that dark period when the clergy possessed all the little erudition which was left in Europe. These convents were seminaries of learning probably from their first institution; and we know with certainty, that in Old Aberdeen there was a monastery in which youth were instructed in *theology*, the *canon-law*, and the *school philosophy*, at least 200 years before the University and King's College were founded. The same was doubtless the case in Oxford and Cambridge, and probably in every town in Europe where there is now a university, which has any claim to be called ancient; for it was not till the more eminent of the laity began to see the importance of literature and science, that universities distinct from convents were founded, with the privilege of admitting to degrees, which conferred some rank in civil society. These universities have long been considered as lay corporations; but as a proof that they had the ecclesiastical origin which we have assigned to them, it will be sufficient to observe, that the Pope arrogated to himself the right of vesting them with all their privileges; and that, prior to the Reformation, every university in Europe conferred its degrees in all the faculties by authority derived from a papal bull.

It is perhaps no improbable conjecture, that the church of Rome derived her idea of academical honours from the Jews, among whom literary distinctions extremely similar subsisted before the nativity of our Saviour. Among them, the young



udent, with respect to his learning, was called a *disciple*; from his minority a *junior*; and the *chosen* or *elect*, on account of his election into the number of disciples. When he had made some progress in knowledge, and was deemed worthy of a degree, he was by imposition of hands מַלְכוּת, *a companion to a Rabbi*, the person who officiates using this form, *I affiliate thee, or, Be thou affiliated*; and as soon afterwards as he was thought worthy to teach others, the *officiate* was raised to the rank of *Rabbi*. Whether this process suggested the idea or not; it has certainly some resemblance to that by which a young man in our universities passes through the degree of *Bachelor* to that of *Master of Arts* or *Doctor*.

The most ancient universities in Europe are those of OXFORD, CAMBRIDGE, PARIS, SALAMANCA, and BOLOGNA; and in the two English universities, the first-founded colleges are those of *University*, *Baliol*, and *Merton*, in the former, and *St. Peter's* in the latter. Oxford and Cambridge, however, were universities, or, as they were then called, *studies*, some hundreds of years before colleges or schools were built in them; for the former flourished as a seminary of learning in the reign of Alfred the Great, and the other, could we believe its partial partizans, at a period still earlier. The universities of Scotland are four, ST. ANDREW'S, GLASGOW, ABERDEEN, and EDINBURGH. In Ireland there is but one university, viz. that of DUBLIN, founded by Queen Elizabeth, and very richly endowed.

UNIVERSITY-COURTS, in England. The two universities enjoy the sole jurisdiction, in exclusion of the king's courts, over all civil actions and suits whatsoever, where a scholar or privileged person is one of the parties; excepting in such cases where the right of freehold is concerned. And then by the university charter they are at liberty to try and determine, either according to the common law of the land, or according to their own local customs, at their discretion; which has generally led them to carry on their process in a course much conformed to the civil law. This privilege, so far as it relates to civil causes, is exercised at Oxford in the chancellor's court; the judge of which is the vice-chancellor, his deputy, or assessor. From his sentence, an appeal lies to delegates appointed by the congregation; from thence to other delegates of the house of convocation; and if they all three concur in the same sentence, it is final, at least by the statutes of the university, according to the rule of the civil law. But if there be any discordance or variation in any of the three sentences, an appeal lies in the last resort to judges delegates appointed by the crown, under the great seal in chancery.

As to the jurisdiction of the university courts in criminal matters, the chancellor's court at Oxford, and probably also that of Cambridge, hath authority to try all offences or misdemeanors under the degree of treason, felony, or mayhem; and the trial of treason, felony, and mayhem, by a particular charter, is committed to the university jurisdiction in another court, namely, the court of the lord high-steward of the university. The process of the trial is this. The high-steward issues one precept to the sheriff of the county, who thereupon returns a panel of eighteen freeholders; and another precept to the bedells of the university, who thereupon return a panel of eighteen matriculated laymen, *laicos privilegio universitatis gaudentes*: and by a jury formed *de medietate*, half of freeholders and half matriculated persons, is the indictment to be tried; and that in the guildhall of the city of Oxford. And if execution be necessary to be awarded in consequence of finding the party guilty, the sheriff of the county must execute the university process; to which he is annually bound by an oath.

VOCABULARY, in grammar, denotes the collection of the words of a language, with their significations, otherwise

called a *dictionary*, *lexicon*, or *nomenclature*. See DICTIONARY. A vocabulary is properly a smaller kind of dictionary, which does not enter so minutely into the origin and different acceptations of words.

VOCAL, something that relates to the voice or speech; thus vocal music is that set to words, especially verses, and to be performed by the voice; in contradistinction to instrumental music, composed only for instruments, without singing.

VOCATIVE, in grammar, the fifth state or case of nouns. See GRAMMAR.

VOETIUS (Gisbert), an eminent divine of the 16th century, was professor of divinity and the oriental tongues at Utrecht, where he was also minister. He assisted at the synod of Dort; and died in 1676, aged eighty-seven. He wrote a great number of works; and was the declared enemy of Des Cartes and his philosophy. His followers are called *Voetians*. Voetius had two sons, *Daniel* and *Paul*, who also wrote several works. *John Voetius*, the son of Paul, was doctor and professor of law at Herborn: he wrote a commentary on the *Pandects*, which is esteemed; and other works on law.

VOICE, a sound produced in the throat and mouth of an animal, by an apparatus of instruments for that purpose. Voices are either articulate or inarticulate. Articulate voices are those whereof several conspire together to form some assemblage or little system of sounds: such are the voices expressing the letters of an alphabet, numbers of which joined together form words. Inarticulate voices are such as are not organized, or assembled into words; such is the barking of dogs, the braying of asses, the hissing of serpents, the singing of birds, &c. The formation of the human voice, with all the varieties thereof observed in speech, music, &c. makes a very curious article of inquiry; and the apparatus and organization of the parts administering thereto, is something exceedingly surprising. Those parts are the trachea or wind-pipe, through which the air passes and repasses into the lungs; the larynx, which is a short cylindrical canal at the head of the trachea; and the glottis, which is a little oval cleft or chink left between two semicircular membranes stretched horizontally within the larynx; which membranes, though capable of joining close together, do generally leave an interval, either greater or less, between them, called the *glottis*.

VOICE, in grammar, a circumstance in verbs, whereby they come to be considered as either active or passive, *i. e.* either expressing an action impressed on another subject, as, *I beat*; or receiving it from another, as, *I am beaten*. See GRAMMAR.

VOICE, in matters of election, denotes a vote or suffrage.

VOICE, in oratory. See DECLAMATION, READING, and ORATORY.

VOLANT, in heraldry, is when a bird, in a coat of arms, is drawn flying, or having its wings spread out.

VOLATILE, in physics, is commonly used to denote a mixed body, whose integrant parts are easily dissipated by fire or heat; but is more properly used for bodies whose parts are easily separated from each other, and dispersed in air.

VOLATILE *Alkali*, in the new French nomenclature *ammoniac*, one of the three alkaline salts. It consists, as Mr. Berthollet and several other chemists have proved, of 807 parts in 1000 of azot, and 193 of hydrogen. Several experiments, published by Dr. Priestley, led the way to this analysis, though he himself did not see their result. It is chiefly procurable from animal substances by distillation, during which process the azot and hydrogen necessary to its formation unite in proper proportions; it is not however procured pure by this process, being mixed with oil and water, and mostly saturated with carbonic acid. To separate these substances, it is first combined with an acid, the muriatic for instance, and then

disengaged from that combination by the addition of lime or pitch. In its greatest degree of purity it can only exist in a gaseous form, at least in the common temperature of the atmosphere. It was at first obtained chiefly from urine, and was therefore called *sal urine*; afterwards from horns, especially from those of the hart, hence its name, *sal cornu cervi*, "hart's horn." See CHEMISTRY.

VOLATILISATION, the art of rendering fixed bodies volatile, or of resolving them by fire into a fine subtil vapour or spirit which easily dissipates and flies away. All bodies, even the most fixed, as gold, may be volatilized, either of themselves, or with the admixture of some volatile substance or spirit, by distillation or sublimation.

VOLECANO, a name given to burning mountains, or to vents for subterraneous fires. The number of volcanoes with which we are at present acquainted is very considerable, not much less than 100. In Europe there are *Ætna*, *Vesuvius*, *Hecle*, *Stromboli*, *Vulcano*; in Asia, one in Mount *Taurus*, three in *Kamtchatka*, five in Japan, two in the Philippines, and a great number more scattered through the islands in the South Sea; in Africa, one in *Fez*, one in the island *Bourbon*, one in *Fuego*, one of the *Cape Verd* islands; and in America several in the *Andes*, *Morne Garou* in *St. Vincent*, and two discovered by Captain *Cook* on the western coast of North America. There are others, but these are best known.

It is remarkable that all the volcanoes with which we are acquainted, four or five perhaps excepted, are situated at a small distance from the sea. Most of them have been burning from time immemorial; some few however have burst out in our time. Volcanoes all occupy the tops of mountains, we find none of them in plains; some of them indeed, which are situated in the ocean, do not rise much above the surface; but even these volcanoes seem to be the apices of mountains, the greater part of which are covered by the sea. The substances ejected by volcanoes are fixed and inflammable air, water, ashes, pumice stones, stones that have undergone no fusion, and lava. The phenomena which take place during the eruptions of volcanoes have been so fully described already in the articles *ÆTNA*, *HECLE*, *ICELAND*, and *VESUVIUS*, that any repetition here would be unnecessary and improper. All that remains, therefore, is to explain the causes of volcanoes, or, to speak more properly, to mention the opinions of philosophers concerning the causes of volcanoes; for the real cause, we are afraid, after all that has been done, remains still unknown. The most elaborate theory that has yet appeared is that of Mr. *Houel*.

According to him, water is necessary for the formation of volcanoes. All volcanoes are near the sea: they are even extinguished when the sea retires from them, for we can still perceive the craters of volcanoes in several lofty inland mountains, which discover what they have been formerly. He supposes that a long series of ages was necessary for the formation of a volcano, and that they were all formed under the surface of the sea. The first explosion which laid open the foundations of the deep, would possibly be preceded by an earthquake. The waters would be parted by a vast globe of burning air, which would issue forth with a tremendous noise, opening at the same time a large and wide vent for the immense flame that was to follow; and which, as it issued from the bottom of the sea, would be spread over its surface by the first gusts of wind which followed. A fire which was to burn through thousands of years, could not be faint or feeble when it was first lighted up. Its first eruptions therefore have undoubtedly been very violent, and the ejected matter very copious. For a long series of ages it would continue to discharge torrents of lava from the bosom of its native earth;

and its first crater would be composed of the fragments of the same earth.

Thus, according to our author, the foundations of the burning mountain would be laid in the bottom of the sea; and even then it would have an hollow cup or crater on the top, similar to that which is to be found on all volcanoes at present. But the question now very naturally occurs, by what means was the internal fire preserved from extinction by the waters of the ocean, which must thus have been incumbent upon it? To this he replies, that "The fire, having disposed the substances in fusion to make an eruption, next laid open the earth, and emitted as much matter as it could discharge, with force sufficient to overcome the resistance of the column of water which would oppose its ascent; but as the strength of the fire diminished, the matter discharged was no longer expelled beyond the mouth; but, by accumulating there, soon closed up the orifice. Thus only small orifices would be left sufficient for giving vent to the vapours of the volcano, and from which only small bubbles of air could ascend to the surface of the water, until new circumstances, such as originally gave occasion to the eruption of the volcano, again took place in the bowels of the earth, and produced new eruptions either through the same or other mouths. The appearance of the sea over the new-formed volcano, in its state of tranquillity, would then be similar to what it is betwixt the islands of *Basilizzo* and *Paritaria*. Columns of air-bubbles are there ascending at the depth of more than 30 feet, and burst on their arriving at the surface. This air would continue to disengage itself with little disturbance as long as it issues forth only in small quantity, until, at the very instant of explosion, when prodigious quantities, generated in the burning focus, would make their way all at once, and the same phenomena which originally took place would again make their appearance."

A volcano, while under water, cannot act precisely as it does in the open air. Its eruptions, though equally strong, cannot extend to so great a distance. The lava accumulates in greater quantity round the crater; the sands, ashes, and *pozzolano*, are not carried away by the winds, but are deposited around its edges, and prevent the marine substances which are driven that way by the waters from entering. Thus they agglomerate with these bodies, and thus a pyramidal mount is formed of all the materials together.

In this manner Mr. *Houel* supposes that the mountain was gradually raised out of the sea by the accumulation of lava, &c. at every eruption, and that the cavern of the volcano was gradually enlarged, being driven down into the bottom of the cavern by the continued action of the stones which the volcano is constantly throwing up; that it was there fused, and at last thrown out at the top of the mountain to accumulate on its sides.

The pabulum by which the internal fire is supported, Mr. *Houel* thinks to be substances contained in the mountain itself, together with bitumen, sulphur, and other inflammable materials which may from time to time flow into the focus of the volcano in a melted state through subterraneous ducts, and the explosions he ascribes to water making its way in the same manner. The water is converted into steam, which fills the cavern, and pushes the melted lava out at the crater; this opinion is corroborated by the copious smoke which always precedes an eruption. But, combined with the water, there is always a quantity of other substances, whose effects precede, accompany, or follow the eruptions, and produce all the various phenomena which they display. The eruption of water from *Ætna*, in the year 1775, proceeded undoubtedly from this cause. The sea, or some of the reservoirs in *Ætna*, or the adjacent mountains, by some means discharged a vast quan-

thly of water into the focus of the volcano. That water was instantly resolved into vapour, which immediately filled the whole cavern, and issued from the mouth of the crater. As soon as it made its way into the open atmosphere, it was condensed again into water, which streamed down the sides of the mountain in a dreadful and destructive torrent.

Thus we have given a view of Mr. Houel's theory; according to which volcanoes originally began at the bottom of the sea; and not only the mountain, but all the adjoining country, was formed by successive eruptions. It is rather a theory of mountains raised by subterraneous heat than of volcanoes, and does not attempt to explain the origin of the fire, which is the principal difficulty; neither does his theory account for the immense height to which matters are sometimes thrown during eruptions. This indeed it is impossible to account for, without supposing that the resistance of the air is diminished.

Dr. Woodward and others, indeed, have had recourse to the hypothesis of a *central fire*, to which the volcanoes are only so many chimneys or spiracles; and Dr. Hutton, in his theory of the earth, adopts the same opinion; but as it did not immediately concern the subject of which he treated, he evades any question concerning its origin, by declaring himself satisfied of its existence without any enquiry into its origin.

Others, as Dr. Lister, have had recourse to the well-known experiment of the fermentation of sulphur and iron, which will take fire when mixed in considerable quantity, and moistened with water. Pyrites, therefore, which are a natural mixture of these two substances, it is supposed, may naturally give rise to volcanoes. Instances are indeed adduced, which undoubtedly prove that these substances will spontaneously take fire when thrown together in large heaps.

When the matter is properly considered, however, it must be evident, that neither of these hypotheses can answer the purpose. The central fire of Dr. Woodward and others is a cause too magnificent even for volcanoes. If any such fire is supposed, we must imagine a burning globe in the centre of the earth, whose heat is sufficient to vitrify the most solid and refractory terrestrial substances. But of what dimensions are we to suppose this globe? Is it one, two, three, four, or more thousands of miles in diameter?—Very large indeed it must be, for we could scarce suppose that fumes could be projected even from the depth of 500 miles into the air. But even this supposition is inadmissible; for as the fire of volcanoes is at times exceedingly augmented from some cause or other, were this cause general, as it must be in case of a burning central globe, the whole number of volcanoes existing on earth would be in a state of eruption at once. Besides, if we were to suppose a burning globe of 7000 miles in diameter to suffer the least dilatation throughout its vast bulk, which must be the undoubted consequence of an augmentation of heat from any unknown cause, all the volcanoes in the world would not be sufficient to give vent to it, though they should spout forth incessant cataracts of lava for centuries together. A dissolution of the whole globe must therefore undoubtedly take place; and though we should lessen the diameter of our burning globe by 1000 miles, our difficulties will be as far from being removed as before.

Volcanic fire, therefore, cannot originate from any general collection of burning materials dispersed throughout the vast mass of solid earth which lies betwixt the surface and the centre. All the volcanoes at present in an active state would not be such a vent for that fire as a tobacco-pipe would be to a glass-house furnace. We must have recourse then to some operation by which we know that nature can kindle and extinguish fires occasionally; and if we can suppose such an operation to take place in the bowels of the earth, we may then reasonably conclude, that we have discovered a cause adequate

to the production of volcanoes. Such a cause, however, cannot be pyrites, sulphur, or nitre, in any quantity under the surface of the earth. It is impossible that beds of pyrites can remain for thousands of years under the same part of the surface of the earth, be occasionally inflamed and ejected, and afterwards undergo a renovation, in order to enable them to go through a similar operation. Besides, neither pyrites nor sulphur can be inflamed without access of air; which cannot take place in the bowels of the earth; for it must be remembered, that the first question is concerning the means by which the fire was originally kindled. Most writers, however, seem to overlook this difficulty, and to be solicitous only about the immediate cause of the explosive force, which is generally ascribed to steam of one kind or other. Mr. Houel in general calls it the force of fire, or of steam; though he does not enter very particularly into its nature. Mr. Whitehurst says, that it is the force of "fire and water, which is the primary agent in all such operations of nature." He also gives a figure, showing how, by means of confined steam, a jet, either of hot water or of liquid fire, may be produced. But this applies only to a particular case, which we cannot suppose always to happen; but volcanoes are constantly attended with explosions; nay, so great is the tendency of volcanic matters to this violent operation, that many fumes have been observed to burst in the air like bombs, after they were thrown out of the volcano; and Mr. Houel even informs us, that such have burst three times during their flight. Water therefore cannot be always the cause of volcanic explosions. When thrown upon melted lead, salts, or especially copper, it explodes indeed with vast force. With the last-mentioned metal it is peculiarly and incredibly violent; inasmuch, that it is said that furnaces have been burst, and buildings thrown down, by the mere circumstance of some of the workmen pitting among the melted metal; and Mr. Whitehurst calculates the force of aqueous steam, when thus suddenly and violently heated, to be no less than twenty-eight times stronger than inflamed gunpowder.

Many philosophers attempt to account for the origin and continuance of volcanoes by the agency of the electric fluid; but their theory is so ill supported by facts, that we think it would be improper at present to take up room with detailing it.

VOLERY, a great bird-cage, so that the birds have room to fly up and down in it.

VOLGA, the largest river in Europe, rises in the forest of Volkonski, about eighty miles from Tver, a town in Russia. This noble river waters some of the finest provinces in the Russian empire, and at last falls into the Caspian Sea by several mouths, below Astracan.

VOLITION, the act of willing. See **METAPHYSICS**.

VOLLEY, a military salute, made by discharging a great number of fire-arms at the same time.

VOLONES, in Roman antiquity, slaves who in the Punic war voluntarily offered their service to the state, which is the reason of the appellation; upon which they were admitted to citizenship, as none but freemen could be soldiers.

VOLT, in the manège, a round or circular tread; and hence, by the phrase *to make volts*, is understood a gate of two treads, made by a horse going sidewise round a centre, in such a manner that these two treads make parallel tracts; one larger, made by the fore-feet, and another smaller made by the hind-feet; the croup approaching towards the centre, and the shoulders bearing out.

VOLTAIRE (Francis Arouet de); a celebrated French author, was born at Paris, February 20, 1694. His father, Francis Arouet, was *ancien notaire au Chatelet*, and treasurer of the chamber of accounts; his mother, Mary-Margaret Draumart. At the birth of this extraordinary man, who lived

to the age of eighty-five years and some months, there was little probability of his being reared, and for a considerable time he continued remarkably feeble. "In his earliest years he displayed a ready wit and a brightly imagination; and, as he said of himself, made verses before he was out of his cradle. He was educated, under Father Poré, in the college of Louis the Great; and such was his proficiency, that many of his essays are now existing, which, though written when he was between twelve and fourteen, show no marks of infancy. The famous Ninon de l'Enclos, to whom this ingenious boy was introduced, left him a legacy of 2000 livres to buy him a library. Having been sent to the equity schools on his quitting college, he was so disgusted with the dryness of the law, that he devoted himself entirely to the muses. He was admitted into the company of the Abbé Cheaulieu, the marquis de la Fare, the Duke de Sully, the grand prior of Vendôme, Marshal Villars, and the Chevalier du Bouillon; and caught from them that easy taste and delicate humour which distinguished the court of Louis XIV. Voltaire had early imbibed a turn for satire; and, for some Philipics against the government, was imprisoned almost a year in the Bastille. He had before this period produced the tragedy of *Oedipus*, which was represented in 1718 with great success; and the Duke of Orleans happening to see it performed, was so delighted, that he obtained his release from prison. The poet waiting on the duke to return thanks: "Be wife (said the duke), and I will take care of you." "I am infinitely obliged (replied the young man); but I intreat your royal highness not to trouble yourself any further about my lodging or board."

He began his *Henriade* before he was eighteen. Having one day read several cantos of this poem on a visit to his intimate friend, the young president de Maisons, he was so teased with objections, that he lost patience, and threw his manuscript into the fire. The president, Hénaut, with difficulty rescued it. "Remember," said Mr. Hénaut to him, in one of his letters, "it was I that saved the *Henriade*, and that it cost me a handsome pair of ruffles." Some years after, several copies of this poem having got abroad, while it was only a sketch, an edition of it was published, with many changes, under the title of *The League*. Instead of fame and friends, the author gained only enemies and mortification, by this first edition. The bigots took fire at it, and the poet was considered as highly criminal for praising Admiral Coligny and Queen Elizabeth. Endeavours were even used to get the piece suppressed; but this strange design proved abortive. His chagrin, on this occasion, first inspired him with the thought of visiting England, in order to finish the work, and republish it in a land of liberty. He was right; for King George I. and more particularly the Princess of Wales, afterwards queen of England, raised an immense subscription for him. Their liberality laid the foundation of his fortune; for on his return to France, in 1728, he put his money into a lottery established by M. Desfortes, comptroller-general of the finances. The adventurers received a rent charge on the *Hotel-de-Ville* for their tickets; and the prizes were paid in ready money; so that if a society had taken all the tickets, it would have gained a million of livres. He joined with a numerous company of adventurers, and was fortunate.

His *Lettres Philosophiques*, abounding in bold expressions and indecent witticisms against religion, having been burnt by a decree of the parliament of Paris, and a warrant being issued for apprehending the author in 1733, Voltaire very prudently withdrew; and was sheltered by the Marchioness du Chatelet, in her castle of Cirey, on the borders of Champagne and Lorraine, who entered with him on the study of the system of Leibnitz, and the Principia of Newton. A gallery was

built, in which Voltaire formed a good collection of natural history, and made an infinite number of experiments on light and electricity. He laboured in the mean time on his Elements of the Newtonian Philosophy, then totally unknown in France, and which the numerous admirers of Des Cartes were very little desirous should be known. In the midst of these philosophic pursuits he produced the tragedy of *Alzira*. He was now in the meridian of his age and genius, as was evident from the tragedy of *Mahomet*, first acted in 1741; but it was represented to the procureur-general, as a performance offensive to religion; and the author, by order of Cardinal Fleury, withdrew it from the stage. *Merope*, played two years after, 1743, gave an idea of a species of tragedy, of which few models had existed. It was at the representation of this tragedy that the pit and boxes were clamorous for a fight of the author; yet it was severely criticised when it came from the press. He now became a favourite at court, through the interest of Madame d'Etiole, afterwards Marchioness of Pampadour. He was appointed a gentleman of the bed-chamber in ordinary, and historiographer of France. He had frequently attempted to gain admittance into the Academy of Sciences, but could not obtain his wish, till 1746, when he was the first who broke through the absurd custom of filling an inaugural speech with the fulsome adulation of Richelieu; an example soon followed by other academicians. From the satires occasioned by this innovation, he felt so much uneasiness, that he was glad to retire with the Marchioness du Chatelet to Luneville, in the neighbourhood of King Stanislaus. The marchioness dying in 1749, Voltaire returned to Paris, where his stay was but short. The King of Prussia now gave Voltaire an invitation to live with him, which he accepted towards the end of August, 1750. On his arrival at Berlin, he was immediately presented with the *Order of Merit*, the *key of chamberlain*, and a pension of 20,000 livres. From the particular respect that was paid to him, his time was now spent in the most agreeable manner; his apartments were under those of the king, whom he was allowed to visit at stated hours, to read with him the best works of either ancient or modern authors, and to assist his majesty in the literary productions by which he relieved the cares of government. But a dispute which arose between him and Maupertuis soon brought on his disgrace. Maupertuis was at some pains to have it reported at court, that one day while General Manstein happened to be in the apartments of M. de Voltaire, who was then translating into French, The Memoirs of Russia, composed by that officer, the king, in his usual manner, sent a copy of verses to be examined, when Voltaire said to Manstein, "Let us leave off for the present, my friend; you see the king has sent me his dirty linen to wash, I will wash yours another time." A single word is sometimes sufficient to ruin a man at court; Maupertuis imputed such a word to Voltaire, and succeeded. It was about this very time that Maupertuis published his very strange Philosophical Letters; and M. de Voltaire did not fail to heighten, with his utmost powers of railery, everything which he found, or could make, ridiculous, in the projects of M. Maupertuis, who was careful to unite his own cause with that of the king: Voltaire was considered as having failed in respect to his majesty; and therefore, in the most respectful manner, he returned to the king his chamberlain's key, and the cross of his Order of Merit, accompanied with four lines of verse, in which he, with great delicacy, compares his situation to that of a jealous lover, who sends back the picture of his mistress. The king returned the key and the ribbon; but they were not followed by an immediate reconciliation. Voltaire set out to pay a visit to her highness the Duchess of Gotha, who honoured him with her friendship as long as she lived. While he remained at Go-

tha, Maupertuis employed all his batteries against him; Voltaire was arrested by the king's orders, but afterwards released.

He now settled near Geneva; but afterward being obliged to quit that republic, he purchased the castle of Ferney in France, about a league from the lake of Geneva. It was here that he undertook the defence of the celebrated family of Calas; and it was not long before he had a second opportunity of vindicating the innocence of another condemned family of the name of *Sirven*. It is somewhat remarkable, that in the year 1774, he had the third time a singular opportunity of employing that same zeal which he had the good fortune to display in the fatal catastrophe of the families of Calas and *Sirven*.

In this retreat M. Voltaire continued long to enjoy the pleasures of a rural life, accompanied with the admiration of a vast number of wits and philosophers throughout all Europe. Wearied at length, however, with his situation, or yielding to the importunities of friends, he came to Paris about the beginning of the year 1778, where he wrote a new tragedy called *Irene*. By this time his understanding seems to have been impaired, either through the infirmities of age, or continued intoxication by the flattery of others; and he ridiculously suffered himself to be crowned in public with laurel in testimony of his great poetical merit. He did not long survive this farce; for having overheated himself with receiving visits, and exhausted his spirits by supplying a perpetual fund of conversation, he was first seized with a spitting of blood; and at last becoming restless in the night-time, he was obliged to use a soporific medicine. Of this he unluckily one night took too large a dose, that he slept thirty-six hours, and expired a very short time after awakening from it.

VOLUME, in matters of literature, a book or writing of a just bulk to be bound by itself. The name is derived from the Latin *volvere*, "to roll up;" the ancient manner of making up books being in rolls of bark or parchment. See **Book**.

VOLUNTARY, in music, a piece played by a musician extempore, according to his fancy. This is often used before he begins to set himself to pay any particular composition, to try the instrument, and to lead him into the key of the piece he intends to perform.

VOLUNTEERS, persons who, of their own accord, either for the service of their prince, or out of the esteem they have for their general, serve in the army without being enlisted, to gain honour and preferment, by exposing themselves in the service. Such are the volunteers who have been long known in the army; but the present age has witnessed whole regiments of volunteers arming themselves for a still more laudable purpose—to fight *pro aris et focis*, for every thing that is dear to honest men.

VOLVOX, in zoology; a genus of animals belonging to the order of *vermes injuria*. The body is round, simple, and pellucid. There are ten species, all of which live in water.

VOLUSENUS. See **WILSON**.

VOLUTA, in natural history; a genus of animals belonging to the class and order of *vermes testacea*. There are 144 species. The animals are of the slug kind; the shell is unilocular and spiral; the aperture narrow and without a beak; the columella plaited.

VOLUTE, in architecture, a kind of spiral scroll used in the Ionic and Composite capitals, whereof it makes the principal characteristic and ornament.

VOMICA, in medicine, an abscess of the lungs. See **ME- DICINE**.

NEW VOMICA, in pharmacy, a flat compressed round fruit,

of the breadth of a shilling, or somewhat more, and of about the thickness of a crown-piece. It is the nucleus of a fruit of an East-Indian tree, the wood of which is the *lignum columbini* of the shops. Some have prescribed small doses of the nux vomica as a specific against a gonorrhœa, and others against quartan agues. But we have so many good and safe medicines for all these purposes, that there seems no occasion for our having recourse to such as these, which show so many signs of mischief.

VOMIT. See **EMETIC**.

VOMITING, a retrograde spasmodic motion of the muscular fibres of the œsophagus, stomach, and intestines, attended with strong convulsions of the muscles of the abdomen and diaphragm; which, when gentle, create a nausea; when violent, a vomiting.

VOORN, one of the islands of Holland, bounded by the river Maes, which divides it from the continent and the island of Idemunde, on the north; by the sea called the *Bies-bocht*, on the east; by another branch of the Maes, which divides it from the islands of Goree and Overflackee, on the south; and by the German Sea on the west: being about twenty-four miles long, and five broad.

VORTEX, in meteorology, a whirlwind, or sudden, rapid, and violent motion of the air in gyres, or circles. *Vortex* is also used for an eddy or whirlpool; or a body of water, in certain seas or rivers, which runs rapidly round, forming a sort of cavity in the middle.

VORTEX, in the Cartesian philosophy, is a system or collection of particles of matter moving the same way, and round the same axis.

VORTICELLO. See **MICROSCOPÉ**.

VOSSIUS (John Gerard), one of the most learned and laborious writers of the 17th century, was of a considerable family in the Netherlands; and was born in 1577, in the Palatinate, near Heidelberg, at a place where his father, John Vossius, was minister. He became well skilled in polite literature, history, and sacred and profane antiquities, and was made director of the college of Dort. He was at length made professor of eloquence and chronology at Leyden, from whence he was called in 1633 to Amsterdam, to fill the chair of a professor of history. He died in 1649. He wrote many learned works, of which a complete edition has been printed at Amsterdam, in 9 vols folio.

VOSSIUS (Isaac), a man of great parts and learning, the son of John Gerard Vossius, was born at Leyden in 1618. He had no other tutor but his father, and employed his whole life in studying; his merit recommended him to a correspondence with Queen Christina of Sweden; he made several journeys into Sweden by her order, and had the honour to teach her the Greek language. In 1670 he came over to England, where King Charles made him canon of Windsor; though he knew his character well enough to say, that there was nothing that Vossius refused to believe, except the Bible. He appears indeed by his publications, which are neither so useful nor so numerous as his father's, to have been a most credulous man, while he afforded many circumstances to bring his religious faith in question. He died at Windsor castle in 1688.

VOTE, the suffrage or resolve of each of the members of an assembly, where any affair is to be carried by a majority; but more particularly used for the resolves of the members of either house of parliament.

VOTIVE MEDALS, those on which are expressed the vows of the people for the emperors or empresses. See **MEDAL**.

VOW, a solemn and religious promise or oath. See **OATH**. The use of vows is found in most religions. They make up a

considerable part of the Pagan worship, being made either in consequence of some deliverance, under some pressing necessity, or for the success of some enterprize. Among the Jews, all vows were to be voluntary, and made by persons wholly in their own power; and if such person made a vow in any thing lawful and possible, he was obliged to fulfil it. If he appointed no particular time for accomplishing his vow, he was bound to do it instantly, lest by delay he should prove less able, or be unwilling, to execute his promise. Among the Romanists, a person is constituted a religious by taking three vows; that of poverty, chastity, and obedience. Vows, among the Romans, signified sacrifices, offerings, presents, and prayers made for the Cæsar, and emperors, particularly for their prosperity and the continuance of their empire. These were at first made every five years, then every fifteen, and afterwards every twenty, and were called *quinquennialia*, *decennialia*, and *vicennialia*.

VOWEL, in grammar, a letter which affords a complete sound of itself, or a letter so simple as only to need a bare opening of the mouth to make it heard, and to form a distinct voice. The vowels are six in number, viz. A, E, I, O, U, Y.

VOWEL (John). See HOOKER.

UPHOLSTER, UPHOLSTERER, or Upholder, a tradesman that makes beds, and all sorts of furniture thereunto belonging, &c.

UPLAND, denotes high ground, or, as some call it, *terra firma*, by which it stands opposed to such as is moorish, marshy, or low.

UPLAND, a province of Sweden, bounded on the north-east by the Baltic Sea, on the south by the sea of Sudermania, and on the west by Westmania and Gestricia, from which it is separated by the river Dela. It is about seventy miles in length and forty-five in breadth, and contains mines of iron and lead. Stockholm is the capital.

UPSAL, a rich and considerable city of Sweden, in Upland, with a famous university, and an archbishop's see. The town is pretty large, and as straight as a line: but most of the houses are of wood, covered with birch-bark, with turf on the top. On an eminence, to the south of the town, is a ruined castle. Those that view the town from hence would take it to be a garden, whose streets represent the alleys; and the houses, which are covered with turf, the grass-plats. It was formerly the residence of the kings, and is now the usual place where they are crowned. It is seated on the river Sala, over which there are two bridges. It is twenty-seven miles north-west of Stockholm. E. Long. 17. 48. N. Lat. 59. 52.

UPUFA, in ornithology; a genus belonging to the order of *Picæ*. The beak is arcuated, convex, and something blunt; the tongue is obtuse, triangular, entire, and very short; and the feet are fitted for walking. There are ten species; one of which, the *epops*, hoopoe, or dung-bird, is frequently seen in Britain. It may be readily distinguished from all others that visit this island by its beautiful crest, which it can erect or depress at pleasure. It is in length fifteen inches; the bill is black, two inches and a half long, slender, and incurved; the irides are hazel: the crest consists of a double row of feathers; the highest about two inches long; the tips are black, their lower part of a pale orange colour: the neck is of a pale reddish brown; the breast and belly white; the lesser coverts of the wings are of a light brown; the back, scapulars, and wings, crossed with broad bars of white and black; the rump is white; the tail consists of only ten feathers, white marked with black, in form of a crescent, the horns pointing towards the end of the feathers. The legs are short

and black; the exterior toe is closely united at the bottom to the middle toe.

According to Linnaeus, it takes its name from its note, which has a sound similar to the word; or it may be derived from the French *huppe*, or "crested:" it breeds in hollow trees, and lays two ash-coloured eggs: it feeds on insects, which it picks out of order of all kinds. Dr. Pallas affirms, that it breeds in preference in putrid carcases; and that he had seen the nest of one in the privy of an uninhabited house, in the suburbs of Tzaritzyn. Ovid says that Iereus was changed into this bird.

UR (anc. geog.), a citadel of Mesopotamia, situated between the Tigris and Euphrates; taken by some for Ur of the Chaldees, the residence of Abraham. What seems to confirm this is, that from Ur to Haran, the other residence of the patriarch, the road lies directly for Palestine. And it is no objection that Ur is said to be in Mesopotamia: because the parts next the Tigris were occupied by the Chaldeans, as seems to be confirmed from Acts vii. 2, 4. It is called *Orche*, in Strabo; *Orchoe*, in Ptolemy.

URALIAN CHAIN, a range of mountains which form part of the boundaries of Asia, and anciently known by the name of *Riphaei Montes*. See *RIPHAËI Montes*, &c.

URANIA, in fabulous history, one of the nine Muses, was supposed to preside over astronomy. She is commonly represented in an azure robe, crowned with stars, and supporting a large globe with both hands.

URANIUM, a fossil found at Johangeorgensstad in Saxony, and at Joachimsthal in Bohemia, and is, by the miners, called *Pechblend*. M. Werner, a German mineralogist, being convinced that it was not a blend, gave it the name of *terram Ochraceum Piccum*, and thought it contained the tungstic acid combined with iron: but M. Klaproth is of a contrary opinion, and maintains that it is very different from wolfram. There are (he says) two varieties of *pechblend*: the one is of a dark grey colour, with very little brilliancy, the particles of which have the form of a flattened cucurbit; it is not very hard, and when triturated, becomes a black powder: its mean specific gravity is 7.5. The other is distinguished by its black colour, though it sometimes assumes a reddish tint: its surface is more brilliant than that of the former, and resembles pit-coal; it is also less hard; and the black powder, to which it is reduced by trituration, has a greenish hue. This kind is generally discovered in compact masses, lying between strata of a micaceous schist, which is found to be decomposed. In the internal parts of this stone, it is not uncommon to meet with veins of a peculiar yellow metallic earth. The *pechblend* is soluble in the nitric and in the nitromuriatic acids, partially so in the muriatic, but not at all in the sulphuric. From these solutions, the unsaturated ferruginous prussiate of potash, or phlogisticated alkali, precipitates the metallic substance, which then resembles kermes mineral in colour. This, when it does not unite in flakes, but is uniformly dissolved in the solution, may be considered as one of the most distinguishing characters of the *pechblend*; another is, that the precipitates, effected by the volatile and fixed alkalis, are yellow; the fixed caustic alkalis giving it a lemon colour, the aerated a like yellow. This yellow oxyd, or calx, cannot be fused with alkalis. As this fossil cannot be classed either among the zinc or iron ores, and is very different from tungstene, M. Klaproth proposes to give to it the appellation of *Uranium*; and he distributes it into the following species:

1. *Uranium sulphuratum*. (a) Dark grey, often exhibiting traces of Galena. (b) Black, resembling pit-coal.
2. *Uranium Ochraceum*. Brimstone colour, lemon colour, deep yellow, reddish brown.

3. *Uranium Spathosum*. (a) Tinged with green by copper.
(b) Yellow. This is the green mica or chalcolithre.

URANOSCOPIUS, in ichthyology, a genus of fishes belonging to the order of *jugulares*. The head is large, rough, and depressed, the upper jaw being shorter than the under one; there are six dentated rays in the membrane of the gills; and the anus is in the middle of the body. There are two species, one of which is found in the Mediterranean Sea.

RAPHAEL D'URBINO. See **RAPHAEL**.

URCHIN, in zoology. See **ECHINUS**.

URETERS, in anatomy. See **ANATOMY**.

URETHRA, in anatomy. See **ANATOMY**.

URIM and THUMMIM, among the ancient Hebrews, a certain oracular manner of consulting God, which was done by the high priest dressed in his robes, and having on his pectoral or breast-plate. Various have been the sentiments of commentators concerning the urim and thummim. Josephus, and several others, maintain, that it meant the precious stones set in the high-priest's breast-plate, which by extraordinary lustre made known the will of God to those who consulted him. Spencer believes that the urim and thummim were two little golden figures shut up in the pectoral as in a purse, which gave responses with an articulate voice. In short, there are as many opinions concerning the urim and thummim as there are particular authors that wrote about them. The safest opinion, according to Broughton, seems to be, that the words *urim* and *thummim* signify some divine virtue and power annexed to the breast-plate of the high-priest, by which an oracular answer was obtained from God when he was consulted by the high-priest; and that this was called *urim* and *thummim*, to express the clearness and perfection which these oracular answers always carried with them; for *urim* signifies "light," and *thummim* "perfection;" these answers not being imperfect and ambiguous, like the heathen oracles, but clear and evident. The use made of the urim and thummim was to consult God in difficult cases relating to the whole state of Israel; and sometimes in cases relating to the king, the sanhedrim, the general of the army, or some other great personage.

URINAL, in medicine, a vessel fit to receive and hold urine, and used accordingly for the convenience of sick persons. It is usually of glass, and crooked.

URINAL, in chemistry, is an oblong glass vessel, closed for making solutions, and so called from its resemblance to the glasses in which urine is set to settle for the inspection of the physician.

URINE, a serous and saline fluid, separated from the blood, and carried by the emulgent arteries to the kidneys, from whence it descends to the bladder by the ureters, and is from time to time emitted thence by the canal of the urethra. See **ANATOMY**. For the analysis of urine, see **CHEMISTRY**, vol. II. p. 465.

URN, a kind of a vase, of a roundish form, but biggest in the middle, like the common pitchers, now seldom used but in the way of ornament over chimney-pieces, in beaufets, &c. The great use of urns among the ancients, was to preserve the ashes of the dead after they were burnt; for which reason they were called *cineraria*, and *urnae cinerarie*, and were placed sometimes under the tomb-stone whereon the epitaph was cut; and sometimes in vaults in their own houses. Urns were also used at their sacrifices to put liquid things in.

UROGALLUS, in ornithology. See **TETRAO**.

URSA, in astronomy, the name of two constellations in the northern hemisphere.

VOL. X.

URSULINES, in church-history, an order of nuns, founded originally by St. Angela of Brescia, in the year 1537; and so called from St. Ursula, to whom they were dedicated.

URSUS, the **BEAR**: a genus of quadrupeds belonging to the order of *Ferae*. There are six fore-teeth in the upper jaw, alternately hollow in the inside, and six in the under jaw, the two lateral ones being lobated. The dog-teeth are solitary and conical; the eyes are furnished with a nictitating membrane; the nose is prominent; and there is a crooked bone in the penis. There are eight species; the principal of which are,

1. *Arctos*, the black bear, has strong, thick, and clumsy limbs; very short tail; large feet; body covered with very long and shaggy hair, various in its colour; the largest are of a rusty brown; the smallest of a deep black: some from the confines of Russia black, mixed with white hairs, called by the Germans, *silver bear*; and some (but rarely) are found in Tartary of a pure white. It inhabits the north parts of Europe and Asia; the Alps of Switzerland, and Dauphine; Japan and Ceylon; North America and Peru. The brown bears are sometimes carnivorous, and will destroy cattle, and eat carrion; but their general food is roots, fruits, and vegetables: they will rob the fields of pease; and, when they are ripe, pluck great quantities up, beat the pease out of the hulks on some hard place, eat them, and carry off the straw: they will also, during winter, break into the farmer's yard, and make great havoc among his stock of oats; they are also particularly fond of honey. The flesh of a bear in autumn, when they are excessively fat, by feeding on acorns, and other mast, is delicate food; and that of the cubs still finer; but the paws of the old bears are reckoned the most exquisite morsel; the fat white, and very sweet; the oil excellent for strains and old pains. The latter end of autumn, after they have fattened themselves to the greatest degree, the bears withdraw to their dens, where they continue for a great number of days in total inactivity and abstinence from food, having no other nourishment than what they get by sucking their feet, where the fat lodges in great abundance: their retreats are either in cliffs of rocks, in the deepest recesses of the thickest woods; or in the hollows of ancient trees, which they ascend and descend with surprising agility: as they lay in no winter provisions, they are in a certain space of time forced from their retreats by hunger, and come out extremely lean: multitudes are killed annually in America, for the sake of their flesh or skin; which last makes a considerable article of commerce.

2. *Martimis*, the polar or white bear, has a long head and neck: short round ears; great teeth; the hair long, soft, and white, tinged in some parts with yellow; growing to a vast size; the skins of some being thirteen feet long. See Plate 2.

This animal is confined to the coldest part of the globe; it has been found as far as navigators have penetrated northwards, above lat. 80. The frigid climes only seem adapted to its nature; for we do not learn from any authority that it is met with farther south than Newfoundland. Its bounds in respect to longitude are also very limited; being an animal unknown except on the shores of Hudson's Bay, Greenland, and Spitzbergen, on one side, and those of Nova Zembla on the other; for such as have appeared in other parts have been brought there involuntarily on floating islands of ice; so that the intermediate countries of Norway and Iceland are acquainted with them but by accident. We cannot trace them farther east than Nova Zembla; though the frozen sea, that is continued from thence as far as the

land of Tschukfchi, that lies above Kamtschatka, is equally suited to their nature. The late histories of those countries are silent in respect to them.

During summer, the white bears are either resident on islands of ice, or passing from one to another: they swim admirably, and can continue that exercise six or seven leagues, and dive with great agility. They bring two young at a time: the affection between the parents and them is so strong, that they would die rather than desert one another. Their winter retreats are under the snow, in which they form deep dens, supported by pillars of the same. They feed on fish, seals, and the carcasses of whales, and on human bodies, which they will greedily tear up: they seem very fond of human blood; and are so fearless as to attack companies of armed men, and even to board small vessels. When on land, they live on birds and their eggs; and allured by the scent of seals' flesh, often break into and plunder the houses of the Greenlanders: their greatest enemy in the brute creation is the morse, with whom they have terrible conflicts, but are generally worsted, the vast teeth of the former giving it a superiority. The flesh is white, and said to taste like mutton: the fat is melted for train oil, and that of the feet used in medicine: but the liver is very unwholesome, as three of Barentz's sailors experienced, who fell dangerously ill on eating some of it boiled. One of this species was brought over to England a few years ago; it was very furious, almost always in motion, roared loud, and seemed very uneasy, except when cooled by having pauls of water poured on it.

3. The *luscus*, or wolverene, has a black sharp-pointed visage; short rounded ears, almost hid in the hairs; the sides of a yellowish brown, which passes in form of a band quite over the hind part of the back, above the tail; the legs are very strong, thick and short, of a deep black: the whole body is covered with very long and thick hair, which varies in colour according to the season. It inhabits Hudson's Bay and Canada, as far as the straits of Michilimackinac; is found under the name of the *glutton* in the north parts of Europe and Asia, being a native of the most rigorous climates.

It is a most voracious animal, and slow of foot; so is obliged to take its prey by surprise. In America it is called the *beaver-eater*, watching those animals as they come out of their houses, and sometimes breaking into their habitations, and devouring them. It often lurks on trees, and falls on the quadrupeds that pass under; will fasten on the horse, elk, or stag, and continue eating a hole into its body, till the animal falls down with the pain; or else will tear out its eyes: no force can disengage it; yet sometimes the deer in their agony have been known to destroy it, by running their head violently against a tree. It devours the fishes, or white fox; searches for the traps laid for the fables and other animals; and is often beforehand with the hunters, who sustain great losses by the glutton: authors have pretended that it feeds so voraciously, that at length it is in danger of bursting; and that it is obliged to ease itself of its load, by squeezing it out between two trees.

In a wild state, it is vastly fierce; a terror to both wolf and bear, which will not prey on it when they find it dead, perhaps on account of its being so very fetid, smelling like a pole-cat: it makes a strong resistance when attacked; will tear the flock from the gun, and pull the traps it is caught in to pieces. Notwithstanding this, it is capable of being tamed, and of learning several tricks. It burrows, and has its den under ground. The skin is sold in Siberia for 4s. or 6s.; at Jakutsk for 12s.; and still dearer at Kamtschatka,

where the women dress their hair with its white paws, which they esteem a great ornament. The fur is greatly esteemed in Europe: that of the north of Europe and Asia, whose skins are sometimes to be seen in the furriers' shops, is much finer, blacker, and more glossy than that of the wolverene, or American kind. The glutton has by some authors been confounded with the hyena.

4. The *lutor*, or raccoon, has the upper part of the body covered with hair, ash-coloured at the root, whitish in the middle, and tipped with black; tail very bushy, annulated with black; toes black, and quite divided.—It inhabits the warm and temperate parts of America: is found also in the mountains of Jamaica, and in the isles of Maria, between the south point of California and Cape Corientes, in the South Sea: is easily made tame, very good-natured, and sportive; but as unlucky as a monkey. It is almost always in motion; and very inquisitive, examining every thing with its paws. It makes use of them as hands; sits up to eat; is extremely fond of sweet things, and strong liquors, and will get excessively drunk. It has all the cunning of a fox; and very destructive to poultry; but will eat all sorts of fruits, green corn, &c. At low water it feeds much on oysters, and will watch their opening, and with its paw snatch out the fish; it sometimes is caught in the shell, and kept there till drowned by the coming in of the tide: it is also fond of crabs. It climbs very nimbly up trees. It is hunted for its skin; the fur is, next to that of the beaver for making hats.

5. The *mexles*, or common badger, is an animal of a very clumsy make, with short thick legs, long claws on the fore feet, and a fetid white matter exuding from the orifice below the tail. It inhabits most parts of Europe, as far north as Norway and Russia, and the step or desert beyond Orenburgh, in the Russian Asiatic dominions, north of the Caspian Sea: inhabits also China, and is often found in the butchers' shops in Peking, the Chinese being fond of them; but a scarce animal in most countries. It seldom appears in the day: confines itself much to its hole; is indolent and sleepy; generally very fat; feeds by night; eats roots, fruits, grass, insects, and frogs; but is not carnivorous: it runs slowly; when overtaken, it comes to bay, and defends itself vigorously; its bite is dangerous. It burrows under ground; makes several apartments, but forms only one entrance from the surface. It is hunted during night for the skin, which serves for pistol furniture; the hairs for making brushes to soften the shades in painting. Its flesh makes good bacon.

URTICA, in botany: a genus of plants of the class of *monocia*, and order of *tetrandria*; and in the natural system classed under the 53d order, *Scabridae*. The small flower has a calyx of four leaves; no corolla; a nectarium minute, central, urn-furnished. The female a bivalve calyx; and a single, oval glossy seed. There are twenty-eight species; three of which are British plants. 1. The *pilosissima*, Roman nettle, has a stalk branched, two or three feet high. Leaves opposite, oval, serrated, stinging. Fruit globose. 2. The *urens*, less stinging nettle, has a stem a foot high. Leaves roundish, deeply serrated, opposite, burning. The stings are very curious microscopic objects: they consist of an exceedingly fine pointed, tapering, hollow substance, with a perforation at the point, and a bag at the base. When the spring is pressed upon, it readily perforates the skin, and at the same time forces up some of the acrimonious liquor contained in the bag, into the wound. 3. The *dioica*, common nettle, has a square firm stem, three or four feet high. Leaves heart-shaped, long-pointed, serrated, beset with stings. Flowers in long,

catkins. The aculei, or stings of the nettle, have a small bladder at their base full of a burning corrosive liquor : when touched, they excite a blister, attended with a violent itching pain, though the sting does not appear to be tubular, or perforated at the top, nor any visible liquor to be infused into the puncture made by it in the flesh. It seems certain, however, that some of this liquor is insinuated into the wound, though invisibly, since the stings of the dried plant excite no pain.

Nettle-tops in the spring are often boiled and eaten by the common people instead of cabbage-greens. In Arran, and other islands, a rennet is made of a strong decoction of nettles : a quart of salt is put to three pints of the decoction, and bottled up for use. A common spoonful of this liquor will coagulate a large bowl of milk very readily and agreeably. The stalks of nettles are so like in quality to hemp, that in some parts of Europe and Siberia they have been manufactured into cloth, and paper has been made of them. The whole plant, particularly the root, is esteemed to be diuretic, and has been recommended in the jaundice and nephritic complaints. The roots boiled will dye yarn of a yellow colour. The larvae, or caterpillars, of many species of butterflies feed on the green plant ; and sheep and oxen will readily eat the dried.

UTICA-Marina. See *ANIMAL-Flower*.

USANCE, in commerce, is a determined time fixed for the payment of bills of exchange, reckoned either from the day of the bills being accepted, or from the day of their date ; and thus called because regulated by the usage and custom of the places whereon they are drawn.

USE, in law, the profit or benefit of lands and tenements ; or a trust and confidence reposed in a person for the holding of lands, &c. that he to whose use the trust is made shall receive the profits.

USHANT, an island of France, fifteen miles west of the coast of Brittany, at the entrance of the British Channel.

USHER (James), archbishop of Armagh, one of the most illustrious prelates in the 17th century, as well with respect to his piety and other virtues, as his uncommon erudition, was born in Dublin in 1580, and it is said that two of his aunts taught him to read, though they were both born blind. Dublin college being finished in 1593, he was one of the three first students admitted into it. He made so swift a progress in his studies, that at eighteen years of age he was able to dispute with Henry Fitz-Simon, a famous Jesuit, who challenged all the Protestant clergy ; and defended his cause so well in the castle of Dublin, that he made him repent his challenge. He was ordained priest in 1603 ; and soon after was appointed to preach constantly before the court at Christ-church in Dublin, on Sundays in the afternoon. In 1603 he was sent over to England with Dr. Luke Challoner, in order to purchase books for the library of Dublin. In 1607 he took the degree of bachelor of divinity ; soon after, he was made chancellor of St. Patrick's cathedral, and the same year was chosen professor of divinity, when he made choice of Bellarmine's controversies for the subject of his lectures. Some years after, he made it a constant custom to come over to England once in three years, spending one month of the summer at Oxford, another at Cambridge, and the rest of the time at London. In 1612 he took the degree of doctor of divinity ; at the latter end of the year 1620 he was promoted to the bishopric of Meath, and in 1625 was made archbishop of Armagh. In the administration of his archbishopric he acted in a very exemplary manner, and endeavoured to reform the clergy and officers in the ecclesiastical courts. In 1640 he came over to England with his family, with an intention soon to return to Ireland : but was prevented by the rebellion which broke out

there in 1641 ; and in that rebellion he was plundered of every thing, except his library, which was in England, and some furniture in his house at Drogheda. His majesty, therefore, conferred on him the bishopric of Carlisle, to be held *in commendam* : the revenues of which were greatly lessened by the Scots and Irish armies quartering upon it ; but when all the lands belonging to the bishoprics in England were seized by the parliament, they voted him a pension of 400*l.* *per annum*, though he never received it above once or twice. He afterwards removed to Oxford ; and, in 1643, was nominated one of the assembly of divines at Westminster, but refused to sit amongst them ; which, together with some of his sermons at Oxford, giving offence to the parliament, they ordered his study of books, of considerable value, to be seized ; but by the care of Dr. Featly, one of the assembly, they were secured for the primative's use. The king's affairs declined ; and Oxford being threatened with a siege, he left that city, and retired to Cardiff in Wales, to the house of Sir Timothy Tyrell, who had married his only daughter, and was then governor and general of the ordinance. He was afterwards invited to London by the Countess of Peterborough. In 1647 he was chosen preacher in Lincoln's-Inn ; and during the treaty in the life of Wight, he was sent for by the king, who consulted him about the government of the church. The death of his majesty struck him with great horror. The Countess of Peterborough's house, where the primate then lived, being just over against Charing Cross, several of her gentlemen and servants went up to the leads of the house, whence they could plainly see what was acting before Whitehall. As soon as his majesty came upon the scaffold, some of the household told the primative of it ; and asked him, whether he would see the king once more before he was put to death. He was at first unwilling, but at last went up : where, as the ceremonial advanced, the primative grew more and more affected ; and, when the executioners in vizards began to put up the king's hair, he swooned away. He died of a pleurisy in 1653 ; and was solemnly buried at Westminster, in St. Erasmus's chapel. He published. 1. *Britannicarum Ecclesiarum Antiquitates*. 2. *Polycarpi et Ignatii Epistolæ, Græcè Latine, &c.* 3. *Annals of the Old and New Testament, in Latin*. 4. *De Græcè Septuaginta interpretum Versione Syntagma* ; and many other books which are esteemed. A considerable number of his works still remain in manuscript.

USHER, an officer or servant who has the care and direction of the door of a court, hall, chamber, or the like.

USHER of the Black Rod, the eldest of the gentlemen ushers, daily waiters at court, whose duty it is to bear the rod before the king at the feast of St. George, and other solemnities.

USK, a river of Wales, which rises on the west of Brecknockshire, and runs south-east through that county and Monmouthshire, falling into the mouth of the Severn.

USQUEBAUGH, a strong compound liquor, chiefly taken by way of dram. There are several different methods of making this liquor ; but the following is esteemed one of the best : To two gallons of brandy, or other spirits, put a pound of Spanish liquorice, half a pound of raisins of the sun, four ounces of currants, and three of sliced dates ; the tops of baum, mint, savory, thyme, and the tops of the flowers of rosemary, of each two ounces ; cinnamon and mace, well bruised, nutmegs, anniseeds, and coriander-seeds, bruised likewise, of each four ounces ; of citron or lemon, and orange-peel, scraped, of each an ounce : let all these infuse forty-eight hours in a warm place, often shaking them together ; then let them stand in a cool place for a week : after which the clear liquor is to be decanted off, and to it is to be put an equal quantity of neat white port, and a gallon of canary ;

after which it is to be sweetened with a sufficient quantity of double-refined sugar.

USTION, in pharmacy, the preparing of certain substances by burning them.

USUFRUIT, in the civil law, the use or enjoyment of any lands or tenements; or the right of receiving the fruits and profits of an inheritance, or other thing, without a power of alienating or changing the property thereof.

USURIOUS CONTRACT, is any bargain or contract whereby a man is obliged to pay more interest for money than the statute allows.

USURPATION, in law, is an injurious using or enjoyment of a thing for continuance of time, that belongs of right to another.

USURY, an unlawful contract upon the loan of money, to receive the same again with exorbitant increase. Under the article **INTEREST**, it was observed, that by statute 37 Hen. VIII. c. 9. the rate of interest was fixed at 10l. per cent. per annum: which the statute 13 Eliz. c. 8. confirms, and ordains, that all brokers shall be guilty of a *premunire* that transact any contracts for more, and the securities themselves shall be void. The statute 21 Jac. I. c. 17. reduced interest to 8l. per cent.; and it having been lowered in 1650, during the usurpation, to 6l. per cent. the same reduction was re-enacted after the Restoration by statute 12 Car. II. c. 13. and, lastly, the statute 12 Annæ, ft. 2. c. 16. has reduced it to 5l. per cent. Wherefore not only all contracts for taking more are in themselves totally void, but also the lender shall forfeit treble the money borrowed. Also if any scrivener or broker takes more than 5s. per cent. procuration-money, or more than 12 d. for making a bond, he shall forfeit 20l. with costs, and shall suffer imprisonment for half a year.

UTERUS, in anatomy. See **ANATOMY**.

UTICA (anc. geog.), a town of Africa Propria, on the Mediterranean: a Tyrian colony, and older than Carthage (Sil. Italicus); its name, according to Bochart, denoting *old*: reckoned second to it; but after the destruction of Carthage, became the capital and centre of all the Roman transactions in Africa, according to Strabo; who adds, that it stood on the same bay with Carthage, at one of the promontories called *Apollonium*, bounding the bay on the west side, the other to the east called *Hermia*, being at Carthage. It became famous by the death of Cato, who thence was called *Uticensis*.

UTRECHT, one of the United Dutch States, which, excepting in one small strip of land to the northward, and bordering on the Zuder Sea, is wholly environed by Holland and Guelderland: it enjoys a good air, and, in most parts, the soil is very fruitful; to the eastward, it is, indeed, a high and sterile country, consisting either of sandy hills, or small eminences, which are, in general, over-run with woods; and westward the country perfectly resembles Holland, being for the most part rich meadow, though in many parts full of turf grounds. In the state of Utrecht, are seventy towns and villages. Its states are composed of the clergy, the nobility, and the towns; of these the former are merely nominals. The second class is composed of the nobility, who, on account of their manors, are called to the assembly of the states. The third class consists of the deputies of the five towns of Utrecht, Amersfoort, Wyk, Rhenen, and Montfoort, but more particularly of the first; nay, in consultations, that city even asserts that the other four towns have only one vote; and so far is certain, that Utrecht can control the sentiments of the rest; but the resolutions taken by it, may not be traversed by the others. This country, together with Overysel, once constituted the temporal dominion of the bishop of Utrecht, the

first of whom was Willibrord, who being collated at Rome in the year 696, by Pope Sergius, founded the church of Willenburgh or Utrecht: its prelate was elected by the five chapters of the latter, who were also not without some share in the government; but Henry of Bavaria, the last bishop, who held that office jointly with the ecclesiastical jurisdiction, being a man of a turbulent spirit, drew on him frequent tumults, and at length the principal of his subjects entered into a secret league with Charles duke of Guelderland, who marched out an armed force against him; and the latter being unable to withstand the duke, in 1528, sold his whole diocese or temporal dominion, together with the absolute sovereignty thereof, to the Emperor Charles V. who annexed it as a lordship to the estates of the house of Austria, under which it continued till the reign of his son Philip II. when, in 1579, by its alliance with the other Netherland provinces, who asserted their liberty, it became a free state. The above-mentioned bishop Henry of Bavaria, had three successors as bishop of Utrecht, of whom Frederick baron Schenk of Tautenberg, was in 1559, by King Philip II. created archbishop, and the bishops of Leiwarden, Deventer, Groningen, Haarlem, and Middleburg, made his suffragans; but since the above, all the bishops of Utrecht have forfeited all share in the temporal government. The college of the deputies of this state consists of twelve members, each class of the states sending four; the chamber of accounts is under the direction of four commissioners; and the provincial court of justice is composed of a president, six ordinary and three extraordinary assessors; to the assembly of the States-General it sends three deputies, that is to say, one from each class of its states. The Calvinist congregations are divided into three classes, namely, into those of Utrecht, Amersfoort, and Rhenen, with Wyk, and the number of ministers here, is seventy-nine, the synod is held once a-year at Utrecht. The Roman-catholics have above thirty churches in this state. The Lutherans, the Remonstrants, and the Anabaptists, are but few.

UTRECHT, a city, and capital of the state so called; in Latin *Utrajectum*, *Trajectum Inferius*, *Trajectum*, *Utrivencium*, *Antonina Civitas*, which last name was given it from Antoninus, a Roman senator, by whom it was built, in the time of Nero; and *Trajectum ad Rhenum*, to distinguish it from Maestricht, which was called *Trajectum ad Mosam*. It is a handsome, large, and rich city, situated on the ancient Rhine. The Wiltes ruined it, and left nothing but the castle, which they called *Willenbourg*. In the year 718, Clotaire king of France rebuilt it, and first called it Utrecht, from the word *Trecht*, which signifies passage, because it was the grand passage over the Rhine, before that river had changed its bed. It was enlarged, and surrounded with walls about the year 934, by Balderic de Cleves, the fifteenth bishop. Its figure is oval, and is about a league and a quarter in circumference, besides four large faubourgs; but though fortified with some bastions and half-moons, it is not strong. The emperor Charles V. when he became master of the signiory and city of Utrecht, in the year 1529, built a chateau, which he called *Vrebourg*, or the *chateau of Peace*; and in the year 1546, celebrated a chapter of the order of the Golden Fleece, in the cathedral church, when Maximilian king of Bohemia, and afterwards emperor, Cosmo duke of Florence, Albert duke of Bavaria, Emanuel Philibert duke of Savoy, and eighteen other lords, were installed knights. The dome, or the cathedral church, it is said, was first built in the year 630, by King Dagobert I. and St. Willibrord made it an abbey church, and soon after it became a cathedral. It was rebuilt by Adolboldee, the nineteenth bishop, and by him consecrated in the year 1024, in the presence of the emperor, Henry II. the

Duke of Brabant, the Comptes of Holland, Guddres, Cleves, and Cuyck, and twelve bishops. In the year 1224 it was again begun to be rebuilt by Henry de Vianen, the thirty-eighth bishop, and finished by his successors. The height of the tower is three hundred and eighty eight feet, and from the top, in a clear day, fifteen or sixteen cities may be seen. The cathedral was at first dedicated to St. Thomas, afterwards to St. Martin. The church of Notre-Dame, commonly called *Buur-Kerk*, and English church, has a small library, which contains some ancient manuscripts; the other parishes are St. James, St. Nicholas, and St. Gertrude. It has likewise hospitals for orphans, foundlings, &c. Before the reformation, it had many religious houses. The magistracy is composed of a grand bailly, two burgomasters, twelve echevins, a treasurer, an intendant of buildings, a president, three commissioners of finances, and a senator, which are changed every year on the 12th of October, and hold their assemblies in the town-house, which is a handsome structure. On the 13th of January 1577, the troops of the States-General besieged the Spaniards in the castle and obliged them to surrender; the Count de Boffin, who was then in the interest of the Hollanders, ordered the castle to be razed, on the fourth of September, in the same year. In the year 1672, the French made themselves masters of it; and his most Christian majesty entered it in state, in the month of July, accompanied by the Duke of Orleans, and the Duke of Monmouth; but on the 13th of November, the Duke of Luxemburg, who had been appointed governor, abandoned the city and the whole province, after having compelled them to pay four hundred and fifty thousand livres. The principal streets are cut through with canals, two of which run through the whole city, namely, the Vaert, and the new Gracht, over which there are thirty five bridges. These are the principal canals of the town, and the buildings on the banks of the new Gracht are magnificent. The market-place is very large, and the centre of several handsome streets. The houses are of brick, and many of them stately; they have in general good cellars, which they cannot have in the state of Holland, the ground there being too marshy. Without the town there are beautiful rows of trees, to which the English have given the name of the Mall, by reason of their having some resemblance to St. James's Park. This place was the seat of an archbishop, before it fell into the Protestants' hands, and had four collegiate churches, two commanderies, and several abbeys, which have been all secularized by the States, and applied to other uses. As it stands in a very healthful air, it is frequented by persons of distinction, who have very fine houses in this city. The university is very famous, and attracts a great number of foreigners, among the rest some English, who resort hither for their education. It was originally only a public school, founded by David of Burgundy, bishop of Utrecht; but in the year 1636 it was converted into an university by the States. The university is subject to the magistrates of the city, and has not a great many privileges to boast of. The students wear their ordinary dres, and board in private houses in the town, for there are scarcely any endowed colleges in Holland. Here the states of the province assemble to take cognizance of the affairs of the whole province. There is a public library, well stocked with books in all branches of learning. The town-house is a very noble building. The painters' hall abounds with fine pieces: they have also a physic garden, but of no great note. The town is famous for the treaty of union, signed in 1579, between the Seven Provinces, which laid the foundation of the republic; as likewise for the treaty of peace, signed here in 1713, between France and the Grand Allies. Utrecht gave birth to Pope Adrian VI. whole

VOL. X.

house they always show to foreigners, and to the celebrated Ann Mary Schurman, so admired in the last century for her learning; eighteen miles south-south-east Amsterdam. Long. 22, 32. E. Ferro. Lat. 52. 6. N.

UTRICULARIA, in botany: a genus of plants of the class of *dianthia*, and order of *monogynia*; and in the natural system arranged under the 24th order, *Corydalis*. The calyx is ringent, with a nectarium resembling a spur; the corolla disphyllous and equal; the capsule unilocular. There are nine species; two of which are natives of Britain. They have been applied to no particular use.

UVA URSI. See ARBUTUS.

VULCAN, in Pagan worship, the god of subterraneous fire and metals, was the son of Jupiter, and Juno; and was said to be so remarkably deformed, that his father threw him down from heaven to the isle of Lemnos, in which fall he broke his leg, and there he set up his forge, and taught men how to soften and polish brass and iron. Thence he removed to the Liparian isles, near Sicily, where, by the assistance of the Cyclops, he made Jupiter's thunderbolts, and armour for the other gods. Notwithstanding the deformity of his person, he had a passion for Minerva, and by Jupiter's consent made his addresses to her, but without success. He was, however, more fortunate in his suit to Venus; who, after her marriage, chose Mars for her gallant; when Vulcan exposed them to the ridicule of the other gods, by taking them in a net.

VULGATE, a very ancient Latin translation of the Bible, and the only one acknowledged by the church of Rome to be authentic. See BIBLE.

VURNERARY, in medicine, an epithet formerly given to remedies supposed to possess virtues for the cure of wounds and ulcers.

VULTURE, a genus of birds belonging to the order of *Accipitres*. The beak is straight and crooked at the point; the head has no feathers; on the fore-part being only naked skin; and the tongue is generally bifid. There are twenty-one species. The most remarkable are,

1. *Gryphus*, the condor, which is not only the largest of this genus, but perhaps of all others which are able to fly. The accounts of authors in regard to the strength of this bird, and its extent of wing, are various. From nine to eighteen feet from the tip of one wing to that of the other has been mentioned; and one gives it strength sufficient to carry off sheep, and boys of ten years old; while another ventures to affirm, that it can lift an elephant from the ground high enough to kill it by the fall! However, the account given in Cook's Voyage is very nearly, if not precisely, the truth, as two birds of this kind are now in the museum of Mr. Parkinson, and are probably male and female. The first of these has an extent of wing somewhat under eleven feet. The bill is strong, moderately hooked, and blunt at the tip, which is white, the rest of it being of a dusky colour. On the top of the head runs a kind of carunculated substance, standing up like the comb of a cock. The head and neck are slightly covered with brown down, in some parts nearly bare, and here and there a carunculated part, as in the neck of a turkey. The lower part of the neck is surrounded with a ruff of a pure white and hairy kind of feathers. The upper parts of the body, wing, and garl, are black, except that the middle wing coverts have whitish ends, and the greater coverts half black half white. The nine or ten first quills are black, the rest white, with the tips only black; and when the wings are closed, producing the appearance of the bird having the back white; giving occasion to Molrué, in his History of Chili, to say, that the back was white. The under

parts of the body are rather slightly covered with feathers; but those of the thighs are pretty long. The legs are stout and brown; claws black and blunt.

The second bird chiefly differs in not having the least appearance of a comb or crest, but smooth for the most part, except where the head and neck are covered with down. The ruff on the lower part of the neck is not so full and conspicuous; but as to the colour of the plumage, the difference is not worth noticing. It is not impossible that this last may prove to be a young male, for Moluc expressly says, that the female is smaller than the male, of a brown colour, and has no ruff about the neck, only a small tuft at the back part.

These birds are said to make their nests among the inaccessible rocks, and to lay two white eggs, larger than those of a turkey; are very destructive to sheep, and will in troops often attempt calves; in which case, some of them first pick out the eyes, whilst others attack the poor animal on all sides, and soon tear him to pieces. This gives rise to the following stratagem, used by the peasants of Chili: one of them wraps himself up in the hide of a fresh killed sheep or ox, and lies still on the ground; the condor, supposing it to be lawful prey, flies down to secure it, when the person concealed lays hold of the legs of the bird, his hands being well covered with gloves; and immediately his comrades, who are concealed at a distance, run in, and assist to secure the depredator, by falling on him with sticks till they have killed him. See Plate 2.

2. The *perenopterus*, or Egyptian vulture. The appearance of this bird is as horrid as can well be imagined, viz. the face is naked and wrinkled; the eyes are large and black; the beak black and hooked; the talons large, and extending ready for prey; and the whole body polluted with filth: these are qualities enough to make the beholder shudder with horror. Notwithstanding this, the inhabitants of Egypt cannot be enough thankful to Providence for this bird. All the places round Cairo are filled with the dead bodies of asses and camels; and thousands of these birds fly about, and devour the carcases before they putrify and fill the air with noxious exhalations. The inhabitants of Egypt, and after them Maillet in his Description of Egypt, say, that they yearly follow the caravan to Mecca, and devour the filth of the slaughtered beasts, and the carcases of the camels which die on the journey. They do not fly high, nor are they afraid of men. If one is killed, all the rest surround him in the same manner as do the roystering crows; they do not quit the places they frequent, though frightened by the explosion of a gun, but immediately return thither. Maillet imagines this bird to be the ibis of the ancients: but it is scarcely to be imagined, that a wise nation should pay such honours to an unclean, impure, and rapacious bird, which was not perhaps so common before the Egyptians filled the streets with carcases. If the ibis is to be found, it must certainly be looked for in the order of grallæ of Linnæus; and we imagine it to be the white stork (*Ardea ciconia*), which is so common in Egypt. The Arabians call it *rochemie*; the French living in Egypt, give it the name of *chapon de Pharaon*, or de Mahometh.

3. The *aura*, or carrion vulture, according to Mr. Latham, is about the size of a turkey, though it varies in size in different parts. The bill is white; the end black; irides bluish saffron colour. The head, and part of the neck, are bare of feathers; and of a red, or rather rufous colour. The sides of the head warted, not unlike that of a turkey. The whole plumage is brown black, with a purple and green gloss in different reflections; but in some birds, especially young ones, greatly verging to dirty brown. The feathers of the quills and tail are blacker than the rest of the body. The legs are flesh-colour; the claws black.

This bird is very common in the West Indies, and both in North and South America. It feeds on dead carcases, snakes, &c. like most of this genus; which makes the smell of it very offensive. In general, it is very tame in its wild state, but particularly so when trained up from being young. This our author experienced in two birds sent home from Jamaica. They were suffered to run wild about the garden, and were alert and brisk during the summer months; but impatient of the least cold; for a rainy day, with the slightest degree of cold, obliged them to creep for shelter. In the West Indies, they roost together of nights, in vast numbers, like rooks in this country. They are reckoned a most useful animal in the places where they resort; which secures their safety, added to a penalty for killing one, which is in force in Jamaica, and other islands of the West Indies.

4. The *fagittarius*, or secretary, is a most singular species, being particularly remarkable from the great length of its legs; which at first sight would induce one to think it belonged to waders: but the characters of the vulture are so strongly marked throughout, as to leave no doubt to which class it belongs. The bird, when standing erect, is full three feet from the top of the head to the ground. The bill is black, sharp, and crooked, like that of an eagle; the head, neck, breast, and upper parts of the body, are of a bluish ashy-colour: the legs are very long, shorter than those of a heron, and of a brown colour; claws shortish, but crooked, not very sharp, and of a black colour; from the hind-head springs a number of long feathers, which hang loose behind like a pendent crest; these feathers arise by pairs, and are longer as they are lower down on the neck; this crest the bird can erect or depress at pleasure; it is of a dark colour, almost black; the webs are equal on both sides, and rather curled; and the feathers, when erected, somewhat incline towards the neck; the two middle feathers of the tail twice as long as any of the rest. This singular species inhabits the internal parts of Africa, and is frequently seen at the Cape of Good Hope. It is also met with in the Philippine islands.

The description was taken by Mr. Latham from three that were alike, which he saw in England alive some years since; two of which are now in the Leverian museum. From confinement they had lost their two long tail feathers; but this want was supplied by some accurate drawings by Sir Joseph Banks, taken from the life at the Cape.

As to the manners of this bird, it is on all hands allowed that it principally feeds on rats, lizards, snakes, and the like; and that it will become familiar: whence Sonnerat is of opinion, that it might be made useful in some of our colonies, if encouraged, towards the destruction of those pests. They call it at the Cape of Good Hope *flangateer*, i. e. snake eater. A great peculiarity belongs to it, i. perhaps observed in no other; which is, the faculty of striking forwards with its legs, never backwards. Dr. Solander saw one of these birds take up a snake, small tortoise, or such like, in its claws; when dashing it from thence against the ground with great violence, if the victim was not killed at first, it repeated the operation till that end was answered; after which it ate it up quietly. Dr. J. R. Forster mentioned a further circumstance, which he says was supposed to be peculiar to this bird; that should it by any accident break the leg, the bone would never unite again.

UVULA, in anatomy. See ANATOMY.

UZ, or URZ, the country and place of residence of Job. In the genealogy of the patriarchs there are three persons called Uz, either of which might give this district its name. The first was the grandson of Sem, by his son Aram (Gen. xxii. 23.), who, according to Josephus, occupied the Trachonitis, and Damascus, to the north of Palestine: but Job was

among the sons of the East. Another *Uz* was the son of Nahor, Abraham's brother (Gen. x. 21.), who appears to have removed, after passing the Euphrates, from Haran of Melopotamia to Arabia Deserta. The third *Uz* was a Horite, from mount Seir (Gen. xxxvi. 28.), and thus not of Eber's posterity. Now the question is, from which of these Job's country, *Uz*, took its name? Not from the first, as is already shown; nor from the second, because his country is always called *Seir*, or *Edom*, never *Uz*; and then called a

South, not an *east*, country, in Scripture. It therefore remains, that we look for the country and place of residence of Job in Arabia Deserta; for which there was very probable reason. The plunderers of Job are called *Chaldeans* and *Sabeans*, next neighbours to him. These Sabeans came not from Arabia Felix, but from a nearer Sabe in Arabia Deserta (Ptolentyn) and his friends, except Eliphaz the Themanite, were of Arabia Deserta.

UZBECK TARTARY. See TARTARY.

W.

W A G

W or *w*, is the 21st letter of our alphabet; and is composed, as its name implies, of two *v*'s. It was not in use among the Hebrews, Greeks, or Romans; but chiefly peculiar to the northern nations, the Teutones, Saxons, Britons, &c. But still it is not used by the French, Italians, Spaniards, or Portuguese, except in proper names, and other terms borrowed from languages in which it is originally used, and even then it is founded like the single *v*. This letter is of an ambiguous nature; being a consonant at the beginning of words, and a vowel at the end. It may stand before all the vowels except *a*; as *water*, *wedge*, *winter*, *wonder*: it may also follow the vowels *a*, *e*, *i*, and unites with them into a kind of double vowel, or diphthong; as in *saw*, *few*, *cow*, &c. It also goes before *r*, and follows *i* and *u*; as in *with*, *fewer*, *thwart*: it goes before *b* also, though in reality it is founded after it; as in *woven*, *what*, &c. In some words it is obscure, as in *shadow*, *widow*, &c.

WAAG, a river of Hungary, which rises in the Carpathian mountains, and falls into the Danube opposite to the island of Schut.

WAAL, a river of the United Netherlands, being one of the branches of the Rhine, which runs from east to west, through Guelderland, passing by Nimeguen, Tiel, Bommel, and Gorcum; and, uniting with the Maes, falls into the German Sea below the Briel.

WACHENDORFIA, in botany: a genus of plants of the class of *triandria*, and order of *monogynia*; and arranged in Linnaeus's Natural Method of Classification under the 6th order, *Infusae*. The corolla is hexapetalous, unequal, and situated below the germen; the capsule trilobular and superior. There are four species; none of which are natives of Britain.

WADD, or WAPPING, is a fustle of paper, hay, straw, or the like, forced into a gun upon the powder, to keep it close in the chamber; or to put up close to the shot, to keep it from rolling out.

WAFERS, for sealing letters, are made thus: Take very fine flour, mix it with glair of eggs, singlals, and a little yeast; mingle the materials; beat them well together; spread the batter, being made thin with gum-water, on even tin plates, and dry them in a stove; then cut them out for use. You may tinge the paste with vermilion for red; indigo or verditer, &c. for blue; saffron, turmeric, or gamboge, &c. for yellow.

WAGER of Law. See (*Wager of*) LAW.

WAGER of Battel. See (*Wager of*) BATTEL.

W A I

WAGGON, a wheel carriage, of which there are various forms, accommodated to the different uses they are intended for. The common waggon consists of the shafts or rods, being the two pieces which the hind horse bears up; the welds; the flotes, or cross pieces, which hold the shafts together; the bolster, being that part on which the forewheels and the axle-tree turn in wheeling the waggon across the road; the chest or body of the waggon, having the flaves or rails fixed thereon; the bales, or hoops which compose the top; the tilt, the place covered with cloth, at the end of the waggon. See MECHANICS.

WAGTAIL, in ornithology. See MOTACILLA.

WAIFS, BONA WAVIATA, are goods stolen, and waived or thrown away by the thief in his flight, for fear of being apprehended. These are given to the king by the law, as a punishment upon the owner for not himself pursuing the felon, and taking away his goods from him. And therefore if the party robbed do his diligence immediately to follow and apprehend the thief (which is called *making fresh suit*), or do convict him afterwards, or procure evidence to convict him, he shall have his goods again. Waived goods do also not belong to the king till seized by somebody for his use; for if the party robbed can seize them first, though at the distance of twenty years, the king shall never have them. If the goods are hid by the thief, or left any-where by him, so that he had them not about him when he fled; and therefore did not throw them away in his flight; these also are not *bona waviata*, but the owner may have them again when he pleases. The goods of a foreign merchant, though stolen and thrown away in flight, shall never be waifs: the reason whereof may be, not only for the encouragement of trade, but also because there is no wilful default in the foreign merchant's not pursuing the thief, he being generally a stranger to our laws, our usages, and our language.

WAIGATS STRAITS, situated between Nova Zembla and Russia, through which the Dutch failed to the north, as high as 75°, in order to discover a north-east passage to China and the East Indies.

WAINSCOT, in building, the timber-work that serves to line the walls of a room, being usually made in pannels, and painted, to serve instead of hangings.

WAIVE, in law, a woman that is put out of the protection of the law. She is called *waive*, as being forsaken of the law; and not *outlaw* as a man is; by reason women cannot be of the decenna, and are not sworn in leets to the king, nor to

the law, as men are; who are therefore within the law; whereas women are not, and so cannot be outlawed, since they were never within it.

WAKE, the print or track impressed by the course of a ship on the surface of the water. It is formed by the remotion of the body of water which was separated by the ship's bottom whilst moving through it; and may be seen to a considerable distance behind the stern, as smoother than the rest of the sea. Hence it is usually observed by the compass, to discover the angle of lee-way. A ship is said to be in the wake of another when she follows her on the same track, or a line supposed to be formed on the continuation of her keel. Two distant objects observed at sea are called in the wake of each other, when the view of the farthest is intercepted by the nearest; so that the observer's eye and the two objects are all placed upon the same right line.

WAKE is the eve-feast of the dedication of churches, which is kept with feasting and rural diversions. The learned Mr. Whitaker, in his History of Manchester, hath given a particular account of the origin of wakes and fairs. He observes, that every church at its consecration received the name of some particular saint: this custom was practised among the Roman Britons, and continued among the Saxons; and in the council of Cealchythe, in 816, the name of the denominating saint was expressly required to be inscribed on the altars, and also on the walls of the church, or on a tablet within it. The feast of this saint became of course the festival of the church. Thus Christian festivals were substituted in the room of the idolatrous anniversaries of heathenism: accordingly, at the first introduction of Christianity among the Jutes of Kent, Pope Gregory the Great advised what had been previously done among the Britons, viz. Christian festivals to be instituted in the room of the idolatrous, and the suffering day of the martyr whose relics were reposed in the church, or the day on which the building was actually dedicated, to be the established feast of the parish. Both were appointed and observed; and they were clearly distinguished at first among the Saxons, as appears from the laws of the Confessor, where the *dies dedicationis*, or *dedicatio*, is repeatedly discriminated from the *propria festivitas sancti*, or *celebratio sancti*. They remained equally distinct to the Reformation; the dedication-day in 1536 being ordered for the future to be kept on the first Sunday in October, and the festival of the patron saint to be celebrated no longer. The latter was, by way of pre-eminence, denominated the *church's holiday*, or its peculiar festival; and while this remains in many parishes at present, the other is so utterly annihilated in all, that Bishop Kennet (says Mr. Whitaker) knew nothing of its distinct existence, and has attributed to the day of dedication what is true only concerning the saint's day. Thus instituted at first, the day of the tutelar saint was observed, most probably by the Britons, and certainly by the Saxons, with great devotion. And the evening before every saint's day, in the Saxon-Jewish method of reckoning the hours, being an actual hour of the day, and therefore like that appropriated to the duties of public religion, as they reckoned Sunday from the first to commence at the sun-set of Saturday; the evening preceding the church's holiday would be observed with all the devotion of the festival. The people actually repaired to the church, and joined in the services of it; and they thus spent the evening of their greater festivities in the monasteries of the North, as early as the conclusion of the seventh century.

These services were naturally denominated from their late hours *waccan* or *wakes*, and *vigils* or *eves*. That of the anniversary at Rippon, as early as the commencement of the eighth century, is expressly denominated the *vigil*. But that

of the church's holiday was named *cyric waccan*, or church-wake, the church-vigil, or church-eve. And it was this commencement of both with a wake, which has now caused the days to be generally preceded with vigils, and the church-holiday particularly to be denominated the *church-wake*. So religiously was the eve and festival of the patron saint observed for many ages by the Saxons, even as late as the reign of Edgar, the former being spent in the church, and employed in prayer. And the wakes, and all the other holidays in the year, were put upon the same footing with the octaves of Christmas, Easter, and of Pentecost. When Gregory recommended the festival of the patron saint, he advised the people to erect booths of branches about the church on the day of the festival, and to feast and be merry in them with innocence. Accordingly, in every parish, on the returning anniversary of the saint, little pavilions were constructed of boughs, and the people indulged in them to hospitality and mirth. The feasting of the saint's day, however, was soon abused; and even in the body of the church, when the people were assembled for devotion, they began to mind diversions, and to introduce drinking. The growing intemperance gradually stained the service of the vigil, till the severity of it was converted, as it now is, into the rigour of a fast. At length they too justly scandalized the Puritans of the last century, and numbers of the wakes were disused entirely, especially in the east and some western parts of England; but they are commonly observed in the north, and in the midland counties.

This custom of celebrity in the neighbourhood of the church, on the days of particular saints, was introduced into England from the continent, and must have been familiar equally to the Britons and Saxons; being observed among the churches of Asia in the sixth century, and by those of the west of Europe in the seventh. And equally in Asia and Europe on the continent, and in the islands, these celebrities were the causes of those commercial marts which we denominate *fairs*. The people resorted in crowds to the festival, and a considerable provision would be wanted for their entertainment. The prospect of interest invited the little traders of the country to come and offer their wares; and thus, among the many pavilions for hospitality in the neighbourhood of the church, various booths were erected for the sale of different commodities. In large towns, surrounded with populous districts, the resort of the people to the wakes would be great, and the attendance of traders numerous; and this resort and attendance constitute a fair.—Basil expressly mentions the numerous appearance of traders at these festivals in Asia, and Gregory notes the same custom to be common in Europe. And as the festival was observed on a feria or holiday, it naturally assumed to itself, and as naturally communicated to the mart, the appellation of *feria* or fair. Indeed several of our most ancient fairs appear to have been usually held, and have been continued to our time, on the original church-holidays of the places: besides, it is observable, that fairs were generally kept in church-yards, and even in the churches, and also on Sundays, till the indecency and scandal were so great as to need reformation.

Wake-ROBIN. See ARUM.

WALACHIA, a province of Turkey in Europe, bounded on the north by Moldavia and Transylvania, on the east and south by the river Danube, and on the west by Transylvania. It is 225 miles in length, and 125 in breadth; and was ceded to the Turks by the treaty of Belgrade, in 1739. It abounds in good horses and cattle; and there are mines of several kinds. The soil is so fertile, that it is capable of producing any thing; and there are good pastures, with

wine, oil, and all manner of European fruits. The inhabitants are chiefly of the Greek church.

WALCHEREN, an island of the Low-countries, and one of the principal of those of Zealand; separated from Dutch Flanders by the mouth of the Scheldt. It is about nine miles in length, and eight in breadth; and though it lies low, has good arable and pasture land. The chief town of this island and the whole province is Middelburg.

WALDEN, a town of Essex, commonly called *Suffron Walden*, with a market on Saturdays, and two fairs on Midlent Saturday for horses, and November 1st for cows. It is remarkable for the plenty of fassion that grows about it. This town was incorporated by Edward VI. and is governed by a mayor and 24 aldermen. It is 27 miles north-west by north of Chelmsford, and 43 north-east of London, E. Long. o. 20. N. Lat. 52. 4.

WALDENSES. See **WALDO**.

WALDO, a merchant of Lyons in the latter part of the 12th century, who applying himself to the study of the Scriptures, and finding no warrant there for several of the Romish doctrines, particularly that of transubstantiation, publicly opposed them. His followers, who from him were called *Waldenses*, being chased from Lyons, spread over Dauphine and Provence; upon which Philip II. is said to have razed 300 gentlemen's seats, and destroyed several walled towns, to stop their growth: but this, instead of suppressing, spread them over a great part of Europe. The articles of their faith, which they drew up and dedicated to the king of France, agreed in most points with those of the present Protestants. In the year 1200, those of them who dwelt in the province of Albigeois in Languedoc, from whence they were called *Albigenses*, stood upon their defence; upon which Philip drove them into Bohemia, Savoy, and England. The crusade against them is said to have consisted of 500,000 men, who wore their crosses on their breasts, to distinguish themselves from those who went to the Holy Land, and wore them on their shoulders.

WALES (*Principality of*), a country constituting a part of Great Britain: is bounded on the north and west by the Irish Sea, on the east by the English counties of Chester, Salop, Hereford, and Monmouth, and on the south by the river Severn and the Bristol Channel; about 150 miles from north to south, and from 50 to 80 in breadth from east to west. The country is mountainous, but not barren, producing all the necessaries of life; the air is good, the cattle and sheep are numerous, but small: in the mountains are found ores of various metals, freestone, limestone, and coal. It is divided into North and South Wales, each containing six counties. To North Wales belong Anglesea, the counties of Caernarvon, Denbigh, Flint, Merioneth, and Montgomery. In South Wales are the counties of Brecknock, Caermarthen, Cardigan, Glamorgan, Pembroke, and Radnor. The county of Monmouth, which formerly belonged to Wales, was detached from the principality, and annexed to England, in the reign of Henry VIII. The present inhabitants are descendants from the ancient Britons, who were driven out of England by the Saxons, and they have preserved their ancient language; and, in many instances, the manners of their ancestors. Previous to the arrival of the Britons, Wales was inhabited by people named Demetes, Ordovices, and Silures. The Britons, indignant of the Saxon yoke, found an asylum among the mountains of Wales, and forming themselves into different states, were long governed by independent kings, till in the reign of Edward I. The last prince, Llewelin, being vanquished and slain in the year 1283, it was united to England: the Welch, though unable to resist the superior force of Edward, submitted to the English dominion with extreme reluctance; and it

was not till some ages elapsed, that the animosity which had long subsisted between the two nations was totally extinguished. To accelerate that period, and render the conquest more secure, Edward had recourse to acts of barbarous, but not ineffectual policy. Sensible that nothing contributed to keep alive the enthusiasm for national honour so much as the bards of the country, whose employment it was to rehearse at all festivals the glorious deeds of their ancestors, Edward ordered them to be put to death. A subsequent expedient practised by him for the purpose of reconciling the Welch to his government, was of a nature far more conciliating. It is said, that, assembling the natives of the country, he promised to give them for their prince a Welchman by birth, and one who could speak no other language. This popular address being received with acclamations of joy, he invested in the principality his second son, Edward, then an infant, who had been born at Caernarvon. The death of his eldest son, Alphonso, happening soon after, young Edward also became heir of the English monarchy, and united both nations under one government. Since that time, the eldest son of the king of England has always been created Prince of Wales.

New WALES. See **NEW BRITAIN**.

New South-WALES. See **NEW HOLLAND**.

Prince of WALES. See **ROYAL FAMILY**.

WALKING LEAF. See **MANTIS Sycifolia**.

WALL, in architecture, the principal part of a building, as serving both to inclose it, and to support the roof, floors, &c.—Walls are distinguished into various kinds, from the matter whereof they consist; as plastered or mud-walls, brick-walls, stone-walls, flint or boulder-walls, and boarded-walls. See **ARCHITECTURE**.

WALLACE (Sir William), a gallant general of the Scots, who endeavoured to rescue his country from the English yoke; but being taken prisoner, he was unjustly tried by the English laws, condemned, and executed as a traitor to Edward I. in 1304.

WALLACHIA. See **WALACHIA**.

WALLER (Edmund), a celebrated English poet, was the son of Robert Waller, esq. of Agmondesham in Buckinghamshire, by Anne, the sister of the great Hamden, who distinguished himself so much in the beginning of the civil wars. He was born in 1605; and his father dying when he was very young, the care of his education fell to his mother, who sent him to Eaton school. He was afterwards sent to King's college in Cambridge, where he must have been very assiduous in his studies, since, at sixteen or seventeen years of age, he was chosen into the last parliament of King James I. and served as burgess for Agmondesham. He began to exercise his poetical talent so early as the year 1623; as appears from his verses "upon the danger his majesty (being prince) escaped in the road of St. Andro's" for there Prince Charles, returning from Spain that year, had like to have been cast away. It was not, however, Mr. Waller's wit, his fine parts, or his poetry, that so much occasioned him to be first publicly known, as his carrying off the daughter and sole heiress of a rich citizen, against a rival whose interest was espoused by the court. It is not known at what time he married his first lady; but he was a widower before he was 25, when he began to have a passion for Sacharissa, which was a fictitious name for the lady Dorothy Sidney, daughter to the earl of Leicester, and afterwards wife to the earl of Sunderland. He was now known at court, cherished by all who had any relish for wit and polite literature; and was one of the famous club of which Lord Falkland, Mr. Chillingworth, and other eminent men, were members. He was returned burgess for Agmondesham in the parliament which met in April 1640. An intermission of parliaments having disgusted the nation, and raised

jealousies against the designs of the court, which would be sure to discover themselves whenever the king came to ask for a supply, Mr. Waller was one of the first who condemned the preceding measures. He showed himself in opposition to the court, and made a speech in the house on this occasion; from which we may gather some notion of his general principles in government; wherein, however, he afterwards proved very variable and inconstant. He opposed the court also in the long parliament which met in November following, and was chosen to impeach Judge Crawley, which he did in a warm and eloquent speech, July 16th, 1641. This speech was so highly applauded, that 20,000 copies of it were sold in one day. In 1642 he was one of the commissioners appointed by the parliament to present their propositions of peace to the king at Oxford. In 1643 he was deeply engaged in a design to reduce the city of London and the Tower to the service of the king; for which he was tried and condemned, together with Mr. Tomkins his brother-in-law, and Mr. Chalouner. The two latter suffered death; but Mr. Waller obtained a reprieve: he was, however, sentenced to suffer a year's imprisonment, and to pay a fine of 10,000l. After this, he became particularly attached to Oliver Cromwell, upon whom he wrote a very handsome panegyric. He also wrote a noble poem on the death of that great man.

At the Restoration, he was treated with great civility by Charles II. who always made him one of the party in his diversions at the duke of Buckingham's and other places. He wrote a panegyric upon his majesty's return; which being thought to fall much short of that he had before written on Oliver Cromwell, the king one day asked him in raillery, "How is it, Waller, that you wrote a better encomium on Cromwell than on me?" "May it please your majesty," answered he, "we poets generally succeed best in fiction." He sat in several parliaments after the Restoration, and continued in the full vigour of his genius to the end of his life, his natural vivacity bearing him up, and making his company agreeable to the last. He died of a dropsy in 1687, and was interred in the church-yard of Beconsfield, where a monument is erected to his memory. Mr. Waller has been honoured as the most elegant and harmonious versifier of his time, and a great refiner of the English language. The best edition of his works, containing poems, speeches, letters, &c. is that published in quarto by Mr. Fenton in 1730.

WALLIS (Dr. John), a celebrated mathematician, was educated at Cambridge; where he became fellow of Queen's College, and continued to till, by his marriage, he vacated his fellowship. In 1646 he received holy orders, and became chaplain to the Lady Vere. While he lived in this family, he cultivated the art of deciphering; and it is said, that the elector of Brandenburg, for whom he explained several letters written in ciphers, sent him a gold chain and medal. In 1643 he published, "Truth tried; or, Animadversions on the Lord Brooke's Treatise, called *The Nature of Truth*, &c." The next year he was chosen one of the scribes or secretaries to the assembly of divines at Westminster. Dr. Peter Turner, Savilian professor of geometry in Oxford, being ejected by the parliament-visitors in 1649, Mr. Wallis was appointed to succeed him in that place. In 1653 he published at Oxford a Grammar of the English Tongue in Latin. In 1655 he entered the lists with Mr. Hobbes; and their controversy lasted a considerable time. In 1657 the Doctor published his *Mathematical Works*. Upon the death of Dr. Langbaine, he was chosen *custos archivum* of the university. After the Restoration he met with great respect, the king himself entertaining a favourable opinion of him on account of some services he had done both to his royal father and himself. He

was therefore confirmed in his places, admitted one of the king's chaplains in ordinary, and appointed one of the divines empowered to review the book of Common-prayer. He complied with the terms of the act of uniformity, and continued a steady conformist till his death. He was one of the first members of the Royal Society, and corresponded with many learned men. In 1657 the curators of the university press at Oxford thought it for the honour of the university to collect the mathematical works of the doctor, which had been printed separately, some in Latin, some in English, and published them all together in the Latin tongue, in 3 vols. folio. He died in 1703. Besides the works above mentioned, he published many others.

WALLOONS, a name for the inhabitants of a considerable part of the Netherlands, viz. Artois, Hainault, Namur, Luxembourg, and part of Flanders and Brabant.

WALNUT-TREE, in botany. See JUGLANS.

WALPOLE (Sir Robert), earl of Orford, was born at Houghton in Norfolk, Sept. 6, 1674, and educated on the foundation at Eton School. Thence he was elected to King's College, Cambridge, and admitted in 1681; but, succeeding to the family estate by the death of his elder brother, he resigned his fellowship. In 1700 he was chosen member of parliament for King's-Lynn, and represented that borough in several succeeding parliaments. In 1705 he was nominated one of the council to Prince George of Denmark, lord high-admiral of England. In 1707, appointed secretary at war; and, in 1709, treasurer of the navy. In 1710, upon the change of the ministry, he was removed from all his posts, and held no place afterwards during the queen's reign. In 1711 he was voted by the House of Commons guilty of an high breach of trust, and notorious corruption in his office of secretary at war; and it was resolved, that he should be committed to the Tower, and expelled the house.

The borough of Lynn re-elected him; and, though the house declared the election void, yet they persisted in the choice. In the well-known debate, relating to Steele for publishing the "Crüis," he greatly distinguished himself in behalf of liberty, and added to the popularity he had before acquired. The schism-bill too soon after gave him a fine opportunity of exerting his eloquence, and of appearing in the character of the champion of civil and religious liberty. On the death of the queen, a revolution of politics took place, and the Whig party prevailed both at court and in the senate. Walpole had before recommended himself to the house of Hanover, by his zeal for its cause, when the Commons considered the fate of the nation with regard to the Protestant succession; and he had now the honour to procure the assent of the house to the new king (which attended the address of condolence and congratulation) "That the Commons would make good all parliamentary funds." It is therefore not to be wondered at, that his promotion soon took place after the king's arrival; and that in a few days he was appointed receiver and paymaster-general of all the guards and garrisons, and of all other the land forces in Great-Britain, paymaster of the Royal Hospital at Chelsea, and likewise a privy-counsellor. On the opening of a new parliament, a committee of secrecy was chosen, to enquire into the conduct of the late ministry, of which Walpole was appointed chairman; and, by his management, articles of impeachment were read against the Earl of Oxford, Lord Bolingbroke, the Duke of Ormond, and the Earl of Strafford. The eminent service he was thought to have done the nation and the crown, by the vigorous prosecution of those ministers, who were deemed the chief instruments of the peace, was soon rewarded by the extraordinary promotions of first commissioner of the treasury, and chancellor and under-treasurer of the exchequer.

In two years' time, a misunderstanding appeared amongst his majesty's servants; and it became evident, that the interest of Secretary Stanhope and his adherents began to outweigh that of the exchequer, and that Walpole's power was visibly on the decline. King George had purchased of the King of Denmark the duchies of Bremen and Verden, which his Danish majesty had gained by conquest from Charles XII. of Sweden. The Swedish hero, enraged to see his dominions publicly set to sale, conceived a resentment against the purchaser, and formed a design to gratify his revenge on the electorate of Hanover. Upon a message sent to the House of Commons by the king, Secretary Stanhope moved for a supply, to enable his majesty to concert such measures with foreign princes and states, as might prevent any change or apprehensions from the designs of Sweden for the future. This occasioned a warm debate, in which it was remarkable that Walpole kept a profound silence. The country party insisted, that such a proceeding was contrary to the act of settlement. They insinuated, that the peace of the empire was only a pretence, but that the security of the new acquisitions was the real object of this unprecedented supply; and they took occasion to observe too, that his majesty's own ministers seemed to be divided. But Walpole thought proper on this juncture to speak in favour of the supply, which was carried by a majority of four voices only. In a day or two, he resigned all his places to the king; and, if the true cause of his defection from the court had been his disapprobation of the measures then pursuing, we must acknowledge his conduct in this instance to have been noble and praise-worthy. But they who consider the intrigues of party, and that he spoke in favour of these measures, will find little room to suppose, that his resignation proceeded from any attachment to liberty, or love of his country. He resigned most probably with a view to be restored with greater plenitude of power: and the number of his friends, who accompanied him in his resignation, prove it to have been a mere factious movement.

On the day of his resignation, he brought in the famous sinking-fund bill: he presented it as a country gentleman; and said, he hoped it would not fare the worse for having two fathers, and that his successor (Mr. Stanhope) would bring it to perfection. His calling himself the father of a project, which hath since been so often employed to other purposes than were at first declared, gave his enemies frequent opportunity for satire and ridicule; and it hath been sarcastically observed, that the father of this fund appeared in a very bad light, when viewed in the capacity of a nurse. In the course of the debates on this bill, a warm contest arose between Walpole and Stanhope: on some severe reflections thrown upon him, the former lost his usual serenity of temper, and replied with great warmth and impetuosity. The acrimony on both sides produced unbecoming expressions, the betraying of private conversation, and the revealing a piece of secret history, viz. "the scandalous practice of selling places and reversions."

In the next session of parliament, Walpole opposed the ministry in every thing; and even Wyndham or Shippen did not exceed him in patriotism. Upon a motion in the house for continuing the army, he made a speech of above an hour long, and displayed the danger of a standing army, in a free country, with all the powers of eloquence. Early in 1720, the rigour of the patriot began to soften, and the complaisance of the courtier to appear; and he was again appointed paymaster of the forces, and several of his friends were found soon after in the list of promotions. No doubt now remained of his entire conversion to court measures; for, before the end of the year, we find him pleading as strongly for the forces re-

quired by the war-office, as he had before declaimed against them, even though at this time the same pretences for keeping them on foot did not exist.

It was not long before he acquired full ministerial power, being appointed first lord-commissioner of the treasury, and chancellor of the exchequer: and, when the king went abroad in 1723, he was nominated one of the lords-justices for the administration of government, and was sworn sole secretary of state. About this time, he received another distinguished mark of the royal favour; his eldest son, then on his travels, being created a peer, by the title of Baron Walpole, of Walpole. In 1725 he was made knight of the bath; and, the year after, knight of the garter. The measures of his administration, during the long time he remained prime or rather sole minister, have been often canvassed with all the severity of critical inquiry. It is difficult to discern the truth through the exaggerations and misrepresentations of party; and we shall leave it to the impartial historian to set it in a proper light. Though he had been called "The Father of Corruption" (which, however, he was not, but certainly a great improver of it), and is said to have boasted that he knew every man's price; yet, in 1742, the opposition prevailed, and he was not any longer able to carry a majority in the House of Commons. He now resigned all his places, and fled for shelter behind the throne. But there is so little appearance of his credit receiving any diminution, that he was soon after created Earl of Orford, and most of his friends and dependents continued in their places. The king too granted him a pension of 4000*l.* in consideration of his long and faithful services. He died in 1745, aged seventy-one.

About the end of Queen Anne's reign, and the beginning of George the First, he wrote the following pamphlets: 1. "The Sovereign's Answer to the Gloucestershire Address." The sovereign meant Charles duke of Somerset, so nicknamed by the Whigs. 2. "Answer to the Representation of the House of Lords on the State of the Navy, 1709." 3. "The Debts of the Nation stated and considered, in four Papers, 1710." 4. "The Thirty-Five Millions accounted for, 1710." 5. "A Letter from a foreign Minister in England to Monsieur Pettecum, 1710." 6. "Four Letters to a Friend in Scotland upon Sacheverell's Trial;" falsely attributed in the General Dictionary to Mr. Maynwaring. 7. "A short History of the Parliament." 8. "The South-Sea Scheme considered." 9. "A Pamphlet against the Peerage-Bill, 1719." 10. "The Report of the Secret Committee, June 9, 1715."

WALRUS, in zoology. See TRICHECHUS.

WALSH (William), an English critic and poet, the son of Joseph Walsh, esq. of Abberley in Worcestershire, was born about the year 1660. He became a gentleman-commoner of Wadham College, Oxford, but left the university without taking a degree. His writings are printed among the works of the Minor Poets, printed in 1749. He was made gentleman of the horse in Queen Anne's reign; and died in 1708. He was the friend of Mr. Dryden and of Mr. Pope; the former of whom esteemed him the best critic then living; and Mr. Pope has celebrated his character in the Essay on Criticism.

WALSINGHAM, a town of Norfolk, with a market on Fridays, and a fair on Whit-Monday, for horses and pedlar's ware. It is seated not far from the sea; and in former times was famous for its college of canons, and was greatly frequented by pilgrims who went to pay their devotions to the image of the Virgin Mary at the chapel, where there are two fine springs, called the *Virgin Mary's wells*. Not many years ago there were found here 100 urns full of ashes by a husbandman, which were supposed to be those which the Ro-

mans filled with the ashes of the dead. It is 22 miles north-west of Norwich, and 117 north-north-east of London. E. Lon. $\circ$. 53. N. Lat. 52. 56.

WALSINGHAM (Thomas), an English Benedictine monk of the monastery of St. Alban's, about the year 1440. He applied himself to the history and antiquity of his country, in quality of historiographer to the king; and composed the History of King Henry VI. with other works.

WALSINGHAM (Sir Francis), minister and secretary of state during the reign of Queen Elizabeth, and one of the greatest politicians of his time, was descended from a noble and ancient family at Chillehurst. After having made great progress in his studies at Cambridge, he was twice sent ambassador to France, and at his return to England was employed in the most important affairs; became secretary of state, and was one of the commissioners for the trial of Mary queen of Scotland. Sir Francis was undoubtedly one of the most refined politicians and most penetrating statesmen that any age ever produced. He had an admirable talent, both in discovering and managing the secret recesses of the heart. He had his spies in most courts in Christendom, and allowed them a liberal maintenance; for it was his maxim, That knowledge cannot be bought too dear. In 1587 the king of Spain having made vast preparations, which surprized, and kept all Europe in suspense, Walsingham employed his utmost endeavours for the discovery of that important secret; and accordingly procured intelligence from Madrid, that the king had informed his council of his having dispatched an express to Rome, with a letter written with his own hand to the pope, acquainting him with the true design of his preparations, and begging his blessings upon him; which for some reasons he could not disclose till the return of the courier. The secret being thus lodged with the pope, Walsingham, by means of a Venetian priest, whom he retained at Rome as a spy, got a copy of the original letter, which was stolen out of the pope's cabinet by a gentleman of the bed-chamber, who took the key out of the pope's pocket while he slept. After this, by his dexterous management, he caused the Spaniards' bills to be protected at Genoa, which should have supplied them with money for their extraordinary preparations; and by this means he happily retarded this formidable invasion for a whole year. In short, he spent his whole time and faculties in the service of Queen Elizabeth; on which account her majesty was heard to say, "That in diligence and fidelity he exceeded her expectations." However, after all his eminent services to his country, this great man gave a remarkable proof at his death, which happened on the 6th of April, 1590, how far he preferred the public interest to his own, he being so poor, that, excepting his library, which was a very fine one, he had scarcely effects enough to defray the expense of his funeral. His principal works are, 1. *Memoirs and Instructions for the use of Ambassadors*, with his *Letters and Negotiations*. 2. *Political Memoirs*.

WALTHERIA, in botany: a genus of plants in the class *monodelpha*, and order *triandra*; and in the natural system arranged under the 37th order, *Columjifera*. There is only one pistillum, and the capsule is unilocular, bivalved, and monopermuous. There are three species, none of which are natives of Britain.

WALTON (Bryan), bishop of Chester, a learned English divine, who gained great reputation by his edition of the Polyglot Bible, with his *Prolegomena* in the beginning; which is more exact, says Father Simon, than any other which had been published on that subject. He died in 1661.

WAMPUM, the money used by the North-American In-

dians. It is much used in all their treaties as a symbol of friendship. It is made of a shell of a particular species of *Venus*.

WAPENTAKE, is the same with what we call a *hundred*; especially used in the north countries beyond the river Trent. The word seems to be of Danish original, and to be so called for this reason: when first this kingdom, or part thereof, was divided into wapentakes, he who was the chief of the wapentake or hundred, and whom we now call a *high constable*, as soon as he entered upon his office, appeared in a field on a certain day on horseback with a pike in his hand, and all the chief men of the hundred met him there with their lances, and touched his pike; which was a sign that they were firmly united to each other by the touching their weapons. But Sir Thomas Smith says, that anciently musters were made of the armour and weapons of the several inhabitants of every wapentake; and from thence that could not find sufficient pledges for their good abearing, their weapons were taken away and given to others; from whence he derives the word.

WAR, a great evil; but inevitable, and oftentimes necessary. If he who first reduced to rules the art of destroying his fellow-creatures, had no end in view but to gratify the passions of princes, he was a monster, whom it would have been a duty to smother at his birth: but if his intention was the defence of persecuted virtue, or the punishment of successful wickedness, to curb ambition, or to oppose the unjust claims of superior power, mankind ought to erect altars to his memory.

War, in the last case, is the most necessary and useful of all the sciences: the various kinds of knowledge which ought to furnish the mind of a soldier are not without great difficulty to be attained. Of most other sciences the principles are fixed, or at least they may be ascertained by the assistance of experience; there needs nothing but diligence to learn them, or a particular turn of mind to practise them. Philosophy, mathematics, architecture, and many others, are all founded upon invariable combinations. Every man, even of a narrow understanding, may remember rules, apply them properly, and sometimes draw just consequences from them: but the science of war branches out into so many particulars; it takes in so many different parts; there are so many reflections necessary to be made, so many circumstances and cases to be brought together; that it is only by a continual application, grounded upon the love of his duty, and an inclination to his profession, that any man can attain it.

To march an army in every fort of country, whether open, woody, or mountainous; to know how to form a camp in all those countries, with which the general must be thoroughly acquainted in order to do it with security; to make a proper disposition for a battle, whether with a view to the posture of the enemy, or to the situation of the country; to foresee events which depend in a manner upon chance; to be capable of making a good retreat on proper occasions; to direct the forages without fatiguing or exposing the troops; to send out detachments with precaution; to conduct the convoys in safety; to know how to canton an army; to establish magazines in places, both safe and within reach of the army, so that it shall never be in want of subsistence;—these are the great ends of the military science.

It is commonly thought sufficient for a military man to know how to obey; and it is also supposed that the success of a day cannot be dubious, if a general joins the confidence of the soldiers to personal courage, a cool head, and a knowledge of the country.

It is true that, in cases of perplexity, many generals have in a great measure owed to their own capacity, and the confi-

dence their soldiers have reposed in them, the advantages they have gained over the enemy; and confidence will always be reposed by the soldiers in that general in whom they perceive coolness united with courage. At the battle of Cannæ, when Gisco seemed to be much astonished at the superiority of the enemy's number, Hannibal answered him coolly, "There is, Gisco, a thing still more surprising, of which you take no notice." Gisco asking him what it was, "It is (replied Hannibal) that in all that great crowd there is not one man whose name is *Gisco*." Plutarch observes, that this coolness of Hannibal greatly animated the Carthaginians, who could not imagine that their general would joke at so important a time, without being certain of overcoming his enemies.

Although bravery and courage are the most essential qualifications of a subordinate officer, yet he should not be deficient in those which are required in a general, and which have been already mentioned; obedience to the orders delivered to him is no longer a virtue than whilst he comprehends and knows the intention of them. War, says a celebrated author, is a business which, like all others, must be learned; it supposes some qualities to be born with us, and demands others which are to be acquired; but since all these qualities must have the original source in genius, a man who proposes war for his profession, should never engage in it without having consulted his natural bent, or without knowing the particular turn and power of his mind. Ability, whether in a general or an officer, is the effect of his genius, quickened by a natural liking to his business.

A quick eye, which is of great importance to a soldier, is natural to some, and in them it is the effect of genius; others acquire it by study or experience; he who knows how to command himself, and has courage enough to keep himself cool on the most urgent occasions, has the readiest and quickest eye. A quick, hot-headed man, however brave, sees nothing; or if he does, it is confusedly, and generally too late.

It is this quick eye which enables a general to judge of an advantageous post, of a manœuvre to be made, and of a good disposition for the troops, whether with respect to that of the enemy, or to the situation and nature of the country.

The quick eye is no other than that penetrating genius which lets nothing escape it. A general who knows how to unite this quality with perpetual coolness, never is in want of expedients; he will see how those events, which to any other would be the preface of his own defeat, may end in the overthrow of his enemies.

The choice of the general officers depends upon this genius, which discovers every thing; they ought to be the right hand of the general, and as capable of commanding the army as himself. Whatever good dispositions a general may make, they must prove ineffectual if not seconded by the general officers under his command; he cannot be every-where, neither can he foresee all exigencies that may arise. He is obliged to give only general orders; it is therefore the business of those who command under him to know how to take the advantage of a wrong movement of the enemy; to take upon them to attack, or sustain the troops which are engaged; and, as circumstances vary, to make them advance towards the enemy, either to keep him back or to attack him.

But the qualities already mentioned would be useless, if order and discipline were not severely observed: the most numerous and best composed army would soon become little else than a body of rangers, who being only united by the hope of booty, would separate as soon as that motive ceased; and trusting each to his own head, or indulging his own humour, would be cut in pieces party by party: so that if the general does not keep up subordination (the soul and strength of discipline), his

army will be nothing more than a troop of Tartars acting more from the hope of plunder than the desire of glory. What art and what genius is there not requisite to maintain this subordination? Too much severity disgraces the soldier, and renders him mutinous; too much indulgence sinks him into indolence, and makes him neglect his duty; licentiousness causes that subordination to seem burdensome, which should never in any degree be given up; he loses that respect, and often that confidence, which he should have with regard to his officer; and indulgence often makes a well-disciplined body become a set of sluggards, who march against their will, and who, on the most pressing emergencies, think only on their own safety.

Besides these qualities, which are essential to a general, and which all who would attain that rank ought of course to have, there are still many others necessary to make a great man. A general who would merit the title of a hero, ought to unite in himself, all civil, military, and political excellence. It is by this that he will easily attain to make war with success: nothing will escape him; he will know without difficulty the genius of every country, and of the nations which compose the enemy's army, the abilities of the generals who command, and the nature of the troops under them; he knows that he may venture a motion with some troops that he would not dare to attempt with others that are equally brave. One nation is vehement, fiery, and formidable in the first onset; another is not so hasty, but of more perseverance: with the former, a single instant determines success; with the latter, the action is not so rapid, but the event is less doubtful.

No man is born a general, although he brings into the world with him the seeds of those virtues which makes a great man: Cæsar, Spinala, Turenne, the great Condé, and some others, showed, even in their earliest years, such qualities as ranked them above other men; they carried within them the principles of those great virtues which they drew forth to action by profound study, and which they brought to perfection by the help of practice: those who came after them, with perhaps fewer natural talents, have by study rendered themselves worthy of being compared to them. Cæsar and all conquerors had this advantage, that they were able to make their own opportunities, and always acted by their own choice. A man may be a good general without being a Marlborough or a Turenne: such geniuses are scarcely seen once in an age; but the more they are raised above the rest of mankind, the more they ought to excite emulation. It is by endeavouring to surpass the intellects of the second rate; it is by striving to equal the most sublime, that the imitation of them is to be attained. This passion in a soldier is neither pride nor presumption; it is virtue; and it is by this only that he can hope to be servicable to the state, and add to the glory of his king and country.

How much soever the honour of commanding armies may be sought after, it degrades him who is not worthy of it; this rank, so much desired, borders on the two extremes of glory and ignominy. A military man who labours to make himself capable of commanding, is not to be blamed; his ambition is noble: by studying the art of commanding, he learns that of obeying and of executing. But it is astonishing in the highest degree to see soldiers thinking only on preferment, and neglecting the study of their business. It is perhaps less surprising if we see others, without having been tried, proposing to themselves to command in chief; because such attempts suppose in the projector an absurd temerity, founded on a profound ignorance of the talents he ought to have, and the virtues which he has not. Such boldness is the character of a man whose mind is too narrow to perceive his

danger: we should rather approve the timidity that suffers itself to be defeated by terror, since it shows at least that he knows to what hazards he is exposed; both one and the other are blameable: modesty is the only proper quality of a soldier; it gives splendour to virtue, it argues diffidence of himself, and desire of arriving at perfection.

The title of general would be less tempting, if proper attention was paid to the qualities it requires, and the duties it imposes; it would then appear a very honourable, but painful burden. The most firm and intrepid genius might be discouraged, merely by thinking that on the conduct of a general depends the fate of the state, the glory of his prince's arms, and his own reputation.

Our predecessors have gone to a considerable length in detailing all that is necessary to be known in the art of war; but in this we shall not imitate them; not merely because our limits do not allow of that extension which the subject would require to be treated to any good purpose, but because the utility of such an article would be extremely limited.

Man-of-War Bird. See PELICANUS.

War-Cry was formerly customary in the armies of most nations, when just upon the point of engaging. Sometimes they were only unumbruous shouts, or horrid yells, uttered with an intent to strike terror into their adversaries; such as is now used by the Indians in America, called the *war-whoop*.

WARBLES, in farriery. See FARRIERY.

WARBURTON (William), an English prelate of gigantic abilities, was born at Newark-upon-Trent, in the county of Nottingham, Dec. 24, 1698. His father was George Warburton, an attorney, and town-clerk of the place in which this his eldest son received his birth and education. His mother was Elizabeth, the daughter of William Hobman, an alderman of the same town, and his parents were married about the year 1666. The family of Dr. Warburton came originally from the county of Chester, where his great grandfather resided. His grandfather, William Warburton, was the first that settled at Newark; where he practised the law, and was coroner of the county of Nottingham. George Warburton, the father, died about the year 1706, leaving his widow and four children, two sons and two daughters, of which the second son George died young; but of the daughters one survived her brother. The bishop received the early part of his education under Mr. Weston, then master of Okeham school in Rutlandshire, and afterwards vicar of Campden in Gloucestershire; in which he was succeeded by his son, both from the gift of the earl of Gainborough. His original designation was to the same profession as that of his father and grandfather, and he was accordingly placed clerk to an attorney, with whom he remained until he was qualified to engage in business upon his own account. He was then admitted to one of the courts at Westminster, and for some years continued the employment of an attorney and solicitor at the place of his birth. The success he met with as a man of business was probably not great. It was certainly insufficient to induce him to devote the rest of his life to it: and it is probable, that his want of encouragement might tempt him to turn his thoughts towards a profession in which his literary acquisitions would be more valuable, and in which he might more easily pursue the bent of his inclination. He appears to have brought from school more learning than was requisite for a practising lawyer. This might rather impede than forward his progress, as it has been generally observed, that an attention to literary concerns, and the bustle of an attorney's office, with only a moderate share of business, are

wholly incompatible. It is therefore no wonder that he preferred retirement to noise, and relinquished what advantages he might expect from continuing to follow the law. It has been suggested by an ingenious writer, that he was for some time usher to a school. In 1724 his first work appeared, under the title of "Miscellaneous Translations in Prose and Verse, from Roman Poets, Orators, and Historians." 12mo. It is dedicated to his early patron, Sir Robert Sutton, and seems to have laid the foundation of his first ecclesiastical preferment. At this period it is probable he had not abandoned his profession, though it is certain he did not attend to it much longer. About Christmas 1726, he came to London, and while there was introduced to Theobald, Concanen, and others of Mr. Pope's enemies, with whose conversation he was extremely pleased. It was at this time that he wrote a letter to Concanen, dated Jan. 2, 1726, which, by accident, falling into the hands of the late Dr. Akenfide, was produced to most of that gentleman's friends, and by that means became the subject of much speculation. About this time he also communicated to Theobald some notes of Shakspeare, which afterwards appeared in that critic's edition of our great dramatic poet. In 1727 his second work, entitled, "A Critical and Philosophical Inquiry into the Causes of Prodiges and Miracles, as related by Historians," &c. was published in 12mo, and was also dedicated to Sir Robert Sutton. He was at this time in orders; and on the 25th of April, 1728, had the honour to be in the king's list of Masters of Arts, created at Cambridge, on his majesty's visit to that university. In June, the same year, he was preferred by Sir Robert Sutton to the rectory of Burnt Broughton, in the diocese of Lincoln; a living worth 200l. a-year, which he retained till his death, at which he spent a considerable part of his middle-life in a studious retirement, devoted entirely to letters, and there planned, and in part executed, some of his most important works. Several years elapsed, after obtaining this preferment, before Mr. Warburton appeared again in the world as a writer. In 1736 he exhibited a plan of a new edition of Velleius Paterculus, which he printed in the "Bibliothèque Britannique, ou Histoire des Ouvrages des Savans de la Grande Bretagne, pour les Mois Juillet, Août, & Sept. 1736. A la Haye." The design never was completed. It was in this year that he may be said to have emerged from the obscurity of a private life into the notice of the world. The first publication which rendered him afterwards famous now appeared, under the title of "The Alliance between Church and State; or, the Necessity and Equity of an established Religion and a Test Law, demonstrated from the Essence and End of Civil Society, upon the fundamental Principles of the Law of Nature and Nations." In three parts: the first, treating of a civil and religious society; the second, of an established church; and the third, of a test law, 8vo. At the end was announced the scheme of "The Divine Legation of Moses," in which he had at this time made a considerable progress. The first volume of this work was published in January 1737-8, and met with a reception which neither the subject, nor the manner in which it was treated, seemed to authorize. It was, as the author afterwards observed, fallen upon in so outrageous and brutal a manner, as had been scarcely pardonable, had it been "The Divine Legation of Mahomet." — It produced several answers, and so much abuse from the authors of "The Weekly Miscellany," that in less than two months he was constrained to defend himself, in "A Vindication of the Author of the Divine Legation of Moses, from the Aspersions of the Country Clergyman's Letter in the Weekly Miscellany of February 14, 1737-8." 8vo. Mr. Warburton's extraordinary merit had now attracted the

notice of the heir apparent to the crown, in whose immediate service we find him, in June 1738, when he published "Faith working by Charity to Christian Edification: a Sermon, &c." The "Essay on Man" had been now published some years; and it is universally supposed that the author had, in the composition of it, adopted the philosophy of lord Bolingbroke, whom on this occasion he had followed as his guide, without understanding the tendency of his principles. In 1738 M. de Crousaz wrote some remarks on it, accusing the author of spinosifm and naturalism: which falling into Mr. Warburton's hands, he published a defence of the first epistle, and soon after of the remaining three, in seven letters, of which six were printed in 1739, and the seventh in June 1740, under the title of "A Vindication of Mr. Pope's Essay on Man, by the Author of the Divine Legation." The opinion which Mr. Pope conceived of these defences, as well as of their author, will be best seen in his letters. In consequence, a firm friendship was established between them, which continued with undiminished fervour until the death of Mr. Pope, who, during the remainder of his life, paid a deference and respect to his friend's judgment and abilities, which will be considered by many as almost bordering on servility. In 1741 the second volume of "The Divine Legation," in two parts, containing books IV. V. VI. was published: as was also a second edition of the "Alliance between Church and State." In the summer of that year, Mr. Pope and Mr. Warburton, in a country ramble, took Oxford in their way, where they parted; Mr. Pope, after one day's stay, going westward; and Mr. Warburton, who stayed a day after him to visit Dr. Conybeare, then dean of Christ-church, returning to London. On that day the vice-chancellor, Dr. Leigh, sent a message to his lodgings, with the usual compliment, to know if a doctor's degree in divinity would be acceptable to him; to which such an answer was returned as to civil a message deserved. About the same time, Mr. Pope had the like offer made him of a doctor's degree in law, which he seemed disposed to accept, until he learnt that some impediment had been thrown in the way of his friend's receiving the compliment intended for him by the vice-chancellor. He then absolutely refused that propoal to himself. Both the degrees were therefore laid aside; and the university of Oxford lost some reputation by the conduct of this business, being thus deprived of the honour of two names, which certainly would have reflected much credit on the society in which they were to have been enrolled. Mr. Pope's affection for Mr. Warburton was of service to him in more respects than merely increasing his fame. He introduced and warmly recommended him to most of his friends, and among the rest to Ralph Allen, esq. of Prior-Park, whose niece he some years afterwards married, and whose great fortune at length came to his only son. In consequence of this introduction, we find Mr. Warburton at Bath in 1742. There he printed a sermon, which had been preached at the Abbey-church, on the 24th of October, for the benefit of Mr. Allen's favourite charity, the General-hospital, or Infirmary. To this sermon, which was published at the request of the governor, was added, "A short Account of the Nature, Rise, and Progress, of the General-Infirmary at Bath." In this year also, he printed a dissertation on the origin of books of chivalry, at the end of Jarvis's preface to a translation of Don Quixote.

In 1742 Mr. Warburton published "A Critical and Philosophical Commentary on Mr. Pope's Essay on Man. In which is contained a Vindication of the said Essay from the Misrepresentations of Mr. de Resnel, the French Translator, and of Mr. de Crousaz, Professor of Philosophy and

Mathematics in the Academy of Lausanne, the Commentator." It was at this period, when Mr. Warburton had the entire confidence of Mr. Pope, that he advised him to complete the *Dunciad*, by changing the hero and adding to it a fourth book. This was accordingly executed in 1742, and published early in 1743, in 4to. with notes by our author, who, in consequence of it, received his share of the satire which Mr. Cibber liberally bestowed on both Mr. Pope and his annotator. In the latter end of the same year, he published complete editions of "The Essay on Man," and "The Essay on Criticism;" and from the specimen which he there exhibited of his abilities, it may be presumed, Mr. Pope determined to commit the publication of those works which he should leave to Mr. Warburton's care. At Mr. Pope's desire, he about this time revised and corrected the "Essay on Homer," as it now stands in the last edition of that translation. The publication of "The *Dunciad*," was the last service which our author rendered Mr. Pope in his life-time. After a lingering and tedious illness, the event of which had been long foreseen, this great poet died on the 30th of May, 1744; and by his will, dated the 12th of the preceding December, bequeathed to Mr. Warburton one half of his library, and the property of all such of his works already printed as he had not otherwise disposed of or alienated, and all the profits which should arise from any edition to be printed after his death; but at the same time directed, that they should be published without any future alterations. In 1744, his assistance to Dr. Z. Grey was handsomely acknowledged in the preface to *Hudibras*. "The Divine Legation of Moses," had now been published some time, and various answers and objections to it had started up from different quarters. In this year, 1744, Mr. Warburton turned his attention to these attacks on his favourite work: and defended himself in a manner which, if it did not prove him to be possessed of much humility or diffidence, at least demonstrated, that he knew how to wield the weapons of controversy with the hand of a master. Sep. 5, 1745, the friendship between him and Mr. Allen was more closely cemented, by his marriage with Miss Tucker, who survived him, and became afterwards the wife of the Rev. Mr. Smith. At this juncture the kingdom was under a great alarm, occasioned by the rebellion breaking out in Scotland. Those who wished well to the then established government, found it necessary to exert every effort which could be used against the invading enemy. The clergy were not wanting on their part; and no one did more service than Mr. Warburton, who printed three very excellent and seasonable sermons at this important crisis. The last of these involved him in a new controversy with Dr. Seebing. Notwithstanding his great connections, his acknowledged abilities, and his established reputation; a reputation founded on the durable basis of learning, and upheld by the decent and attentive performance of every duty incident to his station; yet we do not find that he received any addition to the preferment given him in 1728, by Sir Robert Sutton (except the chaplainship to the Prince of Wales) until April 1746, when he was unanimously called by the Society of Lincoln's-Inn to be their preacher. In November he published "A Sermon preached on the Thanksgiving appointed to be observed the 9th of October, for the Suppression of the late unnatural Rebellion, 1746," in 8vo. In 1747 appeared his edition of "Shakspeare, and his 'Preface to *Clarissa*,'" and, in the same year he published, 1. "A Letter from an Author to a Member of Parliament, concerning Literary Property," in 8vo. 2. "Preface to Mrs. Cockburn's Remarks upon the Principles and Reasonings of Dr. Rutherford's Essay on the Nature and Obligations of Virtue, &c." in 8vo. 3. Pre-

face to a Critical Inquiry into the Opinions and Practice of the Ancient Philosophers, concerning the Nature of a Future State, and their Method of teaching by double Doctrine," (by Mr. Towne), 1747, in 8vo. 2d edition. In 1748, a third edition of "The Alliance between Church and State; corrected and enlarged." In 1749, a very extraordinary attack was made on the moral character of Mr. Pope, from a quarter whence it could be the least expected. "His guide, philosopher, and friend," Lord Bolingbroke, published a book which he had formerly lent Mr. Pope in MS. The preface to this work, written by Mr. Mallet, contained an accusation of Mr. Pope's having clandestinely printed an edition of his lordship's performance without his leave or knowledge. A defence of the poet soon after made its appearance, which was universally ascribed to Mr. Warburton, and was afterwards owned by him: it soon afterwards produced an abusive pamphlet. About this time, the publication of Dr. Middleton's "Inquiry concerning the Miraculous Powers," gave rise to a controversy, which was managed with great warmth and asperity on both sides, and not much to the credit of either party. On this occasion, Mr. Warburton published an excellent performance, written with a degree of candour and temper, which, it is to be lamented, he did not always exercise. The title of it was, "Julian; or, a Discourse concerning the Earthquake and fiery Eruption which defeated the Emperor's Attempt to rebuild the Temple at Jerusalem, 1750," in 8vo. In 1751, he gave the public his edition of "Mr. Pope's Works," with notes, in nine vols. 8vo. and in the same year printed "An Answer to a Letter to Dr. Middleton, &c." in 8vo. and "An Account of the Prophecies of Arise Evans, the Welsh Prophet, in the last Century;" the latter of which pieces afterwards subjected him to much ridicule. In 1753, Mr. Warburton published the first volume of a course of sermons preached at Lincoln's-Inn; and this, in the subsequent year, was followed by a second. After the public had been some time promised Lord Bolingbroke's works, they were about this time printed. The known abilities and infidelity of this nobleman had created apprehensions in the minds of many people of the pernicious effects of his doctrines; and nothing but the appearance of his whole force could have convinced his friends, how little there was to be dreaded from arguments against religion so weakly supported. The personal enmity, which had been excited many years before between the peer and our author, had occasioned the former to direct much of his reasoning against two works of the latter. Many answers were soon published, but none with more acuteness, solidity, and sprightliness, than, "A View of Lord Bolingbroke's Philosophy, in two Letters to a Friend, 1754." The third and fourth letters were published in 1755, with another edition of the two former; and, in the same year, a smaller edition of the whole; which, though it came into the world without a name, was universally ascribed to Mr. Warburton, and afterwards publicly owned by him. At this advanced period of his life, that preference which his abilities might have claimed, and which had hitherto been withheld, seemed to be approaching towards him. In Sept. 1754, he was appointed one of his majesty's chaplains in ordinary, and in the next year was presented to a prebend in the cathedral of Durham, on the death of Dr. Mangey. About the same time, the degree of doctor of divinity was conferred on him by Dr. Herring, then archbishop of Canterbury; and a new impression of "The Divine Legation" having been called for, he printed a fourth edition of the first part of it, corrected and enlarged, divided into two volumes, with a dedication to the Earl of Hardwicke. The same year appeared "A Ser-

mon preached before his Grace, Charles, Duke of Marlborough, President, and the Governors of the Hospital for the Small-Pox and for Inoculation, at the Parish-Church of St. Andrew, Holborn, on Thursday, April 24, 1755," in 4to.; and, in 1756, "A Sermon preached on the last public Fast-Day, at Lincoln's-Inn-Chapel," in 4to. In 1757, a pamphlet was published, called, "Remarks on Mr. David Hume's Essay on the Natural History of Religion;" which is said to have been composed of marginal-observations, made by Dr. Warburton on reading Mr. Hume's book; and which gave so much offence to the author, animated upon, that he thought it of importance enough to deserve particular mention in the short account of his life. Oct. 11, in this year, our author was advanced to the deanery of Bristol; and in 1758, republished the second part of "The Divine Legation," divided into two parts. At the latter end of next year, Dr. Warburton received the honour so justly due to his merit, of being (on the 22d of December) dignified with the mitre, and promoted to the vacant see of Gloucester. He was consecrated on the 20th of Jan. 1760; and on the 30th of the same month preached before the House of Lords. In the next year he printed "A rational Account of the Nature and End of the Sacrament of the Lord's Supper," in 12mo. In 1762 he published "The Doctrine of Grace, &c." in 2 vols. 12mo. and in the succeeding year drew upon himself much illiberal abuse from some writers of the popular party, on occasion of his complaint in the House of Lords, Nov. 15, 1763, against Mr. Wilkes, for putting his name to certain notes on the infamous "Essay on Woman." In 1765, another edition of the second part of "The Divine Legation" was published, as volumes III. IV. and V. the two parts printed in 1755 being considered as volumes I. and II. It was this edition which produced the well-known controversy between him and Dr. Lowth. On this occasion was published "The Second Part of an Epistolary Correspondence between the Bishop of Gloucester and the late Professor of Oxford, without an Imprimatur, i. e. without a Cover to the violated Laws of Honour and Society, 1765," in 8vo. In 1766 he gave a new edition of "The Alliance between Church and State," and "A Sermon preached before the Incorporated Society for the Propagation of the Gospel in Foreign Parts; at the Anniversary-Meeting in the Parish-Church of St. Mary-le-Bow, Friday, Feb. 21," in 8vo. The next year produced a third volume of his, "Sermons;" and with this, and a single "Sermon preached at St. Lawrence-Jewry, Thursday, April 30, 1767," before his Royal Highness, Edward, Duke of York, President, and the Governors of the London-Hospital, &c." in 4to. he closed his literary labours. His faculties continued, unimpaired for some time after this period; and in 1769 he gave considerable assistance to Mr. Ruffhead, in his "Life of Mr. Pope." He lost an only son a little before his own death, which was in June 1779, in the 81st year of his age. A neat marble monument has been lately erected in the cathedral of Gloucester, with an inscription.

WARD (Dr. Seth), an English prelate, chiefly famous for his knowledge in mathematics and astronomy, was born at Buntingford in Hertfordshire, about the year 1617. He was admitted of Sidney-college, Cambridge, where he applied with great vigour to his studies, particularly to the mathematics, and was chosen fellow of his college. He was involved not a little in the consequences of the civil war, but soon after the Restoration obtained the bishopric of Exeter; in 1667 he was translated to Salisbury; and in 1671 was made chancellor of the order of the garter; he was the first Protestant bishop that enjoyed that honour, and he procured it to be annexed to the see of Salisbury. Bishop

Ward was one of those unhappy persons who have the misfortune to survive their senses, which happened in consequence of a fever ill cured; he lived to the Revolution, without knowing any thing of the matter, and died in 1690. He was the author of several Latin works in mathematics and astronomy, which were thought excellent in their day; but their use has been superseded by later discoveries and the Newtonian philosophy.

WARD (Dr. John), was the son of a dissenting minister, and born at London in 1679. He for some years kept a school in Tenter-alley, Moorfields; but rendered himself prominent in the study of antiquity, that in 1720 he was chosen professor of rhetoric in Gresham-college; in 1723, during the presidency of Sir Isaac Newton, he was elected a fellow of the Royal Society; and in 1752, one of the vice-presidents, in which office he was continued to his death. He was elected one of the trustees of the British Museum in 1753, and died at Gresham-college in 1758. The work for which he is best known, is his *Lives of the Professors of Gresham-college*; which is a considerable addition to the history of learning in our country. His *Lectures on Oratory* were published after his death, in two volumes, 8vo.

WARD, is variously used in our old books: a ward in London is a district or division of the city, committed to the special charge of one of the aldermen; and in London there are twenty-six wards, according to the number of the mayor and aldermen, of which every one has his ward for his proper guard and jurisdiction. A forest is divided into wards; and a prison is called a *ward*. Lastly, the heir of the king's tenant, that held *in capite*, was termed a *ward* during his minority; but this wardship is taken away by the statute 12 Car. II. c. 24.

WARD-HOOK, or *Wadd-hook*, in gunnery, a rod or staff, with an iron end turned ferpentwise, or like a screw, to draw the wadding out of a gun when it is to be unloaded.

WARDEN, or GUARDIAN, one who has the charge or keeping of any person, or thing, by office. Such is the warden of the Fleet, the keeper of the Fleet prison; who has the charge of the prisoners there, especially such as are committed from the court of Chancery for contempt.

WARDHUIS, a port of Norwegian Lapland, 120 miles south-east of the North Cape. E. Long. 31. 12. N. Lat. 70. 23.

WARDMOTE, in London, is a court so called, which is kept in every ward of the city: answering to the *curia comitis* of Rome.

WARDROBE, a closet or little room adjoining to a bed-chamber, serving to dispose and keep a person's apparel in; or for a servant to lodge in, to be at hand to wait, &c. The Wardrobe, in a prince's court, is an apartment wherein his robes, wearing apparel, and other necessaries, are preserved under the care and direction of proper officers.

In Britain, the *Master or Keeper of the Great Wardrobe*, was an officer of great antiquity and dignity. High privileges and immunities were conferred on him by King Henry VI. which were confirmed by his successors; and King James I. not only enlarged them, but ordained that this office should be a corporation or body politic for ever.

It was the duty of this office to provide robes for the coronations, marriages, and funerals, of the royal family; to furnish the court with hangings, cloths of state, carpets, beds, and other necessaries; to furnish houses for ambassadors at their first arrival; cloths of state, and other furniture, for the lord-lieutenant of Ireland, and all his majesty's ambassadors abroad; to provide all robes for foreign knights of the garter; robes for the knights of the garter at home;

robes and all other furniture for the officers of the garter; coats for kings, heralds, and pursuivants at arms; robes for the lords of the treasury, and chancellor of the exchequer, &c. livery for the lord chamberlain, grooms of his majesty's privy chamber, officers of his majesty's robes; for the two chief justices, for all the barons of the exchequer, and several officers of these courts; all liveries for his majesty's servants, as yeomen of the guard, and wardens of the Tower, trumpeters, kettle-drummers, drummers, and fifes; the messengers, and all belonging to the stables, as coachmen, footmen, littermen, postillions, and grooms, &c. all the king's coaches, chariots, harnesses, saddles, bits, bridles, &c. the king's watermen, game-keepers, &c. also furniture for the royal yachts, and all rich embroidered tilts, and other furniture for the barges.

Besides the master or keeper of the wardrobe, who had a salary of 2000l. there was his deputy, who had 150l. and comptroller and a patent clerk, each of whom has a salary of 300l. Besides many other inferior officers and servants, who were all sworn servants to the king.

There was likewise a removing wardrobe-keepers at St. James's, Windsor Castle, Hampton Court, Kensington, and Somerset House; but the whole of the wardrobe establishment was abolished by act of parliament in 1782, and the duty of it in future to be done by the lord-chamberlain.

WARDSHIP, in chivalry, one of the incidents of tenure by knight-service. See *FEOBAL System*, *KNIGHT Service*, and *TENURE*.

Upon the death of a tenant, if the heir was under the age of twenty-one, being a male, or fourteen being a female, the lord was entitled to the wardship of the heir, and was called the *guardian in chivalry*. This wardship consisted in having the custody of the body and lands of such heir, without any account of the profits, till the age of twenty-one in males, and sixteen in females. For the law supposed the heir-male unable to perform knight-service till twenty-one; but as for the female, she was supposed capable at fourteen to marry, and then her husband might perform the service. The lord therefore had no wardship, if at the death of the ancestor the heir-male was of the full age of twenty-one, or the heir-female of fourteen; yet if she was then under fourteen, and the lord once had her in ward, he might keep her so till sixteen, by virtue of the statute of Westminster, 1. 3 Edw. I. c. 22. the two additional years being given by the legislature for no other reason but merely to benefit the lord.

This wardship, so far as it related to land, though it was not nor could be part of the law of feuds, so long as they were arbitrary, temporary, or for life only; yet when they became hereditary, and did consequently often descend upon infants, who by reason of their age could neither perform nor stipulate for the services of the feud, does not seem upon feudal principles to have been unreasonable. For the wardship of the land, or custody of the feud, was retained by the lord, that he might out of the profits thereof provide a fit person to supply the infant's services till he should be of age to perform them himself. And if we consider a feud in its original import, as a stipend, fee, or reward for actual service, it could not be thought hard that the lord should withhold the stipend so long as the service was suspended. Though undoubtedly to our English ancestors, where such stipendary donation was a mere supposition or figment, it carried abundance of hardship; and, accordingly, it was relieved by the charter of Henry I. which took this custody from the lord, and ordained that the custody, both of the land and the children, should belong to the widow or

next of kin. But this noble immunity did not continue many years.

The wardship of the body was a consequence of the wardship of the land; for he who enjoyed the infant's estate was the properest person to educate and maintain him in his infancy: and also in a political view, the lord was most concerned to give his tenant a suitable education, in order to qualify him the better to perform those services which in his maturity he was bound to render.

When the male heir arrived to the age of twenty-one, or the heir female to that of sixteen, they might sue out their livery or *ousterlemain*; that is, the delivery of their lands out of their guardian's hands. For this they were obliged to pay a fine, namely, half-a-year's profits of the land: though this seems expressly contrary to *magna charta*. However, in consideration of their lands having been so long in ward, they were excused all reliefs, and the king's tenants all primer feisins. In order to ascertain the profits that arose to the crown by these fruits of tenure, and to grant the heir his livery, the itinerant justices, or justices in eyre, had it formerly in charge to make inquisition concerning them by a jury of the county, commonly called an *inquisitio post mortem*; which was instituted to enquire (at the death of any man of fortune) the value of his estate, the tenure by which it was holden, and who, and of what age, his heir was; thereby to ascertain the relief and value of the primer feisin, or the wardship and livery accruing to the king thereupon. A manner of proceeding that came in process of time to be greatly abused, and at length an intolerable grievance; it being one of the principal accusations against Empson and Dudley, the wicked engines of Henry VII. that by colour of false inquisitions they compelled many persons to sue out livery from the crown, who by no means were tenants thereunto. And afterwards a court of wards and liveries was erected, for conducting the same enquiries in a more solemn and legal manner.

When the heir thus came of full age, provided he held a knight's fee, he was to receive the order of knighthood, and was compellable to take it upon him, or else pay a fine to the king. For in those heretical times no person was qualified for deeds of arms and chivalry who had not received this order, which was conferred with much preparation and solemnity. We may plainly discover the footsteps of a similar custom in what Tacitus relates of the Germans, who, in order to qualify their young men to bear arms, presented them in a full assembly with a shield and lance; which ceremony is supposed to have been the original of the feudal knighthood. This prerogative, of compelling the vassals to be knighted, or to pay a fine, was expressly recognised in parliament by the statute *de militibus*, 1 Edw. II.; was exerted as an expedient for raising money by many of our best princes, particularly by Edw. VI. and Queen Elizabeth; but this was the occasion of heavy murmurs when exerted by Charles I.: among whose many misfortunes it was, that neither himself nor his people seemed able to distinguish between the arbitrary stretch and the legal exertion of prerogative. However, among the other concessions made by that unhappy prince before the fatal recourse to arms, he agreed to divest himself of this undoubted flower of the crown; and it was accordingly abolished by statute 16 Car. I. c. 20.

WARE, a town of Hertfordshire, with a market on Tuesdays, and a fair on the last Tuesday in April, and Tuesday before St. Matthew's day (Sep. 21.), for horses and other cattle. It is a large, well frequented, and well inhabited thoroughfare town, seated on the river Lea, twenty-one miles north of London. It carries on a great trade in malt and

corn, which they are continually sending in large quantities to London. E. Long. 0. 3. N. Lat. 51. 50.

WARN, in law, is to summon a person to appear in a court of justice.

WARP, in the manufactures, a name for the threads, whether of silk, wool, linen, hemp, &c. that are extended lengthwise on the weaver's loom; and across which the workman, by means of his shuttle, passes the threads of the woof, to form a cloth, riband, fustians, or the like.

WARP, a small rope employed occasionally to remove a ship from one place to another, in a port, road, or river. And hence,

To WARP, is to change the situation of a ship, by pulling her from one part of a harbour, &c. to some other, by means of warps, which are attached to buoys; to anchors sunk in the bottom; or to certain stations upon the shore, as posts, rings, trees, &c. The ship is accordingly drawn forwards to those stations, either by pulling on the warps by hand, or by the application of some purchase, as a tackle, windlass, or capstan, upon her deck. When this operation is performed by the ship's lesser anchors, these machines, together with their warps, are carried out in the boats alternately towards the place where the ship is endeavouring to arrive: so that when she is drawn up close to one anchor, the other is carried out to a competent distance before her, and being sunk, serves to fix the other warp, by which she is farther advanced. Warping is generally used when the sails are vaned, or when they cannot be successfully employed, which may either arise from the unfavourable state of the wind, the opposition of the tide, or the narrow limits of the channel.

WARRANT, is a power and charge to a constable or other officer to apprehend a person accused of any crime. It may be issued in extraordinary cases by the privy-council, or secretaries of state; but most commonly it is issued by justices of the peace. This they may do in any cases where they have a jurisdiction over the offence, in order to compel the person accused to appear before them; for it would be absurd to give them power to examine an offender, unless they had also power to compel him to attend and submit to such examination. And this extends to all treasons, felonies, and breaches of the peace; and also to all such offences as they have power to punish by statute. Before the granting of the warrant, it is fitting to examine upon oath the party requiring it, as well to ascertain that there is a felony or other crime actually committed, without which no warrant should be granted; as also to prove the cause and probability of suspecting the party against whom the warrant is prayed.

This warrant ought to be under the hand and seal of the justice; should set forth the time and place of making, and the cause for which it is made; and should be directed to the constable, or other peace-officer, or it may be to any private person by name. A general warrant to apprehend all persons suspected, without naming or particularly describing any person in special, is illegal and void for its uncertainty; for it is the duty of the magistrate, and ought not to be left to the officer, to judge of the ground of suspicion. Also a warrant to apprehend all persons guilty of such a crime, is no legal warrant; for the point upon which its authority rests, is a fact to be decided on a subsequent trial; namely, whether the person apprehended thereupon be guilty or not guilty. When a warrant is received by the officer, he is bound to execute it, so far as the jurisdiction of the magistrate and himself extends. A warrant from any of the justices of the court of king's bench extends over all the

kingdom, and is tested or dated *England*: but a warrant of a justice of the peace in one county, must be backed, that is, signed, by a justice of another county, before it can be executed there. And a warrant for apprehending an English or Scotch offender, may be indoried in the opposite kingdom, and the offender carried back to that part of the united kingdom in which the offence was committed.

WARRANT, WARRANTIA, in law, a promise, or covenant, by deed, made by the bargainer for himself and his heirs, to warrant and secure the bargainee and his heirs, against all men, for enjoying the thing agreed on or granted between them.

WARREN (Sir Peter), an admiral, distinguished by his virtue, learning, and undaunted courage, was descended from an ancient family in Ireland, and received a suitable education to qualify him for a command in the royal navy, in which he served for several years with great reputation; but the transaction which placed his great abilities in their full light, was the taking of Louisbourg in the year 1745, when he was appointed commodore of the British squadron sent on that service. He joined the fleet of transports, from Boston in Canada, on the 25th of April, having under his command the *Superb* of 60, and the *Launceston* and *Eltham* of 40 guns; he was afterwards joined by several other men-of-war sent from England, and took possession of Louisbourg on the 17th of June. The French, exasperated at this loss, were constantly on the watch to retake it; and in 1747 fitted out a large fleet for that purpose, and at the same time another squadron to prosecute their success in the East Indies. These squadrons sailed at the same time; but the views of the French were rendered abortive by the gallant Admiral Anson and Sir Peter Warren, who had been created rear-admiral, who with a large fleet of ships fell in with the French, defeated the whole fleet, and took the greatest part of the men-of-war. This was the last service Sir Peter rendered to his country as a commander in the British fleet; for a peace being concluded in the succeeding year, the fleet was laid up in the several harbours. He was now chosen one of the representatives in parliament for Westminster; and in the middle of his popularity he paid a visit to Ireland, his native country, where he died of an inflammatory fever in 1752, sincerely lamented by all ranks of people; and an elegant monument of white marble was erected to his memory in Westminster abbey.

WARREN, is a franchise or place privileged by prescription or grant from the king, for the keeping of beasts and fowls of the warren; which are hares and coney, partridges, pheasants, and some add quails, woodcocks, and water-fowl, &c. These being *feræ naturæ*, every one had a natural right to kill as he could: but upon the introduction of the forest laws at the Norman conquest, these animals being looked upon as royal game, and the sole property of our savage monarchs, this franchise of free-warren was invented to protect them, by giving the grantee a sole and exclusive power of killing such game, so far as his warren extended; on condition of his preventing other persons. A man therefore that has the franchise of warren, is in reality no more than a royal game-keeper: but no man, not even a lord of a manor, could by common law justly sport on another's soil, or even on his own, unless he had the liberty of free warren. This franchise is almost fallen into disrepute since the new statutes for preserving the game; the name being now chiefly preserved in grounds that are set apart for breeding hares and rabbits. There are many instances of keen sportsmen in ancient times, who have sold their estates, and reserved the free-warren, or right of killing game, to themselves: by which means it comes to pass that a man and his heirs have sometimes free-warren over another's ground.

A warren may lie open; and there is no necessity of inclosing it as there is of a park. If any person offend in a free-warren, he is punishable by the common law, and by statute 21 Edw. III. And if any one enter wrongfully into any warren, and chase, take, or kill, any coney without the consent of the owner, he shall forfeit treble damages, and suffer three months imprisonment, &c. by 22 and 23 Car. II. c. 25. When coney are on the soil of the party, he hath a property in them, by reason of the possession, and action lies for killing them; but if they run out of the warren and eat up a neighbour's corn, the owner of the land may kill them, and no action will lie.

WARSAW, a large city of Poland, the capital of that country, and of the province of Malovia. It is built partly in a plain, and partly on a gentle ascent rising from the banks of the Vistula, which is about as broad as the Thames at Westminster, but very shallow in summer. This city and its suburbs occupy a vast extent of ground, and are supposed to contain 70,000 inhabitants, among whom are a great number of foreigners. The whole has a melancholy appearance, exhibiting the strong contrast of wealth and poverty, luxury and distress, which pervades every part of this unhappy country. The streets are spacious, but ill paved; the churches and public buildings are large and magnificent; the palaces of the nobility are numerous and splendid; but the greatest part of the houses, particularly in the suburbs, are mean and ill-constructed wooden hovels.—Warsaw is 160 miles south-east by south of Dantzic, 130 north-north-east of Craew, and 300 north-east by north of Vienna. E. Long. 21. 6. N. Lat. 50. 14.

WART, a small knotty kind of tumor which most frequently rises on the skin of the hands. Many ridiculous cures have been suggested for them by old women, and these have been kept in countenance by the *spontaneous disappearance* of warts, which frequently happens. When a remedy is thought necessary, touching them once a day with *Tincture of muriatic acid* is a very good one.

WARWICK, the capital of Warwickshire in England, and from which this county derives its name. It is very ancient, and supposed by Camden to be the place called by the Romans *Præstidium*, where the Dalmatian horse were posted. It stands on a rock of free-stone, of which all the public edifices in the town are built. At the Norman invasion it was a considerable place; and had many burgesses, of whom twelve were obliged by their tenure to accompany the king in his wars. It is supplied with water brought in pipes from springs half a mile from the town, besides what it derives from the wells within it made in the rock: and it is easily kept clean, by being situated upon a declivity. Four streets, from the four cardinal points of the compass, meet in the centre of the town. The principal public buildings are St. Mary's, a very stately edifice, an hospital, a town-house of free-stone, three charity schools, and a noble bridge over the Avon. It has had several charters; but is governed at present by a mayor, twelve brethren, twenty-four burgesses, &c. It is a very handsome populous town, and gives title of earl to the family of the Greylles. W. Long. 1. 36. N. Lat. 52. 20.

WASH, among distillers, the fermentable liquor used by the malt distillers. See **BREWERY**.

WASHING, in painting, is when a design, drawn with a pen or crayon, has some one colour laid over it with a pencil, as Indian ink, bistre, or the like, to make it appear the more natural, by adding the shadow of prominences, apertures, &c. and by imitating the particular matters whereof the thing is supposed to consist. Thus they wash with a pale red, to imitate brick and tile; with a pale Indian blue, to imitate

water and slate; with green, for trees and meadows; with saffron or French berries, for gold or brás; and with several colours for marbles.

WASHING OF Ores, the purifying an ore of any metal, by means of water, from earths and stones, which would otherwise render it difficult of fusion.

WASHINGTON, a city of North America, now building for the metropolis of the United States. It is seated at the junction of the rivers Potomac and the Eastern Branch, extending about four miles up each, including a tract of territory scarcely to be exceeded, in point of convenience, salubrity, and beauty, by any in the world. This territory, which is called *Columbia*, lies partly in the state of Virginia, and partly in that of Maryland, and was ceded by these two states to the United States of America, and by them established to be the seat of government after the year 1800. It is divided into squares or grand divisions, by streets running due north, and south, and east, and west, which form the ground-work of the plan. However, from the Capitol, the president's house, and some of the important areas in the city, run diagonal streets, from one material object to another, which not only produce a variety of charming prospects, but remove the insipid fameness which renders some other great cities unpleasing. The great leading streets are all 160 feet wide, including a pavement of ten feet, and a gravel walk of thirty feet planted with trees on each side, which will leave eighty feet of paved street for carriages. The rest of the streets are in general 110 feet wide, with a few only ninety feet, except North, South, and East Capitol streets, which are 160 feet. The diagonal streets are named after the respective states composing the Union, while those running north and south are, from the Capitol east-ward, named *East First-street*, *East Second-street*, &c. and those west of it are in the same manner called *West First-street*, *West Second-street*, &c. Those running east and west are from the Capitol northward named *North A-street*, *North B-street*, &c. and those south of it are called *South A-street*, *South B-street*, &c. The squares or divisions of the city amount to 1150. The rectangular squares generally contain from three to six acres, and are divided into lots of from forty to eighty feet in front, and their depth from about 110 to 300 feet, according to the size of the square. The irregular divisions produced by the diagonal streets are some of them small, but generally in valuable situations. Their acute points are all to be cut off at forty feet, so that no house in the city will have an acute corner. All the houses must be of brick or stone. The area for the Capitol (or house for the legislative bodies) is situated upon the most beautiful eminence in the city, about a mile from the Eastern Branch, and not much more from the Potomac, commanding a full view of every part of the city, as well as a considerable extent of the country around. The president's house will stand upon a rising ground, not far from the banks of the Potomac, possessing a delightful water prospect, with a commanding view of the Capitol, and some other material parts of the city.

The city being situated upon the great post road, exactly equidistant from the northern and southern extremities of the Union, and nearly so from the Atlantic Ocean to the river Ohio, upon the best navigation, and in the midst of the richest commercial territory in America, commanding the most extensive internal resources, is by far the most eligible situation for the residence of congress; and it is now pressing forward, by the public-spirited enterprize, not only of the people of the United States, but also of foreigners.

WASP, in zoology. See *VESPA*.

WATCH, in the art of war, a number of men posted at any passage, or a company of the guards who go on the patrol.

WATCH, in the navy, the space of time wherein one division of a ship's crew remains upon deck, to perform the necessary services, whilst the rest are relieved from duty, either when the vessel is under sail or at anchor. The length of the sea-watch is not equal in the shipping of different nations. It is always kept four hours by our British seamen, if we except the dog-watch, between four and eight in the evening, that contains two reliefs, each of which are only two hours on deck. The intent of this is to change the period of the night-watch every twenty-four hours; so that the party watching from eight till twelve in one night, shall watch from midnight till four in the morning on the succeeding one. In France the duration of the watch is extremely different, being in some places six hours, and in others seven or eight; and in Turkey and Barbary it is usually five or six hours. A ship's company is usually classed into two parties; one of which is called the *starboard* and the other the *larboard* watch. It is, however, occasionally separated into three divisions, as in a road, or in particular voyages. In a ship of war the watch is generally commanded by a lieutenant, and in merchant-ships by one of the mates; so that if there are four mates in the latter, there are two in each watch; the first and third being in the larboard, and the second and fourth in the starboard watch: but in the navy, the officers who command the watch usually divide themselves into three parties, in order to lighten their duty.

WATCH, is also used for a small portable movement, or machine, for the measuring of time; having its motion regulated by a spiral spring. Watches, strictly taken, are all such movements as show the parts of time; as clocks are such as publish it, by striking on a bell, &c. But commonly the name *watch* is appropriated to such as are carried in the pocket; and *clock* to the large movements, whether they strike the hour or not. See *CLOCK*.

The invention of spring or pocket watches belongs to the present age. It is true, we find mention made of a watch presented to Charles V. in the history of that prince: but this, in all probability, was no more than a kind of clock to be set on a table, some resemblance whereof we have still remaining in the ancient pieces made before the year 1670. There was also a story of a watch having been discovered in Scotland belonging to King Robert Bruce; but this we believe has turned out altogether apocryphal. The glory of this very useful invention lies between Dr. Hooke and M. Huyghens; but to which of them it properly belongs, has been greatly disputed; the English ascribing it to the former, and the French, Dutch, &c. to the latter. Mr. Derham, in his *Artificial Clockmaker*, says roundly, that Dr. Hooke was the inventor; and adds, that he contrived various ways of regulation. One way was with a loadstone: another with a tender straight spring, one end whereof played backwards and forwards with the balance; so that the balance was to the spring as the bob to a pendulum, and the spring as the rod thereof: a third method was with two balances, of which there were divers sorts; some having a spiral spring to the balance for a regulator, and others without. But the way that prevailed, and which continues in mode, was with one balance, and one spring running round the upper part of the verge thereof: though this has a disadvantage, which those with two springs, &c. were free from; in that a sudden jerk, or confused shake, will alter its vibrations, and put it in an unusual hurry.

The time of these inventions was about the year 1658; as appears, among other evidences, from an inscription on one of the double-balance watches presented to King Charles II. viz. *Robt. Hooke inven. 1658. T. Tompion fecit, 1675*. The invention presently got into reputation, both at home and abroad; and two of them were sent for by the dauphin of

France. Soon after this, M. Huygens's watch with a spiral spring got abroad, and made a great noise in England, as if the longitude could be found by it. It is certain, however, that his invention was later than the year 1673, when his book *de Horol. Oscillant.* was published; wherein he has not one word of this, though he has of several other contrivances in the same way.

One of these the Lord Brouncker sent out of France, where M. Huygens had got a patent for them. This watch agreed with Dr. Hooke's in the application of the spring to the balance; only M. Huygens's had a longer spiral spring, and the pulses and beats were much slower. The balance, instead of turning quite round, as Dr. Hooke's, turns several rounds every vibration.

Mr. Derham suggests, that he has reason to doubt M. Huygens's fancy first was set to work by some intelligence he might have of Dr. Hooke's invention from Mr. Oldenburg, or some other of his correspondents in England; and this, notwithstanding Mr. Oldenborth's attempt to vindicate himself in the Philosophical Transactions, appears to be the truth. Huygens invented divers other kinds of watches, some of them without any spring or chain at all; which he called, particularly, *pendulum watches.*

Striking WATCHES are such as, besides the proper watch-part for measuring of time, have a clock-part for striking the hours, &c.

Repeating WATCHES, are such as by pulling a spring, &c. repeat the hour, quarter, or minute, at any time of the day or night.—This repetition was the invention of Mr. Barlow, and first put in practice by him in larger movements or clocks about the year 1676. The contrivance immediately set the other artists to work, who soon contrived divers ways of effecting the same. But its application to pocket-watches was not known before King James the Second's reign; when the ingenious inventor above mentioned, having directed Mr. Thompson to make a repeating watch, was soliciting a patent for the same. The talk of a patent engaged Mr. Quare to resume the thoughts of a like contrivance, which he had had in view some years before: he now effected it, and being pressed to endeavour to prevent Mr. Barlow's patent, a watch of each kind was produced before the king and council; upon trial of which, the preference was given to Mr. Quare's. The difference between them was, that Barlow's was made to repeat by pushing in two pieces on each side the watch-box; one of which repeated the hour, and the other the quarter: whereas Quare's was made to repeat by a pin that stuck out near the pendant, which being thrust in (as now it is done by thrusting in the pendant itself), repeated both the hour and quarter with the same thrust.

Of the Mechanism of a WATCH, properly so called. Watches, as well as clocks, are composed of wheels and pinions, and a regulator to direct the quickness or slowness of the wheels, and of a spring which communicates motion to the whole machine. But the regulator and spring of a watch are vastly inferior to the weight and pendulum of a clock, neither of which can be employed in watches. In place of a pendulum, therefore, we are obliged to use a balance (Pl. 32. vol. IX. fig. 1.) to regulate the motion of a watch; and a spring (fig. 2.) which serves in place of a weight, to give motion to the wheels and balance.

The wheels of a watch, like those of a clock, are placed in a frame formed of two plates and four pillars. Fig. 3. represents the inside of a watch, after the plate (fig. 4.) is taken off. A is the barrel which contains the spring (fig. 2.); the chain is rolled about the barrel, with one end of it fixed to the barrel A (fig. 5.), and the other to the fusee B.

When a watch is wound up, the chain which was upon the

barrel winds about the fusee, and by this means the spring is stretched; for the interior end of the spring is fixed by a hook to the immovable axis about which the barrel revolves; the exterior end of the spring is fixed to the inside of the barrel, which turns upon an axis. It is therefore easy to perceive how the spring extends itself, and how its elasticity forces the barrel to turn round, and consequently obliges the chain which is upon the fusee to unfold and turn the fusee; the motion of the fusee is communicated to the wheel C (fig. 5.); then, by means of the teeth, to the pinion *e*, which carries the wheel D; then to the pinion *d*, which carries the wheel E; then to the pinion *e*, which carries the wheel F; then to the pinion *f*, upon which is the balance-wheel G, whose pivot runs in the pieces A called the *potance*, and B called a *follower*, which are fixed on the plate fig. 4. This plate, of which only a part is represented, is applied to that of fig. 3. in such a manner that the pivots of the wheels enter into holes made in the plate fig. 3. Thus the impelled force of the spring is communicated to the wheels: and the pinion *f* being then connected to the wheel F, obliges it to turn (fig. 5.) This wheel acts upon the palettes of the verge 1, 2 (fig. 1.), the axis of which carries the balance HH (fig. 1.) The pivot I, in the end of the verge, enters into the hole *c* in the potance A (fig. 4.) In this figure the palettes are represented; but the balance is on the other side of the plate, as may be seen in fig. 6. The pivot 3 of the balance enters into a hole of the cock BC (fig. 7.), a perspective view of which is represented in fig. 8. Thus the balance turns between the cock and the potance *c* (fig. 4.), as in a kind of cage. The action of the balance-wheel upon the palettes 1, 2 (fig. 1.), is the same with what we have described with regard to the same wheel in the clock; i. e. in a watch, the balance-wheel obliges the balance to vibrate backwards and forwards like a pendulum. At each vibration of the balance a palette allows a tooth of the balance-wheel to escape; so that the quickness of the motion of the wheels is entirely determined by the quickness of the vibrations of the balance; and these vibrations of the balance and motion of the wheels are produced by the action of the spring.

But the quickness or slowness of the vibrations of the balance depend not solely upon the action of the great spring, but chiefly upon the action of the spring *a, b, c*, called the *spiral spring* (fig. 9.), situated under the balance H, and represented in perspective (fig. 6.) The exterior end of the spiral is fixed to the pin *a* (fig. 9.) This pin is applied near the plate in *a* (fig. 6.); the interior end of the spiral is fixed by a peg to the centre of the balance. Hence if the balance is turned upon itself, the plates remaining immovable, the spring will extend itself, and make the balance perform one revolution. Now, after the spiral is thus extended, if the balance be left to itself, the elasticity of the spiral will bring back the balance, and in this manner the alternate vibrations of the balance are produced.

In fig. 5. all the wheels above described are represented in such a manner, that you may easily perceive at first sight how the motion is communicated from the barrel to the balance.

In fig. 10. are represented the wheels under the dial-plate by which the hands are moved. The pinion *a* is adjusted to the force of the prolonged pivot of the wheel D (fig. 5.), and is called a *cannon pinion*. This wheel revolves in an hour. The end of the axis of the pinion *a*, upon which the minute-hand is fixed, is square; the pinion (fig. 10.) is indented into the wheel *b*, which is carried by the pinion *a*. Fig. 11. is a wheel fixed upon a barrel, into the cavity of which the pinion *a* enters, and upon which it turns freely. This wheel revolves in twelve hours, and carries along with it the hour-hand. For a full account of the principles upon which

watches and all time-keepers are constructed, we must refer our readers to a short treatise, entitled *Thoughts on the Means of Improving Watches*, by Thomas Mudge.

WATCH-glasses, in a ship, are glasses employed to measure the period of the watch, or to divide it into any number of equal parts, as hours, half-hours, &c. so that the several stations therein may be regularly kept and relieved, as at the helm, pump, look-out, &c.

WATCHING, in medicine, is when the patient cannot sleep. In fevers it is a dangerous symptom, and if long continued ends in a delirium.

WATER, a well-known fluid, diffused through the atmosphere, and over the surface of the globe, and abounding in a certain proportion in animals, vegetables, and minerals. The uses of water are so universally known, that it would be superfluous to enumerate them in this article. It is essential to animal and vegetable life; it makes easy the intercourse between the most distant regions of the world; and it is one of the most useful powers in the mechanic arts. It is often found combined with various substances, and is then frequently beneficial in curing or alleviating diseases. Those properties of water which fit it for answering mechanical purposes are explained in other articles of this Work (see **HYDROSTATICS**, **PNEUMATICS**, **RESISTANCE**, and **RIVERS**); but for an account of the celebrated discovery of the composition of water, and the various substances which are often found chemically united with it, see **CHEMISTRY**, vol. II. p. 407.

The ancient philosophers considered water as one of the four elements. During the age of the alchemists, when it was believed that different substances could be converted into gold, it was also an opinion, adopted by many, that water could be changed into earth. Even so late as the time of Mr. Boyle this sentiment was not laid aside. He relates, that a friend of his, by distilling a quantity of water an hundred times, found at length that he had got six-tenths of the first quantity in earth: whence he concludes, that the whole water, by further prosecuting the operation, might be converted into earth. Others have made experiments to the same purpose, and seemingly with the same success; but the deception is now found out. Water has the power of corroding the hardest bodies, even glass itself, by long digestion, especially when assisted by heat; and hence those who have made the experiments just mentioned have been themselves deceived, by supposing the earth which really came from the containing vessel to come from the water.

Margraaf made several experiments to determine whether water be transmutable into earth, and found that after every distillation a sediment was left. Lavoisier repeated Margraaf's experiments, and gave the explanation which we alluded to, that the sediment consisted of portions of the glass separated by the water. Dr. Black goes still farther; he ingeniously supposes, that the alkali, which is an essential ingredient in the composition of glass, unites with the water, and makes the glass swell, and thus occasions small portions of it to be detached.

Of late it has been discovered that charcoal possesses many unexpected properties, and, among others, that of preserving water from corruption, and of purifying it after it has been corrupted. Mr. Lowitz, whose experiments on charcoal have been published in *Crell's Chemical Journal*, has turned his attention to this subject in a memoir read to the Economical Society of Petersburg. He found that the effect of charcoal was rendered much more speedy by using along with it some sulphuric acid. One ounce and a half of charcoal in powder, and 24 drops of concentrated sulphuric acid (oil of vitriol), are sufficient to purify three pints and a half of corrupted water, and do not communicate to it any sensible acidity. This

small quantity of acid renders it unnecessary to use more than a third part of the charcoal powder which would otherwise be wanted; and the less of that powder is employed, the less is the quantity of water lost by the operation, which, in sea-voyages, is an object worthy of consideration. In proportion to the quantity of acid made use of, the quantity of charcoal may be diminished or augmented. All acids produce nearly the same effects: neutral salts also, particularly nitre and sea-salt, may be used, but sulphuric acid is preferable to any of these; water which is purified by means of this acid, and charcoal, will keep a longer time than that which is purified by charcoal alone. When we mean to purify any given quantity of corrupted water, we should begin by adding to it as much powder of charcoal as is necessary to deprive it entirely of its bad smell. To ascertain whether that quantity of powdered charcoal was sufficient to effect the clarification of the said water, a small quantity of it may be passed through a linen bag, two or three inches long; if the water, thus filtrated, still has a turbid appearance, a fresh quantity of powdered charcoal must be added, till it is become perfectly clear: the whole of the water may then be passed through a filtering bag, the size of which should be proportioned to the quantity of water. If sulphuric acid, or any other, can be procured, a small quantity of it should be added to the water, before the charcoal powder.

The cleaning of the casks in which water is to be kept in sea-voyages should never be neglected: they should be well washed with water and sand, or with any other substance capable of removing the mucilaginous particles, and afterwards a quantity of charcoal-dust should be applied. A still better method perhaps would be to rinse them with a pretty strong solution of oil of vitriol and water, which will entirely deprive them of the musty or putrid smell they may have contracted.

SEA-WATER. See **SEA-WATER**.

WATER-Carts: carriages constructed for the purpose of watering the roads for several miles round London; a precaution absolutely necessary near the metropolis, where, from such a vast daily influx of carriages and horses, the dust would otherwise become quite insufferable in hot dry weather. Pumps are placed at proper distances to supply these carts.

WATER-Ordeal. See **ORDEAL**.

WATER, among jewellers, is properly the colour or lustre of diamonds and pearls. The term, though less properly, is sometimes used for the hue or colour of other stones.

WATER-Bellows. See *Machines for blowing Air into Furnaces*.

WATER-Colours, in painting, are such colours as are only diluted and mixed up with gum-water, in contradistinction to oil-colours. See **COLOUR-Making**.

WATER-Gang, a channel cut to drain a place by carrying off a stream of water.

WATER-Hen. See **PARRA**.

WATER-Line of a Ship, certain horizontal lines supposed to be drawn about the outside of a ship's bottom, close to the surface of the water in which the floats. They are accordingly higher or lower upon the bottom, in proportion to the depth of the column of water required to float her.

WATER-Logged, the state of a ship when, by receiving a great quantity of water into the hold, by leaking, &c. she has become heavy and inactive upon the sea, so as to yield without resistance to the efforts of every wave rushing over her decks. As, in this dangerous situation, the centre of gravity is no longer fixed, but fluctuating from place to place, the stability of the ship is utterly lost: she is therefore almost totally deprived of the use of her sails, which would operate to overlist her, or press the head under water. Hence there is no resource for the crew, except to free her by the pumps, or to abandon her by the boats as soon as possible.

WATER-Sail, a small sail spread occasionally under the lower fludding-sail, or driver-boom, in a fair wind and smooth sea.

WATER-Ouzel. See **TURBUS**.

WATER-Spout, an extraordinary meteor consisting of a large mass of water collected into a sort of column, and moved with rapidity along the surface of the sea.

The best account of the water-spout which we have met with is in the *Phil. Trans.* Abridged, vol. viii, as observed by Mr Joseph Harris, May 21, 1732, about sunset, lat. $32^{\circ} 30'$ N. long. 90° E. from Cape Florida. "When first we saw the spout (says he), it was whole and entire, and much of the shape and proportion of a speaking trumpet; the small end being downwards, and reaching to the sea, and the big end terminated in a black thick cloud. The spout itself was very black, and the more so the higher up. It seemed to be exactly perpendicular to the horizon, and its sides perfectly smooth, without the least ruggedness. Where it fell the spray of the sea rose to a considerable height, which made somewhat the appearance of a great smoke. From the first time we saw it, it continued whole about a minute, and till it was quite dissipated about three minutes. It began to waste from below, and so gradually up, while the upper part remained entire, without any visible alteration, till at last it ended in the black cloud above: upon which there seemed to fall a very heavy rain in that neighbourhood.—There was but little wind, and the sky elsewhere was pretty serene."

Water-spouts have by some been supposed to be merely electrical in their origin; particularly by Signior Beccaria, who supported his opinion by some experiments. But if we attend to the successive phenomena necessary to constitute a complete water-spout through their various stages, we shall be convinced, that recourse must be had to some other principle in order to obtain a complete solution.

Dr. Franklin, in his *Physical and Meteorological Observations*, supposes a water-spout and a whirlwind to proceed from the same cause; their only difference being, that the latter passes over the land, and the former over the water. This opinion is corroborated by M. de la Pryme, in the *Philosophical Transactions*, where he describes two spouts observed at different times in Yorkthire, whose appearances in the air were exactly like those of the spouts at sea, and their effects the same as those of real whirlwinds.

A fluid moving from all points horizontally towards a centre, must at that centre either mount or descend. If a hole be opened in the middle of the bottom of a tub filled with water, the water will flow from all sides to the centre, and there descend in a whirl: but air flowing on or near the surface of land or water, from all sides towards a centre, must at that centre ascend; because the land or water will hinder its descent.

The doctor, in proceeding to explain his conceptions, begs to be allowed two or three positions, as a foundation for his hypothesis. 1. That the lower region of air is often more heated, and so more rarefied, than the upper, and by consequence specifically lighter. The coldness of the upper region is manifested by the hail, which sometimes falls from it in warm weather. 2. That heated air may be very moist, and yet the moisture less equally diffused and rarefied as hot to be visible till colder air mixes with it; at which time it condenses and becomes visible. Thus our breath, although invisible in summer, becomes visible in winter.

These circumstances being granted, he presupposes a tract of land or sea, of about 60 miles in extent, unsheltered by clouds and unrefreshed by the wind, during a summer's day, or perhaps for several days without intermission, till it becomes violently heated, together with the lower region of the air in contact with it; so that the latter becomes specifically lighter than the superincumbent higher region of the atmosphere,

wherein the clouds are usually floated: he supposes also that the air surrounding this tract has not been so much heated during those days, and therefore remains heavier. The consequence of this, he conceives, should be, that the heated lighter air should ascend, and the heavier descend; and as this rising cannot operate throughout the whole tract at once, because that would leave too extensive a vacuum, the rising will begin precisely in that column which happens to be lightest or most rarefied; and the warm air will flow horizontally from all parts of this column, where the several currents meeting, and joining to rise, a whirl is naturally formed, in the same manner as a whirl is formed in a tub of water, by the descending fluid receding from all sides of the tub towards the hole in the centre.

And as the several currents arrive at this central rising column, with a considerable degree of horizontal motion, they cannot suddenly change it to a vertical one; therefore as they gradually, in approaching the whirl, decline from right to curve or circular lines, so, having joined the whirl, they ascend by a spiral motion: in the same manner as the water descends spirally through the hole in the tub before mentioned.

Lastly, as the lower air nearest the surface is more rarefied by the heat of the sun, it is more impressed by the current of the surrounding cold and heavy air which is to assume its place, and consequently its motion towards the whirl is swiftest, and so the force of the lower part of the whirl strongest, and the centrifugal force of its particles greatest. Hence the vacuum which encloses the axis of the whirl should be greatest near the earth or sea, and diminish gradually as it approaches the region of the clouds, till it ends in a point.

This circle is of various diameters, sometimes very large.

If the vacuum passes over water, the water may rise in a body or column therein to the height of about 32 feet. This whirl of air may be as invisible as the air itself, though reaching in reality from the water to the region of cool air, in which our low summer thunder-clouds commonly float; but it will soon become visible at its extremities. The agitation of the water under the whirling of the circle, and the swelling and rising of the water in the commencement of the vacuum, renders it visible below. It is perceived above by the warm air being brought up to the cooler region, where its moisture begins to be condensed by the cold into thick vapour, and is then first discovered at the highest part, which being now cooled, condenses what rises behind it, and this latter acts in the same manner on the succeeding body; where, by the contact of the vapours, the cold operates faster in a right line downwards, than the vapours themselves can climb in a spiral line upwards: they climb however; and as by continual addition they grow denser, and by consequence increase their centrifugal force, and being risen above the concentrating currents that compose the whirl, they fly off, and form a cloud.

It seems easy to conceive how, by this successive condensation from above, the spout appears to drop or descend from the cloud, although the materials of which it is composed are all the while ascending. The condensation of the moisture contained in so great a quantity of warm air as may be supposed to rise in a short time in this prodigiously rapid whirl, is perhaps sufficient to form a great extent of cloud; and the friction of the whirling air on the sides of the column may detach great quantities of its water, disperse them into drops, and carry them up in the spiral whirl mixed with the air. The heavier drops may indeed fly off, and fall into a shower about the spout; but much of it will be broken into vapour, and yet remain visible.

As the whirl weakens, the tube may apparently separate in the middle; the column of water subsiding, the superior condensed part drawing up to the cloud. The tube or whirl of

air may nevertheless remain entire, the middle only becoming invisible, as not containing any visible matter.

Dr. Lindfay, however, in several letters published in the Gentleman's Magazine, has controverted this theory of Dr. Franklin, and endeavoured to prove, that water-spouts and whirlwinds are distinct phenomena; and that the water which forms the water-spout, does not ascend from the sea, as Dr. Franklin supposes, but descends from the atmosphere. Our limits do not permit us to insert his arguments here, but they may be seen in the Gentleman's Magazine, vol. li. p. 559, 615; vol. liii. p. 1025; and vol. lv. p. 594. We cannot avoid observing, however, that he treats Dr. Franklin with a degree of asperity to which he is by no means entitled, and that his arguments, even if conclusive, prove nothing more than that some water-spouts certainly do descend; which Dr. Franklin hardly ever ventured to deny. There are some very valuable dissertations on this subject by Professor Wilcke of Uplal.

WATER-Works. See **HYDROSTATICS, MECHANICS, and RIVER**, under which we have given all that is essentially necessary on the subject. We shall here however introduce, from the specification of the patent, an account of certain new methods of giving an independent moving power to all machines, by means of hydraulic engines; and also of constructing and employing separately several of their parts, such as wheels, pistons, and apparatus for reducing friction, upon new principles.

The author, Count de Thiville, declares his invention to consist in the application of certain hydrostatical principles not at all or but little known till now, which, contrary to the laws of statics in solid bodies, give to incompressible fluids the property of rising almost spontaneously above the place from which they have fallen.

“Without accounting for the causes (says he), I will confine myself to effects founded on experiments, and give some specimens of these principles, and of the consequences resulting therefrom. Let fig. 1. in Pl. 4. be an empty tube, and stopped at bottom or top air-tight. If it be immersed into water, and suddenly opened, the fluid will rise to *a*, fall to *b*, rise again to *c*, and so on till it fix itself at *d*; which is the level of the fluid. Let fig. 2. be a vertical section of a chest fastened in a large reservoir or pond. Let the front part *a b* revolving at *i* be in the position *i 2*, if it fall suddenly at *i 3*, the water will rise above its level, and a portion will flow out of the chest. Let the front part *a b*, in the situation *i 4*, be counterpoised by a pendulum *V O*, in such a manner that, either at work or at rest, the gravity of *V O* be in the same constant ratio with the gravity of *a b*, then the least possible power impelling on *O*, will communicate motion to *a b* by the rods *B* and *X*, which have a common centre at *V*. If the motion is alternate and regular, *a b* going up and down from *3* to *5*, the water will rise as before, and enter an upper reservoir *q*; besides the front part *a b* striking or impelling on the surface of the fluid at *r*, will form a wave, which will be able to raise a body *Y*, immersed at some distance, and the water withdrawing will abandon the body to its own weight, which effect may be productive of a power. If the water is prevented from going out of the chest, by the front part being lengthened as at *c*, this front part being alternately and gradually loaded with, and unloaded from, the weight of water, will produce a gradual and disposable power, which will be still greater if the chest be situated out of the reservoir, communicating with it by its back part only. If an empty vessel *K* intercept that communication, the valve at *7* being suddenly opened, the water will rise to *9*. If *7* be shut, and the valve *6* opened at the moment the front part *a b* falls from *i 2*, to *i 3*, *9* will fall in *8*, and so on, so that if a body is immersed in the vessel *K*, it will

produce power by going freely up and down. Let a chest, fig. 3. with an aperture *x* in its circular bottom, be placed in a reservoir; if that chest be suspended like a pendulum at *A*, or bearing like a cradle on fixed beams *a b*, or like a mangle on the top of rollers *c d* without centres; if I move the chest alternately and regularly in any of those manners, or otherwise, the water will alternately rise out of the chest, and enter the upper reservoirs *y* and *z*. If the surrounding water be found an obstacle to the motion, the chest may be placed out of the reservoir, and be supplied by a syphon above, or a flexible pipe under the chest, as seen at *q* and *f*, fig. 5. That pipe corresponding with the aperture *x*, fig. 3. Four or more of these chests, *a*, fig. 4. may likewise be established on a floating circular timber-work with apertures at *x*; the intervals *b* between the chests being empty and inaccessible to the water, as seen in the section fig. 4. No. 2. Then if a circular and alternate motion from *1* to *2* round the point *A*, be given, the water will rise and flow in the parts *c*, which belong to an upper reservoir *d*. Let fig. 5. be a chest with flat or circular bottom hanging at *y*, to a beam *z*, turning at *X* upon standards *B*. At *z* hangs another chest *P* ten feet high, and only a few inches thick, immersed in the water, *X y* being to *X z* as one to ten. If *A* contains 100 cubic feet of water, *P* ought to contain little less than 10 feet. The bottom of *A* being nearly level to the surface *l* of the reservoir; if the water enters gradually in *A*, the chest will descend in *O*, and raise *P* to *S*. *P* being suspended at *x*, and so contrived that its upper part when filled be somewhat heavier, and when empty somewhat lighter, than its under part, the consequence will be, that when *P* is disengaged it turns at *x*, discharges its water into *R*, and takes again its former upright situation. But it must be observed, that of whatever materials *P* may be constructed, it must lose a great part of its weight when in water, for instance, 100 pounds. In order to remedy that real disadvantage, I fix in the building a vessel *I*, containing 100 pounds of water on a surface only a few inches deep. To that vessel is fixed an upright pipe *2*, united by a flexible pipe at *3* to another pipe *4*, tied upon the part *X z* of the beam. Another pipe *5* containing 100 pounds of water is fastened to the curved part of the beam; by that means the gravity which *P* loses gradually, entering into water, is repaired gradually by the water entering the pipe *5*, so that an inverse ratio subsists constantly between *P* and *5*. When *A* is arrived and fastened at *O*, the sluice or shuttle *a* of the reservoir, and that *b* of the chest is opened, the front part *T* figs. 5. and 6. upon which the water acts by its lateral pressure being disengaged, falls with an increasing power according to what has been said at fig. 2; a rope or chain *c* fixed in *K*, turns a wheel *H* by means of a hook *i*, which catches the teeth of a ratchet *m*, one of the vessels *5* is raised in *l*, turns in *x*, and makes the same effect as *P*, fig. 6.”

“If (continues the Count) I can raise a large quantity of water, for instance, at the height of one foot only, by the means seen in figs. 2. 3. and 4. I can employ this water as an immediate power, acting on a common water-wheel; but the power which I can derive from the gravity of *A*, fig. 5. being in the order of an arithmetical progression, cannot act on machinery but by the mediate assistance of *P*, which raises the water to nearly five feet. I dispose accordingly an overshot breast-wheel, figs. 7. 8. and 9. in such a manner that the water be conveyed in one or two rows of buckets *l*, by one single or double trough *b*; the water enters the buckets at *x*; they are situated contrary to the usual way; and their lower part is narrower than the upper part as seen in fig. 9; the side parts are beveled or inclined so as to leave between them an interval *a*, fig. 9. by which the water is discharged when each bucket is arrived at *X*, fig. 7. only, which disposition increases consider-

ably the power of the wheel; but in order to produce the best effect, the resistance arising from friction ought to be reduced as much as possible; to that effect let A, figs. 7, 8, and 10. be a chest traversed by the gudgeon *b* of a wheel, to that gudgeon is fixed a hollow cylinder *d*; if the chest be filled with an incompressible fluid, and if besides the cylinder displace a volume of that fluid, equal to the weight which in the usual way is supported by the gudgeon, that weight will be totally transported from the gudgeon to the fluid, and the friction arising from gravity will be totally reduced. Instead of the cylinder *d* being fixed to the axis, it may be independent; the iron axis or even the wooden axletree, in that case turning on its periphery as seen in A 2, and A 3, figs. 8, and 11. If a wheel be to revolve horizontally like a millstone, the cylinder ought to be fixed either at the under part, or at the top of the axis. These wheels, whichever of them I employ, must be provided with a cog-wheel which turns a pinion, the axle of which is a crank, or another pinion with teeth upon half part only of its circumference; which teeth, catching alternately the upper and under teeth of a double rake, give the vibration to the chests or front parts by rods, which means are already well known. The power which is destined to put in motion these different machines, described in figs. 2, 3, 4, 5, and 6, ought to be considered only as a regulator which gives the necessary velocity, engages and disengages at pleasure by any known means, and increases the effect in giving a regular and isochronal motion."

The following observations are annexed by the patentee.

"From what has just been said in my specification above, it may be concluded that the application of the foregoing principles may vary *ad infinitum*. At what height, in what quantity, and at what expense of power, can the water be raised, are likewise liable to great variations, and can only be ascertained by experiment on large scales, and in open water. Some parts of the objects above specified have already had a sort of publicity. About two years ago, I offered to the Royal Society a *Memoir on Friction, and on the Means of reducing it*.

"The object of that memoir was to prove, by experiments, that, between fluids and solid bodies immersed in them, there is neither friction nor absolute resistance. This principle, it is true, is in direct opposition to the doctrine adopted by the learned in philosophy. I made likewise an application, to demonstrate that the problem of a perpetual motion, though inconsistent with the laws of mechanics, was to be resolved by the *phenomena nature*; and that, if it was possible to borrow from nature the materials with which it acts, and consequently to produce effects similar to those which daily occur to our eyes, the problem would be resolved. The ideas contained in my first memoir on friction having been deemed inadmissible, *à fortiori*, such an idea as that now in agitation should be put aside; yet as an observer who has spent much time in considering the subject, I take the liberty to say, to those who maintain that *there is friction and absolute resistance in fluids*, they consequently know what is the quantity of them under certain data. To such I beg leave to propose the following problems:

"*Friction in fluids.* 1. Let A fig. 12. be a cylindric foot of solid matter, the weight of which is only one grain less than an equal volume of water, consequently about fifty pounds weight, that cylinder is supported by B. Let V represent the requisite power, to subdue the resistance which friction opposes to motion; which resistance, according to the admitted doctrine, is about a third of the weight.

"2. Let another cylinder of the same matter and diameter be ten feet long, *ceteris paribus*: let the requisite power be represented by X.

"3. Let both apparatus be totally immersed in water, the power in that new situation being represented by Y if the length is one foot, and by Z if it is ten feet.

"What are the ratios between V and Y, between X and Z, and between Y and Z?"

"*Resistance of Fluids.* 1. Let a cubic foot in the same circumstances as before, *i. e.* weighing about sixty-three pounds, be freely immersed in water, the power to move it, either horizontally or perpendicularly, be represented by X.

"2. Let another solid body be ten feet long, *ceteris paribus*. The power represented by Y.

"3. Let another solid be two feet every way, *i. e.* eight cubic feet, *ceteris paribus*. The power represented by Z.

"What are the respective ratios between X Y and Z?"

The count uses the expression of absolute resistance, to indicate that the velocity of the bodies in motion, or their respective velocities, have no relation at all with the power, which ought to be considered only as destined to subdue the resistance, without any regard to time, *i. e.* whether the effect takes place in the space of two hours, or in that of two seconds.

"*Perpetual Motion.* Without prejudging any thing upon the principles," says the count, "I have introduced in my specification, which principles I consider as a theorem from which every one may draw the corollaries; I will confine myself within the limits I have prescribed, and propose the following problem. Let A, fig. 13. be a wheel or cylinder turning on its gudgeon *b*, *c c c* is an assemblage of sheets of any material or fluid; these sheets pass between thin plates or wires fastened in a fixed box *i i*, at *o o* they pass freely between small cylinders or rollers, turning in another fixed box V. Instead of being so separated, they may be pressed close to each other by passing between two rollers *u u*; thus the apparatus being so disposed, and the level of the water being as at *d e*, I lay the phenomenon of spontaneous ascent of fluids in capillary tubes or spaces, ought to take place between the sheets at *i i*; and it ought not to do so at *o o*, or at *u u*, by their being too close to, or too distant from, each other. That being established, I represent by Y the power acquired by the ascent of the fluid at *i i*; I represent by Z the mechanical resistance, occasioned by the rubbing of the sheets against the cylinders at *o o*, or by their pressure at *u u*. Now I ask how, and at what point, the laws which preside over the phenomena of nature at *i i*, and those which regulate the mechanical effect at *o o*, or *u u*, coincide so as to determine a constant ratio between the power and the resistance; and finally, what is the ratio between Y and Z?"

"It is obvious, that if Z be greater than, or equal to, Y, the machine will remain immovable. If on the contrary Y is greater than Z, the machine once put in motion will never stop.

"I abstain from any comment on the foregoing problems. I must only add, that I do not think I am too sanguine in my expectations, in announcing that a candid and impartial examination of my doctrine may be productive of some advantage to the sciences; and that the arts will derive a great benefit from a proper application of the principles which I have established in the foregoing specification. That doctrine and those principles are explained at full length in a treatise, and in different memoirs which I have composed, and intend to publish, on hydrostatics, and on the motion and resistance of fluids; in which I have carefully avoided all scientific calculations, formulae, &c. and have submitted all my hypotheses to the test of experiment. I shall submit those philosophical episcules to the investigation of the learned in natural philosophy, as soon as a good version from the pen of an abler translator than I am shall be completed."

Note relating to figs. 7. 8. and 9. "Independently of the advantages resulting from the wheel fig. 7. losing no water at all, another advantage, which is not evident at first sight, deserves to be explained. To that effect, let A, fig. 14. represent the actual way of filling the buckets; and B, the method I am now proposing. If these two buckets are placed at equal distance from a common centre of gravity C, and filled with the same quantity of water, it is obvious that, by the position of that water in the buckets, B acts more powerfully than A, and consequently will overpower it upon that centre. If, besides, the impulse or flock of the water on such wheels is worth being reckoned, that impulse acting at *b b*, at a greater distance from the common centre than at *a a*, its power will consequently be greater."

Note relating to figs. 5. and 6. "Four, six, or more chests either rectilinear or curvilinear, acting as seen in figs. 5. and 6. may be disposed as two or three pair of scales. The rods which communicate the motion may be engaged or disengaged at pleasure, so that when one scale of the first pair is in motion to be emptied, the other scale is at rest; the first scale of the second pair is acting by its gradual gravity, and falling from A to O, and the other scale is empty, and rising from O to A, and so on. The whole ought to be so calculated that the water may successively, and almost without interruption, flow out of one of the upright chests P, and that the moving power has only one chest to move. It is understood that the wheels intended to be the moving power belong to any machinery, such as corn or paper-mills, pump-work, or any other machine whatever."

"The following allegations, if they turn out to be founded on facts, will prove much in favour of my opinion, that there is no friction between fluids and solid bodies. If a copper-bottomed ship is examined (which I never had an opportunity to do) as soon as it arrives from a long voyage, I think it will be seen, 1, That the metallic brightness has been restored to the copper by the incessant percussion of the water. 2, That, that effect is the greatest on the parts which are the nearest to the surface of the water. 3, That it decreases in proportion to the distance from that surface. 4, That on all the parts which form the bottom of the ship (at which parts the friction, if any, ought to be more strongly felt, owing as much to their almost horizontal situation as to the column of water bearing heavier upon them, in the ratio of its depth), the copper is totally covered with verdigris, consequently has experienced no friction at all; since an incessant motion, during six months or more, has not been able to produce an effect equal to that which could have been attained by slightly rubbing with the finger during a few minutes. 5, If a piece of copper be taken from the part near the surface of the water, and another near the keel, it will be found that the first has lost of its original thickness, and that the second has lost nothing but by the chemical operation of the acid of the water acting upon the copper. If these assertions be confirmed by facts, they will be strong arguments against the supporters of the doctrine of friction in fluids."

Under the name of WATER-WORKS, may be comprehended almost every hydraulic structure or contrivance; such as, canals, conduits, locks, mills, water-engines, &c. But they may be conveniently arranged under two general heads, 1st, Works which have for their object the conducting, raising, or otherwise managing of water; and, 2^{dly}, Works which derive their efficacy from the impulse or other action of water. The first class comprehends the methods of simply conducting water in aqueducts or in pipes for the supply of domestic consumption or the working of machinery. It comprehends also the methods of procuring the supplies necessary for these purposes, by means of pumps, water or fire engines. It also

comprehends the subsequent management of the water thus conducted, whether in order to make the proper distribution of it according to the demand, or to employ it for the purpose of navigation, by lockage, or other contrivances.—And in the prosecution of these things many subordinate problems will occur, in which practice will derive great advantages from a scientific acquaintance with the subject. The second class of water-works is of much greater variety, comprehending almost every kind of hydraulic machine; and would of itself fill volumes. Many of these have already occurred in various articles of this Dictionary. In describing or treating them, we have tacitly referred the discussion of their general principles, in which they all resemble each other, to some article where they could be taken in a connected body, susceptible of general scientific discussion, independent of the circumstances which of necessity introduced the particular modifications required by the uses to which the structures were to be applied.

WATERFORD, a city and sea-port of Ireland, in a county of the same name, with a bishop's see. It is the second place in the kingdom, and is a wealthy, populous city, enjoying many ample privileges. The streets are narrow, and the air is not very healthy; but it has an excellent harbour, seated as well for trade as any in the world, and ships of the greatest burden may ride at the quay. It stands on the river Sure, eight miles north of St. George's Channel, twenty-six fathoms of Kilkenny, and seventy-five fathoms by west of Dublin. W. Long. 6. 54. N. Lat. 52. 18.

WATERFORD, a county of Ireland, forty-six miles in length, and twenty-five in breadth: bounded on the south by St. George's Channel; on the west by Cork; on the north by the river Sure, which separates it from Tipperary and Kilkenny; and on the east by Waterford Haven, which parts it from Wexford. It contains seventy-one parishes. It is a fine country, very pleasant and rich; and the principal place is of the same name.

WATERING, in the manufactures, is to give a lustre to stuffs, &c. by wetting them lightly with gum-water, and then passing them through the press or calender whether hot or cold. The gum-water ought to be pure, thin, and clear, otherwise the folds of the stuff will all stick together: the operation must also be performed when the water is very hot, that it may penetrate.

WATERING Meadows. See **MEADOWS**.

WATERLAND (Dr. Daniel), a learned English divine, who distinguished himself greatly in theological controversies, was born in 1683 at Wasley in Lincolnshire, of which place his father was rector. He had his academical learning at Magdalen College, Cambridge, where he drew up a useful tract, which went through several editions, entitled, *Advice to a Young Student, with a Method of Study for the first four Years*. In 1713 he became master of the college, was soon after appointed chaplain to George I. and in 1720 preached the first course of lectures founded by Lady Moyer in defence of our Lord's divinity. He went through several promotions: and at the time of his death in 1740 was canon of Windsor, archdeacon of Middlesex, and vicar of Twickenham. Besides his controversial writings, he published two volumes of sermons.

WATLING-STREET. See **WAY**.

WATSON (Dr. Robert), an elegant historian, was born at St. Andrew's, in Scotland, about the year 1730. He was the son of an apothecary of that place, who was also a brewer. Having gone through the usual course of languages and philosophy at the school and university of his native place, and also entered on the study of divinity, a desire of being acquainted with a larger circle of literati, and of improving himself in every branch of knowledge, carried him, first to the

Fig. 1.

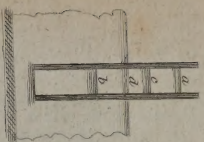


Fig. 2.

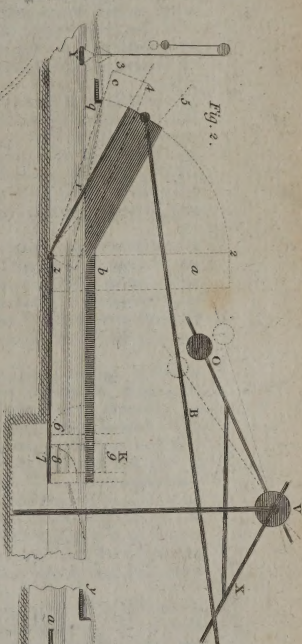


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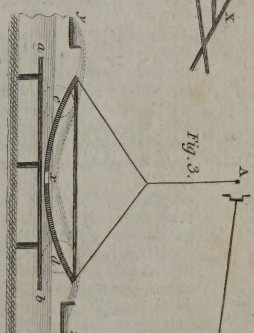


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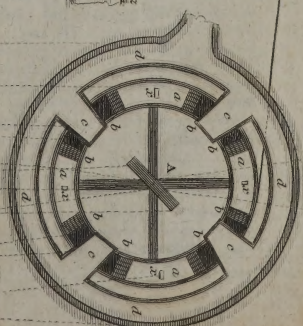


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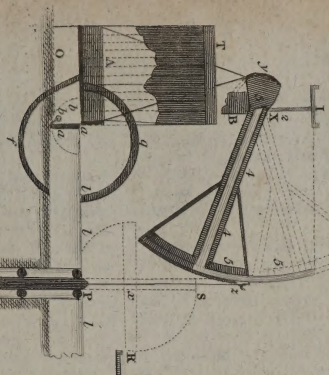


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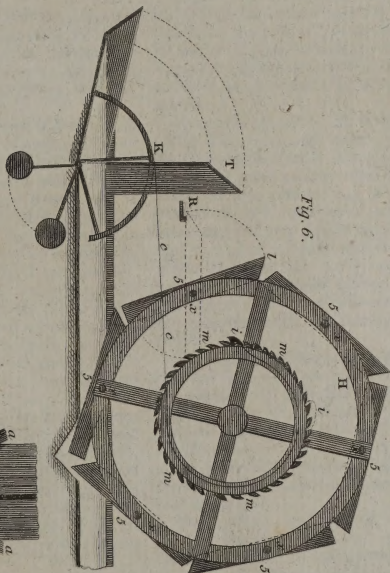


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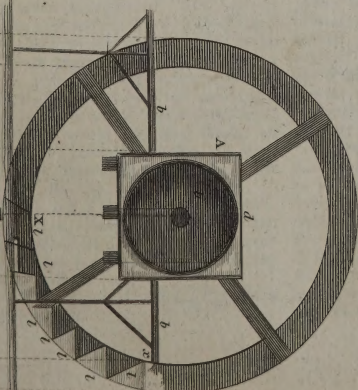


Fig. 9.

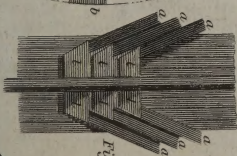


Fig. 10.

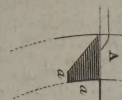


Fig. 11.



Fig. 12.



Fig. 13.



Fig. 14.



Fig. 15.



university of Glasgow, and afterwards to that of Edinburgh, where he delivered lectures on rhetoric; and met with the countenance, approbation, and friendship of Lord Kames, Mr. Hume, with other men of genius and learning.

At this time he had become a preacher; and a vacancy having happened in one of the churches of St. Andrew's, he offered himself a candidate for that living, but was disappointed. He afterwards obtained a patent from the crown, constituting him professor of rhetoric and belles-lettres; and read to his students a course of metaphysics and logics on the most enlightened plan. By his history of Philip II. Dr. Watson attained in his life-time a considerable degree of celebrity; and his history of Philip III. published after his death, has added to his fame. Of his last performance, however, he has only completed the four first books; the two last were written by the editor of his manuscript, at the desire of the guardians of his children.

On the death of Principal Tulideph, Dr. Watson, through the Earl of Kinnoull, was appointed his successor; in which station he lived only a few years. He married the daughter of Mr. Shaw, professor of divinity in St. Mary's College, St. Andrew's, and by this lady he had five daughters, who survived him.

WATTS (Dr. Isaac), a learned and eminent dissenting minister, was born at Southampton in 1674, of parents eminent for piety, and considerable sufferers for conscience-sake. In 1699 he was sent up to London for academical education under the tuition of the Reverend Mr. Thomas Rowe; and in 1696 was himself engaged as tutor to the son of Sir John Harpott, baronet, at Stoke Newington. He began to preach in 1698, and met with general acceptance; and after officiating for three years as an assistant to the Rev. Dr. Isaac Chauncy, he succeeded in his pastoral charge in 1702, and continued to preside over that church as long as he lived. Though his whole income did not amount to an hundred a-year, he allotted one third of it to the poor. He died in 1748. His numerous works have rendered his name famous among people of every denomination, both in this and other countries, and they have been translated into a variety of languages. His *Lyrical Poems*, his *Psalms and Hymns*, and his *Divine Songs for Children*, are a sufficient proof of his poetical talents, and have had an amazing number of editions. His logic and philosophy have been much admired. He also wrote works upon a variety of other subjects, and printed several volumes of his sermons. He was admired for the mildness and benevolence of his disposition and the sweetness of his manners. After his death, his works were collected, and published in six volumes quato.

WAVE, in philosophy, a cavity in the surface of water, or other fluids, with an elevation aside thereof. The waves of the sea are of two kinds, natural and accidental. The natural waves are those which are exactly proportioned in size to the strength of the wind, whose blowing gives origin to them. The accidental waves are those occasioned by the wind's reacting upon itself by repercussion from hills and mountains, or high shores, and by the washing of the waves themselves; otherwise of the natural kind, against rocks and shoals: all these causes give the waves an elevation, which they can never have in their natural state. For the height of the waves, and filling them by means of oil, see SEA.

WAVED, in heraldry, is said of a bordure, or any ordinary or charge, in a coat of arms, having its outlines indented in manner of the rising and falling of waves: it is used to denote, that the first of the family in whose arms it stands, acquired its honours by sea-service.

WAVING, in the sea-language, is the making signs to a vessel to come near or keep off.

WAX, or Bees WAX, in natural history, a firm and solid substance, moderately heavy, and of a fine yellow colour, formed by the bees from the pollen of flowers. See ARIS. The best sort is that of a lively yellow colour, and an agreeable smell, somewhat like that of honey: when new, it is toughly, yet easy to break; but by age it becomes harder and more brittle, loses its fine colour, and in a great measure its smell.

It appears that wax and the pollen have for their basis a fat oil, which passes to the state of resin by its combination with oxygene. If the nitric or muriatic acid be digested upon fixed oil for several months, it passes to a state resembling wax. Wax, by repeated distillations, affords an oil which possesses all the properties of volatile oils. It is reduced into water and carbonic acid by combustion. The colouring matter of wax is insoluble in water and in alcohol.

Fixed alkalis dissolve wax, and render it soluble in water. It is this saponaceous solution which forms the punic wax. It may be used as the basis of several colours; and may be made into an excellent paste for washing the hands. Ammoniac likewise dissolves it; and as this solvent is evaporable, it ought to be preferred when it is proposed to use the wax as a varnish.

From the common yellow wax, by bleaching, is formed white wax, sometimes called, very improperly, *virgin-wax*. The greater the surface is in proportion to the quantity, the sooner and more perfectly this operation is performed. The usual way is to melt the wax in hot water; when melted, they press it through a strainer of tolerably fine linen, and pour it into round and very shallow moulds. When hardened by cooling, it is taken out and exposed to the sun and air, sprinkling it now and then with water, and often turning it: by this means it soon becomes white. The best sort is of a clear and almost transparent whiteness, dry, hard, brittle, and of an agreeable smell, like that of the yellow wax, but much weaker.

The common yellow wax is of very great use both in medicine and in many of the arts and manufactures. It has been sometimes given internally in dysenteries and erosions of the intestines; but its great use is in the making of ointments and plasters, and the greater part of those of the shops owe their consistence to it. The white wax is also an ingredient in some of the cerates and ointments of the shops; and is used in making candles, and in many of the nicer arts and manufactures where wax is required.

Sealing-WAX, or Spanish-WAX, is a composition of gum lac, melted and prepared with resins, and coloured with some suitable pigment. There are two kinds of sealing-wax in use; the one hard, intended for sealing letters, and other such purposes, the other soft, designed for receiving the impressions of seals of office to charters, patents, and such written instruments. The best hard red sealing-wax is made by mixing two parts of shell-lac, well powdered, and resin and vermilion, powdered, of each one part, and melting this combined powder over a gentle fire: and when the ingredients seem thoroughly incorporated, working the wax into sticks. Seed-lac may be substituted for the shell-lac; and instead of resin, boiled Venice turpentine may be used. A coarser, hard, red sealing-wax may be made, by mixing two parts of resin, and of shell-lac, or vermilion and red-lead, mixed in the proportion of one part of the vermilion to two of the red-lead, of each one part; and proceeding as in the former preparation. For a cheaper kind, the vermilion may be omitted, and the shell-lac also, for very coarse uses. Wax of other colours is made by substituting other colouring matters for vermilion, as verditer for blue, ivory black for black wax. For uncoloured, soft sealing wax, take of bees-wax, one pound; of tur-

pentine, three ounces; and of olive-oil one ounce; place them in a proper vessel over the fire, and let them boil for some time; and the wax will be then fit to be formed into rolls or cakes for use. For red, black, green, blue, yellow, and purple soft sealing-wax, add to the preceding composition an ounce or more of any ingredients directed above for colouring the hard sealing-wax, and stir the mafs till the colouring ingredients be incorporated with the wax.

WAX-Works, the representation of the faces, &c. of persons living, or dead; made by applying plaster of Paris in a kind of paste, and thus forming a mould containing the exact representation of the features. Into this mould melted wax is poured, and thus a kind of masks is formed; which being painted and set with glass eyes, and the figures dressed in their proper habits, they bear such a resemblance that it is difficult to distinguish between the copy and the original.

WAY, a passage or road. The Roman ways are divided into consular, prætorian, military, and public; and of these we have four remarkable ones in England: the first Watling-street, or Watling-street, leading from Dover to London, Dunstable, Toucester, Atterton, and the Severn, extending as far as Anglesea in Wales. The second, called *Hilkenild* or *Ikenild street*, stretches from Southampton over the river Itis at Newbridge; thence by Camden and Lichfield; then passes the Derwent near Derby, and ends at Tinnmouth. The third, called *Pesse-way*, because in some places it was never perfected, but lies as a large ditch, leads from Cornwall through Devonshire, by Tethbury, near Stow in the Wolds; and beside Coventry to Leicester, Newark, and so to Lincoln. The fourth, called *Erming*, or *Erminge street*, extends from St. David's, in Wales, to Southampton.

WAY Covert, Gang, Hatch. See **COVERT-WAY**, **GANG**, &c.

WAY of a Ship, is sometimes the same as her rake, or run forward or backward: but this term is most commonly understood of her sailing.

WAY-Leaves, in the coal business. See **COALERY**.

Rights of WAYS, in law. This may be grounded on a special permission; as when the owner of the land grants to another a liberty of passing over his grounds, to go to church, to market, or the like: in which case the gift or grant is particular, and confined to the grantee alone; it dies with the person; and if the grantee leaves the country, he cannot assign over his right to any other; nor can he justify taking another person in his company. A way may be also by prescription; as if all the owners and occupiers of such a farm have immemorially used to cross another's ground: for this immemorial usage supposes an original grant, whereby a right of way thus appurtenant to land may clearly be created. A right of way may also arise by act and operation of law; for if a man grants me a piece of ground in the middle of his field, he at the same time tacitly and impliedly gives me a way to come at it; and I may cross his land for that purpose without trespass. For when the law doth give any thing to one, it giveth impliedly whatsoever is necessary for enjoying the same. By the law of the twelve tables at Rome, where a man had the right of way over another's land, and the road was out of repair, he who had the right of way might go over any part of the land he pleased: which was the established rule in public as well as private ways. And the law of England, in both cases, seems to correspond with the Roman.

WAYFARING TREE. See **VIBURNUM**.

WAYWODE, is properly a title given the governors of the chief places in the dominions of the Czar of Muscovy. The palatines, or governors of provinces in Poland, also bear the quality of *waywodes*, or *warwodes*. The Poles likewise call

the princes of Wallachia and Moldavia *waywodes*; as esteeming them no other than on the foot of governors; pretending that Wallachia and Moldavia are provinces of Poland. Everywhere else they are called *hospodars*. Du Cange says, that the name *waywode* is used in Dalmatia, Croatia; and Hungary, for a general of an army: and Leunclavius, in his *Pandects of Turkey*, tells us, it usually signifies *captain* or *commander*.

WEANING, putting a child away from the breast, and bringing it to use common food.

WEAR, or **WEER**, a great flank or dam in a river, fitted for the taking of fish, or for conveying the stream to a mill. New wears are not to be made, or others altered, to the nuisance of the public, under a certain penalty. See **RIVER**.

WEARING, or **VEERING**, in seamanship. See **SEAMANSHIP**.

WEASEL, in zoology. See **MUSTELA**.

WEATHER, the state or disposition of the atmosphere, with regard to moisture or drought, heat or cold, wind or calm, rain, hail, frost, snow, fog, &c. See **ATMOSPHERE**, **RAIN**, **HEAT**, **WIND**, **HAIL**, **FROST**, &c. As it is in the atmosphere that all plants and animals live and breathe, and as that appears to be the great principle of most animal and vegetable productions, alterations, &c. there does not seem any thing, in all philosophy, of more immediate concernment to us than the state of the weather. In effect, all living things are only assemblages, or bundles of vessels, whose juices are kept moving by the pressure of the atmosphere; and which by that motion maintain life. So that any alterations in the rarity or density, the heat, purity, &c. of that fluid necessarily be attended with proportionable ones in these. What great, yet regular alterations, a little change of weather makes in a tube filled with mercury, or spirit of wine, or in a piece of string, &c. every body knows, in the common instance of barometers, thermometers, hygrometers, &c. and it is owing partly to our inattention, and partly to our unequal, intemperate course of living, that we do not feel as great and as regular ones in the tubes, chords, and fibres of our own bodies.

It is certain, a great part of the brute creation have a sensibility, and sagacity, this way, beyond mankind; and yet, without any means or disposition thereto, more than we; except that their vessels, fibres, &c. being, in other respects, in one equable habitude; the same or a proportionable cause from without, has always a like or proportionable effect on them; that is, their vessels are regular barometers, &c. affected only from one external principle; viz. the disposition of the atmosphere; whereas ours are acted on by divers from within, as well as without: some of which check, impede, and prevent, the action of others.

We know of nothing more wanting than a just theory of the weather, on mechanical principles. But, in order to that, a complete history of the weather will be required. If registers were carefully kept in divers parts of the globe, for a good series of years, we should be enabled to determine the directions, breadth, and bounds of the winds, and of the weather they bring with them; the correspondence between the weather of divers places, and the dependence between one sort and another at the same place. In time, no doubt, we might learn to foretell divers great emergencies; as, extraordinary heats, rains, frosts, droughts, dearths, plagues and other epidemical diseases, &c.

The members of our Royal Society, the French Academy of Sciences, and many authors of note, have made considerable essays this way, and the practice of keeping meteorological journals has, of late years, become very general. For

infructions and examples pertaining to this subject, see Phil. Transf. vol. lxx. part ii. art. 16.

Eraf. Bartholin. has observations of the weather for every day throughout the year 1671. Mr. W. Merle made the like at Oxford, for seven years, with a very remarkable care and accuracy. Dr. Plott did the same at the same place, for the year 1684. Mr. Hillier, at Cape Corfe, for the years 1686, 1687. Mr. Hunt, &c. at Gresham College, for the years 1695, 1696. Dr. Derham, at Upminster in Essex, for the years 1691, 1692, 1697, 1698, 1699, 1703, 1704, 1705. Mr. Townley, in Lancashire, in 1697, 1698. Mr. Cunningham, at Emin in China, for the years 1698, 1699, 1700, 1701. Mr. Locke, at Oats in Essex, 1692. Dr. Scheuchzer, at Zurich, in 1708; and Dr. Tilly, at Pifa, the same year. See the Phil. Transactions.

The form of Dr. Derham's observations afford a good specimen of a journal of this kind; observing that he notes the strength of the winds, by 0, 1, 2, 3, &c. and the quantity of rain as it fell through a tunnel, in pounds and centesimals.

Day.	Hour.	Weather.	Wind.	Barometer.	Rain.
27	7	Fair.	S. W.	29 37	1 52
	12	Rain.	S. W. by W.	29 34	
	9	Stormy,	-	29 88	0 29

We have several schemes for keeping meteorological journals or diaries of the weather, extant in the Philosophical Transactions, the Medical Essays of Edinburgh, and in other books. The Ephemerides Ultrajectine may also be consulted. The instruments requisite for such journal, are a barometer, thermometer, anemoscope, and ombrometer, which see in their proper places.

As a specimen of the use of such histories, we shall add some general remarks, drawn from them by Dr. Derham; and, 1. That foggy weather makes the mercury rise in the barometer, as well as the north wind. The cause, he suggests, probably enough, to be the accession of the load of vapour to the former weight of the atmosphere. Misty weather he likewise observes to have the like effect. 2. The cold and heats in England and Switzerland begin and end nearly about the same time: nay, and any remarkable weather, especially if it continue any while, affects one place as well as the other. 3. That the remarkably cold days in June, anno 1708, were found, in Switzerland to precede ours, commonly by about five days, or more; and that the remarkable heats in the following months began to abate in both places about the same time; only somewhat sooner here than there. 4. That though the winds in both places frequently agree, yet they oftener differ. 5. That the barometer is always lower at Zurich than at Upminster, by sometimes one, and sometimes above two English inches; but the common difference is about half an inch. Which may be solved either by supposing Zurich situate one-fourth of a mile higher above the level of the sea than Upminster; or else, by supposing that part of the terraqueous globe, as lying near the line, to be higher, and more distant from the centre than ours is, which lies nearer the pole. 6. That the barometers generally rise and fall together at far distant places: though this agreement of the barometer is not so constant between Zurich and Upminster, as in places nearer home; viz. at London and Paris; where, again, the agreement is not so great as between Upminster and Lancashire. 7. That the variations of the barometer are greatest at the places are nearest the pole. Thus, *e. gr.* the mercury at London has a greater range by two or three lines than at

Paris; and at Paris a greater than at Zurich. In some places near the equinoctial, there is scarce any variation at all. See BAROMETER. 8. That the rain in Switzerland and Italy is much greater in quantity, throughout the year, than that in Essex, yet the rains are more frequent, *i. e.* there are more rainy days, in Essex, than at either of those places. For the proportion of the annual rains that fall in several places and seasons, see RAIN. 9. That cold contributes greatly to rain; and that, apparently, by condensing the suspending vapours, and making them descend. Thus, very cold months, or seasons, are generally followed immediately by very rainy ones; and cold summers are always wet ones. 10. That high ridges of mountains, as the Alps, and the fnows with which they are covered, not only affect the neighbouring places by the cold, rains, vapours, &c. they produce; but even distant countries, as England, often partake of their effects. Thus, the extraordinary colds, December, 1708, and the relaxations thereof, were felt in Italy and Switzerland, several days before they reached us; an indication, Dr. Derham thinks, that they were derived from them to us. See a collection of ingenious observations, and meteorological conjectures by Dr. Franklin, in his Experiments, &c. p. 182, &c. See EVAPORATION, RAIN, and WIND.

Prognosticks of the WEATHER. We do not here mean to obtrude the idle, arbitrary observations of fanciful people upon our readers; but shall confine ourselves to what has a visible foundation in the nature of things.

1. Then, "a thick, dark sky, lasting for some time, without either sun or rain, always becomes first fair, then foul," *i. e.* it changes to a fair clear sky, before it turns to rain. This the Rev. Mr. Clarke observed, who kept a register of the weather for thirty years, since put into Dr. Derham's hands by his grandson the learned Dr. S. Clarke: he says, he scarce ever knew it to fail; at least when the wind was in any of the easterly points; but Dr. Derham has observed the rule to hold good, be the wind where it will. And the cause is obvious. The atmosphere is replete with vapours, which, though sufficient to reflect and intercept the sun's rays from us, yet want density to descend; and while the vapours continue in the same state, the weather will do so too. Accordingly, such weather is generally attended with moderate warmth, and with little or no wind to disturb the vapours, and a heavy atmosphere to sustain them; the barometer being commonly high. But when the cold approaches, and, by condensing, drives the vapours into clouds or drops, then way is made for the sunbeams; till the same vapours, being by farther condensation formed into rain, fall down in drops.

2. "A change in the warmth of the weather is generally followed by a change of the wind." Thus, the northerly and southerly winds, commonly esteemed the causes of cold and warm weather, are really the effects of the cold or warmth of the atmosphere; of which Dr. Derham assures us he has had so many confirmations, that he makes no doubt of it. Thus, it is common to see a warm southerly wind suddenly changed to the north, by the fall of snow or hail; or to see the wind, in a cold frosty morning, north, when the sun has well warmed the earth and air, wheel towards the south; and again turn northerly or easterly in the cold evening.

3. "Most vegetables expand their flowers and down in sun-shiny weather; and towards the evening, and against rain, close them again; especially at the beginning of their flowering, when their seeds are tender and sensible." This is visible enough in the down of dandelion, and other downs; and eminently in the flowers of pimpernel; the opening and shutting of which, Gerard (Herb. lib. ii.) observes, are the countryman's *weather-wiser*, whereby he foretels the weather of the following day. The rule is, if the flowers be close that up, it

betokens rain, and foul weather: if they be spread abroad, fair weather. "*Est et alia (arbor in Tylis) similis, foliosior tamen, resque floris; quem noctu comprimens, aperire incipit solis exortu, moridie expandit. Incolae dormire eum dicunt.*" Plin. Nat. Hist. lib. xii. cap. 11. The stalk of trefoil, Lord Bacon observes, swells against rain, and grows more upright: and the like may be observed, though not so sensibly, in the stalks of most other plants. He adds, that in the stubble-fields there is found a small red flower, called by the country people *pimpernel*; which, opening in a morning, is a sure indication of a fine day. See *Sleep of Plants*.

That vegetables should be affected by the same causes that affect the weather, is very conceivable; if we consider them as so many hygrometers, and thermometers, consisting of an infinite number of tracheæ, or air-vessels; by which they have an immediate communication with the air, and partake of its moisture, heat, &c. These tracheæ are very visible in the leaf of the scabiose, vine, &c.

Hence it is, that all wood, even the hardest and most solid, swells in moist weather; the vapours easily insinuating into the pores thereof; especially of that which is lightest and driest. And hence we derive a very extraordinary use of wood, viz. for breaking rocks for millstones. The method at the quarries is this. Having cut a rock into a cylinder, they divide that into several less cylinders, by making holes at proper distances round the great one; the holes they fill with so many pieces of fallow wood, dried in an oven, which, in moist weather, becoming impregnated with the humid corpuscles of the air, swell; and, like wedges, break or cleave the rock into several fissions.

Predictions of the WEATHER from the barometer and moon. See *BAROMETER* and *moon*.

WEATHER, in sea-language, is used as an adjective, and applied by mariners to every thing lying to windward of a particular situation: thus, a ship is said to have the weather-gage of another, when she is farther to windward. Thus also, when a ship under sail presents either of her sides to the wind, it is then called the *weather-side* or *weather-board*; and all the rigging and furniture situated thereon are distinguished by the same epithet, as the *weather-boards*, the *weather-lifts*, the *weather-braces*, &c.

To WEATHER, in sea-language, is to sail to windward of some ship, bank, or head-land.

WEATHER-Cock, a moveable vane, in form of a cock, or other shape, placed on high, to be turned round according to the direction of the wind, and point out the quarter from whence it blows.

WEATHER-Glass. See *BAROMETER*.

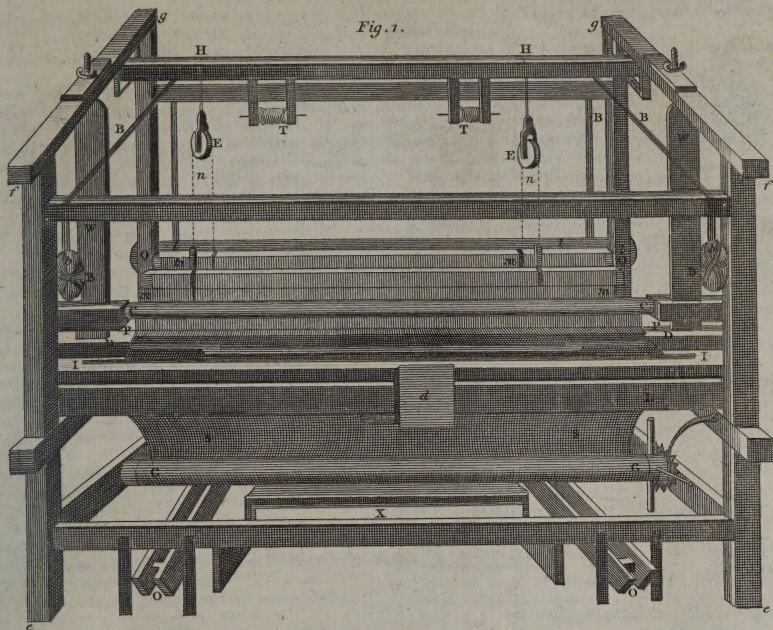
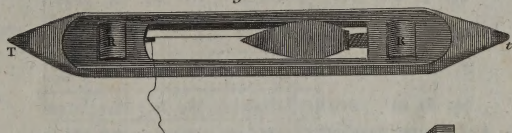
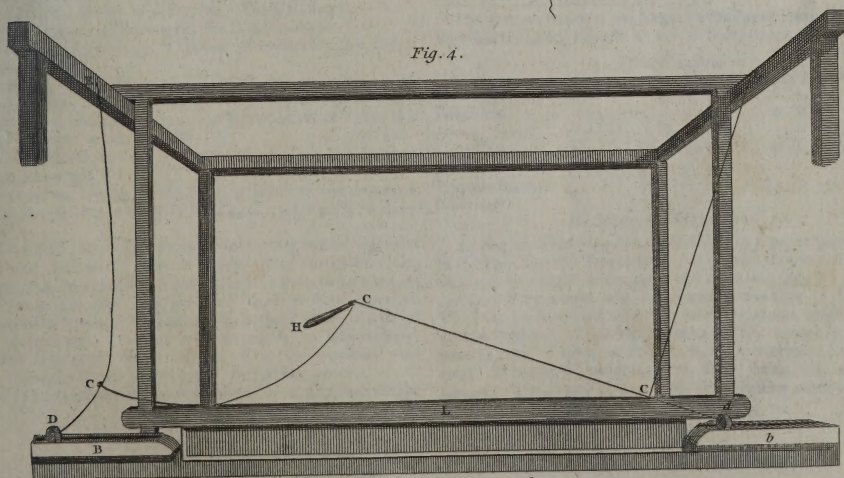
WEATHERING, among sailors, signifies the doubling or sailing by a head-land or other place.

WEAVING, the art of working a web of cloth, silk, or other stuff, in a loom with a shuttle. For an idea of the manner in which this is performed, see *CLOTH*.

WEAVING-Loom, a machine for weaving cloth, silk, &c. by raising the threads of the warp in order to throw in the shoot, and strike it close. Of these there are various kinds, distinguished by the different sorts of cloths, stuffs, silks, &c. in which they are employed; and which are chiefly distinguished by the number and variety of the threads they raise in order to work the warp, either plain or in figures, by making more or less of the woof or shoot appear through the warp. In order to give a general idea of weaving, we shall here describe the parts of the common weaver's loom. See Plate 5, fig. 1. in which *e, f, e, f*, are the front posts, and *g, g*, the back posts of the loom; *l, l, l, m, m, m*, are the *lams* in their place at *Q*, or, as they are called in some parts of Scotland, the *biddles*, and in others the *flaves*. They are composed of strong threads,

stretched between two horizontal bars, an upper and a lower. The threads of one lam are so disposed as to pass between the upper threads of the warp, while they admit the lower threads to pass through loops or small holes in them, and the disposition of the threads of the other lam is such, that while they pass between the lower threads of the warp, they admit the upper threads to pass through the small holes just mentioned. The lams are suspended from the cross-bar or *lam-bearer* *HH*, by means of ropes *n, n*, passing from the upper bars of the *lams* over the pulleys at *EE*, and balanced by weights at the other ends. From the lower bar of each *lam* or *biddle* a rope passes to the *treadles* or moveable bars at *OO*; so that when a foot presses a treadle, the lam fastened to it sinks, while the other rises by means of the balancing weight suspended from the pulley at *E*. The workman then throws in the woof by means of the shuttle, and closes it by one or two strokes of the *lay* or *batten*, of which *WB, WB*, are called the *swords*, *CC* the *cap*, or in Scotland the upper *shell*, *DD* the *block* or under *shell*, and *PP* the *reed* or *comb* contained between these shells. *LL* is the bench on which the workmen sit; for the loom which our figure represents is constructed for weaving cloth of such a breadth as to require two workmen, who have their quills in a box *d* on the middle of the bench on which they sit. Between the workmen's bench and the *batten* or *lay* is the *breast-bar* *I, I*, a smooth square beam, in which there is an opening to let the web through as it is wove. From this opening the web *SS* passes to the *knee-roll* or *web-beam* *GG*, round which it is rolled by means of the spokes, visible in the figure, and kept from being unrolled by a wheel with teeth and clench, visible likewise in the figure. In some looms the web passes from the knee-roll to the wooden frame *X*, to be dried as it is wove. Opposite to the breast-bar, and on the other side of the *batten* or *lay*, is the *cane-roll* or *yarn-beam*, on which the warp is rolled when put into the loom, and from which it is gradually unrolled as the work proceeds. *TT* are bobbins filled with yarn of the warp to mend such threads of it as may be broke in the weaving; and *B, B, B*, are clues of the same kind of yarn with the borders of the warp, to mend such threads as may there be broken.

Fig. 2. represents the common shuttle with the vacuity in the middle, in which the quill with the woof is placed on a spindle or axis. As this shuttle is thrown with one hand in at one side of the warp, and received with the other hand at the other side, it is obvious, that when the web is of a breadth too great for a man to reach from one side of it to the other, two workmen must be employed and much time lost. To remedy this inconvenience, a new shuttle has, in this country, been lately brought into very general use, and called the *flying shuttle*, because it flies through the warp with wonderful rapidity on two steel rollers *RR* (fig. 3.) This shuttle is not thrown with the hand, but moved backwards and forwards by a very simple piece of machinery, of which fig. 4. will give the reader a sufficiently accurate conception. To each end of the *batten* or *lay* *L* is fastened a kind of open box *B, b*, with the bottom or horizontal side exactly on a level with the threads of the warp of the intended web. In each of these boxes is a vertical piece of wood *D, d*, of considerable thickness, called a *driver*. This driver is moved easily on an iron spindle or axis from one end of the box to the other by means of a slender rope *CCCC*, and a handle *H* is seen in the figure. When the weaver is to begin his work, he lays the shuttle on its rollers in the box *B* with the iron tip *T* (fig. 3.), touching, or almost touching, the driver *D* (fig. 4.) Then moving the handle *H*, with a sudden jerk, towards the box *b*, the driver *D* forces the shuttle with a rapid motion through the warp till it strikes *d*, which is impelled by the stroke to the further end of the box *b*. The two drivers *D* and *d* have

*Fig. 2.**Fig. 3.**Fig. 4.*

now changed their positions in their respective boxes; so that the driver which was at the front of its box before, is now at the farther end of it, and *vice versa*. Then by a sudden jerk of the hand towards B the shuttle is driven back till it strikes D; and thus is the work continued without the weaver having occasion ever to stretch his arms from one margin of the web to the other. That the shuttle may not, by the unsteadiness of the workman's hand, be driven zig-zag through the warp or out of the place in which it ought to move, the guiding or driving rope CCDD is made to pass through smooth holes or loops C, C, at the ends of the ropes EC, EC, suspended either from the cross-bar on the top of the loom or from the swords of the batten.

WEB, a sort of tissue or texture formed of threads interwoven with each other; some whereof are extended in length, and called the *warp*; others are drawn across, and called the *weft*.

WEDGE, one of the mechanical powers. See MECHANICS.

WEDNESDAY, the fourth day of the week, so called from a Saxon idol named *Woden*, supposed to be Mars, worshipped on this day.

WEDNESDAY, the first day of Lent, so called from the custom observed in the ancient Christian church of penitents expressing their humiliation at this time, by appearing in sack-cloth and ashes.

WEED, a common name for all rank and wild herbs, that grow of themselves, to the detriment of other useful herbs they grow among.

WEED, in the miner's language, denotes the degeneracy of a load or vein of fine metal into an useless marcasite.

WEEDS, also denote a peculiar habit, worn by the relicts of persons deceased, by way of mourning.

WEEK, in chronology, a division of time comprising seven days. See PLANETARY DAYS and SABBATH.

PASSION-WEEK, or the Holy WEEK, is the last week in Lent, wherein the church celebrates the mystery of our Saviour's death and passion.

WEEK OF WYCK, in geography, a parliament and port-town of Scotland, in the shire of Caithness. W. Long. 3. 2. N. Lat. 58. 30.

WEEKS *Ember*. See EMBER.

FEAST OF WEEKS. See PENTECOST.

WEEVEL, *Method of destroying*. See GRANARY.

WEEVER, in ichthyology. See TRACHINUS.

WEEVIL, in zoology, a species of curculio. See CURCULIO.

WEIGH, a weight of cheefe, wool, &c. containing 256 pounds avoirdupois. Of corn, the weigh contains 40 bushels; of barley or malt, six quarters. In some places, as Essex, the weight of cheefe is 300 pounds.

WEIGHING, the act of examining a body in the balance to find its weight.

WEIGHING *Anchor*, is the drawing it out of the ground it had been cast into, in order to set sail, or quit a port, road, or the like.

WEIGHT, in physics, a quality in natural bodies, whereby they tend downwards towards the centre of the earth. Or, weight may be defined in a less limited manner, to be a power inherent in all bodies whereby they tend to some common point, called the *centre of gravity*, or, to speak more accurately, to one another: and that with a greater or less velocity, as they are more or less dense, or as the medium they pass through is more or less rare. See MECHANICS.

WEIGHT, in commerce, denotes a body of a known weight

appointed to be put in the balance against other bodies whose weight is required.

The security of commerce depending, in a good measure, on the justness of weights, which are usually of lead, iron, or brass, most nations have taken care to prevent the falsification thereof, by stamping or marking them by proper officers, after being adjusted by some original standard. Thus, in England, the standard of weights is kept in the exchequer by a particular officer, called the *clerk of the market*.

Weights may be distinguished into ancient and modern.

I. ANCIENT WEIGHTS.

1. Those of the ancient Jews, reduced to the English troy weight, will stand as in the following table:

Shekel	lb.	oz.	dwt.	gr.
	0	0	9	2 $\frac{1}{2}$
60 Maneh	3	3	6	10 $\frac{1}{2}$
3000 50 Talent	113	10	1	10 $\frac{1}{2}$

2. Roman weights, reduced to English troy weight, will stand as in the following table:

Lentes	oz.	dwt.	gr.
	0	0	0 $\frac{1}{12}$
4 Siliquæ	0	0	3 $\frac{1}{2}$
12 3 Obolus	0	0	9 $\frac{1}{2}$
24 6 2 Scriptulum	0	0	18 $\frac{1}{2}$
72 18 6 3 Drachma	0	2	6 $\frac{1}{4}$
96 24 8 4 1 $\frac{1}{3}$ Sextula	0	3	0 $\frac{6}{7}$
144 36 12 6 2 1 $\frac{1}{2}$ Sicilius	0	4	13 $\frac{1}{2}$
192 48 16 8 2 $\frac{1}{2}$ 1 $\frac{1}{2}$ Duella	0	6	1 $\frac{1}{2}$
576 144 48 24 8 6 4 3 Uncia	0	18	5 $\frac{1}{2}$
6912 1728 576 288 96 72 48 36 12 Libra	10	18	13 $\frac{1}{2}$

The Roman ounce is the English avoirdupois ounce, which they divided into 7 denarii, as well as 8 drachmas.

3. Attic Weights.

Drachma	English Troy Weight.
	lb. oz. dwt. gr.
	0 0 2 16,9
100 Mina	1 1 10 20
6000 60 Talent	67 7 5 0

II. MODERN WEIGHTS.

1. *English Weights*.—Mr. Renardson, in a paper published in the Philosophical Transactions, has proved, that at first there was but one weight in England, and that this was the avoirdupois. Troy weight was introduced in the time of Henry VII.: at present, both the troy and avoirdupois weights are used in England. Troy weight seems to have derived its name from *Troyes*, a town in France, where a celebrated fair was kept. It is used for weighing gold, silver, jewels, silk, and all liquors. The avoirdupois is used for weighing other things.

TABLE of Troy Weight, as used by the Goldsmiths, &c. Apothecaries.

Grains.	Grains.
24 Penny-weight.	20 Scruple. 9
480 20 Ounce.	60 3 Dram. 5
5760 240 12 Pound.	480 24 8 Ounce. 3
	5760 288 96 12 Pound.

The troy pound in Scotland, which by statute is to be the same as the French pound, is commonly supposed equal to 15 ounces and three quarters troy English weight, or 7560 grains. But by a mean of the standards kept by the dean-of-guild of Edinburgh, it weighs $599\frac{1}{2}$ or 7600 grains.

TABLE of Avoirdupois Weight.

Drams.	
16 An ounce.	
256 16 A pound.	
7168 448 28 A quarter.	
28672 1792 112 4 A hundred.	
573440 35840 2240 80 20 A ton.	

The avoirdupois pound is equal to 7004 troy grains, the avoirdupois ounce to 437.75 grains; and it follows of consequence, that the troy pound is to the avoirdupois pound as 88 to 107 nearly; for as 88 to 107, so is 5760 to 7003.636: that the troy ounce is to the avoirdupois ounce as 80 to 73 nearly; for as 80 to 73, so is 480 to 438. An avoirdupois pound is equal to 1 lb. 2 oz. 11 dwts. 20 gr. troy: a troy ounce is equal to 1 oz. 1.35 dr. avoirdupois; an avoirdupois dram contains 27.34375 grains; 175 troy pounds are equal to 144 avoirdupois pounds.

The moneyers have a peculiar subdivision of the grain troy: thus,

The {	Grain Mite Droit Periot	} into {	20 Mites.
			24 Droits.
			20 Periot.
			24 Blanks.

The English weights are used in the United Provinces of America.

2. *French Weights.*—Different weights were formerly used in most of the different provinces of France: we believe that they have lately undergone several alterations. Be that as it may, a knowledge of the ancient weights of that country is of importance on account of the books in which they are used. The Paris pound contains 16 ounces, and is divided two ways.

Grains.	
24 Penny-weight.	
72 3 Gros.	
576 24 8 Ounce.	
4608 192 64 8 Marc.	
9216 384 128 16 2 Pound.	

Half-ounce.

2 Ounce.	
4 2 Half-quarter pound.	
8 4 2 Quarter-pound.	
16 8 4 2 Half-pound.	
32 16 8 4 2 Pound.	
3200 1600 800 400 200 100 Quintal.	

The weights of the first division are used to weigh gold, silver, and the richer commodities; and the weights of the second division for commodities of less value.

The Paris 2 marc, or pound weight, is equal to 7560 grains troy, and the Paris ounce equal to 472.5 grains troy.

lb. oz. dwt. gr.

The Paris pound = 1 3 15 0 troy

The Paris ounce = 0 0 19 16.5 troy.

A grain troy = 1.2186507 of a Paris grain.

But the pound was not the same throughout France. At Lyons, *c. gr.* the city pound was only 14 ounces; so that 100 Lyons pounds made only 86 Paris pounds. But beside the city pound, they had another at Lyons for silk, containing 15 ounces. At Toulouse, and throughout the Upper Languedoc, the pound was 13 ounces and a half of Paris weight. At Marseilles, and throughout Provence, the pound was 13½ ounces of Paris weight. At Rouen, beside the common Paris pound and marc, they had the weight of the vicomte; which was 16 ounces, a half, and five-sixths of the Paris weight. The weights enumerated under the two articles of English and French weights are the same that are used throughout the greatest part of Europe; only under somewhat different names, divisions, and proportions.

French weights are used in all the French American settlements.

3. *Dutch Weights.*—The weight used in Amsterdam, and all over Holland, is called *Troy weight*, and is exactly the same with that used at Brussels. The Dutch weights are as follows:

Deukens.	
2 Troyken.	
4 2 Vierling.	
16 8 4 As.	
512 256 128 32 Angle.	
10240 5120 2560 640 20 Ounce.	
81920 40960 20480 5120 160 8 Marc.	

The marc is equal, according to M. Tillet, to 4620 French grains.

The Amsterdam pound used in commerce is divided into 16 ounces, 32 loots, or 128 drachms. This pound contains 2 marcs troy, and ought therefore to weigh only 10240 as: but it weighs 10280; so that it is a little heavier than the troy pound of Amsterdam: 256 lb. of commerce are equal to 257 lb. troy of Holland. Two different pounds are used by apothecaries; the one containing 2 marcs, the other only 1½. The

first is called *arsenic* pound weight; it contains 16 ounces, the ounce 8 drachms, the drachm 8 scruples, the scruple 20 grains. The second is called the *apothecary's* pound; it is divided into 12 ounces, or 24 loots. Three *arsenic* pounds are equal to 4 apothecary's pounds.

The Dutch stone	=	8 commercial lb.
The Lifpund, or Ll.	=	15
The pound weight	=	100
The Schipppond, or Sch. lb.	=	300

4. *Spanish Weights*.—The marc of Castile, used for weighing gold and silver, is divided as follows:

Grains (gold weight).

1 $\frac{1}{4}$	Grain (silver weight).								
12	1 $\frac{1}{2}$	Tomine (gold weight).							
12 $\frac{1}{2}$	12	1 $\frac{1}{2}$	Tomine (silver weight).						
37 $\frac{1}{2}$	36	3 $\frac{1}{2}$	3	Adarme.					
75	72	64	6	2	Ochava.				
66	92 $\frac{4}{5}$	8	7 $\frac{1}{2}$	24 $\frac{1}{2}$	1 $\frac{1}{2}$	Castellano.			
600	576	50	48	16	8	6 $\frac{1}{2}$	Ounce.		
4800	4608	400	384	128	64	10	8	Marc.	

The marc, according to Tillet, is equal to 7 oz. 4 gros, 8 grains French, which is equal to 4785 $\frac{1}{2}$ as of Holland. One hundred marcs of Castile = about 92 $\frac{1}{2}$ marcs of Holland; 100 marcs of Holland = 107 marcs of Castile. Medicines are sold by the fame marc; but it is divided differently, containing 8 ounces, 64 drachms, 192 scruples, 584 obols, 1152 carateras, 4608 grains.

The Spanish commercial pound is divided into two marcs, called *marcs of Tego*, each of which is equal to the marc of Castile. This pound is divided into 16 ounces, 256 adarmes, 9216 grains.

5. *Weights of Portugal*.—The Lisbon marc for assaying silver consists of 12 deniers, and the denier of 24 grains. The marc of Portugal for weighing gold and silver is equal, according to Tillet, to 7 ounces, 3 $\frac{1}{2}$ gros, and 34 grains French, which makes 4776 $\frac{1}{2}$ as of Holland; so that it is exactly the same with the Lisbon pound. It is divided into 8 ounces, 64 outavas, 192 scruples, 4608 grains.

The pound consists of 2 marcs, 16 ounces, or 96 outavas. The arroba of 32 lb. the quintal of 4 arrobas, or 128 lb., 100 Oporto pounds make 87 $\frac{1}{2}$ pounds of commerce of Amsterdamm.

6. *Weights of Italy*.—*Genoa*. Two kinds of weights are used at Genoa, the *peso grosso* (heavy weight), and the *peso fottile* (light weight): the latter is used for weighing gold and silver, the former for other things. The pound of the *peso fottile* is equal, according to Tillet, to 1 marc, 2 ounces, 2 $\frac{1}{2}$ gros, 30 grains French. It is divided into 8 ounces, the ounce into 24 deniers, and the denier into 24 grains. The pound of the *peso grosso* is equal to 1 marc, 2 ounces, 3 gros, 5 grains, French. It is divided into 12 ounces:

The cantaro	=	100 lbs. peso grosso.
The rubbo	=	25 lbs.
The rotolo	=	1 $\frac{1}{2}$ lb.
100 lbs. peso grosso	=	64 $\frac{1}{2}$ lb. of commerce of Amsterdamm.
100 lbs. peso fottile	=	129 marcs troy of Holland.

Rome. The Roman pound consists of 12 ounces, the ounce of 24 deniers, the denier of 24 grains. The Roman pound, Vol. X.

according to Tillet, is equal to 1 marc, 3 ounces, $\frac{1}{2}$ gros, 14 grains, French.

Venice. The marc for weighing gold and silver contains 8 ounces, 32 quarti, 1152 carati, or 4608 grani. An hundred marcs of Venice = 971 marcs troy of Holland, 100 marcs of Holland = 103 of Venice. In Venice they also use a *peso grosso* and *peso fottile*. 100 lbs. peso grosso = 94 $\frac{1}{2}$ commercial lbs. of Amsterdamm. 100 lbs. peso fottile = 61 $\frac{1}{2}$ ditto.

7. *Swedish Weights*.—The marc for weighing gold and silver is equal to 16 loths, 64 quintuns, or 4384 as. The pound of 32 loths, used for weighing food, is equal, according to Tillet, to 1 marc, 5 ounces, 7 gros, 8 grains French, which makes 8848 $\frac{1}{2}$ as troy of Holland. This answers exactly to the weight of the different pounds, as fixed in Sweden, viz. 8848 as = the pound for weighing articles of food; 7821 $\frac{1}{2}$ as = marc used in the mines; 7450 $\frac{1}{2}$ as = marc used in towns and in the country; 7078 $\frac{1}{2}$ as = marc used for weighing iron; 7416 as = pound used in medicine.

The kippund = 400 lbs. for weighing food.

The centner = 120 lbs.

The wagg = 165 lbs.

The sten = 32 lbs.

The Swedith as = 1 as of Holland troy.

8. *German Weights*.—*Vienna*. The marc of Vienna for weighing gold and silver is divided into 16 loths, 64 quintals, or 256 deniers or pfenings; the loth into 4 quintals, or 16 pfenings. This marc, according to Tillet, is equal to 1 marc, 1 ounce, 1 gros, 16 grains, French, = 5831 as troy Holland. The pound of Vienna is divided into 2 marcs, or 4 viertings; the mark into 8 ounces, 16 loths, 64 quintals, or 266 pfenings.

Hamburg. The marc for assaying gold is divided into 24 carats; the carat into 12 grains. The marc for silver is divided into 16 loths, and the loth into 18 grains. These marcs consist each of 288 grains, and are therefore equal. This marc, used in Hamburg for gold and silver, is the marc of Cologne, which is equal, according to Tillet, to 7 ounces, 5 gros, 7 $\frac{1}{2}$ grains, French, = 4866 as troy of Holland. It is divided into 8 ounces, 16 loths, 64 quintuns, 256 pfenings, 4352 elches, or 65536 right pfenings thelle. The apothecary pound used in Hamburg, and almost all Germany, is divided into 12 ounces, 96 drachms, 288 scruples, or 5760 grains; an ounce is equal to 621 as of Holland. The pound of commerce is equal, according to Tillet, to 10085 as of Holland; for half a pound is equal to 7 ounces, 7 gros, 23 grains, French. This pound is divided into 16 ounces, 32 loths, 128 quintuns, or 512 pfenings.

9. *Russian Weights*.—The berckowitz = 400 lbs.

The poud = 40 lbs.

The potand is divided into 32 loths, or 96 folotnuks. One hundred Russian lbs. = 106 $\frac{1}{2}$ marcs, or 82 $\frac{1}{2}$ lbs. of Amsterdamm. One hundred lbs. of commerce of Amsterdamm = 120 $\frac{1}{2}$ lbs. of Russia.

10. *Weights used in the several parts of Asia, the East-Indies, China, Persia, &c.*—In Turkey, at Smyrna, &c. they use the batman, or battemant, containing 7 $\frac{1}{2}$ ocos; theocco contains 4 cheyks or pounds, each of which, according to Tillet, is equal to 1 marc 2 oz. 3 gros, 28 gr. French. The Turkish weights are divided as follows:

Cantaras	Barmans	Ocos.	Rotelos.	Cheiks.	Mefals.	Drachms.
1	=	7 $\frac{1}{2}$	=	44	=	100
						176
						1733 $\frac{1}{2}$
						17600
						1
						6
						13 $\frac{1}{2}$
						24
						1000
						2400
						1
						2
						266 $\frac{1}{2}$
						400
						1
						1 $\frac{1}{2}$
						117 $\frac{1}{2}$
						176
						1
						66 $\frac{1}{2}$
						100
						1
						1

At Aleppo there are three sorts of rottos; the first 720 drachms, making about 7 pounds English, and serving to

weigh cottons, galls, and other large commodities; the second is 680 drachms, used for all silks but white ones, which is weighed by the third rotto of 700 drachms. At Seyda the rotto is 600 drachms.

The other ports of the Levant not named here, use some of these weights, particularly the *occa* or *ocqua*, the *rottoli*, and *rotto*.

The Chinese weights are the piece for large commodities; it is divided into 100 *catis*, or *cattis*; though some say into 125; the *catt* into 16 *taels*, or *tales*; each *tal* equivalent to 1½ of an ounce English, or the weight of 1 *rial* and $\frac{1}{12}$, and containing 12 *mas*, or *males*, and each *mas* 10 *condrins*. So that the Chinese piece amounts to 137 pounds English *avoirdupois*, and the *catt* to 1 pound 8 ounces. The *picol* for silk containing 66 *catis* and $\frac{4}{5}$; the *bahar*, *bakaire*, or *barr*, containing 300 *catis*.

Tonquin has also the same weights, measures, &c. as China. Japan has only one weight, viz. the *catt*; which, however, is different from that of China, as containing 20 *taels*. At Surat, Agra, and throughout the states of the Great Mogul, they use the *man*, or *maund*, whereof they have two kinds; the king's *man*, or king's weight; and the *man* simply; the first used for the weighing of common provisions, containing 40 *feers*, or *ferres*; and each *feer* a just Paris pound. The common *man*, used in the weighing of merchandise, consists likewise of 40 *feers*, but each *feer* is only estimated at 12 Paris ounces, or $\frac{3}{4}$ of the other *feer*.

The *man* may be looked upon as the common weight of the East-Indies, though under some difference of name, or rather of pronunciation; it being called *mao* at Cambaya, and in other places *mein*, and *maun*. The *feer* is properly the Indian pound, and of universal use; the like may be said of the *bahar*, *tal*, and *catt*, above mentioned.

The weights of Siam are the piece, containing two *thans* or *cattis*; but the Siamese *catt* is only half the Japanese, the latter containing 20 *taels*, and the former only 10; though some make the Chinese *catt* only 16 *taels*, and the Siamese 8. The *tael* contains 4 *baats* or *ticals*, each about a Paris ounce; the *baat* 4 *selings* or *mayons*; the *mayon* 2 *foangs*; the *foang* 4 *payes*; the *paye* 2 *clams*; the *lompaye* half a *foang*.

It is to be observed, that these are the names of their coins as well as weights; silver and gold being commodities there sold, as other things, by their weights.

In the *ile* of Java, and particularly at Bantam, they use the *gantan*, which amounts to near 3 Dutch pounds. In *Golconda*, at *Visapour*, and *Goa*, they have the *furatelle*, containing 1 pound 14 ounces English; the *mangalis*, or *mangelin*, for weighing diamonds and precious stones, weighing at *Goa* 5 grains, at *Golconda*, &c. 5½ grains. They have also the *rotolo*, containing 144 ounces English; the *metrical*, containing the sixth part of an ounce; the *wall* for *piastres* and *ducats*, containing the 73d part of a *rial*.

In *Perfia* they use two kinds of *batmans* or *mans*; the one called *catt* or *cheray* which is the king's weight, and the other *batman* of *Tauris*. The first weighs 13 pounds 10 ounces English; the second 6½ pounds. Its divisions are the *ratel*, or a 16th; the *derhem*, or *drachm*, which is the 50th; the *mechal*, which is half the *derhem*; the *dung*, which is the sixth part of the *mechal*, being equivalent to 6 carat grains; and, lastly, the grain, which is the fourth part of the *dung*. They have also the *yakie*, which exceeds a little our ounce; the *fahcheray*, equal to the 1170th part of the *derhem*; and the *to-man*, used to weigh out large payments of money without selling; its weight is that of 50 *abafis*.

11. *Weights at Cairo in Egypt*.—Almost every kind of goods has its own weight; these are regulated by the *cantaren* or principal weight.

	Rotels.
The ordinary cantaren, or hundred weight, weighs	100
The cantaren of quicksilver and tin	102
coffee, wine, and iron	105
ivory	109
almonds and other fruits	115
woods for dyeing	120
arfenic and other drugs	125
minium and cinnabar	139
gum-arabic, aloes, and other aromatics	133

The *rotel* or *rotoli* is nearly equal to the pound of *Marseilles*; 108 lbs. of *Marseilles* are equal to 110 *rotels*. The *Marseilles* pound consists of 13 ounces of Paris; so that 100 lbs. of *Marseilles* are equal to 81 lbs. Paris, and 100 lbs. Paris = 123 lbs. of *Marseilles*.

We shall subjoin here Mr. Ferguson's table for comparing the English *avoirdupois* pound with foreign pounds:—

London pound	1,0000	Hamburg	1,086½
Antwerp	1,04	Lisbon	1,135
Amsterdam	1,1111	Leghorn	0,75
Abeville	1,0989	Norimberg	1,136½
Ancona	0,78	Naples	0,71
Avignon	0,8928	Paris	1,1235
Bourdeaux	1,0689	Prague	1,2048
Bologna	0,8	Placentia	0,72
Bruges	1,0204	Rochelle	0,8928
Calabria	0,73	Rome	0,7874
Calais	0,9345	Rouen	1,1089
Dieppe	1,0989	Seville	0,9259
Dantzic	0,862	Toulouse	0,8928
Ferrara	0,75	Turin	0,82
Flanders	0,9433	Venice	1,06
Geneva	1,07	Vienna	1,23
Genoa, gross	0,7		

In order to show the proportion of the several weights used throughout Europe, we shall add a reduction of them to one standard, viz. the London pound.

The 100 lb. of England, Scotland, and Ireland, are equal to

lb. oz.	
91	8 of Amsterdam, Paris, &c.
96	8 of Antwerp or Brabant.
88	0 of Rouen, the viscounty weight.
106	0 of Lyons, the city weight.
90	9 of Rochelle.
107	11 of Toulouse and Upper Languedoc.
113	0 of Marseilles or Provence.
81	7 of Geneva.
93	5 of Hamburg.
89	7 of Francfort, &c.
96	1 of Leipfic, &c.
137	4 of Genoa.
132	11 of Leghorn.
153	11 of Milan.
152	0 of Venice.
154	10 of Naples.
97	0 of Seville, Cadiz, &c.
104	13 of Portugal.
96	5 of Leige.
112	$\frac{3}{4}$ of Russia.
107	$\frac{3}{4}$ of Sweden.
89	$\frac{3}{4}$ of Denmark.

A curious weighing machine was some time ago invented by M. Hanin of Paris, whereby the weights of the principal countries in Europe, and the relative proportions they bear to each

other, are shown at one view. For this he received a bounty of 20 guineas from the Society instituted at London for the Encouragement of Arts, Manufactures, and Commerce. We shall insert a description and figure of this ingenious machine.

In Pl. 3. fig. 1. represents the back of the machine, which being supported by the ring A, and a weight hung to the hook B, the spring C, C, C, made fast by strong screws at *g*, is drawn downwards; and the bar D, having a rack thereon at *e*, turns the pinion *f*, in proportion to the weight of the body hanging thereto. Fig. 2. shows the face of the machine, on which are a number of concentric circles, and the weights of several countries of Europe engraved thereon, as expressed by the words on a line with them. In the centre of this face is a ring fixed to the small plate, turned by the pinion *f*, shown at fig. 1. From this ring a hand projects, which, by the turning of the pinion, points to such part of the circle as is marked with the weight, hung to the hook B; and thereby shows what weight of any of the countries mentioned, is equal to the pounds troy of London, which are engraved on the outer circle, or to the pounds avoirdupois, which are engraved on the second circle, and so of the rest. A slider moves on the hand, which may be brought to any of the circles at pleasure, in order to point out the relative weight with greater precision.

In the same plate we have also given, at the request of a correspondent, the *quadrant scale*, which is an invention for weighing goods without weights. It surpasses the STEELYARD in weighing to a greater nicety; being less liable to be out of order, and having no trouble of shifting the weight; as, directly on the goods being put into the scale, the index shews the weight of them. The sizes are from 7 lb. to 150 lb. but they may be made to any size; and so as to weigh to 2 oz. very exactly. In the plate, A shows the frame made of brass. B a strong spring screwed to the frame near the nut F, to which hangs the scale C by the hook D, which being drawn downwards by the goods in the scale, raises the index E. F a nut to regulate the index in case of variation. G the hook to hang it up by.

Many attempts have been made to introduce an uniformity of weights and measures into the commercial world; but hitherto they have all failed. The accomplishment of such an undertaking would be of infinite advantage to mankind, and certainly claims the most serious attention of those who by their situation can alone bring it about. The undertaking is indeed difficult, but surely not impossible. Something of this kind has lately been attempted in France; and if it succeed, as the method is simple, and exceedingly well adapted for calculation, it surely deserves to be imitated.

WEIGHT of Air. See PNEUMATICS.

Regulation of WEIGHTS and MEASURES, is a branch of the king's prerogative. See PREROGATIVE and MEASURE. As weight and measure are things in their nature arbitrary and uncertain, it is therefore expedient that they be reduced to some fixed rule or standard: which standard it is impossible to fix by any written law or oral proclamation; for no man can, by words only, give another an adequate idea of a foot rule, or a pound weight. It is therefore necessary to have recourse to some visible, palpable, material standard; by forming a comparison with which all weights and measures may be reduced to one uniform size; and the prerogative of fixing this standard, our ancient law vested in the crown, as in Normandy it belonged to the duke. This standard was originally kept at Winchester: and we find in the laws of King Edgar, near a century before the conquest, an injunction that the one measure, which was kept at Winchester, should be observed throughout the realm. Most nations have regulated the standard of measures of length by comparison with the parts of the human body; as the palm, the hand, the span, the

foot, the cubit, the ell (*ulna* or arm), the pace, and the fathom. But as these are of different dimensions in men of different proportions, our ancient historians inform us, that a new standard of longitudinal measure was ascertained by King Henry the First; who commanded that the *ulna*, or ancient ell, which answers to the modern yard, should be made of the exact length of his own arm. And one standard of measure of length being gained, all others are easily derived from thence; those of greater length by multiplying, those of less by dividing, that original standard. Thus, by the statute called *compositio ulnarum et peticarum*, five yards and an half make a perch; and the yard is subdivided into three feet, and each foot into twelve inches; which inches will be each of the length of three grains of barley. Superficial measures are derived by squaring those of length; and measures of capacity by cubing them. The standard of weights was originally taken from corns of wheat, whence the lowest denomination of weights we have is still called a *grain*: 32 of which are directed, by the statute called *compositio mensurarum*, to compose a penny-weight, whereof 20 make an ounce, 12 ounces a pound, and so upwards. And upon these principles the first standards were made; which, being originally so fixed by the crown, their subsequent regulations have been generally made by the king in parliament. Thus, under King Richard I. in his parliament holden at Westminster, A.D. 1197, it was ordained that there should be only one weight and one measure throughout the kingdom, and that the custody of the assize, or standard of weights and measures, should be committed to certain persons in every city and borough; from whence the ancient office of the king's aulnager seems to have been derived, whose duty it was, for a certain fee, to measure all cloths made for sale, till the office was abolished by the statute 11th and 12th William III. c. 20. In King John's time this ordinance of King Richard was frequently dispensed with for money; which occasioned a provision to be made for enforcing it, in the great charters of King John and his son. These original standards were called *pondus regis*, and *mensura domini regis*, and are directed by a variety of subsequent statutes to be kept in the exchequer chamber, by an officer called the *clerk of the market*, except the wine gallon, which is committed to the city of London, and kept in Guildhall.

By the articles of union, the English standards are established over all Great Britain; but the force of custom is so strong, that the Scottish standards are still universally retained for many purposes. Likewise a variety of local weights and measures are used in particular places of both countries, which differ from the general standards of either.

WELD, or WOLD, in botany. See RESEA.

WELDING-HEAT, in smithery, a degree of heat given to iron, &c. sufficient to make the surfaces of two pieces incorporate upon being beaten together with a hammer.

WANMANNIA, in botany: a genus of plants of the class *estrandia*, order *monogynia*, and arranged in the natural classification with those plants the order of which is doubtful. The calyx is four-leaved, the corolla has four petals, and the capsule is bilocular and birofrated. There are four species, none of which are natives of Britain.

WELL, a hole under ground, usually of a cylindrical figure, and walled with stone and mortar: its use is to collect the water of the strata around it.

WELL, an apartment formed in the middle of a ship's hold to inclose the pumps, from the bottom to the lower deck. It is used as a barrier to preserve those machines from being damaged by the friction or compression of the materials contained in the hold, and particularly to prevent the entrance of ballast, &c. by which the tubes would presently be choked,

and the pumps rendered incapable of service. By means of this inclosure, the artificers may likewise more readily descend into the hold, in order to examine the state of the pumps, and repair them as occasion requires.

Well-room of a boat, the place in the bottom where the water lies, between the ceiling and the platform of the stern-fluets, whence it is thrown out into the sea with a scoop.

Burning-Well. See *BURNING-SPRINGS*.

Well of a Fishing-vessel, an apartment in the middle of the hold, which is entirely detached from the rest, being lined with lead on every side, and having the bottom thereof penetrated with a competent number of small holes, passing also through the ship's floor; so that the salt-water running into the well is always kept as fresh as that in the sea, and yet prevented from communicating itself to the other parts of the hold.

Well-hole, in building, is the hole left in a floor for the stairs to come up through.

WELLS, a city of Somersetshire, and see of a bishop; the bishop of Bath being also that of Wells.—It is supposed to take its name from the many springs and wells that are near it. It is not very large; but is adorned with handsome buildings, both public and private. Its cathedral is a very beautiful structure, adorned with images and carved stonework. The bishop's palace joins to the cathedral; and on the other side are the houses for the prebendaries. In the market-place is a fine market-house, supported by pillars. It is governed by a mayor, and sends two members to parliament. The chief manufacture is knit hosiery. W. Long. 2. 37. N. Lat. 51. 12.

WEN, a tumor or excrescence arising on different parts of the body, and containing a cystus or bag filled with some peculiar kind of matter. See *Nævus*.

WEREGILD, the price of *homicide*; paid partly to the king for the loss of a subject, partly to the lord whose vassal he was, and partly to the next of kin of the person slain.

WERST, *WURST*, or *Verst*, a Russian measure equal to 3500 English feet. A degree of a great circle of the earth contains about 104 wersts and a half.

WERTURIAN or *URALIAN Mountains*, a famous chain of mountains forming part of the boundary of Asia. It begins distinctly (for it may be traced interruptedly farther south) near the town of Kungur, in the government of Kasan, in lat. 57. 20.; runs north, and ends opposite to the Waygatz strait, and rises again in the ile of *Neva Zemlja*. The Russians also call this range *Semennoi Point*, or, *the girdle of the world*; from a supposition that it encircled the universe. These were the *Kipchak montes*: *Pars mundi damnata a natura rerum, et densa mense caligine*; of which only the southern part was known to the ancients, and that so little as to give rise to numberless fables. Beyond these were placed the happy *Hyperborei*, a fiction most beautifully related by Pomponius Mela. Moderns have not been behindhand in exaggerating several circumstances relative to these noted hills. Ytbrand Ides, who crossed them in his embassy to China, asserts that they are 5000 toises or fathoms high; others, that they are covered with eternal snow. The last may be true in their more northern parts; but in the usual passages over them, they are free from it three or four months.

The heights of part of this chain have been taken by M. l'abbé d'Auteroche; who, with many assurances of his accuracy, says, that the height of the mountain Kyria near Solikamskaia, in latitude 63°, does not exceed 471 toises from the level of the sea, or 286 from the ground on which it stands. But, according to M. Gmelin, the mountain Pouda is much higher, being 752 toises above the sea. From Peterburg to this chain is a vast plain, mixed with certain

elevations or platforms, like islands in the midst of an ocean. The eastern side descends gradually to a great distance into the wooded and morassy Siberia, which forms an immense inclined plain to the Icy Sea. This is evident from all the great rivers taking their rise on that side, some at the amazing distance of latitude 46°; and, after a course of above 27 degrees, falling into the Frozen Ocean, in latitude 73. 30. The Yaik alone; which rises near the southern part of the eastern side, takes a southern direction, and drops into the Caspian Sea. The Dvina, the Pezora, and a few other rivers in European Russia, shew the inclined plane of that part. All of them run to the Northern Sea; but their course is comparatively short. Another inclination directs the Dnieper and the Don into the Euxine, and the vast Volga into the Caspian Sea.

WESLEY (JOHN), one of the most extraordinary characters that ever existed, whether we consider him as a various and voluminous writer, a zealous and indefatigable preacher, or the founder of the most numerous sect in the christian world, was the son of the Rev. Samuel Wesley, rector of Epworth, in the ile of Axholme, in Lincolnshire, and was born in that village in the year 1703.

In the year 1713 he was entered a scholar at the Charter-house in London, where he continued seven years, under the tuition of the celebrated Dr. Walker, and of the Rev. Andrew Tooke, author of "The Pantheon." Being elected to Lincoln College, Oxford, he became a fellow of that college about the year 1725, took the degree of master of arts in 1726, and was joint tutor with the Rev. Dr. Hutchins, the rector: He discovered, very early, an elegant turn for poetry; some of his gayer poetical effusions are proofs of a lively fancy and a fine classical taste; and some translations from the Latin poets, while at college, are allowed to have great merit. He had early a strong impression, like Count Zinzendorf, of his designation to some extraordinary work. This impression received additional force from some domestic incidents; all which his active fancy turned to his own account. His wonderful preservation from a fire when a child, naturally tended to cherish the idea of his being designed by Providence to accomplish some purpose or other, that was out of the ordinary course of human events.

The reading of the writing of Mr. William Law, the celebrated author of "Christian Perfection," and of "A Serious Address to the Christian World," contributed, moreover, to lead Mr. John Wesley, and his brother Charles, with a few of their young fellow-students, into a more than common strictness of religious life. They received the sacrament of the Lord's Supper every week; observed all the fasts of the church; visited the prisons; rose at four in the morning; and refrained from all amusements. From the exact method in which they disposed of every hour, they acquired the appellation of Methodists, by which their followers have been ever since distinguished.

The boundaries of this island were soon deemed by Mr. Wesley too confined for a zeal which displayed the piety of an apostle, and of an intrepidity to which few missionaries had been superior. In 1735 he embarked for Georgia, one of our colonies, which was, at that time, in a state of political infancy; and the great object of this voyage was to preach the gospel to the Indian nations in the vicinity of that province. He returned to England in 1737. Of his spiritual labours, both in this country and in America, he himself has given a very copious account, in a series of "Journals," printed at different periods. These Journals drew our laborious preacher into a controversy with Dr. George Lavington, bishop of Exeter, and Dr. William Warburton, bishop of Gloucester.

On his return from Georgia, Mr. Wesley paid a visit to

Count Zinzendorf, the celebrated founder of the sect of Moravians, or Herrnhuters, at Herrnuth, in Upper Lusatia. In the following year he appeared again in England, and with his brother Charles, at the head of the Methodists. He preached his first field sermon at Britol, on the 2d of April, 1738, from which time his disciples continued to increase. In 1741 a serious altercation took place between him and Mr. Whitefield. In 1744, attempting to preach at an inn at Taunton, he was regularly silenced by the magistrates. Although he chiefly resided, for the remainder of his life, in the metropolis, he occasionally travelled through every part of Great Britain and Ireland, establishing congregations in each kingdom. In 1750 he married a lady, from whom he was afterward separated. By this lady, who died in 1781, he had no children.

It has been justly observed of Mr. Wesley, that his labours were principally devoted to those who had no instructor; to the highways and hedges; to the miners in Cornwall, and the colliers in Kinwood. These unhappy creatures married and buried among themselves, and often committed murders with impunity before the Methodists sprung up. By the humane and active endeavours of Mr. Wesley and his brother Charles, a sense of decency, morals, and religion, was introduced into the lowest classes of mankind; the ignorant were instructed, the wretched relieved, and the abandoned reclaimed. His personal influence was greater perhaps than that of any other private gentleman in any country. He died March 2, 1791, aged 88, having preached the Wednesday before at Leatherhead in Surrey.—His works, as already observed, are very voluminous, and consist of various subjects, Theology, History, Biography, Philosophy, Medicine, &c.

WEST (GILBERT), son of the reverend Dr. West and of a sister of Sir Richard Temple, afterwards Lord Cobham, was educated at Eton and at Oxford, with a view to the church; but obtaining from his uncle a commission either in a regiment of dragoons or dragon guards, entered into the army, where he continued till his appointment into the office of Lord Townshend, secretary of state, with whom he attended the king to Hanover. He was nominated clerk-extraordinary of the privy-council in May 1729; soon after which he married, and settled at Wickham in Kent, where he devoted himself to learning, and to piety. For his "Observations on the Resurrection," which appeared in 1747, he received from Oxford, by diploma, the degree of LL.D. March 30, 1748. In 1749 first appeared his translation of "Pindar's Odes." He was very often visited by Lyttelton and Pitt. His income was not large; and his friends endeavoured, but without success, to obtain an augmentation. In time, however, his revenue was improved; he lived to have one of the lucrative clerkships of the privy-council in 1752; and Mr. Pitt at last had it in his power to make him treasurer of Chelsea Hospital. In 1755 he lost his only son, and died himself the year following, on the 26th of March.

WEST, one of the cardinal points of the horizon, diametrically opposite to the east; and strictly defined the intersection of the prime vertical with the horizon on that side the sun lies in.

WESTMINSTER, a city which forms the west part of the capital of Britain, but has a government distinct from the rest. This city had its name from the situation of its abbey, anciently called a *minster*, in respect of that of St. Paul. That part properly called the city of Westminster, comprehending the parishes of St. John and St. Margaret, was once an island formed by the Thames, called *Thorney island*, from the thorns with which it was over-run; and the abbey that stood in it, Thorney-abbey. The liberties of Westminster contain the several parishes of St. Martin in the Fields, St.

James's, St. Anne, St. Paul Covent-garden, St. Mary le Strand, St. Clement Danes, St. George Hanover Square, and the precinct of the Savoy. The government, both of the city and liberties, is under the jurisdiction of the dean and chapter of Westminster, in civil as well as ecclesiastical affairs; and their authority extends to the precinct of St. Martin le Grand, by Newgate-street, and in some towns of Essex, that are exempted from the jurisdiction of the bishop of London and the archbishop of Canterbury; but the management of the civil part has, ever since the reformation, been in the hands of laymen, elected from time to time, and confirmed by the dean and chapter. The chief of these laymen are the high-steward, the deputy-steward, and the high-bailiff, who hold their offices for life. There are also sixteen burgesses and their assistants, out of which are elected two head-burgesses, one for the city, and the other for the liberties. Another officer is the high-constable, who has all the other constables under his direction.

WESTMORELAND, a county of England, bounded on the north and north-west by Cumberland; on the south and south-east by Yorkshire; and on the south and south-west by Lancashire. Its extent from north-east to south, is 40 miles, and its breadth from the east projection to that in the west, 42. It is generally divided into the baronies of Kendal and Westmoreland; the former is very mountainous, but the latter is a large champaign country. These are the only principal divisions of this county, which contains eight market-towns and twenty-six parishes. It lies partly in the diocese of Chester, and partly in that of Carlisle. The earl of Thanet is hereditary sheriff of the county, which sends only four members to parliament. The air is clear, sharp, and salubrious, the natives being seldom troubled with diseases, and generally living to old age. The soil is various; that on the mountains is very barren, while that in the valleys is fertile, producing good corn and grass, especially in the meadows near the rivers. In the hilly parts on the western borders it is generally believed there are vast quantities of copper ore, and veins of gold; some mines of copper are worked, but most of the ore lies so deep that it will not answer the expence. This county yields the finest slate; and abundance of excellent hams are cured here. The principal rivers are, the Eden, the Lune, and the Ken. It has also several fine lakes, the principal of which is Winander Mere, or Windermere-water. In the forest of Martindale, to the south of Ulls-water, the breed of red deer still exists in a wild state.—Appleby is the county town.

WESTPHALIA, a duchy of Germany, bounded to the east by the bishopric of Paderborn, and the territories of Waldeck and Hesse; to the south by the counties of Witgenstein and Nauff, and the duchy of Berg; to the north by the bishopric of Munster and the county of Lippe. It is about 40 miles in length and 30 in breadth. The lower part of it is very fruitful, yielding plenty of corn and cattle, and some salt-springs. The higher affords iron-ore, calamine, lead, copper, some silver and gold, fine woods, cattle, game, fish, with a little corn. The rivers, that either pass through the duchy or along its borders, are the Rahr, the Lenne, the Bigge, the Dimel, and the Lippe. There are twenty-eight towns in it, besides boroughs and cloisters. The provincial diets are held at Arenberg. In the year 1180, the Emperor Fred. I. made a donation of this duchy to the archbishopric of Cologne, which was confirmed by succeeding emperors; and in 1638, the last duke of Arenberg ceded to it also the county of Arenberg. The duchy is governed at present by a bailiff, under the archbishop, and is divided into the Hellwege, the Haartfrank, and the Surland; or otherwise into the Ruden, the Werl, the Bilstein, and the Brilon quarters.

WESTPHALIA, one of the circles of Germany: anciently the people inhabiting between the Wefer and the Rhine, were called *Westphalians*; and hence that tract got the name of *Westphalia*: but the circle of that name is of a larger extent, being furrounded by the circle of Burgundy, or the Austrian Netherlands, the United Provinces, and the North Sea, with the circles of the Upper and Lower Rhine, and comprising a great many different states.

The fummoning princes and directors of the circle of Westphalia, are the bishops of Munster, alternately with the electors of Brandenburg and Palatine, as dukes of Cleve and Juliers. The archives belonging to it were before the present war (1797) kept at Dusseldorf. Its quota of men and money is somewhat more than the ninth part of the whole sum granted by the empire. With respect to religion, it is partly Protestant and partly Catholic; but the Protestants predominate, and are, at least the greater part of them, Calvinists. The air of this country is not reckoned very wholesome, and towards the north is extremely cold in winter. The soil in general is marshy and barren; yet there is some good corn and pasture land: but the fruit is chiefly used to feed hogs; and hence it is that their bacon and hams are so much valued and admired.

WET COUGH, *coming heap*, a term used by the maltsters for one of the principal articles of malt-making. See **BREWING**.

WETSTEIN (John James), a very learned German divine, born at Basil in 1693. On his admission to the ministry, he maintained a thesis *De variis Novi Testamenti Lectionibus*; in which he showed that the great variety of readings of the New Testament afford no argument against the authenticity of the text. He had made these various readings the object of his attention; and travelled into foreign countries to examine all the MSS. he could come at. In 1730 he published *Prolegomena ad Novi Testamenti Græci editionem accuratissimam*, &c. Some divines, dreading his unsettling the present text, procured a decree of the senate of Basil against his undertaking, and even got him prohibited from officiating in the ministry; on which he went to Amsterdam, where the remonstrants named him to succeed the famous Le Clerc, then superannuated, as professor of philosophy and history. At last he published his edition of the New Testament, in two vols. folio, 1752; in which he left the text as he found it, placing the various readings, with a critical commentary, underneath; subjoining two epistles of Clemens Romanus, till then unknown to the learned, but discovered by him in a Syriac MS. of the New Testament. He also published some small works; and is said to have been not only an universal scholar, but to have abounded in good and amiable qualities. He died at Amsterdam in 1754.

WETERAVIA, the southern division of the Landgrate of Hesse in Germany, lying along the northern bank of the river Maine, comprehending the counties of Hanau and Nassau.

WEXFORD, a county of Ireland, in the province of Munster, 38 miles in length, and 24 in breadth; bounded on the north by Wicklow, on the east by St. George's Channel, on the south by the Atlantic Ocean, on the west by Waterford and Kilkenny, and on the north by Catherlough. It contains 709 parishes, and sends eighteen members to parliament. It is a fruitful country in corn and grass; and the principal town is of the same name.

WEXFORD, a sea-port of Ireland, capital of a county of the same name. It was once reckoned the chief city in Ireland, being the first colony of the English, and is still a large handsome town, with a very commodious harbour at the mouth of the river Slana, on a bay of St. George's Channel, 63 miles south of Dublin. W. Long. 6 3. N. Lat. 52. 18.

WHALE, in ichthyology. See **BALÆNA** and **PHYSETER**.

WHALE, in astronomy, one of the constellations. See **ASTRONOMY**.

WHALE-BONE. See **BALÆNA**.

WHALE-FISHERY. See **FISHERY**.

WHARF, a space on the banks of a haven, creek, or hithe, provided for the convenient loading and unloading of vessels.

WHARTON (Philip duke of), a nobleman of the most brilliant parts, but of the most whimsical, extravagant, and inconsistent turn of mind, was educated by his father's express order at home. He very early married a young lady, the daughter of Major-general Holmes, which disappointed his father's views of disposing of him in such a marriage as would have been a considerable addition to the fortune and grandeur of his illustrious family; yet that amiable lady deserved infinitely more felicity than the met with by this alliance. This precipitate marriage is thought to have hastened the death of his father; after which the duke, being free from paternal restraints, plunged into all manner of excesses.

In the beginning of the year 1716 he began his travels; and as he was designed to be instructed in the strictest Whig principles, Geneva was thought a proper place for his residence: He first passed through Holland, and visited several courts of Germany; and being arrived at Geneva, conceived such a disgust against his governor, that he left him, and set out post for Lyons, where he wrote a letter to the chevalier de St. George, who then resided at Avignon, and presented him a very fine stout horse; which the chevalier no sooner received than he sent a man of quality to him, who took him privately to his court, where he was entertained with the greatest marks of esteem, and had the title of duke of Northumberland conferred upon him. He, however, remained there but one day, and then returned post to Lyons, whence he set out for Paris. He likewise paid a visit to the consort of James II. who then resided at St. Germain, to whom he also paid his court. During his stay at Paris, his winning address and abilities gained him the esteem and admiration of all the British subjects of rank of both parties.

About the latter end of December, 1716, he arrived in England, whence he soon after set out for Ireland, where, though under age, he was allowed the honour to take his seat in the house of peers, and immediately distinguished himself, notwithstanding his former conduct, as a violent partizan for the ministry; in consequence of which zeal the king created him a duke. He no sooner came of age than he was introduced to the house of lords in England with the same blaze of reputation. In a little time he opposed the court, and appeared one of the most vigorous in defence of the Bishop of Rochester; and soon after printed his thoughts twice a-week, in a paper called the *True Briton*, several thousands of which were dispersed weekly.

The duke's boundless profusion had by this time so burdened his estate, that by a decree of Chancery it was vested in the hands of trustees for the payment of his debts, allowing him a provision of 12000*l.* per annum for his subsistence. This being not sufficient to support his title with suitable dignity, he went abroad and shone to great advantage, with respect to his personal character, at the imperial court. From thence he made a tour to Spain: the English minister was alarmed at his arrival, fearing that his grace was received in the character of an ambassador: upon which the duke received a summons under the privy-seal to return home; but instead of obeying it, he endeavoured to inflame the Spanish court against that of Great Britain, for exercising an act of power, as he calls it, within the jurisdiction of his catholic majesty. He then acted openly in the service of the Pretender, and was received at his court with the greatest marks of favour.

While his grace was thus employed, his neglected duties

died in England on the 14th of April, 1726, without issue. Soon after the duke fell violently in love with M. Oberne, one of the maids of honour to the queen of Spain, the daughter of an Irish colonel, whose fortune chiefly consisted in her personal accomplishments. All his friends, and particularly the queen of Spain, opposed the match; but he falling into a lingering fever, occasioned by his disappointment, the queen gave her consent, and they were soon after married. He then spent some time at Rome, where he accepted of a blue garter, assumed the title of duke of Northumberland, and for a while enjoyed the confidence of the exiled prince. But not always keeping within the bounds of Italian gravity, it became necessary for him to remove from hence; when, going by sea to Barcelona, he wrote a letter to the King of Spain, acquainting him that he would assist at the siege of Gibraltar as a volunteer. Soon after he wrote to the Chevalier de St. George, expressing a desire to visit his court; but the chevalier advised him to draw near to England.

The duke seemed resolved to follow his advice; and setting out with his duchess, arrived in Paris in May 1728, whence he soon after proceeded to Rouen, where he took up his residence; and was so far from making any concession to the government of England, that he did not give himself the least trouble about his estate, or any other concern there; though, on his arrival at Rouen, he had only about 600*l.* in his possession, and a bill of indictment was preferred against him in England for high-treason. Soon after the chevalier sent him 2000*l.* which he squandered away in a course of extravagance; when, to save the charges of travelling by land, he went from Orleans to Nantz by water, and staid there till he got a remittance from Paris, which was squandered almost as soon as received. At Nantz he was joined by his ragged servants, and from hence took shipping with them for Bilbao, when the queen of Spain took the duchess to attend her person. About the beginning of the year 1731, the duke, who commanded a regiment, was at Lerida, but declined so fast that he could not move without assistance; yet when free from pain did not lose his gaiety. He, however, received benefit from some mineral waters in Catalonia; but soon after relapsed at a small village, where he was utterly destitute of all the necessaries of life, till some charitable fathers of a Bernardine convent removed him to their house, and gave him all the relief in their power. Under their hospitable roof he languished a week, and then died, without one friend or acquaintance to close his eyes; and his funeral was performed in the same manner in which the fathers inter those of their own fraternity.

Thus died Philip duke of Wharton, "who, like Buckingham and Rochester (says Mr. Walpole), comforted all the grave and dull, by throwing away the brightest profusion of parts on witty fooleries, debaucheries, and scrapes, which mix graces with a great character, but never can compose one.

"With attachment to no party, though with talents to govern any party, this lively man changed the free air of Westminster for the gloom of the Eburian, the prospect of King George's garter for the Pretender's; and with indifference to all religion, the frolic lord who had writ the ballad on the archbishop of Canterbury, died in the habit of a capuchin. It is difficult to give an account of the works of a man whose library was a tavern, and women of pleasure his muses. A thousand follies of his imagination may have been lost. There are only two volumes in 8vo. called his *Life and Writings*. These contain nothing of the latter, but 74 numbers of the *True Briton*, and his speech in defence of the bishop of Rochester. His other works are the ballads above mentioned; the *Drinking Match* at Eden-hall, in imitation

of the Chevy-Chace, printed in a miscellany called *Wartoniana*; and a parody of a song sung at the opera-house by Mrs. Tofts. His lordship also began a play on the story of the Queen of Scots."

WHEAT, in botany. See **TRITICUM**. For the culture of wheat, see **HUSBANDRY**. The three principal kinds of bad wheat are, the *blighted*, the *smutty*, and the *worm-eaten*. Blighted wheat is that of which the stalk is a little twisted and rickety, the blade being of a bluish green and curled up, the grain also is green and tubercled: smutty wheat appears as if great part of the ear had been burnt, some small parts only being free, and, in particular, the stem that rises in the centre of the ear, round which the grain is ranged: worm-eaten or rotten wheat is corrupted without losing much of its natural form, or external appearance; the husk is filled with a greasy, black powder, that is insufferably fetid. It appeared, from the experiments of M. Tillet, that there was a kind of infectious quality in all those kinds of wheat; so that if sound wheat was sprinkled with the flour of smutty or rotten wheat, the crop produced would be rotten or smutty. It appeared also, that among the grain which was produced from ground manured with the straw of distempered wheat, there was a much greater proportion of distempered wheat than in that produced from ground manured with the straw of good wheat: the great secret then was to destroy the principle of this contagion in the wheat that was put into the ground; and M. Tillet found, as the result of a great number of experiments, that if the grain, before it is sowed, be well moistened with a solution of sea-salt, or nitre, in common water, none of the ensuing crop will be smutty, or otherwise defective, either in kind or quality; not only supposing the grain that is sowed to be sound, and the soil to be good, but even supposing the grain to be sowed with the flour of smutty wheat, and the ground manured with bad straw.

The following receipt for preventing smutty wheat was published in 1769 by order of the Society for the Encouragement of Arts: they received it from Mr. John Reynolds of Adisham in Kent.

A tub is to be procured that has a hole at bottom, in which a staff and tap-hole is to be fixed over a whisp of straw, to prevent any small pieces of lime passing (as in the brewing way); this done, we put 70 gallons of water, then a corn bushel heap-full of lime-stone, unslaked, stirring it well till the whole is dissolved or mixed, letting it stand about 30 hours, and then run it off into another tub as clear as we can (as practised in beer): this generally produces a hoghead of good strong lime-water; then add three pecks of salt, 42 pounds, which, with a little stirring, will soon dissolve; thus we have a proper pickle for the purpose of brining and liming our seed-wheat without any manner of obfuscation, which is more than can be said in doing it the common way, and greatly facilitates the drilling.

Herein we steep the wheat in a broad-bottomed basket of about 24 inches diameter, and 20 inches deep (for large sowing, made on purpose), running in the grain gradually in small quantities from 10 to 12 gallons up to 16 gallons, stirring the same. What floats, we skim off with a strainer, and is not to be sown: then draw up the basket, to drain over the pickle, for a few minutes; all which may be performed within half an hour, sufficiently pickled; and so proceed as before. This done, the wheat will be fit for sowing in 24 hours, if required; but if designed for drilling, two hours pickled will be found best; and if prepared four or five days before-hand, in either case it makes no difference at all; but should the seed be clammy, and rick to the notches in the drill-box, more lime must be added to the lime-water; here the master must use his discretion, as the case requires; for

some time has much more drying or astringent qualities in it than others. If sea-water can be obtained conveniently, much less salt will suffice, but some will be found necessary even then, otherwise the light grains will not float, a thing of more consequence than is generally imagined, and it ought to be skimmed off and thrown aside for poultry, &c.

WHEEL, in mechanics, a simple machine, consisting of a round piece of wood, metal, or other matter, which revolves on its axis. See **MECHANICS**.

WHEEL-Carriages. See **MACHINERY**.

WHEEL-Animal. See **ANIMALCULE**.

WHEEL, Potter's. See **POTTERY**.

WHEEL is also the name of a kind of punishment to which great criminals are put in divers countries. In some, assassins, parricides, and robbers on the highway, are said to be condemned to the wheel, when they are to have their bones first broken with an iron bar on a scaffold, and then to be exposed, and left to expire on the circumference of a wheel. In Germany they break their bones on the wheel itself.—Of this cruel punishment, it is not certain who was the inventor: it was first used in Germany, and was, indeed, but rarely practised any-where else, till the time of Francis I. of France; who, by an edict of the year 1534, appointed it to be inflicted on robbers on the highway.

WHEELER (Sir George), a learned traveller and divine, was the son of Colonel Wheeler of Charing in Kent, and was born in 1650 at Breda, where his parents as royalists were then in exile. He travelled through various parts of Greece and the East in company with Dr. James Spon of Lyons; and taking orders on his return, was installed a prebend of Durham, made vicar of Basingstoke, and afterward rector of Houghton le Spring. He published an account of his Travels in 1682 in folio; and in 1689, his Observations on ancient Edifices of Churches yet remaining in the East, compared with Eusebius: also the Protestant Monastery, or Christian Economics. He died in 1724.

WHEELINGS, in the military art, are different motions made both by horse and foot, either to the right and left, or to the right and left about.

General Rules for WHEELING.—The circle is divided into four equal points: thence, wheeling to the right or left, is only a quarter of the circle; wheeling to the right or left about is one half of the circle. When you wheel to the right, you are to close to the right, so near as to touch your right-hand man, but without pressing him; and to look to the left, in order to bring the rank about even. When you wheel to the left, you are to close to the left, and look to the right as above directed. This rule will serve for all the wheeling by ranks; as when a battalion is marching by subdivisions with their ranks open, then each rank wheels distinctly by itself, when it comes to the ground on which the ranks before it wheeled, but not before. In wheeling, the men are to take particular care neither to open nor close their ranks, and to carry their arms well. In wheeling, the motion of each man is quicker or slower, according to the distance he is from the right or the left: thus, when you wheel to the right, each man moves quicker than his right-hand man; and wheeling to the left, each man moves quicker than his left-hand man; the circle that every man wheels being larger, according to the distance he is from the hand he wheels to; as may be seen by describing several circles within one another, at two feet distance from each, which is nearly the space every man is supposed to take up.

WHELK, in zoology. See **BUCCINUM**.

WHELPS, in a ship, the seaman's term for those brackets which are set up on the capitan clove under the bars; they give the sweep to it, and are so contrived that the cable

winding about them may not fudge so much as it might otherwise do if the body of the capitan were quite round and smooth.

WHETSTONE, a stone which serves for the whetting of knives and other tools upon.

WHEY, the serum or watery parts of milk.

WHIDAH, a kingdom of Africa, on the coast of Guinea, and to the west of the Gold Coast; extending about ten miles along the sea. It is a populous country, well furnished with large villages; and there are so many small ones, that they are not above a musket-shot from each other. Whidah was conquered by the king of Dahomy. Their trade consists of slaves, elephants' teeth, wax, and honey. The English factory is 200 miles east of Cape Coast Castle, within land. Bows, arrows, beautiful assaguays, and clubs, are the principal weapons of the nation.

WHIDAW-BIRD. See **EMBERIZA**.

WHIG, a party in Britain, opposite to the Tories, from whom they differ chiefly in their political principles. See **TORIES**.

WHIMBREL. See **SCOLOPAX**.

WHIM, in botany. See **ULEX**.

WHINCHEL. See **MOTACILLA**.

WHIP, or **WHIP-Staff**, in a ship, a piece of timber, in form of a strong staff, fastened into the helm, for the steersman, in small ships, to hold in his hand, in order to move the rudder, and direct the ship.

WHIRLPOOL, an eddy, vortex, or gulf, where the water is continually turning round. Those in rivers are very common, from various accidents, and are usually very trivial, and of little consequence. In the sea they are more rare, but more dangerous. Sibbald has related the effects of a very remarkable marine whirlpool among the Orcaades, which would prove very dangerous to strangers, though it is of no consequence to the people who are used to it. This is not fixed to any particular place, but appears in various parts of the limits of the sea among these islands. Wherever it appears, it is very furious; and boats, &c. would inevitably be drawn in and perish with it; but the people who navigate them are prepared for it, and always carry an empty vessel, a log of wood, or large bundle of straw, or some such thing, in the boat with them; as soon as they perceive the whirlpool, they toss this within its vortex, keeping themselves out: this substance, whatever it be, is immediately received into the centre, and carried under water; and as soon as this is done, the surface of the place where the whirlpool was becomes smooth, and they row over it with safety: and in about an hour they see the vortex begin again in some other place, usually at about a mile's distance from the first.

WHIRLWIND, a wind which moves in a spiral direction, as well as horizontally, which is exceedingly rapid and impetuous, but only of short duration. Dr. Franklin's opinion of the origin of whirlwinds has been already given in the article **WATER-SPOUT**. If his theory be true, it will follow, that no hurricane ever can be so violent as to remove an obstacle of the size of only one cubic inch, provided that was supported by a power equivalent to fifteen pounds; for this is the utmost force of the atmosphere when rushing into a perfect vacuum, which never could take place in the centre of a whirlwind or water-spout. Indeed, notwithstanding the dreadful effects sometimes observed from hurricanes and whirlwinds, we shall easily perceive, that the utmost of their power always falls very far short of this. The diminution of the specific gravity of the air by only 1-4th in the middle of the column, would produce such an afflux of air from all quarters, that an obstacle presenting a surface of one foot square, would require a force of 504 pounds to prevent it from being carried away;

which the strongest walls that can be built by human art could scarce resist. Nay, even the tenth part of this, or the diminution of the gravity of the atmosphere by 1-40th part, would produce a pressure of upwards of fifty pounds on every square foot of surface, which, it is to be doubted, whether any of our common houses could resist.

Some philosophers ascribe the vacuum in the atmosphere to which, according to Dr. Franklin's theory, whirlwinds are owing, to a stream of electric matter rushing with violence into the atmosphere out of the earth. But they do not inform us how this matter comes to be accumulated in that part of the earth : what induces it to pass out of the earth ; how it passes invisibly through pure air ; or what serves it for a conductor. It seems to be the fashion among certain philosophers to ascribe every phenomenon, with the cause of which we are unacquainted, to electricity. But this is merely substituting a new name, and serves rather to retard than advance our knowledge of nature.

Some kinds of whirlwinds move with a slow motion, and are injurious only by their vortex ; while others seem to do mischief as well by their progressive as their whirling motion. Of this kind are those called *typhons* ; which, by their frequently following the course of rivers, seem thus also to discover their electrical origin.

WHISKY, a term signifying *water*, and applied in Scotland and in Ireland to a distilled liquor drawn from barley, which is perhaps preferable to any English malt brandy : it is strong, but not pungent, and free from the empyreumatic taste or smell.

WHISPERING-PLACES. See ACOUSTICS.

WHIST, a well-known game at cards, which requires great attention and silence ; hence the name. This game is played by four persons, who cut for partners ; the two highest and the two lowest are together, and the partners sit opposite to each other : the person who cuts the lowest card is to deal first, giving one at a time to each person, till he comes to the last card, which is turned up for the trump, and remains on the table till each person has played a card. The person on the left hand side of the dealer plays first, and whoever wins the trick is to play again, thus going on till the cards are played out. The ace, king, queen, and knave of trumps, are called *honours* ; in case any three of these honours have been played between, or by either of the two partners, they reckon for two points towards the game, and if the four honours have been played between or by either of the two partners, they reckon for four points towards the game, the game consisting of ten points. The honours are reckoned after the tricks ; all above six tricks reckoning also towards the game.

In Hoyle's games may be seen the general rules for playing WHIST, which are too long for insertion here.

WHISTON (William), an English divine of great parts, uncommon learning, and of a singular character, was born at Norton near Twycroft in the county of Leicester, where his father was rector, in 1667. He was admitted of Clare-hall, Cambridge, where he pursued his studies, particularly in the mathematics, and commenced tutor ; which his ill health at length forced him to decline. Having entered into orders, he, in 1694, became chaplain to Dr. More, bishop of Norwich ; and in this station he published his first work, entitled, *A New Theory of the Earth*, &c. in which he undertook to prove the Mosaic doctrine of the earth perfectly agreeable to reason and philosophy. This work brought no small reputation to the author. In the beginning of this century he was made Sir Isaac Newton's deputy, and afterwards his successor, in the

Lucasian professorship of mathematics ; when he resigned a living he had in Suffolk, and went to reside at Cambridge. About this time he published several scientific works, explanatory of the Newtonian philosophy ; and he had the honour of being one of the first, if not the very first, who rendered these principles popular and intelligible to the generality of readers. About the year 1710 he was known to have adopted Arias principles, and was forming projects to support and propagate them ; among other things, he had translated the *Apostolical Constitutions* into English, which favoured the Arias doctrine, and which he asserted to be genuine. The consequence was, that he was deprived of his professorship, and banished the university ; he nevertheless pursued his scheme, by publishing the next year his *Primitive Christianity Revived*, 4 vols. 8vo. for which the convocation fell upon him very vehemently. On his expulsion from Cambridge, Mr. Whiston settled in London ; where, without suffering his zeal to be intimidated, he continued to write and to propagate his *Primitive Christianity*, with as much ardour as if he had been in the most flourishing circumstances. In 1721 a subscription was made for the support of his family, which amounted to 470*l*. For though he drew profits from reading astronomical and philosophical lectures, and also from his publications, which were very numerous, yet these of themselves would have been very insufficient : nor, when joined with the benevolence and charity of those who loved and esteemed him for his learning, integrity, and piety, did they prevent his being frequently in great distress. He continued long a member of the church of England, and regularly frequented its service, though he disapproved of many things in it : but at last he went over to the Baptists, and attended Dr. Forster's meeting at Pinners' Hall, Broad-street. Among other performances not specified above, he wrote *Memoirs of his own life and writings*, which contain some curious particulars.

He was remarkable for speaking the plainest truths on every occasion, and to persons of every degree. During the year 1725, that he, with Dr. Clarke, Dr. Berkeley, and others, had the honour to attend Queen Caroline on a certain day of every week, to talk of the progress of science, her majesty one evening took occasion to pay him a just compliment on his truth and integrity, requesting that he would, with his usual plainness, point out to her any fault that he might have observed in her conduct. At first he begged to be excused, adding, that few persons could bear to have their faults plainly told to them, and least of all royal personages, who, from their elevation, are necessarily surrounded by flatterers, to whose lips truth is a stranger. Her majesty replied, that he was to consider her not as a queen, but as a philosopher ; and that philosophy is of very little use, if it cannot enable its professors to bear without offence truths necessary to their own improvement. Upon this he told her, that the greatest fault which he had observed in her conduct, was her indecent behaviour in the house of God, which he assured her, had made very unfavourable impressions on the minds of many persons, who, coming to town from distant parts of the country, had gone to the chapel to obtain a sight of her majesty, the king, and the royal family. The queen made no reply : but in about six weeks afterwards renewed her request, that Mr. Whiston would point out the most glaring improprieties in her conduct. To this he answered, that he had laid down a maxim from which he could not deviate, never to point out to any person more than one fault at a time, and never to give a second reproof till he had observed some good consequence to have arisen from the first (A). Much to the queen's

(A) Bishop Berkeley was present at these conversations, and from his son we received the account which we have given of them. They are likewise mentioned, but not stated so accurately, by Bishop Newton in his own Life.

Honour, ~~he~~ was pleased with this plain-dealing, and continued to think favourably of Mr. Whiston. This honest, but whimsical and credulous man, died in 1762, at the advanced age of ninety-five.

WHITBY (Dr. Daniel), a very learned English writer, was born in 1638, and bred at Oxford; where, in 1664, he was elected perpetual fellow of his college. He afterward became chaplain to Dr. Seth Ward, bishop of Salisbury; who collated him in 1668 to the prebend of Yatesbury in that church, and soon after to that of Husbourn and Burbach. In 1672 he was admitted chanter of the said church, on the death of Mr. John South, and then, or soon after, rector of St. Edmund's church in Salisbury. He was made a prebendary of Taunton Regis in 1696, and died in 1726. He was ever strangely ignorant of worldly affairs, even to a degree that is scarcely to be conceived. His writings are numerous, and well known; particularly his Commentary on the New Testament.

WHITEY, a sea-port town in the North Riding of Yorkshire, seated on the river Esk, near the place where it falls into the sea. The houses are neat, strong, and convenient; the number of inhabitants about 9000. Ship-building is their principal manufacture. W. Long. $\circ$. 24. N. Lat. 54. 30.

WHITE, one of the colours of natural bodies.

WHITE of the Eye, denotes the first tunic or coat of the eye, called *albuginea*. See **ANATOMY**.

WHITE of an Egg. See **ALBUMEN** and **EGG**.

WHITE Friars, a name common to several orders of monks, from being clothed in a white habit.

WHITE Sea, is a bay of the Frozen Ocean, so called in the north part of Muscovy, lying between Russian Lapland and Samoida; at the bottom of which stands the city of Archangel. This was the chief port the Russians had before their conquest of Livonia.

WHITE Colour for painting. See **COLOUR-MAKING**.

WHITE Tobac. See **CHEMISTRY**, p. 443.

WHITE Iron, or *Tin-plate*, iron-plates covered over with tin; for the method of making which, see **LATTEN**. In 1681 tin-plates were manufactured in England by one Andrew Yarranton, who had been sent to Bohemia to learn the method of making them. But the manufacture was soon afterwards discontinued. It was revived again in 1740, and is now arrived at as great, if not greater, perfection in this country than in any other.

WHITE Lead. See **CHEMISTRY**, p. 437.

WHITE Throat, in ornithology. See **MOTACILLA**.

WHITEFIELD (George), a celebrated Methodist, was born in Gloucester, in 1714, at the Bell-Inn. He was placed at a petty school in this place, and gave early proofs of great elocution and memory. At fifteen he was well versed in the classics. His fame recommended him to Dr. Benson, then bishop of Gloucester, who made him a voluntary offer of ordination, which Mr. Whitefield accepted, and preached daily in fields, prisons, and open streets. He was chaplain to the Countess-dowager of Huntingdon. After a long course of peregrination, he died at Newbury-Port, in New-England, Sept. 30, 1769. The time of his marriage, &c. is not ascertained.

WHITEHAVEN, a sea-port town of Cumberland, with a market on Thursday, and one fair on August 1st for merchandise and toys. It is seated on a creek of the sea, on the north end of a great bergh or hill, washed by the tide of flood on the west side, where there is a large rock or quarry of hard white stone, which gives name to the place, and which, with the help of a strong stone-wall, secures the harbour into which small barks may enter. It is lately much improved in

its buildings, and noted for its trade in pit-coal and salt, there being near it a prodigious coal-mine, which runs a considerable way under the sea. They have a custom-house here; and they carry on a good trade to Ireland, Scotland, Chester, Bristol, and other parts. It is ten miles south-west of Cocker-mouth, and 289 north-west of London. W. Long. 3. 6. N. Lat. 54. 30.

WHITES, or *FLUOR ALBUS*. See **MEDICINE**.

WHITING, in ichthyology. See **GADUS**.

WHITLOW, or *WRITLOE*. See **SURGERY**.

WHITSUN-EARTHINGS, otherwise called *Smoke-farthings* or *Quadrantes Pentecostales*, a composition for offerings which were anciently made in Whitsun-week by every man in England, who occupied a house with a chimney, to the cathedral church of the diocese in which he lived.

WHITSUNDAY, a solemn festival of the christian church, observed on the fiftieth day after Easter, in memory of the descent of the Holy Ghost upon the apostles in the visible appearance of fiery cloven tongues, and of those miraculous powers which were then conferred upon them. It is called *Whitsunday*, or *White-Sunday*; because this being one of the stated times for baptism in the ancient church, those who were baptized put on white garments, as types of that spiritual purity they received in baptism. As the descent of the Holy Ghost upon the apostles happened upon the day which the Jews called *Pentecost*, this festival retained the name of *Pentecost* among the Christians.

WHITSUNDAY-Isle, one of the New Hebrides, which lies about four miles to the south, runs in the same direction, and is of the same length, having more sloping exposures than Aurora: it appears to be better inhabited, and to contain more plantations.

WHORTLEBERRY. See **VACCINIUM**.

WIBURGH, a considerable town of Denmark, in north Jutland, with a bishop's see, remarkable for being the seat of the chief court of justice in the province. The hall where the council assembles has the archives of the country, and escaped the terrible fire that happened in the year 1726, and which burned the cathedral church, that of the Black Friars, the town-house, and the bishop's palace; but they have all been rebuilt more magnificent than before. It is seated on the lake Weter, in a peninsula, twenty-five miles north-west of Sleswick, and 110 north-by-west of Copenhagen. E. Long. 9. 50. N. Lat. 56. 20.

WICKET, a small door in the gate of a fortified place, &c. or a hole in a door through which to view what passes without.

WICKLIFF (John), the first divine in Europe who had resolution to attempt a reformation of religion, was born about the year 1324, in the parish of Wycliff, near Richmond, in Yorkshire. He was educated at Oxford, first in Queen's, and afterwards in Merton college, of which he was a probationer-fellow. Having acquired the reputation of a man of great learning and abilities, in 1361 he was chosen master of Balliol-hall, and in 1365 constituted warden of Canterbury college, by the founder Archbishop Simon de Ilip; but was, in 1387, ejected by the regulars, together with three secular fellows. He thought their proceedings arbitrary, and therefore appealed to the pope; but instead of obtaining redress, in 1370 the ejection was confirmed. This disappointment probably contributed somewhat towards his enmity to the see of Rome, or rather to confirm that enmity; for he had long before written against the pope's exactions and corruptions of religion. However, his credit in the university continued; for having taken the degree of doctor in divinity, he read public lectures with great applause; in which he frequently exposed the impositions of the Mendicant friars. About this time he published

a defence of his sovereign Edward III. against the pope, who had insisted on the homage to which his predecessor King John had agreed. This defence was the cause of Wickliff's introduction at court, and of his being sent one of the ambassadors in 1374 to Bruges, where they met the pope's nuncios, in order to settle several ecclesiastical matters relative to the pope's authority. In the mean time Wickliff was presented by the king to the rectory of Lutterworth in Leicestershire, and in 1375 he obtained a prebend in the church of Westbury in Gloucestershire. Wickliff continued hitherto, without molestation, to oppose the papal authority; but in 1377 a bull was sent over to the Archbishop of Canterbury, and to Courtney bishop of London, ordering them to secure this archheretic, and lay him in irons; at the same time the pope wrote to the king, requesting him to favour the bishops in the prosecution: he also sent a bull to Oxford, commanding the university to give him up. Before these bulls reached England, Edward III. was dead, and Wickliff, protected by John duke of Lancaster, uncle to Richard II. favoured by the queen-mother, and supported by the citizens of London, eluded the persecution of Pope Gregory IX. who died in 1378. In the following year this intrepid reformer presented to parliament a severe paper against the tyranny of Rome, wrote against the papal supremacy and infallibility, and published a book *On the Truth of the Scriptures*, intended to prepare the way for an English translation of them, in which he had made considerable progress. In 1381 he published *Sixteen Conclusions*; in the first of which he ventured to expose the grand article of transubstantiation. These conclusions being condemned by the chancellor of Oxford, Wickliff appealed to the king and parliament; but being deserted by his unsteady patron the Duke of Lancaster, he was obliged to make a confession at Oxford; and by an order from the king was expelled the university. He now retired to his living of Lutterworth, where he finished his translation of the bible. This version, of which there are several manuscript copies in the libraries of the universities, British Museum, &c. is a very literal translation from the Latin vulgate. In 1383 he was suddenly struck with the palsy; a repetition of which put an end to his life in December 1384. He was buried in his own church, where his bones were suffered to rest in peace till the year 1428, when, by an order from the pope, they were taken up and burnt.—Besides a number of works that have been printed, he left a prodigious number of manuscripts; an accurate list of which may be seen in Bishop Tanner's *Bib. Brit. Hib.* Some of them are in the Bodleian Library, others in the British Museum, &c.

Wickliff was doubtless a very extraordinary man, considering the times in which he lived. His natural sagacity discovered the absurdities and impositions of the church of Rome, and he had the honesty and resolution to promulgate his opinions, which a little more support would probably have enabled him to establish: they were evidently the foundation of the subsequent reformation.

WICKLOW, a county of Ireland, in the province of Leinster; bounded on the north by the county of Dublin; on the east by the Irish Sea; on the south by Wexford; and on the west by Kildare and Catherlough. It is thirty-three miles in length, twenty in breadth, and indifferently fruitful. It contains fifty-four parishes, and sends ten members to parliament.

WICKLOW, the capital of a county of the same name, in Ireland; seated on the sea-side, with a narrow harbour, at the mouth of the river Leirtrim, over which stands a rock, instead of a castle, surrounded by a strong wall, twenty-four miles south of Dublin. W. Long. 6. 7. N. Lat. 52. 55.

WIDGEON, in ornithology. See *ANAS*.

WIDOW, a woman who has lost her husband.

WIFE, a married woman, or one joined with, and under the protection of, an husband. See *HUSBAND*.

ISLE OF WIGHT, an island lying on the south coast of Hampshire, from which it is separated by a narrow channel. It is about twenty-one miles in length, and thirteen in breadth. It is nearly divided into equal parts by the river Mede or Cowes, which rising in the southern angle, enters at the northern, into the Channel, opposite the mouth of Southampton Bay. The south coast is edged with very steep cliffs of chalk and freestone, hollowed into caverns in various parts. The west side is fenced with ridges of rocks, of which the most remarkable are those called, from their sharp extremities, the *Needles*. Between the island and the main are various sand-banks, especially off the eastern part, where is the safe road of St. Helen's. Across the island, from east to west, runs a ridge of hills, forming a tract of fine downs, with a chalky or marly soil, which feed a great number of fine-fleeced sheep. Rabbits are also very plentiful here. To the north of this ridge the land is chiefly pasture: to the south of it is a rich arable country, producing great crops of corn. The variety of prospects which this island affords, its mild air, and the neat manner in which the fields are laid out, render it a very delightful spot. It is devoted almost solely to husbandry, and has no manufactory. It is one of the principal resources of the London market for unmalted barley. Among its products are to be reckoned a pure white pipe-clay, and a fine white crystalline sand; of the latter of which great quantities are exported for the use of the glass-works in various parts. Its principal town is the borough of Newport: it likewise contains the two small boroughs of Newton and Yarmouth.

WILD-FIRE. See *Wild-Fire*.

WILDERNESS, in gardening, a kind of grove of large trees, in a spacious garden, in which the walks are commonly made, either to intersect each other in angles, or have the appearance of meanders and labyrinths.

Wildernesses (says Mr. Miller) should always be proportioned to the extent of the gardens in which they are made; for it is very ridiculous to see a large wilderness planted with tall trees in a small spot of ground; and, on the other hand, nothing can be more absurd than to see little paltry squares, or quarters of wilderness work, in a magnificent large garden. As to the situation of wildernesses, they should never be placed too near the habitation, nor so as to obstruct any distant prospect of the country, there being nothing so agreeable as an unconfined prospect: but where, from the situation of the place, the sight is confined within the limits of the garden, nothing can so agreeably terminate the prospect as a beautiful scene of the various kinds of trees judiciously planted; and if it be so contrived that the termination is planted circularly, with the concave towards the sight, it will have a much better effect than if it end in straight lines or angles. The plants should always be adapted to the size of the plantation; for it is very absurd for tall trees to be planted in the small squares of a little garden; and in large designs small shrubs will have a mean appearance. It should also be observed never to plant evergreens among deciduous trees; but always to place the evergreens in a wilderness in a separate part by themselves, and that chiefly in sight.

As to the walks, those that have the appearance of meanders, where the eye cannot discover more than twenty or thirty yards in length, are generally preferable to all others, and these should now and then lead into an open circular piece of grass; in the centre of which may be placed either an obelisk, statue, or fountain; and if in the middle of the wilderness there be contrived a large opening, in the centre of which

may be erected a dome or banquetting-house, surrounded with a green plot of grafs, it will be a considerable addition to the beauty of the whole. From the sides of the walks and openings, the trees should rise gradually one above another to the middle of the quarters; where should always be planted the largest growing trees, so that the heads of all the trees may appear to view, while their stems will be hid from the sight. Thus, in those parts which are planted with deciduous trees, roses, honeysuckles, spiræa frutex, and other kinds of low-flowering shrubs, may be planted next the walks and openings; and at their feet, near the sides of the walks, may be planted primroses, violets, daffodils, &c. not in a straight line, but so as to appear accidental, as in a natural wood. Behind the first row of shrubs should be planted syringas, althæa frutex, mezeoreons, and other flowering shrubs of a middle growth; and these way be backed with many other sorts of trees rising gradually to the middle of the quarters.

The part planted with evergreens may be disposed in the following manner, viz. in the first line next the great walks may be placed the laurustinus, boxes, spurge-laurel, juniper, favin, and other dwarf evergreens. Behind these may be placed laurels, hollies, arbutusæ, and other evergreens of a larger growth. Next to these may be planted alternanthes, phyllireas, yews, cypresses, Virginian cedars, and other trees of the same growth; behind these may be planted Norway and silver firs, the true pine, and other sorts of the fir growth; and in the middle should be planted Scotch pines, pinafer, and other sorts of the larger growing evergreens; which will afford a most delightful prospect if the different shades of the greens are curiously intermixed.

But beside the grand walks and openings (which should always be laid with turf, and kept well mowed), there should be some smaller serpentine walks through the middle of the quarters, where persons may retire for privacy; and by the sides of these private walks may also be scattered some wood-flowers and plants; which, if artfully planted, will have a very good effect.

In the general design for these wildernesses, there should not be a studied and stiff correspondency between the several parts; for the greater diversity there is in the distribution of these, the more pleasure they will afford.

WILKINS (Dr. John), a most ingenious and learned English bishop, was the son of a goldsmith of Oxford, and was born in 1614. He adhered to the parliament during the civil wars, by whom he was made warden of Wadham College in 1648; he married afterwards the sister of Oliver Cromwell, and procured a dispensation to retain his wardenship notwithstanding. Richard Cromwell made him master of Trinity College, Cambridge, from which he was ejected on the Restoration. He then became preacher to Gray's-Inn, rector of St. Laurence Jewry, London, dean of Rippon, and in 1668 was promoted to the bishopric of Chester: he died in 1672. Bishop Wilkins thought it prudent to submit to the powers in being; he therefore subscribed to the solemn league and covenant while it was enforced, and was equally ready to swear allegiance to King Charles when he was restored: this, with his moderate spirit toward dissenters, rendered him not very agreeable to churchmen. His mathematical and philosophical works, which contain many ingenious and curious pieces, considering the time when they were written, have been collected in one volume, 8vo. He published also some theological tracts. He was the first president of the Royal Society.

WILL, that faculty of the mind by which it embraces or rejects any thing offered to it. See METAPHYSICS.

WILL, or Last WILL, in law, signifies the declaration of a man's mind and intent relating to the disposition of his lands, goods, or other estate, or of what he would have done after

his death. In the common law there is a distinction made between a will and a testament: that is called a *will* where lands or tenements are given; and when the disposition concerns goods and chattels alone, it is termed a *testament*. See TESTAMENT.

WILL-with-a-whip, or Jack-with-a-lantern, two popular names for the meteor called *ignis fatuus*. See LIGHT.

WILLIAM of MALMSBURY, an historian of considerable merit in the reign of King Stephen; but of whose life few particulars are known. According to Bale and Pits, he was surnamed *Somerfetus*, from the county in which he was born. From his own preface to his second book *De Regibus Anglorum*, it appears that he was addicted to learning from his youth; that he applied himself to the study of logic, physics, ethics, and particularly to history. He retired to the Benedictine convent at Malmisbury, became a monk, and was made precentor and librarian; a situation which much favoured his intention of writing the history of this kingdom. In this monastery he spent the remainder of his life, and died in the year 1142. He is one of our most ancient and most faithful historians. His capital work is that entitled *De Regibus Anglorum*, in five books; with an Appendix, which he styles *Historia Novella*, in two more. It is a judicious collection of whatever he found on record relative to England, from the invasion of the Saxons to his own times.

WILLIAM of Newberry, so called from a monastery in Yorkshire, of which he was a member, wrote a history, which begins at the conquest and ends at the year 1197. His Latin style is preferred to that of Matthew Paris; and he is entitled to particular praise, for his honest regard to truth, in treating the fables of Jeffery of Monmouth with the contempt they deserve; as well as for expressing his approbation of Henry III.'s design of reforming the clergy, by bringing them under the regulation of the secular power.

WILLIAM of Wykeham, bishop of Winchester, was born in the village of Wykeham, in the county of Southampton, in 1324. He had his education at Winchester and Oxford. Having continued near six years in the university, his patron, Nicholas Wedal, governor of the province of Southampton, took him into his family, and appointed him his counsellor and secretary. He could not have made choice of a fitter person for that employment, no man in that age writing or speaking more politely than Wykeham. For this reason, Edington bishop of Winchester, lord high-treasurer of the kingdom, appointed him his secretary three years after, and also recommended him to King Edward III. who took him into his service. Being skilled in geometry and architecture, he was appointed surveyor of the royal buildings, and also chief-justice in Eyre: he it was who superintended the building of Windsor-castle. He was afterward chief secretary of state, a keeper of the privy-seal; and in 1367 succeeded Edington in the see of Winchester. A little after he was appointed lord high-chancellor and president of the privy-council. That he might well discharge the several functions of his employments, both ecclesiastical and civil, he endeavoured, on one hand, to regulate his own life according to the strictest maxims, and to promote such parish-priests only as were able to give due instructions to their parishioners, and at the same time led exemplary lives: on the other hand, he did all in his power to cause justice to be exactly administered. In 1371 he resigned his chancellorship, and some time after the great seal. Edward being returned to England, after having carried on a very successful war in France, found his exchequer in great disorder. The Duke of Lancaster, one of his sons, at the head of several lords, having brought complaints against the clergy, who then enjoyed most possessions in the kingdom, the king removed them from their employments. But the lay-

men, who were raised to them, behaved so ill, that the king was forced to refore the ecclesiastics. The Duke of Lancaster flowed strong animosity to the clergy, and set every engine at work to ruin Wykeham. He impeached him of extortion, and of disguising things, and obliged him to appear at the King's bench. He got such judges appointed as condemned him; and not satisfied with depriving him of all the temporalities of his bishoprick, he advised Edward to banish him; but this prince rejected the proposal, and afterwards restored to Wykeham all that he had been divested of. Richard II. was but eleven years old when Edward died: where-by the Duke of Lancaster had an easy opportunity of reviving the accusations against the Bishop of Winchester: nevertheless Wykeham cleared himself. Then he founded two noble colleges, the one in Oxford, the other in Winchester. Whilst he was exerting his utmost endeavours to improve these two fine foundations, he was recalled to court, and in a manner forced to accept of the office of lord high-chancellor in 1389. — Having excellently discharged the duties of that employment for three years, he obtained leave to resign it, foreseeing the disturbances that were going to break out. Being returned to his church, he finished his college, and built there to magnificent a cathedral, that it almost equals that of St. Paul's in London. He laid out several sums in things advantageous to the public and to the poor; notwithstanding which, in 1397 he was in great danger; for he and some others were impeached of high-treason in open parliament: however, he was again fully cleared. From that time till his death he kept quiet in his diocese, and there employed himself in all the duties of a good prelate. He died in 1404, in the eighty-first year of his age.

Fort-WILLIAM, a fortress in the Highlands of Scotland, erected in King William's reign, as was also a small town adjoining, called *Maryburgh*, in honour of his queen. It is situated in Invernesshire, on a narrow arm of the sea called *Loch Eil*, which might easily, by a very short canal, be united to the Western sea. Fort-William is of a triangular form, having two bastions, and is capable of admitting a garrison of 800 men; but could not be defended against an attack, as it is commanded by several hills in the neighbourhood.

WILLIAM'S Fort, is a factory of Asia belonging to the East-India Company, seated on one of the branches of the river Ganges, in the kingdom of Bengal. The fort was first built in the shape of an irregular tetragon of brick and mortar; and the town has nothing regular in it, because every one built a house as he liked best, and for his own convenience. The governor's house is within the fort, and is the best piece of architecture in these parts. Here there are also convenient lodgings for the factors and writers, with store-houses for the company's goods, and magazines for ammunition. About fifty yards from the fort is the church, built by the charity of merchants residing here. The town is called *Calcutta*, and has a pretty good hospital for the sick, though few come out of it alive. It is governed by a mayor and aldermen, as most of the company's factories in the East Indies now are. In 1757 it was surprised by the nabob of Bengal, who took it, and put most of those that had made resistance into a place called the *Black Hole*, where most of them were smothered. This nabob was afterwards killed, and another set up in his room, more friendly to the English; and the factory was re-established. E. Long 86. o. N. Lat. 22. 27.

Sweet-WILLIAM. See **DIANTHUS**.

WILLIAMSBURG, a town of North America, in Virginia, and formerly capital of that state. It is situated between two creeks; one falling into James, and the other into York river. The distance of each landing-place is about a mile

from the town, which, with the disadvantage of not being able to bring up large vessels, and the want of enterprise in the inhabitants, has occasioned its decay. Here is a college, designed for the education of the Indians, but which, on account of their aversion to learning, never answered the purpose. It is sixty miles east of Richmond. W. Long. 76. 30. N. Lat. 37. 10.

WILLIAMSTADT, a sea-port town of Holland. It is a handsome strong place, and the harbour is well frequented. It was built by William prince of Orange in 1585; and in 1732 belonged to the stadtholder of Friesland. The river near which it is built called *Butterdijck* or *Holland Diep*; and is one of the Bulwarks of the Dutch on the side of Brabant, where they always keep a garrison. This place made a gallant defence in 1793 against the French, who were obliged to raise the siege. It is fifteen miles north-east of Bergen-op-Zoom, and twelve south-west of Dort. E. Long. 4. 30. N. Lat. 51. 39.

WILLIS (Dr. Thomas), a celebrated English physician, was born at Great Bodwin, in Wiltshire, in 1621, and studied at Christ-church College, Oxford. When that city was garrisoned for the king, he, among other scholars, bore arms for his majesty, and devoted his leisure hours to the study of physic. The garrison of Oxford at length surrendering to the parliament, he applied himself to the practice of his profession, and soon rendered himself famous by his care and skill. He appropriated a room as an oratory for divine service according to the church of England, whither most of the loyalists in Oxford daily resorted. In 1660 he became Sedleian professor of natural philosophy, and the same year took the degree of doctor of physic. In 1664 he discovered the famous medicinal spring at Allstrop, near Brackley. He was one of the first members of the Royal Society, and soon made his name illustrious by his excellent writings. In 1666, after the fire of London, he removed to Westminster; and his practice became greater than that of any of the physicians his contemporaries. Soon after his settlement in London, his only son Thomas falling into a consumption, he sent him to Montpellier in France for the recovery of his health; and it proved successful. His wife also labouring under the same disorder, he offered to leave the town; but she, not suffering him to neglect the means of providing for his family, died in 1670. He died at his house in St. Martin's in 1675, and was buried near her in Westminster-abbey. Dr. Willis was extremely modest and unambitious, and refused the honour of knighthood. He was remarkably pious: as he rose early in the morning, that he might be present at divine service, which he constantly frequented before he visited his patients, he procured prayers to be read beyond the accustomed times while he lived; and at his death settled a stipend of 20*l. per annum* to continue them. He was a liberal benefactor to the poor wherever he came, having from his early practice allotted part of his profits to charitable uses. He was exact and regular in all his hours: and though his table was the resort of most of the great men of London, yet he was remarkable for his plainness, and his being a man of little discourse, complaisance, or society; but he was justly admired for his deep insight into natural and experimental philosophy, anatomy, and chemistry; for his successful practice; and for the elegance and purity of his Latin style. He wrote, 1. A treatise in English, entitled *A plain and easy Method for preserving those that are well from the infection of the Plague, and for curing such as are infected*. 2. Several Latin works, which were collected and printed at Amsterdam, in 1682, in 2 vols. 4to.

WILLUGHBY (Francis), a celebrated natural historian, was the only son of Sir Francis Willughby, knight. He was fond of study from his childhood, and held silence in M m

abhorrence; he being so great an economist with regard to his time, as not willing to lose or misapply the least part of it, by which means he attained great skill in all branches of learning, and particularly in the mathematics. But observing that the history of animals was in a great measure neglected by his countrymen, he particularly applied himself to that province; and for this purpose carefully read over what had been written on that subject by others. He then travelled several times over his native country; and afterwards into France, Spain, Italy, Germany, and the Low-countries, attended by his ingenious friend Mr. John Ray. It is remarkable, that notwithstanding the advantages of birth, fortune, and parts, he was as humble as any man of the meanest fortune; was sober, temperate, and chaste; scrupulously just; so true to his word and promise, that a man might venture his estate and life upon it; so faithful and constant to his friend, as never to desert him when fortune frowned upon him; and remarkably pious, patient, and submissive to the divine will. This is the character given of him by Mr. Ray, whose veracity none will doubt. This ingenious and learned gentleman died in 1672, at thirty-seven years of age; having impaired his health by his application. He wrote, 1. *Ornithologie libri tres*, folio, which was afterwards translated into English, with an Appendix by Mr. Ray, in folio. 2. *Hystorie Piscium libri quatuor*, folio. 3. Letters of Francis Willughby, Esq. added to Philosophical Letters between the learned Mr. Ray and several of his correspondents, published, in 8vo. by William Derham. 4. Several ingenious papers in the Philosophical Transactions.

WILMOT (John), earl of Rochester, a great wit in the reign of Charles II. the son of Henry earl of Rochester, was born in 1648. He was taught grammar and classical learning at the free-school at Burford; where he obtained a quick relish of the beauties of the Latin tongue, and afterwards became well versed in the authors of the Augustine age. In 1659 he was admitted a nobleman of Wadham College, where he obtained the degree of master of arts. He afterwards travelled through France and Italy; and at his return was made one of the gentlemen of the bed-chamber to the king, and comptroller of Woodstock Park. In 1665 he went to sea, and was in the Revenge, commanded by Sir Thomas Tiddiman, when an attack was made on the port of Bergen in Norway; during the whole action he showed the greatest resolution, and gained a high reputation for courage; which he supported in a second expedition, but afterwards lost it in a private adventure with Lord Mulgrave.

Before the Earl of Rochester travelled, he had given in to the most disorderly and imtemperate way of living; at his return, however, he seemed to have got the better of it entirely. But falling into the company of the courtiers, who continually practised these excesses, he became so sunk in debauchery, that he was for five years together so given up to drinking, that during all that time he was never cool enough to be master of himself. His violent love of pleasure, and his disposition to extravagant mirth, carried him to great excesses. The first involved him in sensuality, and the other led him into many adventures and ridiculous frolics. Once disguising himself so that he could not be known by his nearest friends, he set up in Tower-street for an Italian mountebank, and there dispersed his nostrums for some weeks. He often disguised himself as a porter, or as a beggar, sometimes to follow a mean amour; at other times, he would go about merely for diversion, in odd shapes; and acted his part so naturally, that he could not be known even by his friends. In short, by his constant indulgence in wine, women, and irregular frolics, he entirely wore out an excellent constitution before he was thirty years of age. In October, 1679, when recovering from a violent dysentery, which ended in a consumption, he was visited by Dr. Burnet,

upon an intimation that such a visit would be agreeable to him. Dr. Burnet published an account of his conferences with Lord Rochester; in which it appears, that though he had lived the life of a libertine and atheist, yet he died the death of a penitent Christian. His death happened in 1680; since which time his poems have been various times printed, both separately and together: but when once he obtained the character of a lewd and obscene writer, everything in that strain was fathered upon him; and thus many pieces not of his writing have crept into the later editions of his works. The author of the Catalogue of Royal and Noble Authors says, he was "a man whom the Muses were fond to inspire, and ashamed to avow; and who practised without the least reserve that secret which can make verses more read for their defects than their merits." Lord Rochester's poems have much more obscenity than wit, more wit than poetry, and more poetry than politeness. His writings, besides those already mentioned, are, A Satyre against Mankind; Nothing, a poem; Valentinian, a tragedy; Fifty-four Letters to Henry Saville, and others: Seven more to his Wife and Son: a Letter on his deathbed to Dr. Burnet. He also left behind him several other papers, and a History of the Intrigues of the Court of Charles II. but his mother, a very devout lady, ordered all his papers to be burned.

WILSON (Florence), known in the republic of letters by the name of *Florentius Volafinus*, was born at Elgin in the shire of Murray in Scotland, and educated in the university of Aberdeen. Travelling to England with an intention to improve his fortune, he had the felicity to be introduced to Cardinal Wolsey, who appointed him tutor to one of his nephews. In that capacity he went to Paris, and continued there till the cardinal's death. During his residence in that city he became acquainted with the learned Cardinal Bellai, archbishop of Paris, who allowed him a pension, and meant to have appointed him royal professor of the Greek and Latin languages in the university of Paris: but Bellai being disgraced, Wilson's prospects faded with the fortunes of his patron, whom nevertheless he attended on his journey to Rome. Wilson was taken ill at Avignon, and the cardinal proceeded without him. After his recovery, he paid a visit to the celebrated Cardinal Sabolet, the Mæcenas of his time, who was also bishop of Carpentras, where he then resided. The cardinal was so charmed with his erudition, that he appointed him professor of the learned languages, with a stipend of 100 pistoles per annum.

During his residence at Carpentras, he wrote his celebrated treatise *De Animi Tranquillitate*. Mackenzie says that he afterwards taught philosophy in Italy; and that, being at length desirous of returning to Scotland, he began his journey homeward, was taken ill at Vienne in Dauphiny, and died there in the year 1547. He was generally esteemed an accomplished linguist, an admirable philosopher, and an excellent Latin poet. He wrote, beside the above treatise, 1. *Poemata*. Lond. 1619. 4to. 2. *Commentatio quædam theologia in aphorismis dissecta, per Sebast. Gryph.* 3. *Philosophie Aristot. Synopsis*, lib. iv.

WILSON (Dr. Thomas), bishop of Sodor and Man, was born at Burton-Wirral in Cheshire, December 1663. From a private school at Chester he was removed to Trinity College, Dublin, intending to study physic; which, however, he soon relinquished for divinity, and was ordained deacon, June 29, 1686. He left Ireland soon after, and became curate of New Church, in the parish of Winwick, Lancashire, of which his maternal uncle, Dr. Sherlock, was then rector. October 20, 1689, he was ordained a priest; and, in 1692, became domestic chaplain to the Earl of Derby, as well as preceptor to his son Lord Strange. Soon after, he was elected master of

the alms-house at Latham. In 1696 he was offered by his patron the bishopric of the Isle of Man, which had been vacant since 1693. This Mr. Wilton modestly declined, but was in a manner forced to accept it. January 16, 1697-8, being first created by Archbishop Tenison, LL.D. he was consecrated at the Savoy-church by Archbishop Sharp, and the April following landed in his diocese. In September he went to England, and in October was married at Winwick, to Mary, daughter of Thomas Patten, esq. of Warrington; with whom he returned to his diocese, April 1699. In 1699 he published a small tract in Manks and English, entitled, *The Principles and Duties of Christianity*, for the use of the island; and, with the assistance of Dr. Thomas Bray, began to found parochial libraries, which he afterwards established and completed throughout his diocese. In 1707 he was made D.D. in full convocation at Oxford; and the same honour was decreed to him the same year at Cambridge.

He continued to perform all the offices of a good bishop and a good man; but the orthodoxy of his spirit, and zeal for church discipline, involved him in altercations and difficulties, especially with the governor, among which the following is recorded: Mrs. Horne, the governor's wife, had defamed Mrs. Fuller and Sir James Pool with a false charge of criminal conversation; and, in consequence of being contumacious, and refusing to ask pardon of the persons injured, was by the bishop banished from the holy communion. But Mr. Horribin, his archdeacon, who was chaplain to Captain Horne, received Mrs. Horne to the communion, and was suspended by the bishop. Upon this, the governor, conceiving that the bishop had acted illegally, fined him 50l. and his two vicars-general 20l. each; and, on their refusing to pay this fine, committed them all, June 29, 1722, close prisoners to Castle Rushin. After a confinement of nine weeks, the bishop was released, on petitioning the council; who afterwards, on July 4, 1724, reversed all the proceedings; as the governor had not competent jurisdiction. He died March the 7th, 1755; his wife died fifty years before, on the very same day: all his children died young except Thomas the youngest. His writings, in two volumes folio, consist of Religious Tracts and Sermons, with a short History of the Isle of Man: he also formed a plan for translating the New Testament into the Manks language, which was completed by his successor, Dr. Mark Hildesley.

WILTON, a market-town in Wiltshire, three miles west of Salisbury. It was once so considerable as to give title to the county. It formerly had twelve churches; and Odo, brother-in-law to William I. was bishop of Wilton: only one now remains. It sends members to parliament, and is the place where the knights of the shire are chosen. It has a great manufactory of carpets, which are brought to high perfection. Wilton is famous for Lord Pembroke's seat, so well known through Europe for its containing a grand assemblage of the productions of the greatest and most ancient masters in painting and sculpture.—Two fairs are held here annually.

WILTSHIRE, a county of England, bounded on the west by Somersetshire, on the east by Berkshire and Hampshire, on the north by Gloucestershire, and on the south by Dorsetshire and part of Hampshire. The length amounts to thirty-nine miles; its breadth to thirty; and its circumference to 140. It contains twenty-nine hundreds, twenty-three market-towns, 304 parishes, and about 876,000 souls. Besides two members for the shire, and two for the city of Salisbury, each of the following towns sends two members to parliament, viz. Wilton, Downham, Hindon, Heytesbury, Westbury, Calne, Devizes, Chippanham, Malmesbury, Cricklade, Great Bedwin, Ludgerhall, Old Sarum, Wootton-Basset, Marlborough. The air of this county is very healthy, not only in the more low

and level parts, but also on the hills. The soil of the vales is very rich, and produces corn and grass in great plenty. The beautiful downs in the south yield the finest pasture for sheep, with which they are overspread. The greatest disadvantage the county labours under is want of fuel, as there are no coal-pits, and but little wood. This county is noted for great quantities of very fine cheese, and for its manufacture of broad cloth, to which it was invited by the great plenty and fineness of its wool. Besides a number of lesser streams, it is watered by the rivers Isis, Kennet, Upper and Lower Avon, Willy, Burne, and Nadder, which are well filled with fish.

WINCHELSEA, a town in Suffex, which has no market, but has one fair on May 14th for cattle and pedlars' ware. It was an ancient place, at least the old town, which was swallowed up by the ocean in 1250. It is now dwindled to a mean place, though it retains its privileges, and sends two members to parliament. It is seated on a rocky cliff, on an inlet of the sea; and had a haven, now choked up. It had eighteen parish-churches, now reduced to one. The market-house is in the midst of the town, from whence run four paved streets, at the end of which are four ways, which had formerly buildings on each side for a considerable distance. It is two miles south-west of Rye, and seventy-one south-east of London. It is governed by a mayor and jurats, though it has but about seventy houses. Three of the gates are still standing, but much decayed. E. Long. o. 44. N. Lat. 50. 58.

WINCHELSEA (Anne countess of), a lady of excellent genius, especially in poetry, was maid of honour to the Duchess of York, second wife to King James II. and was afterwards married to Heneage, second son of the Earl of Winchelsea. One of the most considerable of the Countess of Winchelsea's poems was that on the Spleen. A collection of her poems was printed at London in 1713, containing a tragedy never acted, entitled *Amphomenes*. The countess died in 1720, without issue, as her husband did in 1726.

WINCHESTER, the capital of the county of Hampshire in England. It is a very ancient city, supposed to have been built several centuries before Christ. The Romans called it *Venta Belgarum*, the Britons *Caer Gwent*, and the Saxons *Wittancester*; whence came the present name. It stands upon the river Itchen, in a bottom surrounded with chalky hills; and is generally allowed to have been a considerable place in the time of the Romans. Some of the first converts to Christianity are supposed to have lived here. In the castle, near the west-gate, many of the Saxon kings anciently kept their court. The cathedral was founded by Kenegulf, a king of the Mercians; but there were many Christians, and places for their worship here, long before that period. It is a large pile, and has a venerable look, but it is not very elegant. Besides the tombs, there are many curious pieces of workmanship in it; the chief of which are, 1. The font, erected in the time of the Saxons. 2. Copper statues of James I. and Charles I. 3. The bishop's throne. 4. The stalls of the dean and prebendaries. 5. The ascent to the choir and altar. 6. The pavement, inlaid with marble of divers colours, in various figures. 7. The altar-piece, reckoned the noblest in England. 8. The paintings in the windows, especially the great east window. At the hospital of the Holy Cross, every traveller that knocks at the door may claim a manchet of white bread and a cup of beer: of which a great quantity is provided every day for that purpose. This hospital was intended for the maintenance of a master and thirty pensioners, but only fourteen are now maintained in it; and the master enjoys a revenue of 800l. a-year. This city is about a mile and a half in compass, and almost surrounded with a wall of flint, has six gates, large suburbs, broad clean streets; but the private houses are in general but ordinary, many of them being very

old. The city is interspersed with a great many gardens, which contribute to its beauty and healthiness. The corporation consists of a mayor, high-steward, recorder, aldermen, two coroners, two bailiffs, twenty-four common-council-men, a town-clerk, four constables, and four sergeants at mace; and the city gives the title of *marquis* to the Duke of Bolton. A Roman highway leads from hence to Alton; and went formerly, as it is thought, from thence to London. The charming downs in the neighbourhood contribute greatly to the health and pleasure of the inhabitants. The river Itchin is navigable for barges from hence to Southampton. W. Long. 1. 21. N. Lat. 51. 5.

WINCKLEMAN (Abbé John). This wonderful man was born at Stendall, in the old Marche of Brandenburg, in the beginning of the year 1718, the son of a shoe-maker, to all appearance destined by his birth to superintend a little school in an obscure town in Germany, raised himself to the office of president of antiquities in the Vatican. After having been seven years professor in the college of Seheulen near Salfwedel, he went into Saxony, where he resided seven years more, and was librarian to Count Bunau at Nothenitz. When he left this place, in 1754, he went to Dresden, where he formed an acquaintance with the ablest artists. In that year he abjured Lutheranism, and embraced the Roman-catholic religion. In September 1755 he set out for Italy, and arrived at Rome in December following. While engaged in teaching some boys their A B C, he aspired to a knowledge of the beautiful, and silently meditated on the comparisons of Homer's Greek with the Latin literature, and a critical acquaintance with the respective languages, which were more familiar to him than they had ever been to any former lover of antiquity, both by his application in studying them, and his public lectures as professor of them. This erudition enabled him to fill up his principal plan of writing the History of Art. In 1756 he planned his Restoration of Ancient Statues, and a larger work on the Taste of the Greek Artists; and designed an account of the galleries of Rome and Italy, beginning with a volume on the Belvedere statues, in the manner of Richardson, who, he says, only ran over Rome. He also intended a history of the corruption of taste in art, the restoration of statues, and an illustration of the obscure points of mythology. All these different essays led him to his History of Art, and his Monumenti Inediti. Having published his Remarks on ancient Architecture, he was going to Naples, with two crowns, part of a pension from the king of Poland, for his travelling charges, and thence to Florence, at the invitation of Baron Stofch, when Cardinal Archinto, secretary of state, employed him to take care of his library. Cardinal Albani having succeeded to the place of librarian of the Vatican, he endeavoured to get a place for the Hebrew language for Winckelman, who refused a canonry, because he would not take the tonsure. The elector of Saxony gave him, in 1761, unsolicited, the place of Counsellor Richter, the direction of the royal cabinet of medals and antiquities at Dresden. Upon the death of the Abbé Venuti, in 1762, he was appointed president of the antiquities of the apostolic chamber, with power over all discoveries and exportations of antiquities and pictures. This is a post of honour, with an income of 160 scudi *per annum*. He had a prospect of the place of president of antiquities in the Vatican, going to be created at 16 scudi per month, and was named corresponding member of the Academy of Inscriptions. He had thoughts of publishing an Essay on the Depavation of Taste in the Arts and Sciences. The King of Prussia offered him by Col. Quintus Icilus, the place of librarian and director of his cabinet of medals and antiquities, void by the death of M. Gautier de la Croze, with a handsome appointment. He made no scruple of accepting

the offer; but, when it came to the pope's ears, he added an appointment, out of his own purse, and kept him at Rome. In April, 1768, he left Rome, to go with M. Cavaceppi over Germany and Switzerland. When he came to Vienna, he was so pleased with the reception he met with, that he made a longer stay there than he had intended. But, being suddenly seized with a secret uneasiness, and extraordinary desire to return to Rome, he set out for Italy, putting off his visits to his friends in Germany to a future opportunity. As he passed through Trieste, he was assailed, June 8, 1768, by a wretch named Arcangeli, a native of Campiglio, a town in the territory of Pistoia, with whom he had made an acquaintance on the road, and who stabbed him in five different places. The abbé being laid on a bed in the midst of the most violent pain, had composure sufficient to receive the last sacraments, and to make his will, in which he appointed Cardinal Alexander Albani his residuary legatee, and expired in the afternoon. The murderer was soon after apprehended, and executed on the wheel, June 26.

WIND, is a sensible agitation of the atmosphere, occasioned by a quantity of air flowing from one place to another. As the air is a fluid, subject to the same laws of gravitation as other fluids, it necessarily has a constant tendency to preserve an equilibrium in every part; so that if, by any means whatever, it is rendered lighter in any one place than another, the weightier air will rush in from every side towards this place, till as much be there accumulated as makes it of an equal weight with the rest of the atmosphere: it is these currents of air which are called *winds*.

Many are the causes which may vary the weight of the atmosphere, and occasion particular tropical winds.

Although other causes may occasion winds in certain circumstances, yet their principal and most universal cause is the sun, which warmeth the air to a much greater degree in some places of the atmosphere than in others; and as the air is susceptible of a great degree of expansion by heat in those places where it is heated to any considerable degree, it is expanded so much as to become lighter than the air in those places where it is colder; so that the weightier cold air from all the circumjacent parts rushes towards this point to restore the equilibrium which had been destroyed. So that if there be any particular part upon the earth's surface where the sun acts constantly with greater force than on any other part, a current of air will constantly flow from there towards the warmer region: but the sun acts with greater force upon those parts of the earth which are nearest the equator, than those which approach towards either poles; so that we might naturally expect that a wind would constantly blow from the polar regions towards the equator; which is really found to be the case in the torrid zone, where the influence of the sun overcomes almost all the other lesser causes which produce the variable winds in our more northerly regions. However, even in the torrid zone, these north and south winds are varied in different ways.

Although the heat of the equatorial region is greater than any other, yet as the sun acts perpendicularly in his diurnal course upon one point of the equator only at one time, and immediately passes over it, and as the air retains the heat communicated to it by the sun but for a short time, cooling gradually as he retires, and continuing still to decrease till his influence again returns the following day; the degree of heat upon this great circle must be very different in different parts, and perpetually varying in every point; which must in some measure tend to disturb those winds coming from the polar regions, which we have already mentioned. To comprehend clearly what will be the effects of this rotation, let us consider what effect it would naturally produce upon the equator with

regard to wind, supposing no other cause should interrupt it. And here we must observe, that as the point upon which the sun acts with the greatest power is constantly moving from east to west, the air to the east of that point over which the sun has more lately passed will be more rarified than that to the west, and will naturally flow towards that point from east to west with greater velocity than from west to east, as the cool air to the west of that point will be interrupted in its motion towards it by the motion of the sun meeting it. Hence therefore it follows, that from the diurnal motion of the earth from west to east a constant wind would always be produced, were it not obstructed by other causes. But as there is a constant stream of air flowing from the polar towards the equatorial regions, a composition of these two currents of air acting at the same time will produce a north-east wind in all parts of the northern hemisphere, and a south-east wind in all parts of the southern one. These winds are known by the name of the *general trade winds*.

If there were no inequalities on the surface of our globe, and if it were composed of a substance perfectly homogeneous, this wind would invariably take place at all times on every part of the earth's surface: but as this is not the case, it is liable to several very considerable variations. In all those regions towards the poles, as the influence of the sun is there but weak, other lesser causes occasion particular winds, and disturb that regularity which at first view we might expect; so that the general trade wind does not invariably take place beyond the 23rd or 30th degree of latitude; and the regions between that and the poles have nothing but variable winds. Even in the torrid zone, there are many causes which in particular places alter this direction of the wind; so that the genuine trade-winds do not take place except in the Atlantic and Pacific oceans on each side the equator to the distance of 28 or 30 degrees, and in the greatest part of the Indian ocean to the south of the equator.

Having thus explained the nature and causes of the general trade-wind, we now proceed to take notice of the principal deviations which take place in the torrid zone. The general trade-wind, when thus altered at particular seasons, is known by the name of *monsoons*. There are other variations, which, although as general, are yet of smaller and more limited influence. These are known by the name of *breezes*; and as they blow periodically from the sea, they are denominated *sea or land breezes*, and take place more or less in every sea-coast within the tropics. As the causes of the monsoons will be more clearly comprehended after the nature of these breezes is explained, we shall first consider them.

The sea and land breezes of the torrid zone are gentle periodical winds regularly shifting twice every day, and blowing from the sea towards the land during the day-time, and from the land towards the sea in the night. These breezes do not blow with an equal degree of force throughout the whole day and night, but are perpetually varying, being always strongest about mid-day and midnight, and becoming gradually weaker till the time of change in the evening and morning; about which time the air continues for a short space perfectly calm: but in a little the breeze begins to be felt on the side opposite to that from which it blew last, so faint at first as hardly to be perceived; but by degrees acquiring greater strength, it goes on increasing for five or six hours, after which it again as gradually sinks and dies away. They always blow directly off or towards the shore, and never extend their influence to a great distance from it, although this is varied by particular circumstances in different places; as they never extend so far from the points of capes and promontories, as in deep bays; nor upon the windward, as leeward-shores.

These breezes are produced by the same cause which gives rise to the trade-wind, viz. the heat of the sun. In these warm regions the days and nights are nearly of an equal length throughout the whole year; the sun rising high in the day-time, and descending almost perpendicularly at night; which occasions a much greater variation between the heat of the day and night than is experienced in the more temperate climates; and it is this great difference between the heat of the night and day which produces the breezes. For the rays of the sun are reverberated from the land during the day-time much more powerfully than from the sea, whose surface is constantly evaporating; and the air above the land is rendered much warmer, and consequently more rarified than above the sea; so that a current of air necessarily takes place at that time from the sea towards the land, increasing and diminishing in strength as the heat increases or declines. But when the sun descends below the horizon, the evaporation from the surface of the sea is stopped or greatly diminished, and the cold which it occasioned is of consequence removed: the reverberation of the sun's rays from the surface of the earth is likewise removed, and the air above the land quickly resumes its natural degree of cold, which is always greater than the sea when the influence of the sun is withdrawn: so that the air above the sea becomes warmer during the night than that above the land, and a current of air is of course established from the land to the sea, which forms the land-breeze, which acts as uniformly, although less powerfully, than the sea-breeze; blowing at first gently as the air begins to cool, and gradually gathering strength as the sun retires below the horizon; till his influence begins to be full again in the morning, when it gradually gives place to the more powerful influences of the sea-breeze. These breezes are not, however, entirely confined to the torrid zone. They are even felt in more northern regions; the sea-breeze in particular being almost as perceptible during the summer season along the coasts of the Mediterranean and the Levant, both on the African, European, and Asiatic shores, as within the tropics. Even in our own colder climate, the effects of this are often sensibly felt during the summer season; although, from the length of the day and shortness of the night, the difference between the heat of these is far less than in warmer climates. And although the shortness of our nights prevents us from feeling a nocturnal breeze, similar to the land-breezes of the torrid zone; yet in every serene evening, we have an opportunity of observing a phenomenon, proceeding from a similar cause with that which occasions them in warmer climates. For as the waters retain their heat longer than the earth after the sun withdraws, the moisture which was raised during the heat of the day to a small distance from the earth's surface is quickly condensed by the cold of the evening, and falls down in copious dews; whereas that which is above the surface of the water is more slowly condensed, by reason of the heat which that element retains longer, and hovers at a small distance above it in the form of a dense vapour, which slowly subsides as it loses its heat. This is the cause of those low mists which are so often seen hovering above the surface of rivers and other waters in the evenings towards the end of summer.

It was already observed, that in the Indian ocean the general trade-wind only took place in some parts to the south of the equator. To the north of the line, and in some places to the south of it in that ocean, the general trade-wind only blows regularly for six months; and during the other six months the wind blows in a direction entirely opposite. It is these winds, which shift thus regularly, which are called *monsoons*, although they are also sometimes called *trade-winds*.

At the equator the days and nights are always of an equal

length throughout the whole year; so that the heat being thus equally divided, it never arrives to such an intense degree as to be insupportable to the inhabitants. And as there is no vicissitude of seasons at the equator, so at the poles they never experience the more pleasing vicissitudes of day and night, the sun never setting during the summer season, nor rising above the horizon during the winter: and although the day decreases in length as we recede from the pole, from six months to twenty-four hours; yet in all high latitudes the sun defends for such a short space below the horizon, and in such an oblique direction, that the difference between the heat of the day and night is but very inconsiderable. From which it follows, that during this season, when the sun continues to act with such uninterrupted influence upon the surface of the earth, the air will then be rarefied more above the dry land than upon the surface of the water; so that a wind would naturally set in at that time from the sea towards the land, similar to the diurnal sea-breezes in the warmer climates; and on the contrary, during the winter season, the air in these northern regions being colder above the land than the water, the winds will naturally blow from the land towards the sea, similar to the land-breezes of the torrid zone. But as the influence of the sun, although of longer continuance, is in general more languid in climates of a high latitude than in those near the line, it is not to be expected that these effects will follow with the same regularity as in the torrid zone: being more apt to be interrupted by lesser causes which affect the atmosphere and produce winds in different directions. Yet these are not so totally interrupted but that we can easily trace their effects even in our own cold climate: for during the summer season, the large continent to the east of us, being more heated than the Atlantic ocean westward, produces a general tendency of the current of air towards the east, inasmuch that westerly winds are observed to prevail more than any other, not only here, but in all the frontier countries on the continent, during the summer season. And easterly winds become again more prevalent in the winter and spring. On the contrary, it is observed in North America, that the easterly winds prevail more in summer than at any other time; and the west winds always prevail during the cold months of winter. The same effects take place with a greater degree of constancy in other parts of Europe, particularly in Greece, and the countries in that neighbourhood; as the ancient Greeks have particularly remarked, that the winds blew from the south during the heat of summer, particularly about the dog-days, and from the north during the colder weather of winter.

Any attentive reader, who has accompanied us thus far, will readily see, that the monsoons which take place in the Indian ocean proceed from the same general cause. For when the sun, in his annual course, has crossed the line, and comes to act very strongly upon the extensive countries of Arabia, Persia, China, and the other parts of India, these become heated to a much higher degree than the ocean to the south of them; and the air above these extensive countries being so much rarefied, naturally draws the wind towards that place, which, by overcoming the general trade-wind, produces the southerly monsoons which take place in all those seas during the months of April, May, June, July, August, and September. But when the sun has again retreated towards the southern hemisphere, this great degree of heat in these countries subsides, and the genuine trade-wind again resumes its natural course; forming what they call the *northerly monsoon*, which blows in the months of October, November, December, January, February, and March: and as the continent of Asia now assumes a greater degree of cold than the Atlantic and Pacific oceans in the same latitude, it produces a brisker and more

steady gale during the continuance of this monsoon, than is ever experienced in the general trade-wind.

Having thus explained the nature of the monsoons in general, we shall proceed to consider the particulars which influence the direction of these in those parts where they take place. In all that part of the Indian ocean which lies between the island of Madagascar and Cape Commorin, the wind blows constantly from the west-south-west, between the months of April and October; and in the opposite direction from the month of October till April, although with some variation in different places, as these winds are neither so strong nor constant in the bay of Bengal as in the Indian ocean. And it is likewise remarkable, that the south-west winds in these seas are generally more southerly on the African side, and more westerly on the Indian, as appears distinctly in the map. But these variations are not repugnant to the general theory. For it is sufficiently known, that high lands in every part of the globe are much colder than low and flat countries; and as that part of Africa is very high and mountainous, the cold in these regions is much greater than in the more flat countries of Arabia and India; so that the wind naturally blows from these cold regions, in the summer season, towards the warmer continent of Asia; which occasions those inflections of the wind to the eastward which take place in these seas during the summer months; and is still farther assisted by the peninsula of India, the kingdom of Siam, and the islands of Sumatra and Java, on the eastern part of this ocean, lying so much farther south than the kingdoms of Arabia and Persia; so that these, being more heated than the ocean to the westward, naturally draw the wind towards them, and produce the easterly variation of the monsoon which takes place in this part of the ocean, while the warm and sandy deserts of Arabia draw the winds more directly northward near the African coast.

In the eastern parts of the Indian ocean, beyond the island of Sumatra, through the gulph of Siam and bay of Tonquin, and along the southern parts of China, and among the Philippine islands, &c. to the north of the equator, the monsoons observe a different direction, blowing nearly due south and north. Here the greatest part of the warm continent is to the west of this district, which makes the wind naturally assume this direction. A little to the east of this, among the Marianne islands, the general trade-wind takes place, there being no continent to the north of them to occasion monsoons.

The monsoons are as regular in the eastern part of the Indian ocean to the south of the equator, as they are to the north of it; as here a northern monsoon sets in from the month of October till April, and a southern from April to October. And here, as to the north of the line, we find the direction of the monsoons varying according to particular circumstances in different places: for about the island of Sumatra, and towards the west end of Java, the monsoons set in nearly from the north and south; but towards Celebes and Timur, they begin to tend a little more to the east and west, gradually declining as they approach the coast of New Guinea; near to which the northerly monsoon from October till April blows from the north-west, and the opposite monsoon from the south-east between October and April. The reader will easily perceive that these monsoons are occasioned by the continent of New Holland and Guinea; which being heated by the sun when in the southern signs, draws the wind towards that in the summer season, in the same manner as the continent of Asia produces the monsoons to the north of the line. And it is likewise sufficiently plain, that the inflection of these periodical winds about Celebes and Timur is occasioned by that part of the continent called *New Guinea* jutting out so

near to the equator to the east of these, and drawing the wind toward that quarter.

These are the most general and extensive monsoons which take place in our globe. But there are other periodical winds, which occur in particular places in these warm regions, that deserve particular attention.

In the Red Sea, the monsoon shifts as regularly as in other places; but being influenced by the coasts, it tends a little more to the north and south than in the Indian Ocean.

On the fourth coast of Africa, to the fourth of Cape Corientes, and about the southern parts of the island of Madagascar, the regular trade-wind from the S. E. takes place between October and April; but from April till October the wind blows from the W. or N. W. and is at that season exceedingly cold. This is evidently occasioned by a cause already taken notice of: for notwithstanding the high and cold nature of this continent, yet when the sun is to the south of the line, his powerful influence at that season so far abates their natural degree of cold, as not to interrupt the general trade-wind between the months of October and April: but when he returns to the northern hemisphere, the high mountains of Africa resume their native coldness, and repel the general trade-winds by their cold and more powerful blast, so as to produce the intemperate monsoon which here takes place between the months of April and October.

From Mozambique to Cape Guardafoy, at the mouth of the Red Sea, the monsoons are a little more irregular than in the other parts of the Indian Ocean. For it is observed, that between October and January the winds are variable, although chiefly from the north. In January the N. E. monsoon sets in, and continues regular till the month of May. From May till October the winds again become variable, but blow chiefly from the southern points; but in the months of June, July, and August, there are frequent calms, especially about the bay of Melinda, which sometimes continue for several weeks together, and extend only about 100 leagues from shore.

Before we can explain the cause of this irregularity clearly, it will be necessary to attend to the direction of the wind on each side of this track at each particular season. In the months of October, November, and December, the winds are here variable, but chiefly from the north. Now during these three months, the wind to the south of this beyond Cape Corientes blows from the S. E. at the Red Sea, and all to the north of this, the wind during this season of the year is from the N. E. And as the sun is then perpendicular to the bay of Melinda, these opposite winds here meeting and opposing one another, and being both of them stopped in their course westward by the cold regions of Africa near the Mountains of the Moon, will naturally produce the variable winds here observed, according as the one or the other of these three balancing powers shall predominate: although, as the coast here runs away towards the south-west, it is natural to expect that the northerly wind, which follows the same direction, should more frequently prevail than those which are opposed by it; especially when we consider, that the island of Madagascar, now beginning to be warmed by the influence of the sun, will concur in drawing the wind to the southward; and when the continent of Africa is more heated in the months of January and February, it does not oppose the easterly monsoon, so that the winds become then more fixed than before. But in the months of June, July, and August, the wind to the south of Cape Corientes is from the N. W.; and near the Red Sea, and throughout the northern part of the Indian Ocean, the S. W. monsoon is then in its greatest vigour; so that on each end of this district the wind is blowing in an opposite direction; from which re-

sults those calms about Melinda, which we just now mentioned.

This much may suffice for the shifting winds on the African and Asiatic coasts. As to America, the only places where the wind shifts regularly are, the bays of Honduras and Campeachy on the east, and that of Panama and some parts on the coast of Mexico on the west, with a small tract upon the coast of Brazil. In the fourth part of the bay of Honduras, between Cape Gratia de Dios and Cape la Bela, the common trade-wind between E. and N. E. blows between March and November; from October till March there are westerly winds, not constant or violent, but blowing moderately sometimes two or three days, or a week; and then the easterly breeze may again prevail for an equal length of time. The reason of the peculiarity here observed, is this: During the summer season, the high land on the isthmus of Darien is so much warmed as not to interrupt the course of the general trade-winds; but when he retires to the southern hemisphere, the cold upon the isthmus at that season becomes so great, as to condense the air to such a degree as to repel the trade-wind for some time: but not being cooled to such an intense degree as in some of the larger continents, the trade-wind at times overcomes and repels these land-breezes in its turn, and produces the phenomena above described. And that this is really the case, appears evident from this circumstance, that the land breezes are most prevalent, and of longest duration in the coldest months of December and January; before and after which two months, the trade-wind being generally checked only a day or two about the full or change of the moon. As these western breezes on this coast take their rise from the same cause as the diurnal land-breeze in warm climates, they may be considered as land-breezes of two or three days' continuance, and forming an intermediate step between the land-breezes and monsoons. Although the influence of these breezes is felt farther off at sea than the common diurnal breeze, yet they do not extend a great way, being seldom felt above 20, 30, or 40 leagues from shore; and about Cape La Vela, which is much exposed to the east wind, these breezes seldom extend above eight or ten leagues from shore. Land breezes of the same nature, and proceeding from similar causes, are also experienced in the winter season in the bay of Campeachy, which are there known by the name of *Simmafenta winds*. Beyond Cape La Vela these western breezes are not felt, which is undoubtedly occasioned by the whole of that coast as far as Cape St. Augustine being so much exposed to the general trade wind, which here sweeps along the coast with so much violence, as almost totally to repress the weaker influence of the breezes. But between Cape St. Augustine and St. Catharine's island, or a little farther, we again meet with a variation of the wind at different seasons, as it is here observed to blow in an E. or N. E. direction from September till April, and from April till September from the S. W. This variable wind, or monsoon, like the others on this coast, extends but for a very short way from shore, and is evidently occasioned by the same causes as the other periodical winds. For in the summer months (which in this climate is between September and April), the land of the continent being heated by the sun, draws the trade-wind from its common course of S. E. a little to the westward: and as the coast here tends towards the S. W. the wind in some measure (as it always does) follows the same direction, and produces this E. N. E. monsoon. But in the winter, when this region becomes more cool, the east wind is repelled by the dense cold air from the mountains; by which means it is bent to the northward, and is forced along the coast to Cape St. Augustine; where meeting with

so further hindrance, it again falls in with the general trade-wind, and is carried along with it in its proper direction.

We have purposely omitted mentioning the winds on the west coasts of Africa and America till the others were explained, as the causes of the peculiarities here observed will be now more easily comprehended. On the coasts of Chili and Peru, in America, from 25° or 30° of south latitude to the line; and on the parallel coast of Angola, &c. in Africa; the wind blows all the year from the south, varying in its direction a little in different places according to the direction of the coast, towards which it always inclines a little. But whatever is the direction at any one place, it continues the same throughout the whole year without any variation, and always blows from some southerly point. But there is this difference between this wind upon the coasts of Chili and Angola, that it extends much further out to sea upon the former than upon the latter.

In order to explain the cause of this singular phenomenon, it is necessary to recollect, that the general trade wind is produced by the concurrence of two separate causes. One is the great heat of the equatorial region, by which alone would be produced a constant north or south wind. The other is the diurnal revolution of the earth, which would cause a perpetual tendency of the air in these warm regions from east to west. From the concurrence of these two causes result the general trade-wind, which would constantly blow from the S. E. or N. E. as we have already demonstrated. But if any one of these two causes, in any particular place, is prevented from producing its full effect, while the other continues to exert its influence, the general direction of the wind will be varied, and it will assume another. Thus, if the east wind was prevented from acting in any particular place, while nothing interrupted the south or north wind, it is evident that the air would rush towards the equator in that direction which was nearest and easiest, whether that should be pointing eastward or westward. Now as the high mountains in the internal parts of Africa and America interrupt the course of the east wind near the surface of the earth, while these coasts of which we now treat are entirely open to the south, the wind naturally rushes along the coasts of Chili and Angola from north to south; and as the low lands near the shore, in these warm regions, is generally warmer than the sea, the wind will naturally point in towards the shore, as is generally observed to happen.

This, then, is the obvious cause of the south wind which always prevails upon the coasts of Chili and Peru, as well as along the shores of Angola, Loango, &c. But it is only near the shore that this can take place; nor can it extend to a great height above these low and fertile regions. For as the internal parts of these countries are exceedingly high, but more especially the Andes of America, which experience a perpetual degree of cold more intense than some polar regions ever experience; the air must here be condensed to a very great degree, and send forth from these high regions a perpetual wind to every side, which occasions almost all the peculiarities that have been remarked in these climates: for by opposing the general current of the trade-wind upon the eastern part of these continents, they produce these deluges of rain which supply the immense rivers of the Amazons, La Plata, &c.; these do not, like the Nile and Gambia, swell only at a particular season, and then shrink into a diminutive size again; but continue throughout the whole year, with less variation of size, to pour their immense floods of water into the ocean. These cold winds likewise stretch to the westward, at a considerable distance above the warmer regions of the sea-coast, at length descend as low as the ocean, and form

the general trade-wind, and occasion that unusual degree of cold which mariners have so often complained of even under the line, to the westward of America. To the same cause also must we attribute the thick fogs so common upon the southern parts of Chili, and along the coasts of Peru, with the other peculiarities of that singular climate about Lima and the kingdom of Valles in South America; for the vapours which are exhaled in such great abundance in the warm regions on the sea-shore, are, at a little height above the earth, condensed by the cold winds which come from the mountains, and form those thick mists which are so often observed in this climate. The same effects are felt in some degree on the similar coast of Africa. But as the mountains of Africa are not so high as the Andes of America, nor approach so near the western coast, the effects are less sensible here than in America. The great height of the Andes above the mountains of the similarly situated country of Africa, is the only reason why the effects on that coast are not felt to an equal degree, although similar in kind.

A more singular deviation from the general trade-wind is observed to take place on the African and American coasts to the north of the line, than those we have taken notice of to the south of it. For it is observed, that from California to the bay of Panama, all along the coasts of New Spain, the winds blow almost constantly from the west or S. W. nearly directly opposite to the trade-wind; and on the coast of Africa from Cape Bayador to Cape Verde, they blow chiefly from the N. W. standing in upon the shore; from thence the wind bends gradually more and more from the north to the west, and so round to the S. W. all along the coast of Guinea, as will be distinctly seen by the map. After what we have said of the winds on the southern parts of these regions, it will be unnecessary to spend much time in explaining the cause of these peculiarities, as it will evidently appear that they are nearly the same, the variations here observed being occasioned by the particular direction of the coast.—Thus, along the coast of New Spain, the wind blows nearly the same direction in every place, as there are no remarkable bendings on the coast; being uniformly drawn towards the shore by the great heat of the low part of the continent near the sea, which in these regions is always more heated than the water of the ocean, and occasions that inflection. But as the coast of Africa is more irregular, the winds also are found to be more different in their direction. To the north of Cape Verde, as the coast stretches nearly south and north, the wind, being drawn towards it a little, blows from the N. W. But beyond that, the coast bends more eastward to Cape Palmas; from which it runs E. or N. E. all along the coast of Guinea, the wind shifting gradually more and more to the west, still pointing in upon the coast. And as there is nothing to oppose the current of air, which comes from the south along the coast of Angola, it stretches forward till it comes within the influence of the coast of Guinea, and is there drawn in towards the shore in a S. W. direction. But as it is only the lower regions of the coast of Guinea, which are so much warmed, the high mountains within continuing cold; the northerly wind coming from these meeting and opposing the southerly winds in the higher regions of the air, by their mutual conflicts occasion those incessant rains and tremendous thunder so remarkable along the whole of this uncomfortable coast.

It has been often observed by mariners, that there is a track of sea to the west of Guinea from five to ten degrees of north latitude, in which the trade-wind blows with less steadiness than in any other part of that ocean, being almost constantly troubled with calms and tornadoes; the cause

of which the reader will perceive by inspecting the map, as he will easily see that the winds are drawn from this quarter almost in every direction: so that there can be here no constant wind; but being exhausted of its air, it must become lighter than the circumjacent parts, and must then be supplied from either side, as chance or occasional circumstances may direct, which occasion those sudden flurries and tornadoes here observed.

Before we take leave of this subject, it is necessary to observe, that in the bay of Panama the winds between September and March are easterly; but from March till September they blow chiefly from the S. S. W. that is, during the winter months, while the sun is far from them, the winds are off shore; and during the summer months, the land being heated to a considerable degree, they are drawn towards the shore as usual. It is remarkable, however, that this is the only part on the west of a large continent, where the wind shifts regularly at different seasons; which seems to be occasioned by the great height of the isthmus of Darien, and the Terra Firma to the east of it, and the nearness of these to the sea, in comparison of the mountains near Benin on the similarly situated coast of Africa; which is greatly assisted by the deepness of the bay, which, by bending so much to the eastward from Cape Lorenzo, is in a great measure screened from the force of the fourth winds, which allows the winter breeze to extend itself upon the bay with more facility. We ought here also to remark, that along the coast of Mexico, between Cape Pelanco and Guatimala, there are land-winds which blow in the months of May, June, and July, called by the Spaniards *Popogaios*. They greatly resemble the Summatenta winds in the bay of Campeachy, as they blow both night and day a moderate breeze without intermission, sometimes three or four days or a week together. But as these blow from the land in summer only, whereas the Summatentas blow only in winter, they must be occasioned by a different cause, which seems to be this: as the continent which divides the South Sea from the bay of Mexico and gulph of Honduras, is but of very small breadth, and in many places very high ground, the heat which it receives from the sun in summer is not so great as on the similar coast of Africa; and as the trade-wind coming from the great Atlantic ocean sweeps along the eastern part of the American coast from Cape St. Augustine to the bay of Honduras with very great violence at that season, the small heat of this narrow continent is not sufficient to stop it entirely during that season; so that at some times it blows for a short time quite across it, and occasions those winds called *Popogaios*.

Besides these more general winds, there are likewise some particular winds which are only felt in particular places at certain times, whose effects are so singular as to merit attention; some of which we shall here take notice of. In the gulph of Persia, particularly at Ormuz, during the months of June and July, there sometimes blows from the west, for a day or two together, a hot suffocating fiery wind, which scorches up and destroys any animal that may be exposed to it; for which reason, almost every body leave their habitations at Ormuz during these two months, and retire to the mountains near Schiras in Persia, where they enjoy a more comfortable climate. To explain the cause of which, it is necessary to observe, that along all the coasts of Asia, to the north of the Indian ocean, the diurnal sea and land breezes take place, as in every part of the torrid zone; by means of which the monsoons are not felt close in upon the shores: But as the monsoon continues to blow regularly at a small distance from shore, so in all probability it continues its course without interruption at a small distance above the surface of the earth. Now when the monsoon is in its greatest vigour, its influence

will sometimes descend even as low as the surface of the earth, and, interrupting the course of the breezes, hurry along with it these warm vapours, which ought to have ascended upwards, and produced the salutary sea-breeze; and as the earth is thus deprived of the refreshing influence and moisture of the sea-breeze, the air, by the strong reverberation of the sun-beams from such dry and sandy countries as Arabia, must soon be heated to an amazing degree, and produce these hot and suffocating winds. It is also remarkable, that these hot winds are more often experienced near headlands, where the sea-breezes are weakest, which seems to confirm this hypothesis.—Winds similar to these in kind, though not in degree, are felt upon the coast of Coromandel during the months of June, July, and August, while the west monsoon reigns; and on the Malabar coast they are likewise felt in the months of December and January, while the east monsoon reigns; but these are much less powerful than either of the others. As these hot winds always come from the land, they are known upon these coasts by the name of *Terenos*.

It has likewise been observed, that on the coast of Africa to the north of Cape Verde, during the months of December, January, and February, there sometimes blows, for a day or two together, an easterly wind, so very intensely cold as to be almost as destructive as the warm winds at Ormuz. We have already in some measure explained the cause of this phenomenon.—During these months, when the sun is far from them, his influence is less felt than at other seasons, and the northerly wind upon the coast is of course weakened, inasmuch that the cold produced by the mountains in the heart of the country being now in its greatest degree of force, bursts its usual confinement for a time, spreading to the west with great violence, and producing those uncommon effects already mentioned. Those who sail on these coasts, distinguish this particular wind by the name of *Hamattan*.

These are the principal winds, whether constant or periodical, that take place within the tropics; and thus simple are their causes.

The succession of sea and land breezes renders the torrid zone not only habitable but comfortable. Besides, as these currents of cold air, rushing from each side of the globe, and carrying along with them vast quantities of aqueous vapours which they collect from the surface of the earth in their course, meet and oppose one another at that part of the atmosphere where the influence of the sun is greatest at the time, the water is there forced from the clouds in such prodigious quantities, as to produce a diversity of seasons in the torrid zone, something similar to what is experienced in more temperate climates; with this difference, however, that whereas, in temperate climates, the warmest and most comfortable season is when the sun approaches nearest perpendicular to them, in these warmer climates the heavy rains which fall upon them at that season moderates the heat, and prevents the sun from having such an effect as at other times; so that their coldest and most inconstant weather, which they call *winter*, is at that season, when, without this cause, they would be exposed to the sun's most powerful influence.

We shall only take notice of one other instance of the happy effects produced on our globe by the laws of nature with respect to winds. We have seen, that in the great Atlantic and Pacific oceans, the trade-wind blows constantly from the easterly points throughout the whole year, so that ships sail from east to west within the tropics with the utmost facility; but it is absolutely impossible in these seas to sail from west to east, as the wind would be constantly against them; so that ships bound for any port to the eastward in these regions, must stand to the north or south till they are beyond the limits of the trade-winds, where they meet with variable breezes, by

the help of which they fail to the eastward. But if the same constant trade-wind had taken place in the northern part of the Indian ocean, it would have been impossible to have failed to the eastward at all; because the continent of Asia would have prevented the ships from sailing far enough north to find the variable winds. But here, as in almost every case in which the operations of nature are concerned, we find, that what produceth the disease, at the same time furnisheth a remedy; for that very continent which would have stood in our way going northward, draws the wind towards itself at one season, which makes that course of navigation unnecessary, the shifting of the monsoons supplying a nearer and more commodious course. Thus we see, that wherever the sea is open to the south or north, near the tropics, so as that ships are at freedom to reach the variable winds, the trade-wind constantly blows in one direction; but wherever there is any extent of continent within the verge of the torrid zone, so as that they could not be at liberty to reach the variable winds, there the course of the trade-wind is altered, being drawn towards it in summer, and from it in winter, forming that shifting wind called *monsoons*. From which we may naturally infer, that as there are no monsoons in the Pacific or Atlantic, or in the western part of the Indian ocean, to the south of the line, there are no extensive continents near the tropics in either of these places.

Hot Winds. See SAMIEL.

Wind-Flower. See ANEMONY.

Wind-Mill. a kind of mill, the internal parts of which are much the same with those of a water-mill: from which, however, it differs, in being moved by the impulse of the wind upon its sails or vanes, which are to be considered as a wheel in axis. See MECHANICS.

Wind-Gage. See *Wind-GAGE*.

Wind-Galls in farriery. See FARRIERY.

Wind-Gun. See AIR-GUN.

Instruments for measuring the strength, velocity, &c. of the Wind. See *Wind-GAGE*, ANEMOMETER, and ANEMOSCOPE.

Wind-Hatch, in mining, a term used to express the place at which the ore is taken out of the mines.

Wind-Shock, a name given by our farmers to a distemper to which fruit-trees, and sometimes timber-trees, are subject. It is a sort of bruise and shiver throughout the whole substance of the tree; but the bark being often not affected by it, it is not seen on the outside, while the inside is twisted round, and greatly injured. It is by some supposed to be occasioned by high winds; but others attribute it to lightning. Those trees are most usually affected by it whose boughs grow more out on one side than on the other. The best way of preventing this in valuable trees, is to take care in the plantation that they are sheltered well, and to cut them frequently in a regular manner while young.

Wind-Taught, in sea-language, denotes the same as stiff in the wind. Too much rigging, high masts, or any thing catching or holding wind aloft, is said to hold a ship wind-taught; by which they mean, that the stoops too much in her sailing in a stiff gale of wind. Again, when a ship rides in a main stress of wind and weather, they strike down her top-masts, and bring her yards down, which else would hold too much wind, or be too much distended and wind-taught.

Wind-Sails, a sort of wide tube or funnel of canvas, employed to convey a stream of fresh air downward into the lower apartments of a ship. This machine is usually extended by large hoops situated in different parts of its height. It is let down perpendicularly through the hatches, being expanded at the lower end like the base of a cone; and having its upper side open on the side which is placed to windward, so as to

receive the full current of wind; which entering the cavity, fills the tube, and rushes downwards into the lower regions of the ship. There are generally three or four of these in our capital ships of war, which, together with the ventilators, contribute greatly to preserve the health of the crew.

WINDAGE of a Gun, is the difference between the diameter of the bore and the diameter of the ball.

WINDLASS, a machine used for raising huge weights, as guns, stones, anchors, &c. It is very simple, consisting only of an axis or roller, supported horizontally at the two ends by two pieces of wood and a pulley; the two pieces of wood meet at top, being placed diagonally so as to prop each other; the axis or roller goes through the two pieces, and turns in them. The pulley is fastened at top where the pieces join. Lastly, there are two staves or handspikes which go through the roller, whereby it is turned, and the rope which comes over the pulley is wound off and on the same.

WINDLASS, in a ship, is an instrument in small ships, placed upon the deck, just abaft the fore-mast. It is made of a piece of timber six or eight feet square, in form of an axle-tree, whose length is placed horizontally upon two pieces of wood at the ends thereof, and upon which it is turned about by the help of handspikes put into holes made for that purpose. This instrument serves for weighing anchors, or hoisting of any weight in or out of the ship, and will purchase much more than any capitan, and that without any danger to those that heave; for if in heaving the windlafs about, any of the handspikes should happen to break, the windlafs would fall of itself.

WINDOW, an aperture or open place in the wall of a house to let in the light. See ARCHITECTURE. The word is Welch, *mynt dor*, signifying the passage for the wind. Window is yet provincially denominated *windor* in Lancashire; i. e. *wind door*, or the passage for air, as that for people was peculiarly called the *door*. Before the use of glass became general, which was not till towards the end of the 12th century, the windows in Britain seem generally to have been composed of paper. Properly prepared with oil, this forms no contemptible defence against the intrusions of the weather, and makes no incompetent opening for the admission of the light. It is still used by our architects for the temporary windows of unfinished houses, and not unfrequently for the regular ones of our work-shops. But some of the principal buildings we may reasonably suppose to have been windowed in a superior manner. They could, however, be furnished merely with lattices of wood or sheets of linen, as these two remained the only furniture of our cathedrals nearly to the eighth century; and the lattices continued in some of the meaner towns of Lancashire to the 18th; and in many districts of Wales, and many of the adjoining parts of England, are in use even to the present moment. These seem all to have been fixed in frames that were called *casements*, and now therefore *casements* in Wales and Lancashire.

WINDSOR, a borough-town of Berkshire, twenty-two miles west of London, most remarkable for the magnificent palace or castle situated there on an eminence, which commands the adjacent country for many miles, the river Thames running at the foot of the hill. The knights of the garter are installed in the royal chapel here. It sends two members to parliament. W. Long. o. 36. N. Lat. 51. 30.

WINDWARD, in the sea language, denotes any thing towards that point from whence the wind blows, in respect of a ship: thus windward-tide, is the tide which runs against the wind.

WINE, a brisk, agreeable, spirituous, and cordial liquor, drawn from vegetable bodies, and fermented. All sorts of vegetables, fruits, seeds, roots, &c. afford wine; as grapes,

currants, mulberries, alder-berries, cherries, apples, pulse, beans, pease, turneps, radishes, and even grafts itself. Hence under the class of wines, or vinous liquors, come not only wines absolutely so called, but also ale, cyder, &c.

Wine in France is distinguished, from the several degrees and steps of its preparation, into, 1. *Mere goutte*, mother-drop, which is the virgin wine, or that which runs of itself out at the top of the vat wherein the grapes are laid, before the vintager enters to tread or stamp the grapes. 2. *Muft*, *formuft*, or *flum*, which is the wine or liquor in the vat, after the grapes have been trod or stamped. 3. *Pressed wine*, being that squeezed with a press out of the grapes half bruised by the treading. The husks left of the grapes are called *rope*, *mark*, or *mark*; by throwing water upon which, and pressing them afresh, they make a liquor for servants use, answerable to our cyderkin, and called *boisson*. 4. *Sweet wine*, is that which has not yet worked nor fermented. 5. *Bouru*, that which has been prevented working by casting in cold water. 6. *Worked wine*, that which has been let work in the vat, to give it a colour. 7. *Boiled wine*, that which has had a boiling before it worked, and which by that means still retains its native sweetness. 8. *Strained wine*, that made by sleeping dry grapes in water, and letting it ferment of itself. Wines are also distinguished with regard to their colour into white wine, red wine, claret wine, pale wine, rose, or black wine; and with regard to their country, or the soil that produces them, into French wines, Spanish wines, Rhenish wines, Hungarian wines, Greek wines, Canary wines, &c. and more particularly into Port wine, Madeira wine, Burgundy wine, Champain wine, Falernian wine, Tockay wine, Schiras wine, &c.

Method of Making, Fining, &c. WINE. In the southern parts of France, their way is with red wines to tread or squeeze the grapes between the hands, and to let the whole stand, juice and husks, till the tincture be to their liking; after which they press it. But for white wines, they press the grapes immediately; when pressed, they tun the must and stop up the vessel, only leaving the depth of a foot or more to give room for it to work. At the end of ten days they fill this space with some other proper wine, that will not provoke it to work again. This they repeat from time to time, new wine spending itself a little before it comes to perfection.

The usual method of fining down wines, so as to render them expeditiously bright, clear, and fit for use, is this: Take an ounce of isinglass, beat it into thin threads with a hammer, and dissolve it, by boiling, in a pint of water; this when cold becomes a stiff jelly. Whisk up some of this jelly into a froth with a little of the wine intended to be fined, then stir it well among the rest in the cask, and bung it down tight; by this means the wine will become bright in eight or ten days. This method, however, is found to be best suited to the white wines; for the red ones, the wine-coopers commonly use the whites of eggs beat up to a froth, and mixed in the same manner with their wines.

They fine it down also by putting the shavings of green beech into the vessel, having first taken off all the rind, and boiled them an hour in water to extract their rankness, and afterwards dried them in the sun, or in an oven. A bushel of these serve for a tun of wine; and being mashed, they serve again and again, till almost quite consumed.

For English wine, the method recommended by Mortimer, is first to gather the grapes when very dry, to pick them from the stalks, then to press them, and let the juice stand twenty-four hours in a vat covered. Afterwards to draw it off from the gross lees, and then put it up in a cask, and to add a pint or quart of strong red or white port to every gallon of juice, and let the whole work, bunging it up close, and letting it

stand till January; then bottle it in dry weather. Bradley chooses to have the liquor when pressed, stand with the husks and stalks in the vat, to ferment for fifteen days. The method of converting white wine into red, so much practised by the modern wine-coopers, Dr. Shaw observes is this: Put four ounces of turnsole rags into an earthen vessel, and pour upon them a pint of boiling water; cover the vessel close, and leave it to cool; strain off the liquor, which will be of a fine deep red, inclining to purple. A small portion of this colours a large quantity of wine. This tincture might be either made in brandy, or mixed with it, or else made into a syrup, with sugar, for keeping. A common way with the wine-coopers is to infuse the rags cold in wine for a night or more, and then wring them out with their hands; but the inconvenience of this method is, that it gives the wine a disagreeable taste, or what is commonly called the *taste of the rag*; whence the wines thus coloured usually pass among judges for pressed wines, which have all this taste from the canvas rags in which the lees are pressed. The way of extracting the tincture, as here directed, is not attended with this inconvenience, but it loads the wine with water; and if made into a syrup, or mixed in brandy, it would load the wine with things not wanted, since the colour alone is required. Hence the colouring of wines has always its inconveniences. In those countries which do not produce the tinging grape, which affords a blood-red juice, wherewith the wines of France are often stained, in defect of this, the juice of alder-berries is used, and sometimes logwood is used at Oporto.

The colour afforded by the method here proposed, gives wine the tinge of the Bourdeaux red, not the port; whence the foreign coopers are often distressed for want of a proper colouring for red wines in bad years. This might perhaps be supplied by an extract made by boiling stick-lack in water. The skins of tinging grapes might also be used, and the matter of the turnsole procured in a solid form, not imbibed in rags.

Stahl observes, that it is a common accident, and a disease in wines, to be kept too hot; which is not easy to cure when it has been of any long continuance, otherwise it may be cured by introducing a small artificial fermentation, that new ranges the parts of the wine, or rather recovers their former texture: but the actual exposing of wine to the fire, or the sun, presently disposes it to turn eager; and the making it boiling hot, is one of the quickest ways of expediting the process of making of vinegar.

On the other hand, wine kept in a cool vault, and well secured from the external air, will preserve its texture entire in all the constituent parts, and sufficiently strong for many years, as appears not only from old wines, but other foreign fermented liquors, particularly those of China, prepared from a decoction of rice; which being well closed down in a vessel, and buried deep under ground, will continue for a long series of years rich, generous, and good, as the histories of that country universally agree in assuring us.

The most general remedy hitherto known for all the diseases of wines, is a prudent use of tartarized spirit of wine, which not only enriches, but disposes all ordinary wines to grow fine.

If either by fraud or accident a larger portion of water is mixed with wine than is proper for its consistence, and no way necessary or essential, this superfluous water does not only deprave the taste, and spoil the excellence of the wine, but also renders it less durable; for humidity in general, and much more a superfluous aqueous humidity, is the primary and restless instrument of all the changes that are brought on by fermentation. It may doubtless therefore be useful, and sometimes absolutely necessary, to take away this superfluous

water from the other part which strictly and properly constitutes the wine. This has been agreed upon all hands as a thing proper, but the manner of doing it has not been well agreed on: some have proposed the effecting it by means of heat and evaporation, others by percolation, and others by various other methods, all found unsuccessful when brought to the trial; but the way proposed by Dr. Shaw from Stahl, is the most certain and commodious; this is done by a concentration of the wine, not by means of heat, but of cold.

If any kind of wine, but particularly such as has never been adulterated, be in a sufficient quantity, as that of a gallon or more, exposed to a sufficient degree of cold in frosty weather, or be put into any place where ice continues all the year, as in our ice-houses, and there suffered to freeze, the superfluous water that was originally contained in the wine will be frozen into ice, and will leave the proper and truly essential part of the wine unfrozen, unless the degree of cold should be very intense, or the wine but weak and poor. This is the principle on which Stahl founds his whole system of condensing wines by cold. When the frost is moderate, the experiment has no difficulty, because not above a third or a fourth part of the superfluous water will be froze in a whole night; but if the cold be very intense, the best way is, at the end of a few hours when a tolerable quantity of ice is formed, to pour out the remaining fluid liquor, and set it in another vessel to freeze again by itself. If the vessel, that thus by degrees receives the several parcels of the condensed wine, be suffered to stand in the cold freezing place where the operation is performed, the quantity lying thin in the pouring out, or otherwise, will be very apt to freeze anew; and if it be set in a warm place, some of this aqueous part thaws again, and so weakens the rest. The condensed wine therefore should be emptied in some place of a moderate degree as to cold or heat, where neither the ice may dissolve, nor the vinous substance mixed among it be congealed. But the best expedient of all is to perform the operation with a large quantity of wine, or that of several gallons, where the utmost exactness, or the danger of a trifling waste, need not be regarded.

By this method, when properly performed, there first freezes about one third part of the whole liquor; and this is properly the more purely aqueous part of it, inasmuch that when all the vinous fluid is poured off to be again exposed to a concentration, the ice remaining behind from this first freezing being set to thaw in a warm place, dissolves into a pure and tasteless water. The frozen part, or ice, consists only of the watery part of the wine, and may be thrown away, and the liquid part retains all the strength, and is to be preserved. This will never grow sour, musty, or mouldy afterwards, and may at any time be reduced to wine of the common kind again, by adding to it as much water as will make it up to the quantity that it was before.

Wines in general may by this method be reduced to any degree of vinosity or perfection.

The benefit and advantage of this method of congelation, if reduced to practice in the large way in the wine countries, must be evident to every body. Concentrated wines in this manner might be sent into foreign countries instead of wine and water, which is what is usually now sent, the wines they export being loaded, and in danger of being spoiled, by three or four times their own quantity of unnecessary, superfluous, and prejudicial water.

An easy method of recovering pricked wines may be learned from the following experiment: Take a bottle of red port that is pricked, add to it half an ounce of tartarized spirit of wine, shake the liquor well together, and set it by for a few days, and it will be found very remarkably altered for the better.

This experiment depends upon the useful doctrine of acids and alkalies. All perfect wines have naturally some acidity, and when this acidity prevails too much, the wine is said to be pricked, which is truly a state of the wine tending to vinegar: but the introduction of a fine alkaline salt, such as that of tartar, imbibed by spirit of wine, has a direct power of taking off the acidity, and the spirit of wine also contributes to this, as a great preservative in general of wines. If this operation be dexterously performed, pricked wines may be absolutely recovered by it, and remain saleable for some time; and the same method may be used to malt liquors just turned sour.

The age of wine is properly reckoned by leaves; thus they say wine of two, four, or six leaves, to signify wine of two, four, or six years old; taking each new leaf put forth by the vine since the wine was made for a year.

WINE is also a denomination applied in medicine and pharmacy to divers mixtures and compositions, wherein the juice of the grape is a principal ingredient. See the article VINUM.

With regard to the medical uses of wines, it is observed, that among the great variety of wines in common use among us, five are employed in the shops as menstrua for medicinal simples; that is, the *vinum album hispanicum*, or Mountain wine; the *vinum album gallicum*, or French white wine; the Canary wine, or sack, the Rhenish wine, and the red port. The effects of these liquors on the human body are, to cheer the spirits, warm the habit, promote perspiration, render the vessels full and turgid, raise the pulse, and quicken the circulation. The effects of the full-bodied wines are much more durable than those of the thinner: all sweet wines, as Canary, abound with a glutinous, nutritious substance, whilst the others are not nutritive, or only accidentally so, by strengthening the organs employed in digestion. Sweet wines, in general, do not pass off freely by urine; and they heat the constitution more than an equal quantity of any other, though containing full as much spirit: red port, and most of the red wines, have an astringent quality, by which they strengthen the tone of the stomach, and thus prove serviceable for restraining immoderate secretions; those which are of an acid nature, as Rhenish, pass freely by the kidneys, and gently loosen the belly. It is supposed that these last exasperate and occasion gouty calculous disorders, and that new wines of every kind have this effect.

WINE Press, a machine used for squeezing the juice out of grapes, and consisting of several pieces of timber, variously disposed, which compose three bodies of timber-work, closely united to the axis, which serves as a swing whereby it may be moved by the vice. Of these there are different sizes as well as different constructions; for an account of which, illustrated by figures, see Miller's Gardener's Dictionary, article WINE Press.

Spirit of WINE, or *alcohol*, a name given by chemists to every ardent spirit produced by distillation. See CHEMISTRY Index.

WING, that part of a bird, insect, &c. whereby it is enabled to fly. See BIRD and ORNITHOLOGY.

WINGS, in military affairs, are the two flanks or extremes of an army, ranged in form of a battle; being the right and left sides thereof.

WINTER, one of the four seasons or quarters of the year. See SEASON, &c. Winter commences on the day when the sun's distance from the zenith of the place is greatest, and ends on the day when its distance is at a mean between the greatest and least. Under the equator, the winter as well as other seasons return twice every year; but all other places have only one winter in the year; which in the northern hemi-

WINTERA Aromatica.



sphere begins when the sun is in the tropic of Capricorn, and in the southern hemisphere when in the tropic of Cancer; so that all places in the same hemisphere have their winter at the same time.

WINTER-Berry. See *PHYSALIS*.

WINTERA, in botany: a genus of plants of the class of *polyandria*, and order of *pentagynia*; and in the natural system arranged under the 12th order, *Holocarpeæ*. The calyx is three-lobed; there are six or twelve petals; there is no style; the fruit is a berry, which is club-shaped as well as the germin. There are two species; the *aromatica* and *granadensis*.

WINTERA *aromatica*, is one of the largest forest-trees upon Terra del Fuego; it often rises to the height of 50 feet. Its outward bark is on the trunk grey and very little wrinkled, on the branches quite smooth and green. The branches do not spread horizontally, but are bent upwards, and form an elegant head of an oval shape. The leaves come out, without order, of an oval elliptic shape, quite entire, obtuse, flat, smooth, shining, of a thick leathery substance, evergreen, on the upper side of a lively deep green colour, and of a pale bluish colour underneath, without any nerves, and their veins scarcely visible; they are somewhat narrower near the footstalks, and there their margins are bent downwards. In general, the leaves are from three to four inches long, and between one and two broad; they have very short footstalks, seldom half an inch long, which are smooth, concave on the upper side, and convex underneath. From the scars of the old footstalks the branches are often tuberculated.

The peduncles, or footstalks for the flowers, come out of the *axilla foliorum*, near the extremity of the branches; they are flat, of a pale colour, twice or three times shorter than the leaves; now and then they support only one flower, but are oftener near the top divided into three short branches, each with one flower. The bractæ are oblong, pointed, concave, entire, thick, whitish, and situated one at the basis of each peduncle.

There is no calyx; but in its place the flower is surrounded with a spathaceous gem, of a thick leathery substance, green, but reddish on the side which has faced the sun: before this gem bursts, it is of a round form, and its size is that of a small pea. It bursts commonly so, that one side is higher than the other, and the segments are pointed. The corolla consists always of seven petals, which are oval, obtuse, concave, erect, white, have small veins, and are of an unequal size, the largest scarcely four lines long; they very soon fade, and drop off almost as soon as the gem bursts. The filaments are from 15 to 30, and are placed on the flat end side of the receptacle; they are much shorter than the petals, and gradually decrease in length towards the sides. The antheræ are large, oval, longitudinally divided into two, or as if each was made up of two oblong antheræ. The germina are from three to six, placed above the receptacle, turbinate, or of the shape of an inverted fig; flat on the inside, and somewhat higher than the stamina; they have no styles, but terminate in a stigma, which is divided into two or three small lobes.

Dr. Solander, to whom the world is indebted for the description, never saw the fruit in its perfectly ripe state; but could conclude from the unripe fruit which he saw in abundance, that each germin becomes a separate seed-vessel, of a thick fleshy substance, and unilocular; and in each the rudiments of three, four, or five seeds were plainly discernible. See Plate VIII. where N° 1. represents the spathaceous gem, after it is burst open. 2. The fame. 3. The fame (a) with the corolla (b) remaining within it. 4. One of the petals spread out. 5. The stamina (a) and the pistilla (b) after the gem and the corolla are taken away. 6. The outside of an anthera (a) with its filament (b). 7. The inside of the same,

Vol. X.

8. The germina (a) situated on the centre of the receptacles after the stamina have been removed; the lobated stigma (b). 9. The convex or outermost side of a germin (a) with its stigma (b). 10. The inside of the fame. 11. A germin cut open longitudinally, so as to show the rudiments of the seeds. 12. A germin cut through transversely.

The weather is much more severe in the climate where these trees are natives than in Britain; here, therefore, it is thought they would thrive very well.

The bark of the wintera, or winter's cinnamon, brought over by the Dolphin, in respect to figure, exactly resembles that which was delineated by Clusius. The pieces are about three or four inches square, of different degrees of thickness, from a quarter to three quarters of an inch. It is of a dark brown cinnamon colour; an aromatic smell, if rubbed; and of a pungent hot spicy taste, which is lasting on the palate, though imparted slowly. It has the name of *winter's cinnamon*, from a faint resemblance in colour and flavour to that grateful aromatic, though differing from it greatly in every other respect. This bark is only brought to us from the Straits of Magellan, and is the produce of the tree above described; much celebrated as an antiscorbutic by the first discoverers, but unknown in the practice of physic, no quantity, except as a curiosity, having been brought to Europe till the return of the ships sent out on the expeditions to the South Seas. The bark which was substituted in the room of this is the canella alba of the shops. See *CANELLA*.

From several experiments made by Dr. Morris, the cortex magellanica appears to be of an astringent of a particular kind, and therefore likely to be of use in several manufactures. Water is the proper solvent of this bark; though the saline, gummy, and resinous parts are so blended in it, as in saffron and some other vegetables, that it parts with them readily in proof and rectified spirits of wine, though not in so great a quantity.

The infusion and decoction of this bark were of so grateful an aromatic bitter taste, that it seems likely to be a pleasant vehicle for some of the nauseous drugs. With this view, on substituting the powder of this bark for the cardamom seeds in making the infusion of senna, as directed in the London Dispensatory, the nauseous smell and taste of that excellent purgative was so effectually covered, as to be scarcely distinguished by the nicest palate. Tincture of rhubarb also prepared with this bark instead of cardamoms seemed far less disagreeable.

WIRE, a piece of metal drawn through the hole of an iron into a thread of a fineness answerable to the hole it passed through. Wires are frequently drawn so fine as to be wrought along with other threads of silk, wool, flax, &c. The metals most commonly drawn into wire are gold, silver, copper, and iron. Gold-wire is made of cylindrical ingots of silver, covered over with a skin of gold, and thus drawn successively through a vast number of holes, each smaller and smaller, till at last it is brought to a fineness not exceeding that of a hair. That admirable ductility which makes one of the distinguishing characters of gold, is no where more conspicuous than in this gilt wire. A cylinder of 48 ounces of silver, covered with a coat of gold, only weighing one ounce, as Dr. Halley informs us, is usually drawn into a wire, two yards of which weigh no more than one grain; whence 98 yards of the wire weigh no more than 49 grains, and one single grain of gold covers the 98 yards; so that the ten thousandth part of a grain is above one-eighth of an inch long.

WIRE of Lapland. The inhabitants of Lapland have a sort of shining slender substance in use among them on several occasions, which is much of the thickness and appearance of our silver-wire, and is therefore called, by those who do not ex-

examine its structure or substance, *Lapland wire*. It is made of the sinews of the rein deer, which being carefully separated in the eating, are, by the women, after soaking in water and beating, spun into a sort of thread, of admirable fineness and strength, when wrought to the smallest filaments; but when larger, is very strong, and fit for the purposes of strength and force. Their wire, as it is called, is made of the finest of these threads covered with tin. The women do this business; and the way they take is to melt a piece of tin, and placing at the edge of it a horn, with a hole through it, they draw these sinewy threads, covered with the tin, through the hole, which prevents their coming out too thickly covered. This drawing is performed with their teeth; and there is a small piece of bone placed at the top of the hole, where the wire is made flat; so that we always find it rounded on all sides but one, where it is flat. This wire they use in embroidering their clothes as we do gold and silver; they often sell it to strangers, under the notion of its having certain magical virtues.

WISDOM, usually denotes a higher and more refined notion of things immediately presented to the mind, as it were, by intuition, without the assistance of ratiocination. Sometimes the word is more immediately used, in a moral sense, for what we call *prudence*, or *discretion*, which consists in the soundness of the judgment, and a conduct answerable thereto.

WISDOM of Solomon, one of the books of the Apocrypha. It abounds with Platonic language, and was probably written after the Chaballistic philosophy was introduced among the Jews.

WIT, is a quality of certain thoughts and expressions, much easier perceived than defined. According to Mr. Locke, wit lies in the assemblage of ideas, and putting those together with quickness and variety, wherein can be found any resemblance or congruity, thereby to make up pleasant pictures and agreeable visions to the fancy. Mr. Addison limited this definition considerably, by observing, that every resemblance of ideas does not constitute wit, but those only which produce delight and surprise. Mr. Pope defined wit to be a quick conception and an easy delivery: while, according to a late writer, it consists in an assimilation of distant ideas.

The word *wit* originally signified *wisdom*. A *witte* was anciently a *wife man*: the *wittenagenot*, or Saxon parliament, an assemblage of wise men. So late as the reign of Elizabeth, a man of pregnant wit, of great wit, was a man of vast judgment. We still say, *in his wits*, *out of his wits*, for in or out of sound mind. The word, however, is now applied in a more limited sense.

Without attempting to expose the inaccuracy of the definitions above mentioned, or hazarding a definition of our own where so many eminent men have failed, we shall endeavour to show in what true wit consists.

It is evident that wit excites in the mind an agreeable surprise, and that this is owing entirely to the strange assemblage of related ideas presented to the mind. This end is effected, 1. By debasing things pompous or *seemingly grave*; 2. By aggrandising things little or frivolous; 3. By setting ordinary objects in a particular and uncommon point of view, by means not only remote but apparently contrary. Of so much consequence are surprise and novelty, that nothing is more tasteless, and sometimes disgusting, than a joke that has become stale by frequent repetition. For the same reason, even a pun or happy allusion will appear excellent when thrown out extempore in conversation, which would be deemed execrable in print. In like manner, a witty repartee is infinitely more pleasing than a witty attack: for though, in both cases, the thing may be equally new to the reader or hearer, the effect on him is greatly injured, when there is access to suppose that it may be the slow production of study and premeditation,

This, however, holds most with regard to the inferior tribes of witticisms, of which their readiness is the best recommendation.

WIT (John de), a celebrated pensioner of Holland, and one of the greatest politicians of his time, was the son of Jacob de Wit, burgomaster of Dort, and was born in 1623. He became well skilled in civil law, politics, mathematics, and other sciences; and wrote a treatise on the Elements of Curved Lines, published by Francis Schooten. Having taken his degree of doctor of law, he travelled into foreign courts, where he became esteemed for his genius and prudence. At his return to his native country, in 1650, he became pensionary of Dort, then counsellor-pensionary of Holland and West Friedland, intendant and register of the fiefs, and keeper of the great seal. He was thus at the head of affairs in Holland; but his opposition to the re-establishment of the office of stadtholder, which he thought a violation of the freedom and independence of the republic, cost him his life, when the prince of Orange's party prevailed. He and his brother Cornelius were assassinated by the populace at the Hague in 1674, aged 47.

WITCH, a person guilty of witchcraft.

WITCHCRAFT, a supernatural power which persons were formerly supposed to obtain the possession of by entering into a compact with the devil. See SORCERY.—The belief that certain persons were endowed with this, and that they were assisted by invisible spirits, is very ancient. The *stage* of the Romans seem rather to have been forerunners than witches; indeed the idea of a witch, as above described, could not have been prevalent till after the propagation of Christianity, as the heathens had no knowledge of the Christian devil.

Witchcraft was universally believed in Europe till the 16th century, and even maintained its ground with tolerable firmness till the middle of the seventeenth. Vast numbers of reputed witches were convicted and condemned to be burnt every year. The methods of discovering them were various. One was, to *weigh* the supposed criminal against the *church bible*, which, if the guilty, would preponderate: another, by making her attempt to say the Lord's Prayer; this no witch was able to repeat entirely, but would omit some part or sentence thereof. It is remarkable, that all witches did not hesitate at the same place; some leaving out one part, and some another. Tests, through which the imps sucked, were indubitable marks of a witch: these were always raw, and also insensible; and, if squeezed, sometimes yielded a drop of blood. A witch could not weep more than three tears, and that only out of the left eye. This want of tears was, by the witch-finders, and even by some judges, considered as a very substantial proof of guilt. Swimming a witch was another kind of popular ordeal generally practised: for this she was stripped naked, and cross-bound, the right thumb to the left toe, and the left thumb to the right toe. Thus prepared, she was thrown into a pond or river, in which, if guilty, she could not sink; for having, by her compact with the devil, renounced the benefit of the water of baptism, that element, in its turn, renounced her, and refused to receive her into its bosom. Sir Robert Filmer mentions two others by fire: the first, by burning the thatch of the house of the suspected witch; the other, burning any animal supposed to be bewitched by her, as a hog or ox. These, it was held, would force a witch to confess.

The trial by the stool was another method used for the discovery of witches. It was thus managed: having taken the suspected witch, she was placed in the middle of a room upon a stool or table, cross-legged, or in some other uneasy posture; to which if she submitted not, she was then bound with

cords : there she was watched, and kept without meat or sleep for the space of 24 hours (for, they said, within that time they should see her imp come and suck). A little hole was likewise made in the door for imps to come in at ; and left it should come in some less discernible shape, they that watched were taught to be ever and anon sweeping the room, and, if they saw any spiders or flies, to kill them ; if they could not kill them, then they might be sure they were imps. If witches, under examination or torture, would not confess, all their apparel was changed, and every hair of their body shaven off with a sharp razor, lest they should secrete magical charms to prevent their confessing. Witches were most apt to confess on Fridays.

By such trials as these, and by the accusation of children, old women, and fools, were thousands of unhappy women condemned for witchcraft, and burnt at the stake. In the 15th volume of the Statistical Account of Scotland there is the trial of two witches, William Coke and Allison Dick, in Kirkcaldy, in 1636. The evidence on which they were condemned is absolutely ridiculous : they were, however, burnt for witchcraft. The expenses which the town and kirk-session were put to on this occasion are still upon record, a standing lesson to those who contend for the infallibility of human reason.

The first writers against witchcraft were stigmatized as Atheists, though they only endeavoured to prove the imbecility of the persons accused, and the insatiation or the knavery of their accusers. Such were the epithets bestowed by Dr. Henry More, and even by Cudworth himself. In this country, while the belief in witchcraft was supported by royal authority (for James I. is universally known to have written on demonology) countenanced by Bacon, and generally adopted among the people, only one writer was hardy enough to oppose it. This was Reginald Scott, who published a collection of impostures detected, under the title of *Discoveries of Witchcraft*. James ordered the book to be burnt by the common executioner, and the judges continued to burn witches as usual. During the civil wars, upwards of eighty were hanged in Suffolk, on the accusation of Hopkins the witch-finder. Webster was the next writer against witchcraft ; but he had a different fate from that of Scott, for most of his arguments were refuted by Glanville. This very acute writer was induced to publish his *Philosophical Considerations about Witchcraft*, by the apprehension, that the increasing disbelief of witches and apparitions tended to affect the evidences of religion, and even of a Deity. In respect of argument, he was certainly superior to his adversaries ; his reasoning is perspicuous, though sometimes subtle, rested on the most specious foundations of evidence, and arranged with great skill.

On the continent, this controversy seemed almost forgotten, till Bekker published his *Monde Enchantée*, in which he denied the existence of witches on the Cartesian principle, that the Deity is the source of all action, consequently actions so opposite to his nature and attributes cannot be supposed to exist. He was answered by Frederick Hoffman, the father of the modern theory and practice of medicine, in his dissertation *De Diaboli Potentia in Corpora*.

The latest witchcraft frenzy was in New England, about 1692, when the execution of witches became a calamity more dreadful than the sword or the pestilence. The accusers became so daring, that neither civil nor religious authority would have proved a security against their attacks, if all the prosecutions had not been suddenly dropped, and the prisoners set at liberty. So far did those wretches proceed in absurdity, that a dog was accused of throwing persons into fits by looking at them. As soon as the prosecutions were stopped, all reports of witchcraft ceased.

It would be ridiculous to attempt a serious refutation of the existence of witches ; and at present, luckily, the task is unnecessary. In this country, at least, the discouragement long given to all suspicion of witchcraft, and the repeal of the statutes against that crime, have very much weakened, though perhaps they have not entirely eradicated, the persuasion. On the continent, too, it is evidently on the decline ; and notwithstanding the exertions of Dr. De Haen, and of the celebrated Lavater, we have little doubt but that in a short time posterity will wonder at the credulity of their ancestors. That there ever were witches, is an opinion that cannot for a moment be believed by a thinking man. The actions imputed to them were either absurd or impossible ; the witnesses by whose evidence they were condemned, either weak enthusiasts or downright villains ; and the confessions ascribed to the witches themselves, the effects of a disordered imagination produced by cruel treatment and excessive watchings. As to the nightly meetings, demonologists themselves have been obliged to confess, that they were nothing else but uneasy dreams, often produced by soporific compositions. The facts which have been brought forward by the advocates for witchcraft bear in their front the most evident marks of trick and imposture ; and this has constantly been found out whenever these facts have been properly examined.

WITENA MOT, or WITENA CEMOT, among the Anglo-Saxons, was a term which literally signified the assembly of the wise men ; and was applied to the great council of the nation, of latter days called the *parliament*.

WITHERS of a HORSE, the juncture of the shoulder-bones at the bottom of the neck and mane, towards the upper part of the shoulder. See FARRIER.

WITNESS, in law, a person who gives evidence in any cause, and is sworn to speak the truth, the whole truth, and nothing but the truth.

Trial by WITNESSES, a species of trial without the intervention of a jury. This is the only method of trial known to the civil law, in which the judge is left to form in his own breast his sentence upon the credit of the witnesses examined ; but it is very rarely used in the English law, which prefers the trial by jury before it in almost every instance : save only that when a widow brings a writ of dower, and the tenant pleads that the husband is not dead ; this being looked upon as a dilatory plea, is in favour of the widow, and for greater expedition allowed to be tried by witnesses examined before the judges : and so, faith Finch, shall no other case in our law. But Sir Edward Coke mentions some others ; as, to try whether the tenant in a real action was duly summoned, or the validity of a challenge to a juror : so that Finch's observation must be confined to the trial of direct and not collateral issues. And in every case Sir Edward Coke lays it down, that the affirmative must be proved by two witnesses at the least.

WITSIUS (Herman), a learned and eminent divine of North Holland, born at Enckhuysen in 1626. He was professor of divinity successively at Franeker, Utrecht, and Leyden ; and applied himself successfully to oriental learning, of which his capital work *Egyptiaca* affords sufficient proof. His Economy of the Covenants between God and Men, is warmly recommended by Mr. Hervey in his *Theron and Asaph*. He died in 1708.

WITTENBERG, a city of Germany, capital of the circle of Upper Saxony, 50 miles north of Dresden. It is under immediate vassalage, and the seat of an aulic judicatory, a general superintendency, an inspection, and consistory. The town is not large ; but is well fortified, and contains a famous university, in which Melancthon was a professor. In this place Martin Luther first began to preach against the pope's indulgences ; and in the cathedral of All Saints he is said to

have been buried. In the old citadel of this town the ancient Saxon electors used to reside. Besides the university, there is a Latin school in the town, with six masters. The library belonging to the university is said to be very valuable. In 1756 the Prussians being masters of the town, destroyed a part of its fortifications. E. Long. 12. 47. N. Lat. 51. 49.

WOAD, in botany. See **ISATIS**. The preparation of woad for dying, as practised in France, is minutely described by Astruc, in his *Memoirs for a Natural History of Languedoc*. The plant puts forth at first five or six upright leaves, about a foot long and six inches broad; when these hang downwards and turn yellow, they are fit for gathering: five crops are gathered in one year. The leaves are carried directly to a mill, much resembling the oil or tan mills, and ground into a smooth paste. If this process was deferred for some time, they would putrefy, and send forth an insupportable fench. The paste is laid in heaps, pressed close and smooth, and the blackish crust, which forms on the outside, re-united if it happens to crack: if this was neglected, little worms would be produced in the cracks, and the woad would lose a part of its strength. After lying for fifteen days, the heaps are opened, the crust rubbed and mixed with the inside, and the matter formed into oval balls, which are pressed close and solid in wooden moulds. These are dried upon hurdles: in the sun, they turn black on the outside; in a close place, yellowish, especially if the weather be rainy. The dealers in this commodity prefer the first, though it is said the workmen find no considerable difference betwixt the two. The good balls are distinguished by their being weighty, of an agreeable smell, and, when rubbed, of a violet colour within. For the use of the dyer, these balls require a further preparation: they are beat with wooden mallets, on a brick or stone floor, into a gross powder; which is heaped up in the middle of the room to the height of four feet, a space being left for passing round the sides. The powder, moistened with water, ferments, grows hot, and throws out a thick fetid fume. It is shovelled backwards and forwards, and moistened every day for twelve days; after which it is stirred less frequently, without watering, and at length made into a heap for the dyer.

Woad not only affords a lasting and substantial blue, which, according to the scale of the dyers, may be reduced into many different shades, but is also of great use in dyeing and fixing many other colours. But notwithstanding this, and its being a commodity of our own, the use of it has very much declined since the introduction of indigo; for the purchase of which large sums go annually out of the nation. The reason of this is, that indigo affords a more lively and pleasing colour, is managed with more ease by the dyers, and does their business more expeditiously. Yet with all these advantages, it is universally acknowledged, that the colour which indigo affords is inferior to that of woad in many respects, and particularly in permanency; for which reason, they are frequently used in conjunction; woad to give solidity and substance, and indigo to give brightness and colour. But the worst consequence that has attended the use of indigo is, not barely lessening the consumption, but abating the price and depreciating the intrinsic value of woad; so that less care is taken in the management of it; to which in a great measure the inferiority of its colour, at least in some places, is at present owing. The declension in its consumption is not the case here only, but also in other countries; for it was once the great staple of Languedoc, and was cultivated also in Normandy, and in other provinces of France; as it also is in Spain, Portugal, the Azores, and Canary islands, Switzerland, in the neighbourhood of Geneva, in different parts of Germany, and in Sweden.

An idea has been entertained, that by an alteration in the manner of curing of it, the inconveniences that are supposed

to attend the use of it might be removed, and that woad might be brought to answer all the purposes of indigo; which, if it could be accomplished, would be most certainly a great advantage, and an advantage which every true lover of his country would with should take place here rather than any where else. The author of the *Natural History of Languedoc* suggests, that woad, if cured in the same manner as indigo, might produce as lively a colour; and adds, that from some experiments made by himself, he is convinced the method would effectually answer. The celebrated M. Du Hamel du Monceau informs us, that having proposed to Mr. Fontenelle, a physician in Louisiana, the cultivating the pastel there in the manner of indigo, that gentleman acquainted him, that by treating indigo after the manner of pastel, he had obtained a very beautiful green: which indeed is always the case when the indigo is only allowed to absorb a small quantity of oxygen; for it is now well known that its blue colour is owing to the absorption of that gas.

WOAHOO, one of the Sandwich Islands, lying to the north-west of Morotoi, at the distance of seven leagues. From the appearance of the north-east and north-west parts, it is the finest island of the group. Nothing can exceed the verdure of the hills, the variety of wood and lawn, and rich cultivated valleys, which the whole face of the country displays. A bay is formed by the north and west extremities, into which a fine river empties itself, through a deep valley; but as the water is blackish for 260 yards from the entrance, watering in it is not convenient. It contains about 60,000 inhabitants. Lieutenant Hergeft, commander of the *Ædædus* storeship, who had been sent from England in 1791, to New South Wales, and thence to the Southern Pacific Ocean, with a supply of provisions for the *Discovery* vessel, Captain Vancouver, then on a voyage of discovery, was here surprised and murdered by the natives, together with Mr. Gooch, the astronomer. W. Long. 157. 51. N. Lat. 21. 43.

WODEN. See **ODIN**, and **MYTHOLOGY**.

WODEVILLE (Anthony), earl of Rivers, brother to the queen of Edward IV. was born in the end of 1442, or in the beginning of 1443. Though one of the most accomplished men of his age, very little is known of his private history. He was early and constantly employed either in the tumults of those turbulent times, or in discharging the duties of some of the highest offices of the state, with which he was invested. Yet he found leisure to cultivate letters, and to be the author of works which, though of little value now, made some noise in that age, when learning was at a low ebb in England. These consisted chiefly of translations from the French; and his lordship, with his printer Caxton, were the first English writers who had the pleasure to see their works published from the press. This accomplished, brave, and amiable nobleman was treacherously imprisoned by Richard III. in Pomfret castle, where, during his confinement, he composed a short poem, which has been preserved by John Rous of Warwick, and breathes, says Dr. Henry, a noble spirit of pious resignation to his approaching fate. He was beheaded on the 23d of June, 1483, in the 41st year of his age.

WOLAW, a town in Germany, in Silesia, and capital of a duchy of the same name. It is surrounded with strong walls and a moats, and one part of the houses are built with stone. The castle is also encompassed with deep ditches, and the greatest part of the inhabitants are employed in a woollen manufactory. In 1709 a Protestant church was allowed to be built here. It is seated on the river Oder, 20 miles north-west of Breslau, and 32 south-east of Glogau. E. Long. 16. 54. N. Lat. 51. 18.

WOLD, **WELD**, or **DYERS Weed**. See **RESEDA**.

WOLF, in zoology. See **CANIS**.

WOLF-Fish, or Sea-Wolf. See ANARCHICAS.

WOLF of Woolf Poifon. See POISON.

WOLFE (Major-General JAMES), was the son of Lieutenant-General Edward Wolfe, and was born at Westerham in the county of Kent, where he was baptized the 11th of Jan. 1726. He betook himself, when very young, to the profession of arms; and was soon singled out as a most rising military genius. Even so early as the battle of La-feldt, when scarce twenty, he exerted himself in so masterly a manner, at a very critical juncture, that it drew the highest encomiums from the great officer then at the head of the army. He was early in the most secret consultations for the attack upon Rochfort: and what he would have done there, and what he afterwards did do at Louibourg, are very fresh in every memory. He was scarce returned from thence, when he was appointed to command the important expedition against Quebec. At last, singly, and alone in opinion, he formed, and executed, that great, that dangerous, yet necessary plan, which drew out the French to their defeat, and will for ever denominate him the conqueror of Canada: but when within the grasp of victory, he received a ball through his wrist, but which immediately wrapping up, he went on, with the same alacrity, animating his troops by precept and example: however, in a few minutes after, a second ball, through his body, obliged him to be carried off to a small distance in the rear, and he shortly after expired. He was brought to England, and interred with all military honours in Westminster-abbey, where a magnificent monument is erected over him.

WOLFE (Christian), a celebrated German philosopher, was born at Breilau in 1679. After having been well instructed in the rudiments of learning and science in his own country, Wolfe professed his studies successively in the universities of Jena, Hamburgh, and Leipzig. At the age of twenty-six he had acquired so much distinction, that he was appointed professor of mathematics, and soon afterwards of philosophy in general, in the university of Hall. After Leibnitz had published his *Theodica*, Wolfe, struck with the novelty of the edifice which that philosopher had raised, assiduously laboured in the investigation of new metaphysical truths. He also digested the Elements of Mathematics in a new method, and attempted an improvement of the art of reasoning in a treatise On the Powers of the Human Understanding. Upon the foundation of Leibnitz's doctrine of Monads, he formed a new system of Cosmology and Pneumatology, digested and demonstrated in a mathematical method. This work, entitled *Thoughts on God, the World, and the Human Soul*, was published in the year 1719; to which were added, in a subsequent edition, *Heads of Ethics and Policy*.

Wolfe was now rising towards the summit of philosophical reputation, when the opinion which he entertained on the doctrine of necessity being deemed by his colleagues inimical to religion, and an oration which he delivered in praise of the morality of the Chinese having given much offence, an accusation of heresy was publicly brought against him; and, though he attempted to justify himself in a treatise which he wrote on the subject of fatality, a royal mandate was issued in November, 1723, requiring him to leave the Prussian dominions. Having been formerly invited by the Landgrave of Hesse Cassel to fill a professor's chair in the university of Cassel, Wolfe now put himself under the patronage of that prince, who had the liberality to afford him a secure asylum, and appointed him professor of mathematics and philosophy. The question concerning the grounds of the century which had been passed upon Wolfe was now every-where freely canvassed; almost every German university was inflamed with disputes on the subject of liberty and necessity; and the names of Wolfians and Anti-Wolfians were every-where heard. After an interval of nine

years, the king of Prussia reversed his sentence of exile, and appointed him vice-chancellor of the university of Hall; where his return was welcomed with every expression of triumph. From this time he was employed in completing his Institutes of Philosophy, which he lived to accomplish in every branch except policy. In 1745 he was created a baron by the elector of Bavaria, and succeeded Ladowig in the office of chancellor of the university. He continued to enjoy these honours till the year 1754, when he expired. He possessed a clear and methodical understanding; which by long exercise in mathematical investigations was particularly fitted for the employment of digesting the several branches of knowledge into regular systems; and his fertile powers of invention enabled him to enrich almost every field of science in which he laboured, with some valuable additions. The lucid order which appears in all his writings enables his reader to follow his conceptions with ease and certainty, through the longest trains of reasoning.

WOLFEMBUITTE, a considerable town of Germany, in the circle of Lower Saxony, and duchy of Brunswick, with a castle where the Duke of Brunswick Wolfembutte resides. It is one of the strongest places in Germany, though the fortifications want repairing in several places. There is an excellent library, kept in a building lately erected for that purpose, consisting of 116,000 printed books, and 2000 uncommon books, with a cabinet of curiosities, relating to natural history. It is seated on the river Ocker, five miles south of Brunswick, and 30 west of Halberstadt. E. Long. 10. 42. N. Lat. 52. 18.

WOLFRAM, or TUNGSTEN. See TUNGSTEN.

WOLFRAM, in natural history and chemistry, the name of a peculiar mineral, lately ranged among the semi-metals. See MINERALOGY. This mineral, which the Germans have called *wolfram* or *wolfrath*, a name translated into Latin *spuma lupi*, or rather *lupus Jovis*, has been met with hitherto only in mines of tin; for, though many authors would make it more common, it is an error owing to their confounding some glossy iron ores with the true wolfram, as appears by the specimens which are frequently found in cabinets under this name. It has been, on account of the bad effects produced by this mineral in the smelting of tin-ores, from which it is very difficult to separate it by washing, because of its great specific weight, that the names of *spuma lupi*, *lupus Jovis*, and *wolfram*, have been given to it by the miners and smelters.

This is really a metallic ore, and contains the very semi-metal lately discovered in the tungsten; both being mineralized, or rather formed by the same tungstenic acid. 1. It is of a black or brown shining colour, of a radiated or foliated texture, of a moderate hardness, and sometimes so brittle as to be easily broken between the fingers; but it is very heavy, its specific gravity being ≈ 7.119 . 2. When scratched it shows a red trace, and this distinguishes it from the tungsten (see MINERALOGY), which is a variety of the ore of the same semi-metal. 3. It is found in scattered masses, crystallized into hexadral flat prisms, coming to a point, with four sides, and these points terminated obliquely. 4. Internally it is shining, with the lustre almost of a metal. 5. When it is broken, its texture appears leafy; and the leaves are flat, but somewhat confused. 6. On some sides they are unequal, and very seldom striated. 7. It is always opaque; and when scraped, it yields a powder of a dark reddish grey. 8. The wolfram will not melt by itself with the blow-pipe, the angles being only rounded; but, 9. Internally it preserves its structure and colour without change. 10. With microcosmic salt (*phosphate of ammonia*) it fuses with effervescence; and forms a glass of a pale red in the exterior flame, and much darker in the interior. 11. With borax it

likewise effervesces, and forms by the interior flame a glass of a greenish yellow, which by the exterior turns reddish. 12. Being exposed in a crucible to a strong fire for one hour, it swelled, became spongy, and of a brownish colour; entered into a semi-vitrification; and was attracted by the magnet. 13. Equal parts of nitre and wolfram being put in a red-hot crucible, they detonated, or rather boiled up with a blue flame round the edges, and a nitrous vapour arose; the matter, when cold, on being put into water, partly dissolved; and a few drops of acid produced a white precipitation. 14. Pounded wolfram, digested in a sand heat with a sufficient quantity of marine acid, to the depth of the thickness of a finger above the matter, after one hour's boiling, the powder turned yellow; which is the same phenomenon as happens with the tungstic acid. See CHEMISTRY. 15. It appears by the chemical analysis of wolfram made by Messrs. John and Faust de Luyart, that its contents consist of 22 parts of manganese in the state of black oxyd; 13,5 of iron, 65 of a yellow wolfranic oxyd, and of quartz and tin. 16. A good quantity of this yellow oxyd being collected, it was observed that it was entirely infusible, and that its specific gravity was = 6,120. It effervesces with microcosmic salt; produces a transparent blue colour without any shade of red; and effervesces also with borax and with mineral alkali. This same matter does not dissolve in water; but when triturated with it, forms a kind of emulsion; to which the acetic acid gives a blue colour, but does not dissolve it. This matter, however, dissolves completely in caustic vegetable alkali, both by the dry and moist way; and the liquor acquires a great bitterness. By pouring on it some nitrous acid a precipitate ensues, which leaves on the filter a white salt; and this being well edulcorated, has a taste at first sweet, afterwards sharp and bitter, producing a very disagreeable sensation on the throat. It is in fact a true acid combined with a portion of the alkali and precipitating acid. 17. This acid melts, if alone, by the flame urged with the blow-pipe. 18. This white salt is a true metallic triple salt, as appears by putting 100 grains in a crucible with powdered charcoal; for after one hour and a half of a strong fire, when cooled a button was found, which fell to powder between the fingers. Its colour was brown; and, on examining it with a magnifier, there was a congeries of metallic globules, of the bigness of pins' heads; which, when broken, exhibit the metallic appearance of a steel colour in the fracture; and their specific gravity was = 17,600. 19. These metallic globules, melted with other metals, gold and platinum excepted, afford ductile alloys with silver or copper; and hard ones with cast-iron, tin, antimony, bismuth, and manganese.

It has been supposed that this is a new metal before unknown: that this was evinced, 1. by its specific gravity, equal to 17,600; 2. by the tinges it gives to different glasses; 3. by its great difficulty to fuse, which is greater than that of manganese; 4. by the yellow colour of its calx; 5. its alloys with other metals; 6. its infusibility, at least by a direct method, with mineral acids; 7. its easy solution in alkalis; 8. the emulsion it gives with water; 9. and by the blue colour it gives to acetic acid. We are not certain, however, how far this opinion has been corroborated by later experiments.

WOLFSBERG, a town of Germany, in Lower Carinthia, with a castle, on which the district about it depends, which is 20 miles in length, and 10 in breadth. It is seated on the river Lavand, at the foot of a mountain covered with wood, and full of wolves, from whence the town took its name. It is 36 miles east of Clagenfurt. E. Long. 15. o. N. Lat. 46. 56.

WOLGAST, a pretty considerable town of Germany, in the circle of Upper Saxony, and in Pomerania, capital of a territory of the same name, with a castle, and one of the best

and largest harbours on the Baltic Sea. It is a well-built place, subject to Sweden, and seated on the river Pnin. E. Long. 14. 4. N. Lat. 54. 1.

WOLLASTON (William), descended of an ancient family in Staffordshire, was born in 1659. He was in 1674 admitted a pensioner in Sidney college, Cambridge, where, notwithstanding several disadvantages, he acquired a great degree of reputation. In 1682, seeing no prospect of preferment, he became assistant to the head-master of Birmingham school. Some time after, he got a small lecture about two miles distant, but did the duty the whole Sunday; which, together with the business of a great free-school for about four years, began to break his constitution. During this space he likewise underwent a great deal of trouble and uneasiness, in order to extricate two of his brothers from some inconveniences, to which their own imprudence had subjected them. In 1689 affairs took a new turn. He found himself by a cousin's will entitled to a very ample estate; and came to London that same year, where he settled; choosing a private, retired, and studious life. Not long before his death, he published his treatise, entitled, *The Religion of Nature Delineated*; a work for which so great a demand was made, that more than 10,000 were sold in a very few years. He had scarcely completed the publication of it, when he unfortunately broke an arm; and this adding strength to distempers that had been growing upon him for some time, accelerated his death; which happened upon the 29th of October, 1724. He was a tender, humane, and in all respects worthy man; but is represented to have had something of the irascible in his constitution and temperament. His *Religion of Nature Delineated* exposed him to some censure, as if he had put a slight upon Christianity by laying so much stress, as he does in this work, upon the obligations of truth, reason, and virtue; and by making no mention of revealed religion. But this censure must have been the offspring of ignorance or envy, since it appears from the introduction to his work, that he intended to treat of revealed religion in a second part, which he lived not to finish.

WOLSEY (Thomas), a famous cardinal and archbishop of York, is said to have been the son of a butcher at Ipswich. He studied at Magdalen College, Oxford, where he became acquainted with the learned Erasmus; and in the year 1500 became rector of Lymington in Somersetshire: he was afterwards made chaplain to King Henry VIII. and obtained several preferments. Having gradually acquired an entire ascendancy over the mind of Henry VIII. he successively obtained several bishoprics, and at length was made archbishop of York, lord high-chancellor of England, and prime minister; and was for several years the arbiter of Europe. Pope Leo X. created him cardinal in 1515, and made him *legate à latere*; and the emperor Charles V. and the French king Francis I. loaded him with favours, in order to gain him over to their interest: but after having first sided with the emperor, he deserted him to espouse the interest of France. As his revenues were immense, his pride and ostentation were carried to the greatest height. He had 500 servants; among whom were nine or ten lords, fifteen knights, and forty esquires. His ambition to be pope, his pride, his exactions, and his political delay of Henry's divorce, occasioned his disgrace. In the earlier part of his life he seems to have been licentious in his manners; for there goes a story, that soon after his preferment to the living of Lymington in Somersetshire, he was put into the stocks by Sir Amias Paulet, a neighbouring justice of the peace, for getting drunk and making a riot at a fair. This treatment Wolsey did not forget when he arrived at the high station of lord-chancellor of England; but summoned his corrector up to London, and, after a severe reprimand, enjoined him six years' close confinement in the Tem-

ple. Whatever may have been his faults, there can be no doubt of their having been aggravated both by the zealous reformers and by the creatures of Henry VIII. who was himself neither Papist nor Protestant; for there is every reason to believe that the cardinal was sincere in his religion; and sincerity, or at least consistency, was then a crime. Wolfey was the patron of learned men; a judge and munificent encourager of the polite arts; and ought to be considered as the founder of Christ-church College, Oxford: where, as well as in other places, many remains of his magnificent ideas in architecture still exist. He died in 1530.

WOLVERENE, in zoology. See URSUS.

WOLVES-TEETH, of a horse. See FARRIERY.

WOMAN, the female of the human species. See HOMO.

WOMB, or UTERUS. See ANATOMY.

WOOD (Anthony), an eminent biographer and antiquarian, was the son of Thomas Wood, bachelor of arts and of the civil law, and was born at Oxford in 1632. He studied at Merton College, and in 1655 took the degree of master of arts. He wrote, 1. The History and Antiquities of the University of Oxford; which was afterwards translated into Latin by Mr. Wale and Mr. Peers, under the title of *Historia & Antiquitates Universitatis Oxoniensis*, 2 vols. folio. 2. *Athene Oxonienses*; or an exact Account of all the Writers and Bishops who have had their Education in the University of Oxford, from the Year 1500 to 1603, 2 vols. folio; which was greatly enlarged in a second edition published in 1721 by Bishop Tanner. Upon the first publication of this work the author was attacked by the university, in defence of Edward earl of Clarendon, lord high-chancellor of England, and chancellor of the university, and was likewise animadverted upon by Bishop Burnet; upon which he published a Vindication of the Historiographer of the University of Oxford. He died at Oxford of a retention of urine in 1695.

WOOD, a substance whereof the trunks and branches of trees consist. It is composed of a number of concentric circles or zones, one of which is formed every year; consequently their number corresponds to the age of the tree. These zones vary in thickness according to the degree of vegetation that took place the year of their formation. They are also of different degrees of thickness in different parts, that part of the tree which is most exposed to the sun and best sheltered growing fastest; hence in this country that part of the zone which looked towards the south while the tree was growing is generally thickest. The innermost circle or zone is the one which was first formed, the outermost was formed the year before the tree was cut down. These zones are at first very soft and tender, and harden by degrees as the tree becomes older: this is the reason that the middle of a tree is so often much better wood than the outside of it. The proper ligneous part of the wood consists of longitudinal fibres, disposed in fasciculi, and possessed of considerable hardness. It is this longitudinal direction of the fibres that renders it so much easier to cleave wood lengthwise than across the tree, or in any other direction. See PLANT.

Chemists have attempted to ascertain the ingredients which enter into the composition of wood. The task, however, is so difficult, that they have by no means made the same progress that they have done in analysing the various mineral productions of nature. When wood is distilled, water comes over first; soon after it begins to be impregnated with oil, then an empyreumatic oil comes over, then carbonic acid gas, then hydrogen gas, and lastly carbonated hydrogen gas; a coal remains behind, which is composed of charcoal, fixed alkali, various earths, and sometimes also of several neutral salts and metallic substances. This was once looked upon by chemists as a perfect analysis, and it was supposed that all the various

substances above mentioned existed in plants in their proper form. But this is now known to be a mistake: the action of the fire produces new combinations in the ultimate ingredients of the plant, and thus produces new substances; and it is only these that are obtained by the above process. It is sufficient however to show, that wood is composed in a great measure of carbon, oxygen, and hydrogen, combined variously and in unknown proportions with one another; as most of the products of the distillation can be resolved into these substances.

There are many varieties of wood possessed of distinguishing properties, as cedar, box, ebony, &c. See those articles.

For more complete information concerning wood, see the articles PLANT and TREE.

Fossil WOOD. Fossil wood, or whole trees, or parts of them, are very frequently found buried in the earth, and that in different strata; sometimes in stone, but more usually in earth; and sometimes in small pieces loose among gravel. These, according to the time they have lain in the earth, or the matter they have lain among, are found differently altered from their original state; some of them having suffered very little change; and others being so highly impregnated with crystalline, sparry, pyritical, or other extraneous matter, as to appear mere masses of stone, or lumps of the common matter of the pyrites, &c. of the dimensions, and, more or less, of the internal figure of the vegetable bodies into the pores of which they have made their way.

The fossil woods which we find at this day are, according to these differences, arranged by Dr. Hill into three kinds; 1. The less altered: 2. The pyritical: and, 3. The petrified.

Of the trees, or parts of them, less altered from their original state, the greatest store is found in digging to small depths in bogs, and among what is called *peat* or *turf earth*, a substance used in many parts of the kingdom for fuel. In digging among this, usually very near the surface, immense quantities of vegetable matter of various kinds are found buried; in some places there are whole trees scarce altered, except in colour; the oaks in particular being usually turned to a jetty black; the pines and firs, which are also very frequent, are less altered, and are as inflammable as ever, and often contain between the bark and wood a black resin. Large parts of trees have also been not unfrequently met with unaltered in beds of another kind, and at much greater depths, as in the strata of clay and loam, among gravel, and sometimes even in solid stone.

Beside these harder parts of trees, there are frequently found also in the peat earth vast quantities of the leaves and fruit and catkins of the hazel and similar trees: these are usually mixed with sedge and roots of grass, and are scarce at all altered from their usual texture. The most common of these are hazel nuts; but there are frequently found also the twigs and leaves of the white poplar; and a little deeper usually there lies a cracked and shattered wood, the crevices of which are full of a bituminous black matter: and among this the stones of plums and other stone-fruits are sometimes found, but more rarely.

In this state the fruits and larger parts of trees are usually found: what we find of them more altered, are sometimes large and long, sometimes smaller and shorter branches of trees, sometimes small fragments of branches, and more frequently small shapeless pieces of wood. The larger and longer branches are usually found bedded in the strata of stone, and are more or less altered into the nature of the stratum they lie in. The shorter and smaller branches are found in vast variety in the strata of blue clay used for making tiles in the neighbourhood of London. These are prodigiously plentiful in all the clay pits of this kind, and usually carry the

whole external resemblance of what they once were, but nothing of the inner structure; their pores being wholly filled, and undistinguishably closed, by the matter of the common pyrites, so as to appear mere simple masses of that matter. These fall to pieces on being long exposed to moisture; and are so impregnated with vitriol, that they are what is principally used for making the green vitriol or copperas at Deptford and other places.

The irregular masses or fragments of petrified wood are principally of oak, and are most usually found among gravel; though sometimes in other strata. These are variously altered by the insinuation of crystalline and stony particles; and make a very beautiful figure when cut and polished, as they usually keep the regular grain of the wood, and show exactly the several circles which mark the different years' growth. These, according to the different matter which has filled their pores, assume various colours, and the appearance of the various fossils that have impregnated them; some are perfectly white, and but moderately hard; others of a brownish black, or perfectly black, and much harder; others of a reddish black, others yellowish, and others greyish, and some of a ferruginous colour. They are of different weights also and hardinesses, according to the nature and quantity of the stony particles they contain: of these, some pieces have been found with every pore filled with pure pellucid crystal: and others in large masses, part of which is wholly petrified and seems mere stone, while the rest is crumbly and is unaltered wood. That this alteration is made in wood, even at this time, is also abundantly proved by the instances of wood being put into the hollows of mines, as props and supports to the roofs, which is found after a number of years as truly petrified as that which is dug up from the natural strata of the earth. In the pieces of petrified wood found in Germany, there are frequently veins of spar or of pure crystal, sometimes of earthy substances, and often of the matter of the common pebbles: these fragments of wood sometimes have the appearance of parts of the branches of trees in their natural state, but more frequently they resemble pieces of broken boards; these are usually capable of a high and elegant polish.

Many substances, it is certain, have been preserved in the cabinets of collectors, under the title of *petrified wood*, which have very little right to that name. But where the whole outer figure of the wood, the exact lineaments of the bark, or the fibrous and filular texture of the fibres, and the vestiges of the utriculi and tracheæ or air vessels, are yet remaining, and the several circles yet visible which denoted the several years' growth of the tree, none can deny these substances to be real fossil wood. See PETRIFICATION.

WOOD (*ſylva*), in geography, a multitude of trees extended over a large continued track of land, and propagated without culture. The generality of woods only consist of trees of one kind. The ancient Saxons had such a veneration for woods, that they made them sanctuaries. It is ordained, that none shall destroy any wood, by turning it into tillage or pasture, &c. where there are two acres or more in quantity, on pain of forfeiting 40s. an acre, by 35 Henry VIII. c. 17. All woods that are felled at 14 years' growth, are to be preserved from destruction for eight years; and no cattle put into the ground till five years after the felling thereof, &c. 23 Eliz. c. 25. The burning of woods or underwood is declared to be felony; also those persons that maliciously cut or spoil timber-trees, or any fruit-trees, &c. shall be sent to the house of correction, there to be kept three months, and whipt once a month.

Wood-Cock, in ornithology. See SCOLOPAX.

Wood-Goat. See CAPRA.

Wood-Louse. See ONISCUS.

Wood-Pecker. See PICUS.

WOODMOTTE. See FOREST-COURTS.

WOODSTOCK, a town of Oxfordshire, in England, pleasantly seated on a rising ground, and on a rivulet; a well-compacted borough town, and sends two members to parliament; but is chiefly noted for Blenheim-house, a fine palace, built in memory of the victory obtained by the Duke of Marlborough over the French and Bavarians in August 1704. It was erected at the public expence, and is one of the noblest seats in Europe. One of the passages to it is over a bridge with one arch, 190 feet in diameter, resembling the Rialto at Venice. The gardens take up 100 acres of ground; and the offices, which are very grand, have room enough to accommodate 300 people. The apartments of the palace are magnificently furnished; and the staircases, statues, paintings, and tapestry, surpassingly fine. The town is about half a mile from the palace, having several good inns; and a manufacture of steel chains for watches, and excellent gloves. It is 8 miles north of Oxford, and 60 west-north-west of London. W. Long. 1. 15. N. Lat. 51. 52.

WOODWARD (Dr. John), was born in 1665, and educated at a country school, where he learned the Latin and Greek languages, and was afterwards sent to London, where he is said to have been put apprentice to a linen-draper. He was not long in that station, till he became acquainted with Dr. Peter Barwick, an eminent physician, who took him under his tuition and into his family. Here he prosecuted with great vigour and success the study of philosophy, anatomy, and physic. In 1692, Dr. Stillingfleet quitting the place of professor of physic in Gresham college, our author was chosen to succeed him, and the year following was elected F. R. S. In 1695 he obtained the degree of M. D. by patent from Archbishop Tennison; and the same year he published his Essay toward a Natural History of the Earth. He afterward wrote many other pieces, which have been well received by the learned world. He founded a lecture in the university of Cambridge, to be read there upon his Essay, &c. and handsomely endowed it. He died in 1728.

WOOF, among manufacturers, the threads which the weavers shoot acrofs with an instrument called the *shuttle*. See CLOTH.

WOOLKEY or OREY Hole, a remarkable cavern two miles from the city of Wells in Somersetshire; for an account of which, see the article GROTTO.

WOOL, the covering of sheep. See OVIS, and SHEEP. Wool resembles hair in a great many particulars; but besides its fineness, which constitutes an obvious difference, there are other particulars which may serve also to distinguish them from one another. Wool, like the hair of horses, cattle, and most other animals, completes its growth in a year, and then falls off as hair does, and is succeeded by a fresh crop. It differs from hair, however, in the uniformity of its growth, and the regularity of its shedding. Every filament of wool seems to keep exact pace with another in the same part of the body of the animal; the whole crop springs up at once; the whole advances uniformly together; the whole loosens from the skin nearly at the same period, and thus falls off in not previously shorn, leaving the animal covered with a short coat of young wool, which in its turn undergoes the same regular mutations.

Hairs are commonly of the same thickness in every part; but wool constantly varies in thickness in different parts, being generally thicker at the points than at the roots. That part of the fleece of sheep which grows during the winter is finer than that which grows in summer. This was first observed by Dr. Anderson, the editor of the Bee, and published in his *Observations on the Means of exciting a Spirit of National Industry*.

While the wool remains in the state it was first shorn off the sheep's back, and not sorted into its different kinds, it is called *fleece*. Each fleece consists of wool of divers qualities and degrees of fineness, which the dealers therein take care to separate. The French and English usually separate each fleece into three sorts, viz. 1. Mother-wool, which is that of the back and neck. 2. The wool of the tails and legs. 3. That of the breast and under the belly. The Spaniards make the like division into three sorts, which they call *prime*, *second*, and *third*; and for the greater ease denote each bale or pack with a capital letter, denoting the sort. If the triage or separation be well made, in 15 bales there will be 12 marked R, that is, refine, or prime; two marked F, for fine, or second; and one S, for thirds. The wools most esteemed are the English, chiefly those about Leominster, Cotswold, and the Isle of Wight; the Spanish, principally those about Segovia; and the French, about Berry; which last are said to have this peculiar property, that they will knot or bind with any other sort; whereas the rest will only knot with their own kind.

Among the ancients, the wools of Attica, Megara, Laodicea, Apulia, and especially those of Tarentum, Parma, and Altino, were the most valued. Varro assures us, that the people there used to clothe their sheep with skins to secure the wool from being damaged.

Of late a great deal of attention has been paid to wool in this country, as well as several others. Several very spirited attempts have been made to improve it by introducing superior breeds of sheep, and better methods of managing them. For this purpose has been formed the *British Wool Society*.

British Wool Society, an association formed for the purpose of obtaining the best breeds of fine-woolled sheep, with a view of ascertaining, by actual experiments, how far each species or variety is calculated for the climate of Great Britain; the qualities of their wool respectively; the uses to which each kind of wool could be most profitably employed in different manufactures; and the comparative value of each species of sheep, so far as the same can be determined.

Attention had for some time been paid by the Highland Society to a famous breed of fine-woolled sheep in Shetland; but it occurred to Sir John Sinclair, and Dr. Anderson, well known as the author of many useful publications, that the improvement of British wool was a matter of too much importance to be intrusted to a society which is obliged to devote its attention to such a variety of objects as the general improvement of the Highlands of Scotland. The latter of these gentlemen, therefore, in an Appendix to the Report of the Committee of the Highland Society of Scotland, for the year 1799, proposed the plan of a patriotic association for the improvement of British wool; and the former, who was convener of the committee, to whom the subject of Shetland wool had been referred, wrote circular letters recommending the plan. The consequence of which was, that, on the 31st of January 1791, several noblemen and gentlemen constituted themselves a *Society for the Improvement of British Wool*. Of this society Sir John Sinclair was elected president.

The particular breeds of sheep to which the society proposed to direct its attention, were sheep for the hilly parts of Scotland; sheep for the plains, or the Lowland breed; and sheep for the islands. They were to try experiments also with sheep from foreign countries distinguished by any particular property.

The principal objects which the members had in view, during the first year of their association, were, 1. To collect specimens of the best breeds which Great Britain at that period afforded, in order to ascertain the degree of perfection to which sheep had already been brought in this kingdom.

VOL. X.

2. To procure from every country distinguished for the quality of its sheep and wool, specimens of the different breeds it possessed, in order to ascertain how far the original breed, or a mixed breed from it and the native sheep of the country, could thrive in Scotland. 3. To disperse as much as possible all these breeds, both foreign and domestic, over the whole kingdom, wherever proper persons could be found to take charge of them, in order to try experiments on a more extensive scale than the society itself could do; to spread information, and to excite a spirit for the improvement of sheep and wool in every part of the country.

In the course of one year the society acquired by donation or purchase about 800 sheep of different sorts and ages, and many of them from foreign countries; about 500 of these were distributed over different parts of Scotland, the greater number of which were sold to gentlemen anxious to promote the views of the society, and well qualified to make experiments on the different breeds which they had obtained. The greatest part of the remainder were taken by different gentlemen who kept them for the society, and according to their directions, without any expense.

It is impossible to produce an instance of so much having been accomplished by a society of private individuals in so short a time. Nor was this all; the same year Mr. Andrew Kerr, a very intelligent sheep farmer on the borders of England, was sent, at the expense of the society, to examine the state of sheep-farming along the east coast of Scotland and the interior part of the Highlands. His tour was printed by order of the society, and contains the first intimation of the possibility of the Cheviot breed thriving in the north of Scotland.

In the year 1792, Messrs. Redhead, Laing, and Marshall, were sent by the society to make a survey of the state of sheep-farming through some of the principal counties of England; the result of which was also published by the society, and contains more information on the subject of the different breeds of England than any work hitherto published; and in 1794, Mr. John Naismith was sent on a tour through the southern districts of Scotland, which completed the circuit of almost the whole kingdom.

Thus a few private individuals, unaided by the public purse, had boldness enough to undertake ascertaining the comparative value of the different kinds of sheep in their own country, and to introduce some of the most celebrated breeds of other countries, and succeeded in the spirited attempt.

WOOLSTONE (Thomas), an English divine, was born at Northampton in 1669, and educated at Cambridge. His first appearance in the learned world was in 1705, in a work entitled, *The old Apology for the Truth of the Christian Religion, against the Jews and Gentiles*, revived. He afterward wrote many pieces; but what made the most noise, were his Six Discourses on the Miracles of Christ; which occasioned a great number of books and pamphlets upon the subject, and raised a prosecution against him. At his trial in Guildhall, before the lord chief-justice Raymond, he spoke several times himself; and urged, that "he thought it very hard that he should be tried by a set of men who, though otherwise very learned and worthy persons, were no more judges of the subjects on which he wrote, than himself was a judge of the most crabbed points of the law." He was sentenced to a year's imprisonment, and to pay a fine of 100*l*. He purchased the liberty of the rules of the King's Bench, where he continued after the expiration of the year, being unable to pay the fine. The greatest obstriction to his deliverance from confinement was, the obligation of giving security not to offend by any future writings, he being resolved to write again as freely as before. Whilst some supposed that

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this author wrote with the settled intention of subverting Christianity under the pretence of defending it, others believed him disordered in his mind; and many circumstances concurred which gave countenance to this opinion. He died, January 27, 1732-3, after an illness of four days; and, a few minutes before his death, uttered these words: "This is a struggle which all men must go through, and which I bear not only patiently, but with willingness." His body was interred in St. George's church-yard, Southwark.

WOOLWICH, a town in Kent, with a market on Fridays, but no fair. It is seated on the river Thames, and of great note for its fine docks and yards, where men-of-war are built; as also for its vast magazines of great guns, mortars, bombs, cannon-balls, powder, and other warlike stores. It has likewise an academy, where the mathematics are taught, and young officers instructed in the military art. It is nine miles east of London. E. Long. o. 10. N. Lat. 51. 30.

WORCESTER, a city of England, capital of a county to which it gives name, and see of a bishop, situated on the river Severn, over which a new bridge has been built within about thirty years. The judicious continuator of Camden thinks Worcester had no share in Roman transactions, but that it was called *Caer Guadronon* by the Britons. It was erected into a bishopric, in the year 680. In the year 1041 it was sacked and burned by Hardicanute the Dane, who put all the inhabitants to the sword, except those who saved themselves in an island in the Severn, because the citizens had killed the officer appointed to collect the tax called Danegelt; it however soon after recovered, and in Edward the Confessor's reign, had many burgesses, and a mint. In the year 1113, an accidental fire consumed the castle, and much damaged the cathedral. In the wars which happened in the reign of Stephen, it was more than once set on fire, but chiefly suffered when taken by Stephen from the Earl of Mellent. In the cathedral is the tomb of King John, supposed to be the oldest royal monument remaining in England; he was buried in the choir between two bishops. Near this city, in the year 1651, a battle was fought between Charles II. and Cromwell, which proved a decisive blow to royalty. Charles, after beholding the ruin of his cause, and giving many proofs of personal valour, was obliged to have recourse to flight. The Duke of Hamilton, who made a desperate resistance, was mortally wounded, and the Scots were almost all either killed or taken. The prisoners, to the number of 8000, were sold as slaves to the American planters. The principal manufacture of Worcester is that of gloves, with one of elegant China-ware. Worcester is large, populous, and well built. Besides the cathedral, it contains nine parish churches, about 2000 houses, and a public infirmary. It is a county of itself, and by a charter of James I. is governed by a mayor, six aldermen, sheriff, recorder, &c. Here are three markets weekly, on Monday, Wednesday, and Friday, and two members are returned to the British parliament: 59 miles N. Bristol, and 120 W. N. W. London.

WORCESTER (Earl of). See **TIPSTOFT**.

WORCESTERSHIRE, a county of England, bounded on the north by Staffordshire and Shropshire, on the east by Warwickshire, on the south by Gloucestershire, and on the west by Herefordshire and Shropshire. Its figure is very irregular; and it is remarkable for having several detached portions sprinkled about the neighbouring counties; a consequence, probably, of its having no natural boundaries. Its measurements, on this account, can scarcely be stated, but the greatest length may be about thirty miles, and breadth about twenty. It is divided into six hundreds, which contain one city (Worcester), ten towns, and 152 parishes: the number of inhabitants is estimated at 70,000. The principal rivers are the Severn, which passes through a rich vale in its whole length, the

Teme, the Avon, the Stour, and the Arrow. Besides the vale in which the Severn flows, is another, called *The Vale of Evesham*, on the banks of the Avon, which flows along the south-eastern parts of the county in its course to meet the Severn. Besides the usual objects of agriculture, great quantities of garden-stuff are here grown, and sent to the towns around, to a considerable distance. In this vale, fell Simon de Montfort, with many of his party, under the arms of Prince Edward, son of Henry III. in the barons' war against that king. The products of Worcestershire; besides the common ones of corn and cattle, are fine wool, hops, cyder, and perry; the latter, especially, is in great reputation. A large quantity of the whitest felt is made from the brine-springs at Droitwich, and sent to Bristol and other places. The Severn in this county and Gloucestershire abounds with lampreys, which by some are much valued as a delicacy. In the Malvern Hills, a spring rises of uncommon purity, which is much resorted to in scrophulous and scorbutic cases. After the Britons were driven out by the Saxons, they retired beyond the Severn, and defended their new territories against the encroaching conquerors; so that this county, with the others through which that large river runs, were for a long time the frontiers between the two people, and, indeed, it has been supposed, that most of the great cities on the east side of the Severn and Dee were built by the Romans or Saxons, or both, against the Britons. The towns are Bewdley, Droitwich, Dudley, Evesham, Kidderminster, Perdhore, Shipston, Stourbridge, Tenbury, and Upton: the city of Worcester, and the county, with the towns of Droitwich and Evesham, each send two members to the British parliament; Bewdley returns one.

WORD, in language, an articulate sound designed to represent fœmidea or notion. See **GRAMMAR** and **LANGUAGE**. See also **LOGIC**, Part I. chap. 1.

WORD, or *Watch-word*, in military affairs, is some peculiar word or sentence, by which the soldiers know and distinguish one another in the night, &c. and by which spies and designing persons are discovered. It is used also to prevent surprisals. The word is given out in an army every night to the lieutenant, or major-general of the day, who gives it to the majors of the brigades, and they to the adjutants; who give it first to the field-officers, and afterwards to a serjeant of each company, who carry it to the subalterns. In garrisons it is given after the gate is shut to the town-major, who gives it to the adjutants, and they to the serjeants.

WORDS of Command. See **EXERCISE** and **MANUAL**.

WORK, in the manege. To work a horse, is to exercise him at pace, trot, or gallop, and ride him at the manege. To work a horse upon voltes, or head and haunches in or between two heels, is to passage him, or make him go sidewise upon parallel lines.

To WORK, in sea language, is to direct the movements of a ship, by adapting the sails to the force and direction of the wind. See **SEAMANSHIP**.

WORK, *Carpenters, Clock, Crown, Field, Fire, Fret, Grotesque, Horn, Mosaic*. See the several articles, together with **FORTIFICATION** and **PYROTECHNY**.

WORK-HOUSE, a place where indigent, vagrant, and idle people, are set to work, and supplied with food and clothing.

Work-houses are of two kinds, or at least are employed for two different purposes. Some are used as prisons for vagrants or sturdy beggars, who are there confined and compelled to labour for the benefit of the society which maintains them; whilst others, sometimes called *poor-houses*, are charitable asylums for such indigent persons as through age or infirmity are unable to support themselves by their own labour. The former kind of work-house, when under proper management, may be made to serve the best of purposes; of the latter we

are acquainted with none which entirely commands our approbation.

To make confinement in a work-house operate to the correction of vagrants and disorderly persons (and if it produce not this effect, it can hardly be considered as a beneficial institution), the prisoners should be shut up in separate cells, and compelled to labour for their own subsistence. A crew of thieves and vagabonds associating with each other is a hell upon earth, in which every individual is hardened in his crimes by the countenance and conversation of his companions; and wretches who, when at liberty, choose to beg or steal rather than to earn a comfortable livelihood by honest industry, will submit to any punishment which a humane overseer can inflict rather than work for the benefit of others. No punishment indeed will compel a vagrant to labour. He may affirm the appearance of it, but he will make no progress; and the pretext of sickness or weakness is ever at hand for an excuse. Hence it is that thieves and strumpets are too often dismissed from work-houses and bridewells ten times more the children of the devil than when they entered them.

To remedy these evils, we can think of no better method than to confine each prisoner in a cell by himself, and to furnish him daily with such an allowance of bread and water as may preserve him from immediate death; for the only compulsion to make such men work seriously is the fear of want, and the only way to reform them is to leave them to their own meditations on the consequences of their past conduct. There are surely very few persons, if any, whose aversion from labour would not be conquered by the pinchings of hunger and the certain prospect of perishing by famine; and it is to be hoped that there are not many so totally divested of every latent principle of virtue, as not to be brought by such solitude to a due sense of their former wickedness. Should one or two, however, be occasionally found so very obdurate as to suffer themselves to perish rather than work, their deaths would prove a salutary beacon to others, and their blood would be on their own heads; for we have the express command of St Paul himself, that "if any will not work, neither should he eat."

No doubt it would be proper that the meditations of vagabonds confined in a work-house should be directed by the private admonitions of a pious and intelligent clergyman; but it is not every clergyman who is qualified to discharge such a duty. If he be actuated by a zeal not according to knowledge, or if he have not with equal care studied human nature and the word of God, his admonitions will be more likely to provoke the profane ridicule of his auditor, and harden him in his wickedness, than to excite in his breast such sorrow for his sins as shall "bring forth fruits meet for repentance." To render the instruction of thieves and vagrants of any use, it must be accurately adapted to the case of each individual; and however excellent it may be in itself, it will not be listened to unless offered at seasons of uncommon seriousness, which the instructor should therefore carefully observe.

That such wholesome severity as this would often reform the inhabitants of work-houses, appears extremely probable from the effects of a similar treatment of common prostitutes mentioned by Lord Kames in his Sketches of the History of Man: "A number of those wretches were in Edinburgh confined in a house of correction, on a daily allowance of three pence, of which part was embezzled by the servants of the house. Pinching hunger did not reform their manners; for being absolutely idle, they encouraged each other in vice, waiting impatiently for the hour of deliverance. Mr. Stirling, the superintendent, with the consent of the magistrates, removed them to a clean house; and instead of money, appointed for each a pound of oat-meal daily, with salt, water, and fire for cooking. Relieved now from distress, they longed

for comfort. What would they not give for milk or ale? Work (says he) will procure you plenty. To some who offered to spin, he gave flax and wheels, engaging to pay them half the price of their yarn, retaining the other half for the materials furnished. The spinners earned about nine pence weekly; a comfortable addition to what they had before. The rest undertook to spin, one after another; and before the end of the first quarter they were all of them intent upon work. It was a branch of his plan to set free such as merited that favour; and some of them appeared to be so thoroughly reformed as to be in no danger of a relapse."

Work-houses erected as charitable asylums appear to us, in every view that we can take of them, as institutions which can serve no good purpose. Economy is the great motive which inclines people to this mode of providing for the poor. There is comparatively but a very small number of mankind in any country so aged and infirm as not to be able to contribute, in some degree, to their subsistence by their own labour; and in such houses it is thought that proper work may be provided for them, so that the public shall have nothing to give in charity but what the poor are absolutely unable to procure for themselves. It is imagined likewise, that numbers collected at a common table, can be maintained at less expence than in separate houses; and foot soldiers are given for an example, who could not live on their pay if they did not melt together. But the cases are not parallel. "Soldiers having the management of their pay, can club for a bit of meat; but as the inhabitants of a poor-house are maintained by the public, the same quantity of provisions must be allotted to each. The consequence is what might be expected: the bulk of them reserve part of their victuals for purchasing ale or spirits. It is vain to expect work from them: poor wretches void of shame will never work seriously, where the profit accrues to the public, not to themselves. Hunger is the only effectual means for compelling such persons to work."

The poor, therefore, should be supported in their own houses; and to support them properly, the first thing to be done is, to estimate what each can earn by his own labour; for as far only as that falls short of maintenance is there room for charity. In repairing those evils which society did not or could not prevent, it ought to be careful not to counteract the wise purposes of nature, nor to do more than to give the poor a fair chance to work for themselves. The present distress must be relieved, the sick and the aged provided for; but the children must be instructed; and labour, not alms, offered to those who have some ability to work, however small that ability may be. They will be as industrious as possible, because they work for themselves; and a weekly sum of charity under their own management will turn to better account than in a poor-house under the direction of mercenaries. Not a penny of it will be laid out on fermented liquors, unless perhaps as a medicine in sickness. Nor does such low fare call for pity to those who can afford no better. Alms makes no part of the maintenance of those who, in many parts of Scotland, live by the sweat of their brows; and yet the person who should banish all from a charity work-house, would be exclaimed against as hard-hearted, and even void of humanity.

That such a mode of supporting the poor in their own houses is practicable, will hardly admit of a dispute; for it has been actually put in practice in the city of Hamburg ever since the year 1788. At that period such revenues as had till then been expended in alms by the several churchwardens, and those of which the administration had been connected with the work-house, were united under one administration with such sums as were collected from private benevolence. The city was divided into sixty districts, containing each an equal number of poor; and over these, 180 overseers

were appointed. A final relief was the first object; but at the very moment that this provision was secured, measures were taken to prevent any man from receiving a dilling which he could have been able to earn for himself. By methods, which our limits will not permit us to state, the overseers were able to make a calculation tolerably exact of what each pauper wanted for bare subsistence, in addition to the fruits of his own labour. A flax-yarn-spinning manufacture was established, in which the yarn is paid for, not by its weight, but by its measure. The clean flax is sold to the poor at a low price, and a certain measure of yarn again bought from them at 30 per cent. above the usual price: so that the overseers are sure that all the yarn spun by the poor will be brought into their office. Every pauper brings with him a book in which the quantity delivered is carefully noted down, which furnishes the overseers with a continual average of the state of industry among their poor.

As soon as this institution was established, the overseers went through their districts, and asked, in all such mansions as could be supposed to harbour want, if the inhabitants stood in need of support? The question to all such poor as wished for relief, and were able to spin, was, Whether they did earn by their work 1s. 6d. a week? for experience had taught the inhabitants of Hamburg, that many poor live upon that sum; and they knew enough of their poor to suppose, that 1s. 6d. avowed earning was equal to something more. If the answer was affirmative, the pauper stood not in need of weekly assistance. If it was negative, work was given him, which, by being paid 30 per cent. above its value, afforded him 1s. 6d. a-week easily, if he was even an indifferent hand. The far more frequent cases were partial inability by age, or weakness, or want of skill. For poor of the latter description a school was opened, and in three months' time the business was easily learnt. During that time, the pauper got first 2s. a-week, and every week afterwards 2d. less, till in the twelfth week he got nothing at all but his earnings, and was dismissed, with a wheel and a pound of flax gratis.

The quantity of work which disabled poor were capable of doing in a week was easily and accurately ascertained by a week's trial in the spinning-school. The result was produced weekly before appointed members of the committee, and the sum which the poor could earn was noted down in their small books. The overseer was directed to pay them weekly what their earnings fell short of 1s. 6d. in every such week, when it appeared from their books that they had earned to the known extent of their abilities. From that moment applications became less frequent; and the committee had an infallible standard for distinguishing real want; for whenever the pauper, if in health (if not, he was peculiarly provided for), had not earned what he could, then he had either been lazy, or had found more lucrative work; in either case, he was not entitled to a relief for that week, whatever he might be for the following.

This mode of providing for the poor, which attracted the notice and obtained the eulogium of the minister in the British house of commons, has for six years been in Hamburg attended with the happiest consequences. In the streets of that city a beggar is rarely to be seen, whilst those, who stand in need of the charitable contributions of the rich, are much more comfortably, as well as at much less expence, maintained at home, with their children about them, than they could be in work-houses, under the management of mercenary overseers. For a fuller account of this judicious institution, we must refer the reader to Vought's *Account of the Management of the Poor in Hamburg, since the year 1788, in a Letter to some Friends of the Poor in Great Britain.*

WORLD, the assemblage of parts which compose the globe of the earth. See GEOGRAPHY and ASTRONOMY.

WORM, in gunnery, a screw of iron, to be fixed on the end of a rammer, to pull out the wad of a firelock, carbine, or pistol, being the same with the wad-hook, only the one is more proper for small arms, and the other for cannon.

WORM, in chemistry, is a long winding pipe, placed in a tub of water, to cool and condense the vapours in the distillation of spirits.

Blind-WORM, or Slow-WORM. See ANGIUS.

Earth-WORM. See LUMBRICUS.

Glow-WORM. See LAMPYRIS.

Silk-WORM. See SILK.

WORMS, VERMES, in natural history. See ZOOLOGY.

WORMS, in the human body. See MEDICINE.

WORMS, in horses. See FARRIERY.

WORMS, in dogs. See DOG.

WORMS, for bait. See FISHING.

WORMS, an ancient, large, and famous city of Germany, in the palatinate of the Rhine, with a bishop's see, whose bishop is a sovereign and prince of the empire. It is a free and imperial city, and the inhabitants are Protestants. In the war of 1689 it was taken by the French, who almost reduced it to ashes.—The bishop afterwards built a new palace in it; and it is famous for a diet held here in 1521, at which Luther assisted in person. The Protestants have lately built a handsome church, where Luther is represented as appearing at the diet. It is noted for the excellent wine that grows in the neighbourhood, which they call *our Lady's milk*. In the campaign of 1743, King George II. took up his quarters in this city, and lodged at the bishop's palace after the battle of Dettingen. It is seated on the western bank of the Rhine, 14 miles north-west of Heidelberg, 20 south-east of Mentz, and 32 south-west of Francfort. E. Long. 8. 29. N. Lat. 49. 32.

WORMING or DOGS. All spaniels have certain strings under their tongues, by most called a *worm*; this must be taken out when they are about two months old, with the help of a sharp knife to slit it, and a shoemaker's awl to raise it up; you must be careful to take all out, or else your pains is to little purpose; for till then he will be hardly ever fat and right, in regard the worm or string will grow foul and troublesome, and hinder his rest and eating. This operation is generally recommended as a preventive of madness in dogs, or at least as disabling them, if mad, from biting in that condition.

WORMIUS (Olaus), a learned Danish physician, born in 1588 at Arhulen in Jutland. After beginning his studies at home, he studied at several foreign universities, and travelled to various parts of Europe for improvement. He returned to his native country in 1613, and was made professor of the belles-lettres in the university of Copenhagen. In 1615 he was translated to the chair of the Greek professor; and in 1624 to the professorship of physic, which he held to his death. These occupations did not hinder him from practising in his profession, and from being the fashionable physician: the king and court of Denmark always employed him; and Christian IV. as a recompense for his services, conferred on him a canonry of Lunden. He published some pieces on subjects relating to his profession, several works in defence of Aristotle's philosophy, and several concerning the antiquities of Denmark and Norway; for which latter he is principally regarded, as they are very learned, and contain many curious particulars. He died in 1654.

WORMWOOD, in botany. See ARTEMISIA.

WORSHIP OF GOD (*cultus Dei*), amounts to the same with what we otherwise call religion. This worship consists in paying a due respect, veneration, and homage to the Deity,

under a certain expectation of reward. And this internal respect, &c. is to be shown and testified by external acts; as prayers, sacrifices, thanksgivings, &c.

As Christian worship consists of prayers and praises, it has been a matter of some debate whether it is most properly performed by preconcerted forms or liturgies, or by extemporaneous addresses to the Almighty. Both these modes have their advantages and disadvantages; and by the sacred writers neither of them is prescribed in opposition to the other.

The advantages of a liturgy are, that it prevents absurd, extravagant, or impious addresses to God, which the folly or enthusiasm of individuals must always be in danger of producing; it gives the congregation an opportunity of joining in the prayers which are put up for them, which they cannot possibly do in a series of extemporaneous petitions, since before they can assent to any one of these and make it their own, their attention is necessarily called away to that which succeeds it; and it relieves the clergyman from the labour of composition, which seems incompatible with that fervour which constitutes the spirit of devotion.

The disadvantages of a fixed liturgy, which are the recommendations of extemporary prayer, are principally two. The forms composed in one age must, by the unavoidable change of language, circumstances, and opinions, become in some degree unfit for another; and the perpetual repetition of the same form of words is very apt to produce inattentive lassitude in the congregation. Would the clergy of the church of England take that liberty which is allowed them in the bidding prayer before sermon, perhaps the service of that church would unite in itself all the advantages both of liturgic and extemporary worship. We have only to add on this subject, that public prayers, whether precomposed or not, ought to be compendious; that they ought to express just conceptions of the Divine attributes; recite such wants as the congregation are likely to feel, and no other; that they ought to contain as few controverted propositions as possible; and that, if it can be done without offence, the pompous style of the *state* should be laid aside in our prayers for the king and all that are in authority; because in every act which carries the mind to God, human greatness must be annihilated.

WORT, the infusion of malt, of which beer is made. The uses of this infusion in common affairs are well known. By Dr. M'Bride it has lately been found to have a strong antiseptic virtue, and to be useful in preventing the scurvy and other diseases to which sailors are liable; and this was confirmed by Captain Cook in his late voyages. See M'BRIDE'S Essay on the Means of Preserving the Health of SEAMEN.

WOTTON (Sir Henry), an eminent writer, was the son of Thomas Wotton, esq. and was born in 1568. He studied for some time at New College, Oxford, whence he removed to Queen's College, where he made a great progress in logic and philosophy; wrote a tragedy for the use of that college, called *Tamredo*; and afterwards received the degree of master of arts. After this, leaving the university, he travelled into France, Germany, and Italy; and having spent about nine years abroad, he returned to England, and became secretary to Robert earl of Essex, with whom he continued till that earl was apprehended for high-treason. He then retired to Florence, where he became known to the Grand Duke of Tuscany, who sent him privately with letters to James VI. king of Scotland, under the name of *Orazio Baldi*, to inform that king of a design against his life. Some months after he went back to Florence; but King James coming to the possession of the crown of England, Mr. Wotton returned home, was knighted by his majesty, and sent ambassador to the republic of Venice; and afterwards was employed in many other embassies, to that and other courts; but the only reward he obtained for

these services was his having the provostship of Eton conferred upon him about the year 1623, which he kept till his death, which happened in 1639. After his decease some of his manuscripts and printed tracts were published together in a volume, entitled *Reliquie Wottonianae*.

WOTTON (William), an English divine, was the son of Mr. Henry Wotton, rector of Wrentham, in Suffolk, a man of considerable learning, and well skilled in the Oriental tongues. He was born at Wrentham the 13th of August, 1666; and was educated by his father. He was admitted of Catharine-hall, Cambridge, in April, 1676, some months before he was ten years old. His progress in learning was answerable to the expectations conceived of him. He not only understood the Greek and Latin tongues, but also the Hebrew, Arabic, Syriac, and Chaldean: his skill too in arts and sciences, in geography, logic, philosophy, mathematics, and chronology, was equally great. In 1679 he took the degree of B.A. when he was but twelve years and five months old. Dr. William Lloyd, bishop of St. Asaph, took him as assistant in making the catalogue of his library, and carried him to St. Asaph. Upon his return, Dr. Turner, afterwards bishop of Ely, procured him by his interest a fellowship in St. John's College; and, in 1691, he commenced bachelor of divinity. The same year, Bishop Lloyd gave him the sinecure of Llandrillo in Denbighshire. He was afterwards made chaplain to the Earl of Nottingham, then secretary of state, who, in 1693, presented him to the rectory of Middleton Keynes in Buckinghamshire. In 1694 he published Reflections upon Ancient and Modern Learning; and afterwards a Defence of the same, it being satirized by Swift. In 1718 he produced his Miscellaneous Discourses relating to the Traditions and Usages of the Scribes and Pharisees, &c. in 2 vols. 8vo. besides several other tracts, sermons, &c. After his death, which happened Feb. 13, 1726, his translation of the Welsh Laws came out; a very laborious work; also A Discourse concerning the Confusion of Languages at Babel; Advice to a Young Student, &c.

WOUNDS. See SURGERY.

WOUNDS, in farriery. See FARRIERY.

WRASSE, or old wife, in ichthyology. See LABRUS.

WREATH, in heraldry, a roll of fine linen or silk (like that of a Turkish turban), consisting of the colours borne in the escutcheon, placed in an achievement between the helmet and the crest, and immediately supporting the crest.

WRECK, or SHIPWRECK, the destruction of a ship by rocks or shallows at sea. By the ancient common law, where any ship was lost at sea, and the goods or cargo were thrown upon the land, these goods, so wrecked, were judged to belong to the king: for it was held, that, by the loss of the ship, all property was gone out of the original owner. But this was undoubtedly adding sorrow to sorrow, and was consonant neither to reason nor humanity. Wherefore it was first ordained by King Henry I. that if any person escaped alive out of the ship, it should be no wreck; and afterwards King Henry II. by his charter, declared, that if on the coasts of either England, Poitou, Oleron, or Gascony, any ship should be distressed, and either man or beast should escape, or be found therein alive, the goods should remain to the owners, if they claimed them within three months; but otherwise should be esteemed a wreck, and should belong to the king, or other lord of the franchise. This was again confirmed with improvements by King Richard I.; who, in the second year of his reign, not only established these concessions, by ordaining that the owner, if he was shipwrecked and escaped, *omnes res suas liberat, et quietas haberet*, but also, that if he perished, his children, or in default of them, his brethren and sisters, should retain the property; and in default of brother or sister, then the goods

should remain to the king *. And the law, as laid down by Bracton in the reign of Henry III. seems still to have improved in its equity. For then, if not only a dog (for instance) escaped, by which the owner might be discovered, but if any certain mark were set on the goods, by which they might be known again, it was held to be no wreck. And this is certainly most agreeable to reason; the rational claim of the king being only founded upon this, that the true owner cannot be ascertained. Afterwards, in the first statute of Westminster, the time of limitation of claims, given by the charter of Henry II., is extended to a year and a day, according to the usage of Normandy: and it enacts, that if any man, a dog, or a cat, escape alive, the vessel shall not be adjudged a wreck. These animals, as in Bracton, are only put for examples; for it is now held, that not only if any live thing escape, but if proof can be made of the property of any of the goods or lading which come to shore, they shall not be forfeited as wreck. The statute further ordains, that the sheriff of the county shall be bound to keep the goods a year and a day (as in France for one year, agreeable to the maritime laws of Oleron, and in Holland for a year and a half), that if any man can prove a property in them, either in his own right or by right of representation, they shall be restored to him without delay; but if no such property be proved within that time, they then shall be the king's. If the goods are of a perishable nature, the sheriff may sell them, and the money shall be liable in their stead. This revenue of wrecks is frequently granted out to lords of manors as a royal franchise; and if any one be thus entitled to wrecks in his own land, and the king's goods are wrecked thereon, the king may claim them at any time, even after the year and day.

It is to be observed, that, in order to constitute a legal wreck, the goods must come to land. If they continue at sea, the law distinguishes them by the barbarous and uncouth appellations of *jetſam*, *ſhoſam*, and *ligan*. *Jetſam* is where goods are cast into the sea, and there sink and remain under water: *ſhoſam* is where they continue swimming on the surface of the waves: *ligan* is where they are sunk in the sea, but tied to a cork or buoy, in order to be found again. These are also the king's, if no owner appears to claim them; but if any owner appears, he is entitled to recover the possession. For even if they be cast overboard, without any mark or buoy, in order to lighten the ship, the owner is not, by this act of necessity, construed to have renounced his property: much less can things *ligan* be supposed to be abandoned, since the owner has done all in his power to assert and retain his property. These three are therefore accounted so far a distinct thing from the former, that by the king's grant to a man of wrecks, things *jetſam*, *ſhoſam*, and *ligan*, will not pass.

Wrecks, in their legal acceptation, are at present not very frequent: for if any goods come to land, it rarely happens, since the improvement of commerce, navigation, and correspondence, that the owner is not able to assert his property within the year and day limited by law. And in order to preserve this property entire for him, and if possible to prevent wrecks at all, our laws have made many very humane regulations; in a spirit quite opposite to those salvage laws which formerly prevailed in all the northern regions of Europe, and a few years ago were still said to subsist on the coasts of the Baltic Sea, permitting the inhabitants to seize on whatever they could get as lawful prize; or, as an author of their own expresses it, "*in naufragorum miseria et calamitate tanquam vulgares ad prædâ currere.*" For by the statute 27 Edw. III.

c. 13. if any ship be lost on the shore, and the goods come to land (which cannot, says the statute, be called *wreck*), they shall be presently delivered to the merchants, paying only a reasonable reward to those that saved and preserved them, which is entitled *ſalvage*. Also by the common law, if any persons (other than the sheriff) take any goods fo cast on shore, which are not legal wreck, the owners might have a commission to enquire and find them out, and compel them to make restitution. And by 12 Ann. st. 2. c. 18. confirmed by 4 Geo. I. c. 12. in order to assist the distressed, and prevent the scandalous illegal practices on some of our sea-coasts (too similar to those on the Baltic), it is enacted, that all head officers and others of towns near the sea, shall, upon application made to them, summon as many hands as are necessary, and send them to the relief of any ship in distress, on forfeiture of 100*l.* and, in case of assistance given, salvage shall be paid by the owners, to be assisted by three neighbouring justices. All persons that secrete any goods shall forfeit their treble value; and if they wilfully do any act whereby the ship is lost or destroyed, by making holes in her, stealing her pumps, or otherwise, they are guilty of felony without benefit of clergy. Lastly, by the statute 26 Geo. II. c. 19. plundering any vessel, either in distress or wrecked, and whether any living creature be on board or not (for whether wreck or otherwise, it is clearly not the property of the populace), such plundering or preventing the escape of any person that endeavours to save his life, or wounding him with intent to destroy him, or putting out false lights in order to bring any vessel into danger, are all declared to be capital felonies; in like manner as the destroying of trees, steeples, or other stated sea-marks, is punished by the statute 8 Eliz. c. 13. with a forfeiture of 100*l.* or outlawry. Moreover by the statute of Geo. II. pilfering any goods cast ashore is declared to be petty larceny; and many other salutary regulations are made, for the more effectually preserving ships of any nation in distress.

By the civil law, to destroy persons shipwrecked, or prevent their saving the ship, is capital. And to steal even a plank from a vessel in distress or wrecked, makes the party liable to answer for the whole ship and cargo. The laws also of the Wifigoths, and the most early Neapolitan constitutions, punished with the utmost severity all those who neglected to assist any ship in distress, or plundered any goods cast on shore.

WREN, in ornithology. See *MOTACILLA*.

WREN (Sir Christopher), a great philosopher, and one of the most learned and most eminent architects of his age, was the son of Christopher Wren, dean of Windsor, and was born in 1632. He studied at Wadham College in Oxford; where he took the degree of master of arts in 1653, and was chosen fellow of All Souls College. When very young he discovered a surprising genius for the mathematics; in which science he made great advances before he was sixteen years old. In 1657 he was made professor of astronomy at Gresham College, London, which he resigned in 1660, on his being chosen to the Savilian professorship of astronomy in Oxford: he was the next year created doctor of laws, and in 1663 was elected fellow of the Royal Society. He was one of the commissioners for the reparation of St. Paul's; and in 1665 travelled into France, to examine the most beautiful edifices there, when he made many curious observations. At his return to England, he drew a noble plan for rebuilding the city of London after the fire, which he presented to parliament; and, upon the decease of Sir John Denham in 1668, was made surveyor-general of his majesty's works; and from that time had the direction of

* In like manner Constantine the Great, finding that by the imperial law the revenue of wrecks was given to the prince's treasury or fiscus, restrained it by an edict (Cod. 11. 5. 1.), and ordered them to remain to the owners; adding this humane expostulation: "Quod enim jus habet fiscus in aliena calamitate, ut de re tam luctuosa compendium sectetur?"

a great number of public edifices, by which he acquired the highest reputation. He built the magnificent theatre at Oxford, St. Paul's cathedral, the churches of St. Stephen Walbrook, and St. Mary-le-Bow, the Monument, the modern part of the palace of Hampton Court, Chelsea College, one of the wings of Greenwich Hospital, and many other beautiful edifices. He was president of the Royal Society, one of the commissioners of Chelsea College, and twice member of parliament; first for Plymouth in Devonshire, and then for Melcomb Regis in the same county; but in 1718 was removed from his place of surveyor-general. He died in 1723, and was interred in the vault under St. Paul's.

This great man also distinguished himself by many curious inventions and discoveries in natural philosophy; and, among many others, contrived an instrument for measuring the quantity of rain that falls on any space of land for a year; he invented many ways of making astronomical observations more accurate and easy; and was the first author of the anatomical experiment of injecting liquors into the veins of animals, &c. He translated into Latin Mr. Oughtred's *Horologio-graphica Geometria*; and wrote a Survey of the Cathedral Church of Salisbury, and other pieces. After his death his posthumous works and draughts were published by his son.

WRESTLING, a kind of combat or engagement between two persons unarmed, body to body, to prove their strength and dexterity, and try which can throw his opponent to the ground. Wrestling is an exercise of very great antiquity and fame. It was in use in the heroic age; witness Hercules, who wrestled with Antæus. It continued a long time in the highest repute, and had considerable rewards and honours assigned to it at the Olympic games. It was the custom for the Athletæ to anoint their bodies with oil, to give the less hold to their antagonists. Lycurgus ordered the Spartan maids to wrestle in public quite naked, in order, as it is observed, to break them of their too much delicacy and niceness, to make them appear more robust, and to familiarize the people, &c. to such nudities.

WRIT, in law, signifies, in general, the king's precept in writing under seal, issuing out of some court, directed to the sheriff or other officer, and commanding something to be done in relation to a suit or action, or giving commission to have the same done. And, according to Fitzherbert, a writ is said to be a formal letter of the king in parchment, sealed with his seal, and directed to some judge, officer, or minister, &c. at the suit of a subject, for the cause briefly expressed, which is to be determined in the proper court according to law.

WRITS, in civil actions, are either original or judicial: original are such as are issued out of the court of chancery for the summoning of a defendant to appear, and are granted before the suit is commenced, in order to begin the same; and judicial writs issue out of the court where the original is returned, after the suit is begun. See **PROCESS**.

The original writ is the foundation of the suit. See **SUIT**.

When a person hath received an injury, and thinks it worth his while to demand a satisfaction for it, he is to consider with himself, or take advice, what redress the law has given for that injury; and thereupon is to make application or suit to the crown, the fountain of all justice, for that particular specific remedy which he is determined or advised to pursue. As for money due on bond, an action of debt; for goods detained without force, an action of *detinue* or *trover*; or, if taken with force, an action of *trespass vi et armis*; or, to try the title of lands, a writ of entry or action of trespass in ejectment; or for any consequential injury received, a special action on the case. To this end he is to sue out, or purchase by paying the stated fees, an *original*, or original writ, from the court of chancery, which is the *officina justitiæ*, the shop or mint of justice, where-

in all the king's writs are framed. It is a mandatory letter from the king in parchment, sealed with his great seal, and directed to the sheriff of the county wherein the injury is committed, or supposed to be, requiring him to command the wrong-doer or party accused, either to do justice to the complainant, or else to appear in court, and answer the accusation against him. Whatever the sheriff does in pursuance of this writ, he must return or certify to the court of common-pleas, together with the writ itself: which is the foundation of the jurisdiction of that court, being the king's warrant for the judges to proceed to the determination of the cause. For it was a maxim introduced by the Normans, that there should be no proceedings in common-pleas before the king's justices without his original writ; because they held it unfit that those justices, being only the substitutes of the crown, should take cognizance of any thing but what was thus expressly referred to their judgment. However, in small actions, below the value of forty shillings, which are brought in the court-baron or county-court, no royal writ is necessary; but the foundation of such suits continue to be (as in the times of the Saxons), not by original writ, but by plaint; that is, by a private memorial tendered in open court to the judge, wherein the party injured sets forth his cause of action: and the judge is bound of common right to administer justice therein, without any special mandate from the king. Now indeed even the royal writs are held to be demandable of common right, on paying the usual fees: for any delay in the granting them, or setting an unusual or exorbitant price upon them, would be a breach of magna charta, c. 29. "nulli vendemus, nulli negabimus, aut differemus justitiam vel rectum."

Original writs are either optional or peremptory; or, in the language of our law, they are either a *precept*, or a *fi te fecerit securum*. The *precept* is in the alternative, commanding the defendant to do the thing required, or show the reason wherefore he hath not done it. The use of this writ is where something certain is demanded by the plaintiff, which is in the power of the defendant himself to perform; as, to restore the possession of land, to pay a certain liquidated debt, to perform a specific covenant, to render an account, and the like; in all which cases the writ is drawn up in the form of a *precept* or command, to do thus, or show cause to the contrary; giving the defendant his choice to redress the injury or stand the suit. The other species of original writs is called a *fi fecerit te securum*, from the words of the writ; which directs the sheriff to cause the defendant to appear in court, without any option given him, provided the plaintiff gives the sheriff security effectually to prosecute his claim. This writ is in use where nothing is specifically demanded, but only a satisfaction in general; to obtain which, and minister complete redress, the intervention of some judicature is necessary. Such are writs of trespass, or on the case, wherein no debt or other specific thing is sued for in certain, but only damages to be assessed by a jury. For this end the defendant is immediately called upon to appear in court, provided the plaintiff gives good security of prosecuting his claim. Both species of writs are tested, or witnessed, in the king's own name; "witnesses ourself at Westminster," or wherever the chancery may be held.

The security here spoken of, to be given by the plaintiff for prosecuting his claim, is common to both writs, though it gives denomination only to the latter. The whole of it is at present become a mere matter of form; and John Doe and Richard Roe are always returned as the standing pledges for this purpose. The ancient use of them was to answer for the plaintiff, who in case he brought an action without cause, or failed in the prosecution of it when brought, was liable to an amercement from the crown for raising a false accusation;

and so the form of the judgment still is. In like manner, as by the Gothic constitutions no person was permitted to lay a complaint against another, *nisi sub scriptura aut specificatione trium testium, quod actionem vellet persequi*: and, as by the laws of Sancho I. king of Portugal, damages were given against a plaintiff who prosecuted a groundless action.

The day on which the defendant is ordered to appear in court, and on which the sheriff is to bring in the writ, and report how far he has obeyed it, is called the *return of the writ*; it being then returned by him to the king's justices at Westminster. And it is always made returnable at the distance of at least 15 days from the date or test, that the defendant may have time to come up to Westminster, even from the most remote parts of the kingdom; and upon some day in one of the four terms, in which the court sits for the dispatch of business.

WRITING, the art or act of signifying and conveying our ideas to others, by letters or characters visible to the eye. See **COMPOSITION**, **GRAMMAR**, and **LANGUAGE**. The most ancient remains of writing, which have been transmitted to us, are upon hard substances, such as stones and metals, which were used by the ancients for edicts and matters of public notoriety: the decalogue was written on two tables of stone; but this practice was not peculiar to the Jews, for it was used by most of the eastern nations, as well as by the Greeks and Romans; and therefore the ridicule which Voltaire attempts to cast upon that part of the book of Genesis, where the people are commanded to write the law on stones, is absurd; for what is there said by no means implies, that other materials might not be used on common occasions. The laws penal, civil, and ceremonial, among the Greeks, were engraven on tables of brass, which were called *Cybes*.

We find that wood was also used for writing on in different countries. In the Sloanian library (N^o 4852.) are six specimens of Kufic writing, on boards about two feet in length, and six inches in depth. The Chinese, before the invention of paper, wrote or engraved with an iron tool upon thin boards or on bamboo. Pliny says, that table books of wood were in use before the time of Homer. These table books were called by the Romans *pugillares*. The wood was cut into thin slices, and finely plained and polished. The writing was at first upon the bare wood, with an iron instrument called a *style*. In later times these tables were usually waxed over, and written upon with that instrument. The matter written upon the tables which were thus waxed over was easily effaced, and by smoothing the wax new matter might be substituted in the place of what had been written before. The Greeks and Romans continued the use of waxed table books long after the use of papyrus, leaves, and skins, became common, because they were so convenient for correcting extemporary compositions.

Table books of ivory are still used for memorandums, but they are commonly written upon with black lead pencils. The practice of writing on table books covered with wax was not entirely laid aside till the commencement of the 14th century.

The bark of trees was also used for writing by the ancients, and is so still in several parts of Asia. The same thing may be said of the leaves of trees. It is needless to observe the use of parchment and vellum, papyrus and paper, for writing; it is too well known. The method of fabricating these substances has been already described as they occurred in the order of the alphabet.

It is obvious, that when men wrote, or rather engraved, on hard substances, instruments of metal were necessary, such as the chisel and the stylus; but the latter was chiefly used for writing upon boards, waxed tablets, or on bark.

When the ancients wrote on softer materials than wood or metal, other instruments were used for writing with, of which reeds and canes seem to have been the first. Reeds and canes are still used as instruments for writing with by the Tartars, the Indians, the Persians, the Turks, and the Greeks. Pencils made of hair are used by the Chinese for their writing: they first liquify their ink, and dip their pencils into it. Hair-pencils have likewise been used for writing in Europe. Large capital letters were made with them from the time of the Roman emperors till the 16th century. After the invention of printing they were drawn by the illuminators. Quills of geese, swans, peacocks, crows, and other birds, have been used in these western parts for writing with, but how long is not easy to ascertain. St. Isidore of Seville, who lived about the middle of the 7th century, describes a pen made of a quill as used in his time.

Method of restoring decayed WRITINGS. In the 77th vol. of the Phil. Trans. there is a paper on this subject by Sir Charles Blagden. One of the best methods he found upon experiment to be, covering the letters with phlogisticated or prussic alkali, with the addition of a diluted mineral acid; upon the application of which, the letters changed very speedily to a deep blue colour, of great beauty and intensity. To prevent the spreading of the colour, which, by blotting the parchment, detracts greatly from the legibility, the alkali should be put on first, and the diluted acid added upon it. The method found to answer best has been, to spread the alkali thin with a feather over the traces of the letters, and then to touch it gently, as nearly upon or over the letters as can be done, with the diluted acid, by means of a feather or a bit of stick cut to a blunt point. Though the alkali should occasion no sensible change of colour, yet the moment the acid comes upon it, every trace of a letter turns at once to a fine blue, which soon acquires its full intensity, and is beyond comparison stronger than the colour of the original trace had been. If, then, the corner of a bit of blotting paper be carefully and dexterously applied near the letters, so as to imbibe the superfluous liquor, the staining of the parchment may be in a great measure avoided; for it is this superfluous liquor which, absorbing part of the colouring matter from the letters, becomes a dye to whatever it touches. Care must be taken not to bring the blotting paper in contact with the letters, because the colouring matter is soft whilst wet, and may easily be rubbed off. The acid chiefly employed was the marine; but both the vitriolic and nitrous succeed very well. They should be so far diluted as not to be in danger of corroding the parchment, after which the degree of strength does not seem to be a matter of much nicety.

Method of Copying WRITINGS. The ingenious Mr. Watt, about 16 years ago, invented a method of copying writings very speedily, and without the possibility of committing mistakes. A piece of thin unfixed paper is to be taken exactly of the size of the paper to be copied; it is to be moistened with water, or, what is better, with the following liquid: Take of distilled vinegar two pounds weight, dissolve it in one ounce of boric acid; then take four ounces of oyster-shells calcined to whiteness, and carefully freed from their brown crust; put them into the vinegar, shake the mixture frequently for 24 hours, then let it stand until it deposits its sediment; filter the clear part through unfixed paper into a glass vessel; then add two ounces of the best blue Aleppo galls bruised, and place the liquor in a warm place, shaking it frequently for 24 hours; then filter the liquor again through unfixed paper, and add to it after filtration one quart, ale measure, of pure water. It must then stand 24 hours, and be filtered again if it shows a disposition to deposit any sediment, which it generally does. When the paper has been wet with this liquid,

put it between two thick unfixed papers to absorb the superfluous moisture; then lay it over the writing to be copied, and put a piece of clean writing paper above it. Put the whole on the board of a rolling-press, and press them through the rolls, as is done in printing copperplates, and a copy of the writing shall appear on both sides of the thin moistened paper; on one side in a reversed order and direction, but on the other side in the natural order and direction of the lines.

WRITEN MOUNTAINS. See MOUNTAINS.

WRY-NECK, in ornithology. See JYNX.

WURTEMBERG, or WIRTEMBERG, a sovereign duchy of Germany, in Suabia; bounded on the north by Franconia; the archbishopric of Mentz, and the palatinate of the Rhine; on the east by the county of Oetting, the marquisate of Burgau, and the territory of Ulm; on the south by the principality of Hoen-Zollern, Furlenburg, and the marquisate of Hohenburg; and on the west by the palatinate of the Rhine, the marquisate of Baden, and the Black Forest. It is 65 miles in length, and as much in breadth, and the river Neckar runs almost through the middle of it from south to north. Though there are many mountains and woods, yet it is one of the most populous and fertile countries in Germany, producing plenty of grafs, corn, fruits, and a great deal of wine towards the confines of the palatinate. There are also mines, and salt springs, with plenty of game and fish. It contains 645 villages, 88 towns, and 26 cities, of which Stutgard is the capital.

WURTSBURG, a large bishopric in Germany, comprehending the principal part of Franconia. It is bounded by the county of Henneburg, the duchy of Coburg, the abbey of Fuld, the archbishopric of Mentz, the marquisate of Anspach, the bishopric of Bamberg, and the county of Wertheim; being about 65 miles in length, and 50 in breadth, and divided into 30 bailiwicks. The soil is very fertile, and produces more corn and wine than the inhabitants consume. The territories of the bishop comprehend above 400 towns and villages, of which he is sovereign, being one of the greatest ecclesiastical princes of the empire.

WURTZBURG, a large and handsome city of Germany, and one of the principal in the circle of Franconia. It is defended with good fortifications, and has a magnificent palace. There is a handsome hospital, in which are generally 400 poor men and women. The castle is at a small distance from the city, and commands it, as it stands upon an eminence. It communicates with the city by a stone bridge, on which are 12 statues, representing as many saints. The arsenal and the cells of the bishop deserve the attention of the curious. There is also an university, founded in 1403. It is seated on the river Maine, in E. Long. 10. 2. N. Lat. 49. 40.

WYCHERLEY (WILLIAM), an eminent English comic poet, and eldest son of Daniel Wycherley, esq. of Cleve in Shropshire, was born about 1640. At fifteen years of age, he was sent to France, in the western parts of which he resided, upon the banks of the Charante. A little before the restoration of Charles II. he became a gentleman-commoner of Queen's College in Oxford. He left the university without being matriculated, or any degree conferred on him; having been by Dr. Barlow reconciled to the Protestant religion, which he had a little before deserted in his travels. He afterwards entered himself of the Middle-Temple; but soon quit-

ted the dry study of the law, for the muses, and published four comedies, in about the space of ten years, viz. *Love in a Wood*, or *St. James's Park*, in 1672; *The Gentleman-Dancing-Master*, 1673; *Plain Dealer*, in 1678; and, *Country Wife*, in 1683. These were collected and printed together in 1712, 8vo. The king now promised to make him tutor to his son, for which service 1500l. per annum should be settled upon him: but soon after this gracious offer, Wycherley lost the favour of the king and of the courtiers, by a precipitate marriage with the countess of Drogheda, a young widow, rich, noble, and beautiful. This lady was jealous of him to that degree, that she could not endure him to be one moment out of her sight. By all accounts she led him a miserable life, but made him some amends, by dying in a reasonable time, and by settling her fortune on him: but his title being disputed after her death, the expence of the law and other incumbrances so far reduced him, that not being able to satisfy the importunity of his creditors, he was flung into prison, where he languished seven years; nor was he released, till James II. going to see his Plain Dealer, was so charmed with the entertainment, that he gave immediate orders for the payment of his debts; adding withal a pension of 200l. per annum, while he continued in England. But Wycherley being ashamed to give the Earl of Mulgrave, whom the king had sent to demand it, a full account of his debts, still laboured under the weight of them till his father died; and then too the estate that descended to him, was left under very uneasy limitations, since, being only a tenant for life, he could not raise any money for the payment of his debts. However, just at the eve of his death, he married a young gentleman of 1500l. fortune, part of which he applied to the uses he wanted it for. Eleven days after the celebration of these nuptials, Jan. 1, 1715, he died; and was interred in the vault of Covent-Garden church. Besides the plays above mentioned, he published a volume of poems in 1704, folio; and, in 1728, his Posthumous Works in prose and verse were published by Mr. Lewis Theobald, in 8vo.

WYNDHAM (Sir William), descended of an ancient family, was born about the year 1687, and succeeded young to the title and estate of his father. On his return from his travels, he was chosen member for the county of Somerset; in which station he served in the three last parliaments of Queen Anne, and as long as he lived: after the change of the ministry in 1710, he was appointed secretary at war; and in 1713 was raised to be chancellor of the exchequer. Upon the breach between the earl of Oxford and lord Bolingbroke, he adhered to the interests of the latter. He was removed from his employment on the accession of George I. and falling under suspicion on the breaking out of the rebellion in 1715, was apprehended. He made his escape; a reward was published for apprehending him; he surrendered, was committed to the Tower, but never brought to a trial. After he regained his liberty, he continued in opposition to the several administrations under which he lived; and died in 1740.

WYKEHAM (William of). See WILLIAM.

WYE, a river of Wales, which rising on the confines of Cardiganhire, and running south-east, divides the counties of Radnor and Brecknock; then crossing Herefordshire, it runs south, and falls into the mouth of the Severn at Chepstow.

X.

X, or **x**, is the 22d letter of our alphabet, and a double consonant. It was not used by the Hebrews or ancient-Greeks; for, as it is a compound letter, the ancients, who used great simplicity in their writings, expressed this letter by its component letters *cs*. Neither have the Italians this letter, but express it by *ff*. **X** begins no word in our language but such as are of Greek original; and is in few others but what are of Latin derivation; as *perplex*, *reflexion*, *defluxion*, &c. We often express this found by single letters, as *cks*, in *backs*, *pecks*; by *ks*, in *books*, *breaks*; by *cc*, in *accels*, *accident*; by *ct*, *action*, *unction*, &c. The English and French pronounce it like *cs* or *ks*; the Spaniards like *c* before *a*, viz. *Alexandro*, as if it were *Alecxandro*. In numerals it expresseth 10, whence in old Roman manuscripts it is used for *denarius*; and as such seems to be made of two *V*'s placed one over the other. When a dash is added over it, thus *X̄*, it signifies 10,000.

XANTHIUM, in botany: a genus of plants of the class *monœcia*, order *pentandria*, and arranged in the natural classification under the 49th order, *Compositæ*. The male flowers are composite, common calyx imbricated; corollula monopetalous, tubular, quinquefid. Female; calyx involucrem of two leaves, containing two flowers; corolla o; drupa, dry, prickly; nucleus bilocular. There are five species, only one of which is a native of Britain, the *strumarium* or less burdock. The stem of this plant is a foot and a half high, thick, often spotted; leaves heart-shaped, lobed, on long foot-stalks. Flowers, male and female, many together, in the axæ of the leaves. The leaves are bitter and astringent. A decoction of the whole plant affords a showy yellow colour, but it is better if only the flowers are used. Horses and goats eat it: cows, sheep, and swine, refuse it.

XANTHOXYLUM. See **ZANTHOXYLUM**.

XEBEC, or **ZEBEC**, a small three-masted vessel, navigated in the Mediterranean Sea, and on the coasts of Spain, Portugal, and Barbary. See Plate 10. fig. 10. in vol. ix. The sails of the xebec are in general similar to those of the poleacre, but the hull is extremely different from that and almost every other vessel. It is furnished with a strong prow: and the extremity of the stern, which is nothing more than a sort of railed platform or gallery, projects farther behind the counter and buttock than that of any European ship. Being generally equipped as a corsair, the xebec is constructed with a narrow floor, to be more swift in pursuit of the enemy; and of a great breadth, to enable her to carry a great force of sail for this purpose without danger of overturning. As these vessels are usually very low built, their decks are formed with a great convexity from the middle of their breadth towards the sides, in order to carry off the water which falls aboard more readily by their scuppers. But as this extreme convexity would render it very difficult to walk thereon at sea, particularly when the vessel rocks by the agitation of the waves, there is a platform of grating extending along the deck from the sides of the vessel towards the middle, whereon the crew may walk dry-footed whilst the water is conveyed through the grating to the scuppers. The xebecs, which are generally armed as vessels of war by the Algerines, mount from 16 to 24 cannon, and carry from 300 to 450 men, two-thirds of whom are generally soldiers. By the very complicated and inconvenient method of working these vessels, what one of their captains of Algiers

told Mr. Falconer will be readily believed, viz. that every xebec requires at least the labour of three square-rigged ships, wherein the standing sails are calculated to answer every situation of the wind.

XENOCRATES, a celebrated ancient Grecian philosopher, was born at Chalcedon in the 95th Olympiad. At first he attached himself to Ælchines, but afterwards became a disciple of Plato, who took much pains in cultivating his genius, which was naturally heavy. As long as Plato lived, Xenocrates was one of his most esteemed disciples; after his death he closely adhered to his doctrine; and, in the second year of the 110th Olympiad, he took the chair in the academy, as the successor of Speusippus.

Xenocrates was celebrated among the Athenians, not only for his wisdom, but for his virtues. He was an admirer of the mathematical sciences: and was so fully convinced of their utility, that when a young man, who was unacquainted with geometry and astronomy, desired admission into the academy, he refused his request, saying, that he was not yet possessed of the handles of philosophy. In fine, Xenocrates was eminent both for the purity of his morals and for his acquaintance with science, and supported the credit of the Platonic school, by his lectures, his writings, and his conduct. He lived to the first year of the 116th Olympiad, or the 82d of his age, when he lost his life by accidentally falling, in the dark, into a reservoir of water.

XENOPHANES, the founder of the Eleaic sect of philosophy among the Greeks, was born at Colophon probably about the 65th Olympiad. From some cause or other he left his country early, and took refuge in Sicily, where he supported himself by reciting, in the court of Hiero, elegiac and iambic verses, which he had written in reprehension of the theogonies of Hesiod and Homer. From Sicily he passed over into Magna Græcia, where he took up the profession of philosophy, and became a celebrated preceptor in the Pythagorean school. Indulging, however, a greater freedom of thought than was usual among the disciples of Pythagoras, he ventured to introduce new opinions of his own, and in many particulars to oppose the doctrines of Epimenides, Thales, and Pythagoras. Xenophanes possessed the Pythagorean chair of philosophy about seventy years, and lived to the extreme age of an hundred years, that is, according to Eusebius, till the 81st Olympiad. The doctrine of Xenophanes concerning nature is so imperfectly preserved, and obscurely expressed, that it is no wonder that it has been differently represented by different writers. Perhaps the truth is, that he held the universe to be one in nature and substance, but distinguished in his conception between the matter of which all things consist, and that latent divine force which, though not a distinct substance but an attribute, is necessarily inherent in the universe, and is the cause of all its perfection.

XENOPHON, an illustrious philosopher, general, and historian, was born at Athens in the 3d year of the 82d Olympiad. When he was a youth, Socrates, struck with his external appearance, determined to admit him into the number of his pupils. Meeting him by accident in a narrow passage, the philosopher put his staff across the path, and stopping him, asked, where those things were to be purchased which are necessary to human life? Xenophon appearing at a loss for a reply to this unexpected salutation, Socrates proceeded to

ask him, where honest and good men were to be found? Xenophon still hesitating, Socrates said to him, "Follow me, and learn." From that time Xenophon became a disciple of Socrates, and made a rapid progress in that moral wisdom for which his master was so eminent. Xenophon accompanied Socrates in the Peloponnesian war, and fought courageously in defence of his country. He afterwards entered into the army of Cyrus as a private volunteer in his expedition against his brother. This enterprize proving unfortunate, Xenophon, after the death of Cyrus, advised his fellow soldiers to attempt a retreat into their own country. They listened to his advice; and having had many proofs of his wisdom as well as courage, they gave him the command of the army, in the room of Proxenus who had fallen in battle. In this command he acquired great glory by the prudence and firmness with which he conducted them back, through the midst of innumerable dangers, into their own country. The particulars of this memorable adventure are related by Xenophon himself in his *Retreat of the Ten Thousand*. After his return into Greece, he joined Agesilaus, king of Sparta, and fought with him against the Thebans in the celebrated battle of *Chæronæa*. The Athenians, displeased at this alliance, brought a public accusation against him for his former conduct in engaging in the service of Cyrus, and condemned him to exile. The Spartans, upon this, took Xenophon, as an injured man, under their protection, and provided him a comfortable retreat at Scilluntæ in Elea. Here, with his wife and two children, he remained several years, and passed his time in the society of his friends, and in writing those historical works which have rendered his name immortal. A war at length arose between the Spartans and Eleans; and Xenophon was obliged to retire to Lepreus, where his eldest son had settled. He afterwards removed, with his whole family, to Corinth, where, in the first year of the hundred and fifth Olympiad, he finished his days.

XENOPHON the *Younger*, a Greek writer, so called to distinguish him from the celebrated Xenophon, was born at Ephesus, and lived, according to some authors, before Heliodorus, that is, about the beginning of the 4th century. He is only known by his *Ephesiaca*, a Greek romance in five books, which is esteemed, and contains the amours or adventures of Abraromes and Anthia. This romance was printed at London, in Greek and Latin, in 1724, 4to.

XERXES I. the fifth king of Persia, memorable for the vast army he is said to have carried into the field against Leonidas king of Sparta; consisting, according to some historians, of 800,000 men, while others make it amount to 3,000,000, exclusive of attendants. The fleet that attended this prodigious land force is likewise made to consist of 2000 sail; and all the success they met with was the taking and burning the city of Athens; for the army was shamefully repulsed near the straits of Thermopylae by Leonidas, and the fleet was dispersed and partly destroyed by Themistocles at the straits of Salamis, who had only 380 sail under his command. Xerxes was assassinated by Artabanus, chief captain of his guards, and his distinguished favourite. See Sparta.

XIMENES (Francis), a justly celebrated cardinal, bishop of Toledo, and prime minister of Spain, was born at Torrelaguna, in Old Castile, in 1437, and studied at Alcalá and Salamanca. He then went to Rome; but being robbed on the road, brought nothing back but a bull for obtaining the first vacant prebend; but the Archbishop of Toledo refused it him, and threw him in prison. Being at length restored to liberty, he obtained a benefice in the diocese of Sigüenza, where Cardinal Gonzales de Mendoza, who was the bishop, made him his grand vicar. Ximenes some time after entered among the Franciscans of Toledo; but being there troubled with visits, he retired to a solitude named *Castanet*, and applied himself to the study of divinity and the oriental tongues.

At his return to Toledo, Queen Isabella of Castile chose him for her confessor, and afterwards nominated him archbishop of Toledo; which, next to the papacy, is the richest dignity in the church of Rome. "This honour (says Dr. Robertson) he declined with a firmness which nothing but the authoritative injunction of the pope was able to overcome. Nor did this height of promotion change his manners. Though obliged to display in public that magnificence which became his station, he himself retained his monastic severity. Under his pontifical robes he constantly wore the coarse frock of St. Francis, the rents of which he used to patch with his own hands. He at no time used linen, but was commonly clad in hair-cloth. He slept always in his habit; most frequently on the floor or on boards, and rarely in a bed. He did not taste any of the delicacies which appeared at his table, but satisfied himself with that simple diet which the rule of his order prescribed. Notwithstanding these peculiarities, so opposite to the manners of the world, he possessed a thorough knowledge of its affairs, and discovered talents for business which rendered the fame of his wisdom equal to that of his sanctity." His first care was to provide for the necessities of the poor; to visit the churches and hospitals; to purge his diocese of usurers and places of debauchery; to degrade corrupt judges, and place in their room persons whom he knew to be distinguished by their probity and disinterestedness. He erected a famous university at Alcalá; and in 1499 founded the college of St. Ildephonsus. Three years after he undertook the *Polyglot Bible*; and for that purpose sent for many learned men to come to him at Toledo, purchased seven copies in Hebrew for 4000 crowns, and gave a great price for Latin and Greek manuscripts. At this Bible he laboured above 12 years. It contains the Hebrew text of the Bible; the version of the Septuagint, with a literal translation; that of St. Jerom, and the Chaldee paraphrases of Onkelos; and Ximenes added to it a dictionary of the Hebrew and Chaldee words contained in the Bible. This work is called *Ximenes's Polyglot*. In 1507 Pope Julius II. gave him the cardinal's hat, and King Ferdinand the Catholic entrusted him with the administration of affairs. Cardinal Ximenes was from this moment the soul of every thing that passed in Spain. He distinguished himself at the beginning of his ministry by discharging the people from the burdensome tax called *alcavala*, which had been continued on account of the war against Granada; and laboured with such zeal and success in the conversion of the Mahometans, that he made 3000 converts, among whom was a prince of the blood of the kings of Granada. In 1509 Cardinal Ximenes extended the dominions of Ferdinand, by taking the city of Oran in the kingdom of Algiers. He undertook this conquest at his own expence, and marched in person at the head of the Spanish army clothed in his pontifical ornaments, and accompanied by a great number of ecclesiastics and monks. Some time after, foreseeing an extraordinary scarcity, he erected public granaries at Toledo, Alcalá, and Torrelaguna, and had them filled with corn at his own expence; which gained the people's hearts to such a degree, that to preserve the memory of this noble action they had an eulogium upon it cut on marble, in the hall of the senate-house at Toledo, and in the market-place. King Ferdinand dying in 1516, left Cardinal Ximenes regent of his dominions; and the Archduke Charles, who was afterwards the emperor Charles V. confirmed that nomination. In this new character he acquitted himself with extraordinary integrity and ability, till at length, from the repeated intreaties of Ximenes himself, and the impatient murmurs of the Spanish ministry, Charles V. embarked, and landed in Spain, accompanied by his favourites. Ximenes was advancing to the coast to meet him, but at Bos Equillos was seized with a violent disorder, which his followers considered as the effects of poison. This accident obliging Ximenes to

stop, he wrote to the king, and with his usual boldness advised him to dismiss all the strangers in his train, whose number and credit already gave offence to the Spaniards, and earnestly desired to have an interview with him, that he might inform him of the state of the nation, and the temper of his subjects. To prevent this, not only the Flemings, but the Spanish grandees, employed all their address to keep Charles at a distance from Aranda, the place to which the cardinal had removed. His advice was now slighted and despised. Ximenes, conscious of his own integrity and merit, expected a more grateful return from a prince to whom he delivered a kingdom more flourishing than it had been in any former age, and lamented the fate of his country, about to be ruined by the rapaciousness and influence of foreign favourites. While his mind was agitated by these passions, he received a letter from the king; in which, after a few cold and formal expressions of regard, he was allowed to retire to his diocese; and he expired a few hours after reading it in 1517, in the 81st year of his age.

This famous cardinal ought not to be confounded with

Roderic XIMENES, archbishop of Toledo, in the 13th century, who wrote a History of Spain in nine books; nor with several other Spanish writers of the name of Ximenes.

XIPHIAS, in zoology, the SWORD-FISH; a genus of fishes belonging to the order of *apodes*. The upper jaw terminates in a long sword-shaped rostrum, from which it is called the *sword-fish*: there are no teeth in the mouth; the gill membrane has eight rays; and the body is somewhat cylindrical. There is but one species, viz. the *gladius*, found in the European ocean. This fish sometimes frequents our coasts, but is much more common in the Mediterranean Sea, especially in the part that separates Italy from Sicily, which has been long celebrated for it: the promontory Pelorus, now Capo di Faro, was a place noted for the resort of xiphias, and possibly the station of the speculators, or the persons who watched and gave notice of the approach of the fish.

The ancient method of taking them is particularly described by Strabo, and agrees exactly with that practised by the moderns. A man ascends one of the cliffs that overhang the sea: as soon as he spies the fish, he gives notice, either by his voice or by signs, of the course it takes. Another, that is stationed in a boat, climbs up the mast, and on seeing the sword-fish, directs the rowers towards it. As soon as he thinks they are got within reach, he defends, and taking a spear in his hand, strikes it into the fish; which, after wearying itself with its agitation, is seized and drawn into the boat. It is much esteemed by the Sicilians, who buy it up eagerly, and at its first coming into season give about sixpence English per pound. The season lasts from May till August. The ancients used to cut this fish into pieces and salt it; whence it was called *Tomus Thurianus*, from Thurii, a town in the bay of Tarentum, where it was taken and cured.

The sword-fish is said to be very voracious, and that it is a great enemy to the tunny, who (according to Belon) are as much terrified at it as sheep are at the sight of a wolf. It is a great enemy to the whales, and frequently destroys them. See BALÆNA.

XYLO-ALOES, or ALOE-WOOD, in the materia medica, is the product of a tree growing in China and some of the Indian islands. See EXCÆCARIA. This drug is distinguished into three sorts; the calambac or tambac, the common lignum aloes, and calambour.

1. The calambac, or finest aloe-wood, called by authors *lignum aloes præstantissimum*, and by the Chinese *fuk-hing*, is the most resinous of all the woods we are acquainted with: it is of a light spongy texture, very porous, and its pores so filled up with a soft and fragrant resin, that the whole may be pressed and dented by the fingers like wax, or moulded

about by chewing in the mouth, in the manner of mastick. This kind, laid on the fire, melts in great parts like resin, and burns away in a few moments with a bright flame and perfumed smell. Its scent, while in the mass, is very fragrant and agreeable; and its taste acrid and bitterish, but very aromatic and agreeable. It is so variable in its colour, that some have divided it into three kinds; the one variegated with black and purple; the second, with the same black, but with yellowish instead of purple; and the third, yellow alone like the yolk of an egg: this last is the least scented of the three. The variation, however, is owing to the trunk of the tree being itself of three different colours; and the heart of it is the valuable sort first described. The two following are supposed to be the other parts of the trunk; though this seems doubtful, especially in regard to the last sort, from the circumstance mentioned of its being found in large logs entire, and sometimes only the heart, which, as above noticed, constitutes the calambac.

2. The *lignum aloes vulgare* is the second in value. This is of a more dense and compact texture, and consequently less resinous than the other; there is some of it, however, that is spongy, and has the holes filled up with the right resinous matter; and all of it, when good, has veins of the same resin in it. We meet with it in small fragments, which have been cut and split from larger: these are of a tolerably dense texture in the more solid pieces, and of a dusky brown colour, variegated with resinous black veins. It is in this state very heavy, and less fragrant than in those pieces which show a multitude of little holes, filled up with the same blackish matter that forms the veins in others. The woody part of these last pieces is somewhat darker than the other, and is not unfrequently purplish, or even blackish. The smell of the common aloe-wood is very agreeable, but not so strongly perfumed as the former. Its taste is somewhat bitter and acrid, but very aromatic.

3. The calambour, called also *agalochum sylvestre*, and *lignum aloes mexicanum*, is light and friable, of a dusky and often mottled colour, between a dusky green black and a deep brown. Its smell is fragrant and agreeable, but much less sweet than that of either of the others; and its taste bitterish, but not so much acrid or aromatic as either of the two former. This is said to be met with very frequently, and in large logs; and these sometimes entire, sometimes only the heart of the tree. This is the aloe-wood used by the cabinet-makers and inlainers.

This drug is esteemed a cordial taken inwardly; and is sometimes given in disorders of the stomach and bowels, and to destroy the worms. A very fragrant oil may be procured from it by distillation; which is recommended in paralytic cases from five to fifteen drops. It is at present, however, little known in medicine.

XYNOECIA, in Grecian antiquity, an anniversary feast observed by the Athenians in honour of Minerva, upon the sixteenth of Hecatombæon, to commemorate their leaving, by the persuasion of Theseus, their country-seats, in which they lay dispersed here and there in Attica, and uniting together in one body.

XYSTARCHA, in antiquity, the master or director of the xythus. In the Greek gymnasium, the xystarcha was the second officer, and the gymnasiarcha the first; the former was his lieutenant, and presided over the two xythi, and all exercises of the athletes therein.

XYSTUS, among the Greeks, was a long portico, open or covered at the top, where the athletes practised wrestling and running: the gladiators, who practised therein, were called *xytici*. Among the Romans, the xystus was only an alley, or double row of trees, meeting like an arbour, and forming a shade to walk under.

Y.

Y, or *y*, the 23d letter of our alphabet: its sound is formed by expressing the breath with a sudden expansion of the lips from that configuration by which we express the vowel *u*. It is one of the ambigential letters, being a consonant in the beginning of words, and placed before all vowels, as in *yard*, *yield*, *young*, &c. but before no consonant. At the end of words it is a vowel, and is substituted for the sound of *i*, as in *try*, *desire*, &c. In the middle of words it is not used so frequently as *i* is, unless in words derived from the Greek, as in *chyle*, *empyreal*, &c. though it is admitted into the middle of some pure English words, as in *dying*, *flying*, &c. The Romans had no capital of this letter, but used the small one in the middle and last syllables of words, as in *corymbus*, *onyx*, *martyr*. **Y** is also a numeral, signifying 150, or, according to Baronius, 159; and with a dash a-top, as **Ȳ**, it signified 150,000.

YACHT, or **YATCH**, a vessel of state, usually employed to convey princes, ambassadors, or other great personages, from one kingdom to another. As the principal design of a yacht is to accommodate the passengers, it is usually fitted with a variety of convenient apartments, with suitable furniture, according to the quality or number of the persons contained therein. The royal yachts are commonly rigged as ketches, except the principal one reserved for the sovereign, which is equipped with three masts like a ship. They are in general elegantly furnished, and richly ornamented with sculpture; and always commanded by captains in his majesty's navy. Besides these, there are many other yachts of a smaller kind, employed by the commissioners of the excise, navy, and customs; or used as pleasure-boats by private gentlemen.

YAMS. See **DIOSCOREA**.

YAMBOO. See **EUGENIA**.

YARD of a SHIP, a long piece of timber suspended upon the masts of a ship, to extend the sails to the wind. See **MAST** and **SAIL**. All yards are either square or lateen; the former of which are suspended across the masts at right angles, and the latter obliquely. See Plate 4. fig. 1. in vol. IX. The square yards are nearly of a cylindrical surface. They taper from the middle, which is called the *flings*, towards the extremities, which are termed the *yard-arms*; and the distance between the flings and the yard-arms on each side is by the artificers divided into quarters, which are distinguished into the first, second, third quarters, and yard-arms. The middle quarters are formed into eight squares, and each of the end parts is figured like the frustum of a cone. All the yards of a ship are square except that of the mizen.

The proportions for the length of yards, according to the different classes of ships in the British navy, are as follows:

	Guns.
560: main-yard fig. 1.	100
559: Pl. 4. vol. IX.	90 80
570: Note, the figure	70
576: represents the	60
575: yard and sails of a	50
561: ship of 74 guns.	44
1000: main-yard :	100. 90. 80.
880: fore-yard :	all the rest.
874: fore-yard :	

Cross-jack and sprit-fail yards equal to the fore top-fail yard.—Sprit-top-fail yard equal to the fore top-gallant yard.

The diameters of yards are in the following proportions to

their length. The main and fore yards five-sevenths of an inch to one yard. The top-fail, cross-jack, and sprit-fail yards, nine-fourteenths of an inch to one yard. The top-gallant, mizen top-fail, and sprit-fail top-fail yards, eight-thirteenths of an inch to one yard. The mizen-yard five-ninths of an inch to one yard. All studding-fail booms and yards half an inch to one yard in length.

The lifts of the main-yard are exhibited in the above figure by *gg*; the horses and their stirrups by *h*, *i*; the reef-tackles and their pendants by *k*, *l*; and the braces and brace-pendants by *m*, *n*.

The lateen-yards evidently derive their names from having been peculiar to the ancient Romans. They are usually composed of several pieces fastened together by woodlings, which also serve as steps whereby the sailors climb to the peak or upper extremity, in order to furl or cast loose the sail.

The mizen-yard of a ship, and the main-yard of a bilander, are hung obliquely on the mast, almost in the same manner as the lateen-yard of a xebec, fettee, or polacre.

YARD, a measure of length used in Britain and Spain, consisting of three feet, chiefly to measure cloth, fluffs, &c.

YARD-Arm is that half of the yard that is on either side of the mast, when it lies athwart the ship.

YARDS also denotes places belonging to the navy, where the ships of war, &c. are laid up in harbour. There are belonging to his majesty's navy six great yards, viz. Chatham, Deptford, Woolwich, Portsmouth, Sheerness, and Plymouth; these yards are fitted with several docks, wharfs, launches, and graving places, for the building, repairing, and cleaning of his majesty's ships; and therein are lodged great quantities of timber, masts, planks, anchors, and other materials; there are also convenient store-houses in each yard, in which are laid up vast quantities of cables, rigging, sails, blocks, and all other sorts of stores needful for the royal navy.

YARE, among sailors, implies ready or quick: as, be yare at the helm; that is, be quick, ready, and expeditious at the helm. It is sometimes also used for bright by seamen: as, to keep his arms yare; that is, to keep them clean and bright.

YARE, a river of Norfolk, which runs from west to east through that county, passing by Norwich, and falling into the German sea at Yarmouth.

YARMOUTH, a sea-port town of Norfolk, with a market on Wednesdays and Saturdays, and a fair on Friday and Saturday in Easter-week for petty chapmen. It is seated on the river Yare, where it falls into the sea; and is a place of great strength, both by art and nature, being almost surrounded with water; and there is a draw-bridge over the river. It is esteemed the key of this coast, and is a clean handsome place, whose houses are well built, it being a considerable town for trade. It has one large church, and a neat chapel, and the steeple of St. Nicholas's is so high that it serves for a sea-mark. It is governed by a mayor. The harbour is a very fine one, though it is very dangerous for strangers in windy weather; and it has for its security a pretty strong fort. It is 27 miles east of Norwich, and 112 north-east of London. E. Long. 1. 55. N. Lat. 52. 45.

YARMOUTH, a town of the Isle of Wight, in Hampshire, with a market on Fridays, and one fair on July 25th for toys. It is seated on the western part of the island, on the sea-shore,

and is encompassed with water; for, not many years ago a channel was cut through the peninsula, over which there is a draw-bridge, and it is defended by a strong castle on the quay. It is a handsome place, whose houses are chiefly built with stone, and covered with slate; and it sends two members to parliament. The market is now disused. W. Long. 1. 28. N. Lat. 50. 49.

YARN, wool or flax spun into thread, of which they weave cloth. See CLOTH.

YARROW, in botany. See ACHILLEA.

YAWNING, an involuntary opening of the mouth, generally produced by weariness or an inclination to sleep. Yawning, according to Boerhaave, is performed by expanding at one and the same time all the muscles capable of spontaneous motion; by greatly extending the lungs; by drawing in gradually and slowly a large quantity of air; and gradually and slowly breathing it out, after it has been retained for some time and rarified; and then restoring the muscles to their natural state. Hence the effect of yawning is to move, accelerate, and equally distribute all the humours through all the vessels of the body, and consequently to qualify the muscles and organs of sensation for their various functions. When yawning is troublesome, Hippocrates says that long deep respiration or drawing in the air at long intervals cures it.

YEAR, in astronomy and chronology. See ASTRONOMY and KALENDAR. The ancient Roman year was the lunar year, which, as first settled by Romulus, consisted only of ten months; viz. 1. March, containing 31 days. 2. April, 30. 3. May, 31. 4. June, 30. 5. Quintilis, 31. 6. Sextilis, 30. 7. September, 30. 8. October, 31. 9. November, 30. 10. December, 30—in all 304 days; which came short of the true lunar year by 50 days, and of the solar, by 61 days. Numa Pompilius corrected this irregular constitution of the year, and composed two new months, January and February, of the days that were used to be added to the former year.

The ancient Egyptian year, called also the year of Nabonassar, on account of the epocha of Nabonassar, is the solar year of 365 days, divided into 12 months, of 30 days each, besides five intercalary days added at the end. The names, &c. of the months are as follows: 1. Thoth. 2. Paophi. 3. Athyr. 4. Chojac. 5. Tybi. 6. Mecheir. 7. Phamenoth. 8. Pharmuthi. 9. Pachon. 10. Panni. 11. Epiphi. 12. Mefori; besides the *ἡμέραι σταγυρίαι*.

The ancient Greek year was lunar; consisting of 12 months, which at first had 30 days apiece, then alternately 30 and 29 days, computed from the first appearance of the new moon; with the addition of an embolismic month of 30 days every 3d, 5th, 8th, 11th, 14th, 16th, and 19th year of a cycle of 19 years; in order to keep the new and full moons to the same terms or seasons of the year. Their year commenced with that new moon, the full moon of which comes next after the summer solstice. The order, &c. of their months was thus: 1. *Ἑκατομβῆσις* containing 29 days. 2. *Μετακτινῆς* 30. 3. *Βοηδρομιῖος*, 29. 4. *Μαινακτηριῖος*, 30. 5. *Ποσειδωνῖος*, 29. 6. *Ποσειδωνῖος*, 30. 7. *Γαμηλιῖος*, 29. 8. *Διαιετιῖος*, 30. 9. *Εκαρβολιῖος*, 30. 10. *Μενυχιῖος*, 30. 11. *Θαργηλιῖος*, 29. 12. *Συμφεριῖος*, 30.

The ancient Jewish year is a lunar year, consisting commonly of 12 months, which alternately contain 30 and 29 days. It was made to agree with the solar year, either by the adding of 11, and sometimes 12 days, at the end of the year, or by an embolismic month. The names and quantities of the months stand thus: 1. Nisan, or Abib, 30 days. 2. Iar, or Zius, 29. 3. Siban, or Siwan, 30. 4. Hammuz, or Tammuz, 29. 5. Ab, 30. 6. Elul, 29. 7. Tisri, or Ethanin, 30. 8. Marchesivam, or Bull, 29. 9. Cilleu, 30.

10. Tebeth, 29. 11. Sabat, or Schebeth, 30. 12. Adar, in the embolismic year, 30. Adar, in the common year, was but 29. Note, in the defective year, Cilleu was only 29 days; and in the redundant year, Marchesivam was 30.

The Persian year is a solar year of about 365 days; consisting of 12 months of 30 days each, with 5 intercalary days added at the end.

The Arabic, Mahometan, and Turkish years, called also the year of the *Hegira*, is a lunar year, equal to 354 days 8 hours, and 48 minutes, and consists of 12 months, which contain alternately 30 and 29 days.

The Hindoo year differs from all these, and is indeed different in different provinces of India. The best account that we have of it is by Mr. Cavendish, in the Phil. Trans. of the Royal Society of London for the year 1792.

NEW YEAR'S GIFT. See GIFT.

YEAST, or YEST, a head or scum rising upon beer or ale while working or fermenting in the vat. See BREWING. It is used for a leaven or ferment in the baking of bread, as serving to swell or puff it up very considerably in a little time, and to make it much lighter, softer, and more delicate. See BAKING, BARM, and BREAD.

Mr. Henry has published a method of preparing artificial yeast, by which good bread may be made without the assistance of any other ferment. The method is this: Boil flour and water together to the consistence of treacle, and when the mixture is cold, saturate it with fixed air. Pour the mixture thus saturated into one or more large bottles or narrow-mouthed jars; cover it over loosely with paper, and upon that lay a plate or board with a weight to keep it steady. Place the vessel in a situation where the thermometer will stand from 70° to 80°, and stir up the mixture two or three times in 24 hours. In about two days such a degree of fermentation will have taken place, as to give the mixture the appearance of yeast. With the yeast in this state, and before it has acquired a thoroughly vinous smell, mix the quantity of flour intended for bread, in the proportion of six pounds of flour to a quart of the yeast, and a sufficient portion of warm water. Knead them well together in a proper vessel, and covering it with a cloth, let the dough stand for 12 hours, or till it appears to be sufficiently fermented in the fore-mentioned degree of warmth. It is then to be formed into loaves and baked. Mr. Henry adds, that perhaps the yeast would be more perfect, if a decoction of malt were used instead of simple water.

It has lately been discovered, that a decoction of malt alone, without any addition, will produce a yeast proper enough for the purpose of brewing. This discovery was made by Joseph Senyor, servant of the reverend Mr. Mason, of Alton near Rotherham; and he received for it a reward of 20l. from the Society for promoting Arts, Manufactures, and Commerce. The process is as follows: Procure three earthen or wooden vessels of different sizes and apertures, one capable of holding two quarts, the other three or four, and the third five or six; boil a quarter of a peck of malt for about eight or ten minutes in three pints of water; and when a quart is poured off from the grains, let it stand in the first or smaller vessel in a cool place till not quite cold, but retaining that degree of heat which the brewers usually find to be proper when they begin to work their liquor. Then remove the vessel into some warm situation near a fire, where the thermometer stands between 70 and 80 degrees Fahrenheit, and there let it remain till the fermentation begins, which will be plainly perceived within 30 hours: add then two quarts more of a like decoction of malt, when cool, as the first was; and mix the whole in the second or larger vessel, and fill it well in, which must be repeated in the usual way, as it rises in a common vat: then add a still greater quantity of the same decoction, to be

worked in the largest vessel, which will produce yeast enough for a brewing of 40 gallons.

Common ale yeast may be kept fresh and fit for use several months by the following method: Put a quantity of it into a clove canvas bag, and gently squeeze out the moisture in a forew-press till the remaining matter be as firm and stiff as clay. In this state it may be clove packed up in a tight cask for securing it from the air; and will keep fresh, found, and fit for use, for a long time. This is a secret that might be of great use to the brewers and distillers, who, though they employ very large quantities of yeast, seem to know no method of preserving it, or raising nurseries of it; for want of which they sustain a very considerable loss; whereas the brewers in Flanders make a very great advantage of supplying the malt-distillers of Holland with yeast, which is rendered lasting and fit for carriage by this easy expedient.

YELL, one of the islands of Shetland, lying north-east from the main land, and divided from it by an arm of the sea, called *Yell-Sound*. By some it is thought to have been the *Thule* of the ancients. In the old descriptions it is said to be 20 miles long and 8 broad. It is very mountainous and full of moss; but there are pretty considerable pastures in which they feed a great many sheep; and it also affords plenty of peat. It has eight large harbours, which would not be thought despicable in other countries. Anciently it seems to have been pretty populous, since there are in it three churches, twenty chapels, and many burghs or Pictish forts.

YELLOW, one of the original colours of light.

Naples YELLOW, a beautiful colour much used by painters, formerly thought to be prepared from arsenic, but now discovered to have lead for its basis.

YELLOW-Hammer, in ornithology. See **FRINGILLA**.

YELLOW-Peter. See **MEDICINE**.

YEMEN, a province of Arabia, stretching along the Red Sea and Indian Ocean, and forming a part of the country once known by the name of Arabia Felix.

YEOMEN, the first or highest degree among the plebeians of England, next in order to the gentry. The yeomen are properly freeholders, who having land of their own, live on good husbandry.

YEOMEN is also a title of office in the king's household, of a middle place or rank between an usher and a groom.

YEOMEN of the Guard were anciently 250 men of the best rank under gentry, and of larger stature than ordinary, each being required to be six feet high. At present there are but 100 yeomen in constant duty, and 70 more not on duty; and as any of the 100 dies, his place is supplied out of the 70. They go dressed after the manner of King Henry VIII's time. They formerly had diet as well as wages when in waiting; but this was taken off in the reign of Queen Anne.

YEW, in botany. See **TAXUS**.

YNCA, an appellation anciently given to the kings of Peru, and the princes of their blood; the word literally signifying, lord, king, emperor, and royal blood.

YOAK, or **Yoke**, in agriculture, a frame of wood fitted over the necks of oxen, whereby they are coupled together, and harnessed to the plough.

YOKE of Land, in our ancient customs, was the space which a yoke of oxen, that is, two oxen, may plow in one day.

YOLK, the yellow part in the middle of an egg (see **EGG**). It contains a lymphatic substance mixed with a certain quantity of mild oil, which, on account of this mixture, is soluble in water. When exposed to heat, it assumes a consistence not so hard as the white of the egg; and when bruised gives out the oil which it contains. This oil has been used externally as a liniment.

YONNE, a river in France, which rising in Burgundy,

and running north through Nivernois and Champaign, falls into the Seine at Montereau fur Yonne.

YORK, a city of England, and see of an archbishop, situated on the river Ouse, in the west-riding, near the centre of the county to which it gives name. It has always been considered as the capital of the north part of England, and the second in rank. The origin of this city is not well known; certain it is, however, that it was the station of the sixth legion, called *Victrix*, which Adrian brought out of Germany, and a Roman colony. The emperor Constantius Chlorus, is said to have died here, and his son, Constantine the Great, being in England at the time of his father's death, to have been proclaimed emperor. This city, under the Saxon government, was for a considerable time in a very flourishing state, till the Danish storm, bursting on it from the north, wasted it in a dreadful manner with fire and sword. And in the next century it felt greater and more terrible calamities in the Danish ravages. In the year 867, the walls had suffered so much from the assaults of war, that Ofthrit and Ella, kings of Northumberland, pursuing the Danes, got the city without any difficulty; and being slain in a bloody battle in the middle of the city, left the victory to the Danes who had retired into it. Hence Malmfbury observes, that York was always first exposed to the fury of the northern nations, received the barbarous flocks of the Danes, and groaned under repeated devastations: but, as the same author asserts, our Athelstan wrestled it from the Danes, and levelled with the ground the strong castle which they had erected there. It was not, however, altogether free from wars in succeeding years, that whole century being remarkable for the ruin of cities; but the Normans, as they put a stop to these calamities, so they almost utterly destroyed York; for the sons of Swain arriving with a fleet of 210 Danish ships in the neighbourhood, the Norman garrison that held two castles in the city, fearing lest the houses in the suburbs might favour the enemy in filling up the ditch, set them on fire; but the wind blowing strong, spread the flames over the whole city, so that it was all in a blaze, when the Danes broke in and made a dreadful massacre of the inhabitants, putting the Normans to the sword, reserving only William Mallet and Gilbert Gant, principal officers of distinction, to be decimated with the soldiers. For they set apart every tenth man of the Normans by lot for execution. This so provoked William I. that he extirpated the inhabitants, as if they had taken part with the Danes, and burned the city a second time, and, according to Malmfbury's account, so devastated the neighbouring villages, and so exhausted this fruitful province by his devastations, that the ground lay uncultivated for sixty miles together. Peace succeeding these turbulent times, York recovered itself, though often devoted to destruction by the Scots and seditions. In the reign of Stephen, it suffered by an accidental fire, which consumed the cathedral, St. Mary's abbey, and other religious houses, together, as is generally thought, with a well-furnished library, founded by Archbishop Egelred. St. Mary's abbey soon recovered its former magnificence by a new building, but the cathedral lay neglected till the time of Edward I. when John Roman, treasurer of the church, laid the foundation of the new work, which his son John, William Melton, and John Thorethy, all archbishops, gradually brought to perfection by the assistance of the neighbouring nobility. About the same time also, the citizens fortified the city with new walls, and a number of towers, thick set, and planned a body of excellent laws for their government. King Richard II. made it a county, corporate by itself, and Richard III. began the castle anew: and Henry VIII. established here a council or senate-house, not unlike the French parliaments, to try and determine the causes of this part of the kingdom, consisting of a

president and council, whose numbers depended on the king's pleasure, a secretary, and other officers. Before William the Conqueror burned York, authors do not scruple to compare it to Rome. It was the chief emporium in the north of England, and fifty years after the terrible fire in King Stephen's time, in the year 1186, this city had so raised its head, as to bear half-proportion to London. A woollen manufacture was held here to the reign of Henry VIII. But the navigation of the Ouse was neglected till the reign of George I. when an act of parliament was obtained for its improvement, but not effectually carried into execution at that time. The walls of this ancient city are all entire, being repaired every year if there is occasion. Those on the south and east from Fishergate to the Red Tower, and thence to Walmgate, were rebuilt in the years 1487 and 1673; and in the former of these divisions is a walk. The city is divided into four wards, Micklegate, Botham, Monk, and Walmgate, and has four principal gates, and six posterns. The latter of these gates is supposed to derive its name by corruption from Watling-street. In the reign of Henry V. it had forty-four parish churches, besides seventeen chapels, sixteen hospitals, and nine religious houses. At the reformation, these were reduced to little more than half the number of parish churches, eighteen of them being united to the rest, three hospitals, and one or two chapels. Clifford's Tower, a round shell, is beautifully situated on an artificial mount, commanding an extensive view over the river. It is said to be as old as the Conquest, and might have been raised by the Conqueror, or, as its mount exactly corresponds with the old bank on the west side of the river, it may have been Roman work. It was used as a garrison in the civil war, and till the year 1683, when the magazine blowing up, reduced it to its present form. The bridge over the Ouse consists of five arches, the middlemost eighty-one feet, or twenty-seven yards wide, and seventeen high. It was built about the year 1566, after the old one had been broken down by a sudden thaw. On its north side is an old chapel, with Saxon zigzag, probably built by the citizens, in the year 1268, in memory of certain Scots then slain in an affray on the bridge. It was turned into an exchange. The cathedral, alike venerable for size, style, and ornaments, was two centuries in building, from the year 1227, when Archbishop Grey began the south cross, to 1426, when the grants of the dean and chapter call it *new built*. The whole length, from east to west, is 524 feet, the breadth 109, length of the cross-aisle and the height of the lantern spire 180. The east window is said hardly to have its equal for tracery, painting, and preservation, and was the work of John Thornton, a glazier, of Coventry, in the year 1405. The archiepiscopal see of York was instituted in form, though not in substance, by Pope Gregory, in his letter to Augustine, in the year 602, but in substance by Pope Honorius, who sent to Paulinus, in the year 634. By a charter of Richard I. it was governed by a mayor, to which the title of lord was prefixed by Richard II. Other members of the corporation are aldermen, assistants, town-clerks, common-council, &c. The guild-hall was built in the year 1446; the lord-mayor's house in the year 1726; and an elegant assembly-room in the year 1736, from a design of the Earl of Burlington. Manufactures have not succeeded in York. The district situated to the south and south west of the city is called the *Ashley of York*. It sends two members to the British parliament, and has four markets weekly, Tuesday, Thursday, Friday, and Saturday: 197 miles N. London, and 101 S. Edinburgh.

YORKSHIRE, the largest county of England, bounded on the south by Derbyshire, Nottinghamshire, and Lincolnshire; on the north by Durham and Westmoreland; on the east by the German Ocean; and on the west by Lancashire and a

part of Cheshire.—It is upwards of 80 miles in length from east to west, nearly as much in breadth, and about 300 in circumference, containing, in the whole, 26 hundreds or wapentakes, 49 market-towns, 563 parishes, 242 vicarages, with many chapels of ease, and 2330 villages. Its area is computed by some at 4684 square miles, by others at 3,770,000 acres, and its inhabitants at upwards of 530,000. It is divided into three parts or ridings, viz. the West, East, and North; so denominated from their situation, in respect of the city of York. Each of these is as large, if not larger, than any ordinary county. There are other divisions, as Richmondshire, Allertonshire, Howdenshire, Hallamshire, Craven, Cleveland, Marshland, Holderness, &c.

As the soil and face of the country vary greatly, so does the air. In the hilly parts the air is good, but the soil very indifferent; of the lower some are marish, others drier, and the soil of both rich; but the air of the former is more foggy and unhealthy than that of the latter. The manufactures of this country are cutlery and hard-wares; particularly knives, bits, and spurs; but the principal are stockings and woollen cloth, with which it supplies, in a great measure, Germany and the North. As to the produce, it abounds in corn, cattle, horses, lead, and iron, coal, wood, lime, liquorice, alum, jet, &c. It lies wholly in the northern circuit, and much the greater part of it in the diocese of York; that only which is called *Richmondshire* belonging to the diocese of Chester. The members it sends to parliament are 30; of which two are for the shire and 28 for the towns.

NEW-YORK, a state of United America, bounded on the north by the 45th degree of latitude, which separates it from Canada, on the east by Connecticut, Massachusetts, and Vermont, on the south-east by the Atlantic, on the south and south-west, by New Jersey and Pennsylvania, and on the north-west by the river St. Lawrence, and the lakes Erie and Ontario: containing in the whole 44,000 square miles, or about 28 millions of acres. The state, to speak generally, is intersected by ridges of mountains, running in a north-east and south-west direction. Beyond the Alleghany Mountains, however, the country is a dead level, of a fine rich soil; covered, in its natural state, with maple, beech, birch, cherry, black walnut, locust, hickory, and some mulberry trees. On the banks of lake Erie, are a few chestnut and oak ridges. Hemlock swamps, are interspersed thinly through the country. All the creeks that empty into lake Erie, have falls, which afford many excellent mill-seats. East of the Alleghany Mountains, the country is broken into hills, with rich intervening valleys; the hills are clothed thick with timber, and when cleared, afford fine pasture; the valleys, when cultivated, produce wheat, hemp, flax, peas, grais, oats, and Indian corn; besides the trees already mentioned, there are, in various parts of the state, the several kinds of oak, such as white, red, yellow, black, and chestnut oak; white, yellow, spruce, and pitch, pines; cedar, balsam, or fir-tree; butternut, poplar, white-wood, which in Pennsylvania is called poplar, and in Europe the tulip-tree; sugar and rock maple, the linden tree, which, with the white-wood, grows on the low rich ground; the button-wood, or sycamore, shrub cranberry, the fruit of which hangs in clusters, like grapes, as large as cherries; this shrub, too, grows on low ground. Besides these is the sumach, which bears clusters of red berries; the Indians chew the leaves instead of tobacco; the berries are used in dyes. Of the commodities produced from culture, wheat is the staple, of which immense quantities are raised and exported. Indian corn and peas, are likewise raised for exportation; and rye, oats, barley, &c. for home consumption. In some parts of the state, large dairies are kept, which furnish for the market, butter and cheese. The best lands in this state, which lie

along the Mohawk river, and west of the Alleghany mountains, are yet in a state of nature, or are just beginning to be settled. This state, agreeably to an act of their legislature, passed in March, 1788, is divided into 16 counties; which, by another act passed at the same time, were divided into townships. In the above-mentioned acts, the limits of the counties and townships are defined. These townships are corporations invested with certain privileges. The act directs, that the freeholders in the several townships shall assemble in town meetings, on the first Tuesday in April, annually, and choose their town-officers. The number of inhabitants in this state, in 1786, was 238,897; of which 18,889 were negroes. In 1756, there were 83,233 whites, and 13,542 blacks; 96,775 in the whole. In 1771, there were 148,124 whites, and 19,883 blacks; total, 168,007. The population for every square mile, including the whole state, is only five, so that this state is but a ninth part as populous as Connecticut. But it is to be considered, that Connecticut has no waste lands, and not half the state of New York is settled. The state of Connecticut, however, throughout, is at least three times as thickly populated, as the settled parts of New York. This state contains vast quantities of iron ore. There is a silver mine at Philippsburg, which produces virgin silver, spar, zink, or spelter, a semi-metal, magnéz, used in glazings, peritus, of a golden hue; various kinds of copper ore, and lead and coal mines, are found in this state. Also petrified wood, plaster of Paris, singlals in sheets, talcs, and crystal of various kinds and colours, asbestos, and several other fossils. A small black stone had also been found, which vitrifies with a small heat, and makes excellent glass. The principal rivers are, Hudson, Onondago, Mohawks, Delaware, Susquehanna, Alleghany, Tyoga, &c. The constitution of this state provides for the free exercise of religious profession and worship, without discrimination or preference, within the state, for all mankind; provided the liberty for conscience hereby granted shall not be so construed as to excuse acts of licentiousness, or justify practices inconsistent with the peace and safety of the state. The ministers of every denomination in the state, are supported by the voluntary contributions of the people, raised generally by subscription, or by a tax upon the pews, except the Dutch churches in New York, Albany, Schenectady, and Kingston, which have, except the two last, large estates confirmed by a charter. The episcopal church, also, in New York, possess a very large estate in and near the city. The supreme legislative powers of the state are vested in two branches, a senate and assembly. The members of the senate are elected by the freeholders of the states, who possess freehold estates to the value of 1000. clear of debts. For the purpose of electing senators, the state is divided into four great districts, each of which chooses a certain number. The senators are divided by lot into four classes, six in each class, and numbered, first, second, third, and fourth. The seats of the first class, are vacated at the expiration of one year; the second at the expiration of the next, &c. and their places filled by new elections. Thus a small change is made in the senate every year; but three-fourths of the members remaining, preserve a knowledge of the business of the former session. A majority of the senate is necessary to do business; and each branch of the legislature has a negative upon the other. The legislature can at any time alter this division of the state, for the choice of senators; and an increase of electors in any district, to the amount of one twenty-fourth of the electors in the whole state, entitles the district to another senator. But the number of senators can never exceed one hundred. The assembly of the state is composed of representatives, from the several counties, chosen annually in May. By the constitution, however, it is ordered, that at the end of seven years,

after the termination of the late war, a census of the electors and inhabitants shall be taken, and the representation apportioned, according to the number of electors in each county. The supreme executive power of the state is vested in a governor (in whose absence, a deputy-governor is appointed to serve) chosen once in three years, by the freemen of the state. The lieutenant-governor is, by his office, president of the senate; and, upon an equal division of voices, has a casting vote; but has no voice on other occasions. The governor has not a seat in the legislature; but, as a member of the council of revision, and council of appointment, he has a vast influence in the state. Hudson's river was first discovered in 1608, by Henry Hudson, an Englishman, who sold his claim to the Dutch. In 1614 the States-General granted a patent to several merchants, for an exclusive trade on the river Hudson. The same year this company built a fort on the west side of the river, near Albany, and named it Fort Orange. In 1614 Captain Argall, under Sir Thomas Dale, governor of Virginia, visited the Dutch on Hudson's river, who being unable to resist him, prudently submitted, for the present, to the King of England, and, under him, to the Governor of Virginia. Determined upon the settlement of a colony, the States-General, in 1621, granted the country to the West-India company; and, in the year 1629, Wouter Van Twiller arrived at Fort Amsterdam, and took upon himself the government. On August 27, 1664, Governor Stuyvesant surrendered the colony to Colonel Nicolls, who had arrived in the bay a few days before, with three or four ships, and about 300 soldiers, having a commission from King Charles II. to reduce the place, which was then called *New Amsterdam*, but was changed to New York, as was Fort Orange to Albany, in honour of his Royal Highness James duke of York and Albany. Very few of the inhabitants thought proper to remove out of the country; and their numerous descendants are still in many parts of this state and New Jersey. In 1667, at the peace of Breda, New York was confirmed to the English, who, in exchange, ceded Surinam to the Dutch. The English kept peaceable possession of the country until the year 1673, when the Dutch, with whom they were then at war, sent a small squadron, which arrived at Staten Island on the 30th of July. John Manning, a captain of an independent company, who had, at that time, the command of the fort, sent a messenger down to the commodore, and treacherously made his terms with him. On the same day the ships came up, moored under the fort, landed their men, and entered the garrison, without giving or receiving a shot. All the magistrates and constables from East Jersey, Long Island, *Esopus*, and Albany, were summoned to New York, and the major part of them swore allegiance to the States-General and the Prince of Orange. The conquerors, however, did not long enjoy the fruits of their success, for, on the 9th of February, the year following, a treaty of peace between England and Holland was signed at Westminster; by the sixth article of which, this province was restored to the English, in whose hands it remained until the late revolution. While New York remained in possession of the Dutch, it was called *New Belghem*, or *New Netherlands*, and governed by an *alcot*, burgomasters, and *scheyvens*. From its surrender to the English, in 1664 to 1683, the province was ruled by governors, appointed and commissioned by the Duke of York, and their council, whose rules and orders had the force of laws. From the last-named period, the people were admitted to a share of the legislative authority. The confederated cantons of Indians, before the incorporation of the Tuscaroras, a people driven by the Carolinians from the frontiers of Virginia, consisted of five nations, viz. the Mohawks, Oneidas, Senecas, Onondagas, and Cayugas. The alliance and trade of these fix

nations inhabiting the territory west of Albany, to the distance of more than 200 miles, though much courted by the French of Canada, have been almost uninterruptedly enjoyed by the English. The chief towns are New York, Albany, and Hudson.

YORK (Ara), a city of America, and capital of a state of the same name, situated at the south-west point of an island, at the confluence of the Hudson and East river. The principal part of the city lies on the east side of the island, although the buildings extend from one river to the other. The length of the city on East river is about two miles, but falls much short of that distance on the banks of the Hudson: its breadth, on an average, is nearly three-fourths of a mile, and its circumference may be four miles. The plan of this city is not perfectly regular, but is laid out agreeably to the situation of the ground. The principal streets are nearly parallel with the rivers: these are intersected, though not at right angles, by streets running from river to river: the width of the streets is various. The houses are generally built of brick; and the roofs tiled: there are remaining a few houses built after the old Dutch manner, but the English taste has prevailed almost a century. Upon the south-west point of the land stands the fort, which is a square, with four bastions; within the walls of which the governors used formerly to reside. Below the fort, near the water, there is a line of fortifications of considerable extent, designed to command the entrance into both rivers. But it is questionable, whether any number of cannon would prevent ships from passing with a favourable wind and tide; and, indeed, whether New York is capable of defence, by land, against a powerful marine force. The city hall is a brick building, more strong than elegant; it is three stories in height, with wings at each end. There are three houses of public worship, belonging to the reformed Protestant Dutch church, four Presbyterian, and three Episcopal churches, with nine places of worship for other Christians, and a synagogue for the Jews. The government of the city (which was incorporated in 1696) is now in the hands of a mayor, aldermen, and common-council. The city is divided into seven wards, in each of which there is chosen annually, by the people, an alderman and assistant, who, together with the mayor and recorder, form the common-council: the mayor and recorder are appointed, annually, by the council of appointment. This city is esteemed the most eligible situation for commerce in the United States; it almost necessarily commands the trade of one half of New Jersey, most of that of Connecticut, and part of that of Massachusetts, besides the whole fertile interior country, which is penetrated by one of the largest rivers in America. This city imports most of the goods consumed between a line of thirty miles east of Connecticut river, and twenty miles west of the Hudson, which is 130 miles; and between the ocean and the confines of Canada, about 250 miles: a considerable portion of which is the best peopled of any part of the United States, and the whole territory contains at least half a million of people. In times of peace, New York will command more commercial business than any town in the United States. In time of war it will be insecure without a marine force; but a small number of ships will be able to defend it from the most formidable attacks by sea. A want of good water is a great inconvenience to the citizens, there being few wells in the city: most of the people are supplied every day with fresh water, conveyed by their doors in casks, from a pump, which receives it from a spring almost a mile from the city. It is found, by a memorandum in one of the old registers, that the total number of inhabitants in the city, taken by order of the king, in the year 1697, was 4302. The number of inhabitants in the city and

county of New York, in 1756, was 10,881; in 1771, 21,863; and in the year 1786, 23,614: 70 miles NN E. Philadelphia. Long. 74. W. Greenwich. Lat. 40. 40. N.

YOUNG (Dr. Edward), was the son of a clergyman of the same name, and was born about the year 1699. When sufficiently qualified, he was matriculated into All Souls college, Oxford; and designing to follow the civil law, he took a degree in that profession. In this situation he wrote his poems called *The Last Day*, published in 1704; which coming from a layman gave universal satisfaction: this was soon after followed by another, entitled, *The Force of Religion, or Vanquished Love*. These productions gained him a respectable acquaintance; he was intimate with Addison, and thus became one of the writers of the *Spectator*: but the turn of his mind leading him to the church, he took orders, was made one of the king's chaplains, and obtained the living of Welwyn in Hertfordshire, worth about 500*l. per annum*, but he never rose to higher preferment. For some years before the death of the late Prince of Wales, Dr. Young attended his court pretty constantly; but upon his decease all his hopes of church preferment vanished: however, upon the death of Dr. Hales, he was taken into the service of the Princess Dowager of Wales, and succeeded him as her privy chaplain. When pretty far advanced in life, he married the Lady Elizabeth Lee, daughter of the late Earl of Lichfield. This lady was a widow, and had an amiable son and daughter, who both died young. What he felt for their loss, as well as for that of his wife, is finely expressed in his *Night Thoughts*, in which the young lady is characterised under the name of Narcissa; her brother by that of Philander. He wrote three tragedies, *The Revenge*, *Buissini*, and *The Brothers*. His satires, called *Love of Fame the universal Passion*, are by many esteemed his principal performance; though Swift said the poet should have been either more angry or more merry: they have been characterised as a firing of epigrams written on one subject, that tire the reader before he gets through them. His *Complaint*, or *Night Thoughts*, exhibit him as a moral and melancholy poet, and are esteemed his master-piece. They form a species of poetry peculiarly his own, and in which he has been unrivalled by all those who attempted to write in this manner. They were written under the recent pressure of his sorrow for the loss of his wife, daughter, and son-in-law; they are addressed to Lorenzo, a man of pleasure and the world, and who, as it is insinuated by some, is his own son, but then labouring under his father's displeasure. As a prose-writer, he attained the prevailing manners of his time, in a work called *The Centaur not Fabulous*; and when he was above 80 years of age, published *Conjectures on Original Composition*. He published some other pieces; and the whole of his works are collected in 4 and 5 vols. 12mo. Dr. Young's turn of mind was naturally solemn; yet, notwithstanding this gloominess of temper, he was fond of innocent sports and amusement. He instituted an assembly and a bowling-green in the parish of which he was rector, and often promoted the gaiety of the company in person. His wit was generally poignant, and ever levelled at those who testified any contempt for decency and religion. One Sunday preaching in office at St. James's, he found, that though he strove to make his audience attentive, he could not prevail. Upon which his pity for their folly got the better of all decorum, and he sat back in the pulpit and burst into a flood of tears. Towards the latter part of life he knew his own infirmities, and suffered himself to be in pupillage to his house-keeper; for he considered that, at a certain time of life, the second childhood of age demanded its wonted protection. His son, whose boyish follies were long obnoxious to paternal severity, was at last forgiven in his

will; and our poet died regretted by all, having performed all that man could do to fill his post with dignity. His death happened in 1765.

YPRES, a handsome, large, and populous town of the Austrian Netherlands, with a bishop's see. It has a considerable manufactory in cloth and ferges, and every year in Lent there is a considerable fair. It is one of the barrier towns, but was besieged and taken by the French in 1744. It is seated on a fertile plain on the river Ypre, in E. Long. 2. 48. N. Lat. 50. 51.

YUCCA, ADAM'S NEEDLE, in botany: a genus of plants of the class *hexandria* and order *monogynia*. The corolla is campanulate and patent, there is no style, the capsule is trilocular. There are four species, none of which are natives of Britain.

All of them are exceedingly curious in their growth, and are therefore much cultivated in gardens. The Indians make a kind of bread from the roots of this plant.

YULE, YOOL, or Iul. See *Iul*.

YUNX, in zoology, a genus of birds of the order *Pica*. The bill is short, roundish, and pointed; the nostrils concave and naked: the tongue very long and cylindrical; there are two fore and two hind claws. There is only one species, the *torquilla*, wry-neck, which is a native of Europe, Asia, and Africa, and is often seen in Britain. It is ash-coloured above, with light black and brown streaks. Beneath light brown, with black spots. Tail ash-colour, with four black bars. Weight 1½ oz. Irides hazel. Length 7 inches. Migrates.

Z.

Z A A

Z, or z, the 24th and last letter, and the 19th consonant of our alphabet; the found of which is formed by a motion of the tongue from the palate downwards and upwards to it again, with a shutting and opening of the teeth at the same time. This letter has been reputed a double consonant, having the found *dz*; but some think with very little reason: and, as if we thought otherwise, we often double it, as in *puzzle*, *muzzle*, &c. Among the ancients, Z was a numeral letter, signifying 2000; and with a dash added a-top, Z signified 2000 times 2000, or 4,000,000. In abbreviations this letter formerly stood as a mark for several forts of weights; sometimes it signified an ounce and a half; and very frequently it stood for half an ounce; sometimes for the eighth part of an ounce, or a dram troy weight; and it has in earlier times been used to express the third part of an ounce or eight scruples. ZZ were used by some of the ancient physicians to express myrrh, and at present they are often used to signify zinziber or ginger.

ZAARA, ZAPARA, SAHARA, or the Desert, a vast country of Africa, bounded on the north by Barbary, on the east by Fezzan and Calina, on the south by Tombuctoo, and on the west by the Atlantic Ocean. Zaara contains a variety of wandering nations, all proceeding from Arabs, Moors, and fugitive Portuguese, who took refuge there when the family of the Sherifs made themselves masters of the three kingdoms of Barbary. All these people bear indiscriminately the names of *Nars*, *Moors*, or *Arabs*. They are subdivided into various nations, of which the most considerable are the Mongearts, Trafsars, and Braenars. The Mongearts lead a wandering life, and live chiefly on the milk of their flocks, with a little barley meal, and some dates. The poorer sort go naked, except the females, who commonly wrap a clout about their middle, and wear a kind of bonnet on their head; but the wealthier sort have a kind of loose gown, made of blue calicoe, with large sleeves, that is brought them from Negroland. When they move from one place to another for fresh pasture, water, or prey, most of them ride on camels, which have generally a sort of saddle between the bunch and the neck, with a string or strap run through their nostrils, which serves for a bridle; and instead of spurs they use a sharp bodkin. Their tents or huts are covered with a coarse fluff, made of camel's hair, and a kind of wool or moss that grows on the palm trees. These Arabs live here under the government of their sheiks or cheyks; as in Arabia, Egypt, and other places.

Z A F

The other two tribes are rather more civilised. They are all Mahometans.

ZABULON (anc. geog.), one of the twelve tribes: bounded on the north by the tribes of Asher and Napthali; on the east by the sea of Galilee; on the south by the tribe of Issachar or the brook Cifon, which ran between both; on the west by the Mediterranean; so that it touched two seas, or was bimarous.

ZABULON (anc. geog.), a very strong town in the tribe of that name, on the Mediterranean, furnished of men, near Ptolemais: its vicinity to which makes it probable that it was also Chabulon, unless either name is a faulty reading in Josephus: distant about 60 stadia from Ptolemais.

ZACYNTHUS (anc. geog.), an island to the south of Cephalenia 60 stadia, but nearer to Peloponnesus, in the Ionian Sea, formerly subject to Ulysses, in compass above 160 stadia, woody and fruitful, with a considerable cognominal town and a port. The island lies over against Elis, having a colony of Achæans from Peloponnesus, over against the Corinthian Gulf. Both island and town are now called *Zante*.

ZAFFRE, is the oxyd of cobalt, employed for painting pottery ware and porcelain of a blue colour. The method of preparing it is as follows: The cobalt taken out of the mine is broken with hammers into pieces about the size of an hen's egg: and the stony involucrum, with such other heterogeneous matters as are distinguishable by the eye, are separated as much as possible. The chosen mineral is then pounded in stamping mills, and sifted through brass wire sieves. The lighter parts are washed off by water, and it is afterwards put into a large flat-bottomed arched furnace, resembling a baking oven, where the flame of the wood reverberates upon the ore; which is occasionally stirred and turned with long-handled iron hooks or rakes; and the process is continued till it ceases to emit any fumes. The oven or furnace is terminated by a long horizontal gallery, which serves for a chimney; in which the arsenic, naturally mixed with the ore, sublimes. If the ore contains a little bismuth, as this semimetal is very fusible, it is collected at the bottom of the furnace. The cobalt remains in the state of a dark grey oxyd, and is called *zaffre*. One hundred pounds of the cobalt ore lose 20 and even 30 per cent. during this operation, which is continued 4 or even 9 hours, according to the quality of the ore. The roasted ore being taken out from the furnace, such

parts as are concreted into lumps are pounded and sifted afresh. Zaffre, in commerce, is never pure, being mixed with two or rather three parts of powdered flints. A proper quantity of the best sort of these, after being ignited in a furnace, are thrown into water to render them friable, and more easily reduced to powder; which, being sifted, is mixed with the zaffre, according to the before-mentioned dose; and the mixture is put into casks, after being moistened with water. This oxyd, fused with three parts of sand, and one of pot-ash, forms a blue glass; which, when pounded, sifted, and afterwards ground in mills, included in large casks, forms *finest*.

The blue of zaffre is the most solid and fixed of all the colours that can be employed in vitrification. It suffers no change from the most violent fire. It is successfully employed to give shades of blue to enamels, and to the crystal glasses made in imitation of some opaque and transparent precious stones, as the lapis lazuli, the turquois, the sapphire, and others of this kind.

ZALEUCUS, a famous legislator of the Locrians, and the disciple of Pythagoras, flourished 500 years B.C. He made a law, by which he punished adulterers with the loss of both their eyes; and his son offending was not absolved from this punishment: yet, to show the father as well as the just law-giver, he put out his own right, and his son's left eye. This example of justice and severity made so strong an impression on the minds of his subjects, that no instance was found of the commission of that vice during the reign of that legislator. It is added, that Zaleucus forbade any wine being given to the sick on pain of death, unless it was prescribed by the physicians; and that he was so jealous of his laws, that he ordered, that whoever was desirous of changing them, should be obliged, when he made the proposal, to have a cord about his neck, in order that he might be immediately strangled, if those alterations were esteemed no better than the laws already established. Diodorus Siculus attributes the same thing to Charondas, legislator of the Sybarites.

ZAMA (ana. geog.), a town of Chamane, a district of Cappadocia, of unknown situation.—Another Zama, of Mesopotamia, on the Sacoras, to the south of Nisibis.—A third, of Numidia, distant five days' journey to the west of Carthage: it was the other royal residence of the kings of Numidia, hence called *Zama Regia*. It stood in a plain; was stronger by art than nature; richly supplied with every necessary; and abounding in men, and every weapon both of defence and annoyance. The last of these is remarkable for the decisive battle fought between the two greatest commanders in the world, Hannibal the Carthaginian, and Scipio Africanus. Of this engagement, the most important perhaps that ever was fought, Mr. Hooke gives an interesting account.

ZANGUEBAR, a country in Africa, lying on the eastern coast, between three degrees of north latitude, and eighteen south. It includes several petty kingdoms, in which the Portuguese have various settlements. The inhabitants, except those converted by the Portuguese, are all Mahometans or idolaters; and the latter much the more numerous. The names of the principal territories are *Mombaza*, *Lamon*, *Meinda*, *Quiola*, and *Mosambique*. The Portuguese have built several forts in Mombaza and Mosambique, and have settled several colonies there. They trade with the negroes for slaves, ivory, gold, ostrich-leathers, wax, and drugs. The productions are much the same as in other parts of Africa between the tropics.

ZANONIA, in botany: the name of a genus of plants of the order *diœcia*, class *pentandria*. The characters are these: it produces separate male and female flowers; in the male flower the cup is a perianthium, composed of three leaves of

an oval figure, expanding every way, and shorter than the flower; the flower is monopetalous, but divided into five segments, and has an open mouth; the segments are jagged, and are equal in size, and bend backwards; the stamina are five filaments of the length of the cup, standing open at their ends, and terminated by simple apices; the female flowers grow on separate plants, and have the cup and flower the same as in the male, only that the cup stands upon the germ of the pistil; this germ is oblong, and from it are propagated three reflex conic styles; the stigmata are bifid and curled; the fruit is a long and very large berry, truncated at the end, and very small at the base; it contains three cells, and has a curled future near the apex; the seeds are two; they are of an oblong figure, and flat. There is one species, the *indica*.

ZANTE, an island of the Mediterranean, near the coast of the Morea, 19 miles south-east of the island of Cephalonia, belonging to the Venetians. It is about 24 miles in length, and 12 in breadth, and very pleasant and fertile; but its principal riches consist in currants, with which it greatly abounds. They are cultivated in a very large plain, under the shelter of mountains on the shore of this island; for which reason the sun has greater power to bring them to perfect maturity. The town called *Zante* may contain near 20,000 inhabitants; the whole island contains about 40,000. The houses are low, on account of the frequent earthquakes, for scarce a year passes without one; however, they do no great damage. The natives speak both Greek and Italian. There are very few Roman-catholics among them; but they have a bishop as well as the Greeks. This place has no fortifications, but there is a fortress upon an eminence planted with cannon. In one part of this island is a place which shakes when trod upon like a quagmire; and a spring which throws out a great deal of bitumen, especially at the time of an earthquake. It serves instead of pitch to pay the bottoms of the ships, and about 100 barrels in a year are used for this purpose. There are about 50 villages in the island; but no other large town beside Zante. It is seated on the eastern side of the island, and has a good harbour. The English and Dutch have each a factory, and consul here. E. Long. 21. 3. N. Lat. 37. 53.

ZANTHOXYLUM, the TOOTHACH-TREE, in botany; a genus of plants of the class of *diœcia*, and order of *pentandria*; and in the natural system arranged under the 46th order, *Hederaceæ*. The calyx is quinquepartite; there is no corolla; the female flower has five pistils and as many monospermous capsules. There are two species, the *clava herculis*, and the *trifoliatum*; neither of which are natives of Britain.

ZAPATA, a kind of feast or ceremony held in Italy, in the courts of certain princes, on St. Nicholas's day; wherein people hide presents in the shoes or slippers of those they would do honour to, in such a manner as may surprize them on the morrow when they come to dress; being done in imitation of the practice of St. Nicholas, who used in the night-time to throw purses of money in at the windows to marry poor maids withal.

ZEA, INDIAN CORN, in botany: a genus of plants of the class *monœcia*, order *triandria*. The male-flowers are placed on distinct spikes; the calyx is a biflorous, beardless glume; the corolla a beardless glume; the female calyx is a bivalve glume, as is the corolla. There is one filiform, pendulous style; the seeds are solitary and buried in an oblong receptacle. There is only one species, the *Mays*, maize. The Indians in New England, and many other parts of America, had no other vegetable but maize or Indian corn for making their bread. They call it *weachin*; and in the United States of America there is much of the bread of the country made of

this grain, not of the European corn. In Italy and Germany also there is a species of maize, which is the food of the poor inhabitants.

The ear of the maize yields a much greater quantity of grain than any of our corn ears. There are commonly about eight rows of grain in the ear, often more, if the ground be good. Each of these rows contains at least 30 grains, and each of these gives much more flour than a grain of any of our corn. The grains are usually either white or yellowish; but sometimes they are red, bluish, greenish, or olive-coloured, and sometimes striped and variegated. This sort of grain, though so essentially necessary to the natives of the place, is yet liable to many accidents. It does not ripen till the end of September; so that the rains often fall heavy upon it while on the stalk, and the birds in general peck it when it is soft and unripe. Nature has, to defend it from these accidents, covered it with a thick husk, which keeps off slight rains very well; but the birds, if not frightened away, often eat through it, and devour a great quantity of the grain.

There are three or four varieties of maize in different parts of America. That of Virginia is very tall and robust, growing to seven or eight feet high; that of New England is shorter and lower. And the Indians farther up in the country have a yet smaller kind in common use. The stalk of the maize is joined like the sugar-cane; it is very soft and juicy, and the juice is so sweet and saccharine, that a syrup, as sweet as that of sugar, has been often made of it; and things sweetened with it have been found not distinguishable from those done with sugar. It has not been tried yet whether it will crystallize into sugar; but in all probability it will.

The Americans plant this corn any time from the beginning of March to the beginning of June; but the best season is the middle of April. The savage Indians, who knew nothing of our account of months, used to guide themselves in the seed-time of this useful plant by the budding of some particular trees of that country, and by the coming up of a sort of fish into their rivers, which they call the *aloofse*. These things were both so regular, that they were in no danger of mistaking the time.

The manner of planting maize is in rows, at equal distances, every way about five or six feet. They open the earth with a hoe, taking away the surface to three or four inches deep, and of the breadth of the hoe; they then throw in a little of the finer earth, so as to leave the hoe four inches deep or thereabouts, and in each of these holes they place four or five grains at a little distance from one another. If two or three of these grow up, it is very well; some of them are usually destroyed either by the birds or other animals.

When the young plants appear, they hoe up the weeds from time to time; and when the stalk gathers some strength, they raise the earth a little about it, and continue this at every hoeing till it begins to put forth the ears; then they enlarge the hill of earth, round the root, to the size of a hop-hill, and after this they leave it till the time of harvest, without any farther care. When they gather the ears, they either immediately strip off the corn, or else hang up the ears, tied in traces at distances from one another; for if they are laid near together, they will heat and rot, or else sprout and grow. But kept cool and separate, they will remain good all the winter. The best method is to thresh out the corn as soon as the harvest is over, to dry it well, on mats in the sun, and then lay it up in holes of the ground, well lined with mats, grass, or the like, and afterwards covered at top with more earth. The most careful among the Indians use this method, and this sort of subterranean granary always proves good.

The uses of this plant among the Indians are very many. The great article is the making their bread of it; but besides

this, the stalks, when cut up before they are too much dried, are an excellent winter food for cattle; but they usually leave them on the ground for the cattle to feed on. The husks about the ear are usually separated from the rest, and make a particular sort of fodder, not inferior to our hay. The Indian women have a way of flitting them into narrow parts, and they then weave them artificially into baskets and many other toys. The original way of eating the grain among the Indians was this: they boiled it whole in water till it swelled and became tender, and then they fed on it either alone or eat it with their fish and venison instead of bread. After this, they found the way of boiling it into a sort of pudding, after bruising it in a mortar; but the way of reducing it to flour is the best of all. They do this by parching it carefully in the fire, without burning, and then beating it in mortars and sifting it. This flour they lay up in bags as their constant provision, and take it out with them when they go to war, eating it either dry or with water. The English have contrived, by mixing it into a stiff paste, either by itself or with rye or wheat-meal, fermenting it with leaven or yeast, and baking it in a hot oven, to make good bread of it. They have likewise found out a method of making good beer, either of the bread, or by malting the grain.

ZEAL, passionate ardour for any person or cause. It is most frequently used to denote a strong and warm attachment to the distinguishing doctrines or worship of some particular sect of Christians. Thus we say, a *zealous Calvinist*, *Arminian*, or *Papist*; though we may likewise with the greatest propriety say of an upright and benevolent man, that he is *zealous of good works*.

ZEALAND, the chief of the Danish islands, is situated at the entrance of the Baltic Sea, bounded by the Schaggorrae Sea on the north, by the Sound, which separates it from Schonen, on the east, by the Baltic Sea on the south, and by the strait called the *Great Belt*, which separates it from the island of Funen, on the west, being of a round figure, near 200 miles in circumference: the chief town is Copenhagen.

ZEALAND, is also a province of the United Netherlands, consisting of eight islands, which lie in the mouth of the river Scheld, bounded by the province of Holland, from which they are separated by a narrow channel on the north, by Brabant on the east, by Flanders, from which they are separated by one of the branches of the Scheld, on the south, and by the German Ocean on the west.

NEW ZEALAND, a country of Asia, in the South Pacific Ocean, first discovered by Tasman, the Dutch navigator, in the year 1642, who gave it the name of *Staten Land*, though it has been generally distinguished in our maps and charts by the name of *New Zealand*, and was supposed to be part of a southern continent: but it is now known, from the late discoveries of Captain Cook who sailed round it, to consist of two large islands, divided from each other by a strait four or five leagues broad. They are situated between the latitudes of 34 and 48 degrees south, and between the longitudes of 166 and 180 degrees east from Greenwich. One of these islands is for the most part mountainous, rather barren, and but thinly inhabited; but the other is much more fertile, and of a better appearance. In the opinion of Sir Joseph Banks and Dr. Solander, every kind of European fruits, grain, and plants, would flourish here in the utmost luxuriance. From the vegetables found here, it is supposed that the winters are milder than those in England, and the summers not hotter, though more equally warm; so that it is imagined, that if this country were settled by people from Europe, they would, with moderate industry, be soon supplied, not only with the necessaries, but the luxuries of life, in great abundance. Here are forests of vast extent, filled with very large timber trees;

and near 400 plants were found here that had not been described by the naturalists. The inhabitants of New Zealand are stout and robust, and equal in stature to the largest Europeans. Their colour in general is brown, but in few deeper than that of the Spaniard who has been exposed to the sun, and in many not so deep; and both sexes have good features. Their dress is very uncouth, and they mark their bodies in a manner similar to the inhabitants of Otaheite, and which is called *tattooing*. Their principal weapons are lances, darts, and a kind of battle-axes; and they have generally shown themselves very hostile to the Europeans who have visited them.

ZEALOTS, an ancient sect of the Jews, so called from their pretended zeal for God's law and the honour of religion.

ZEBRA, in zoology. See **EQUUS**.

ZEBU, in zoology; a name given by M. de Buffon to the 'bos indicus' of Linnæus. See **BOS**, vi.

ZECHIN, or **ZECHINO**. See **SEQUIN**.

ZEDOARY, in the materia medica. See **KÆMPFERIA**.

ZELL, a city of Germany in the circle of Lower Saxony, capital of the duchies of Zell and Lunenburg, situated at the confluence of the rivers Aller and Fuhle, 30 miles north of Hanover, and 40 south of Lunenburg. E. Long. 10. 12. N. Lat. 52. 49.

ZEMBLA NOVA, a very large island, lying in the Northern Ocean, to the north of Russia, from which it is separated by the strait of Waigata. It has no inhabitants except wild beasts, particularly white foxes and bears. In 1595 a Dutch vessel was cast away on the coast, and the ship's company were obliged to winter here; but they did not feel the fun from the fourth of November to the beginning of February, and had great difficulty to keep themselves from being frozen to death.

ZEMINDAR. See **HINDOOSTAN**.

ZEND, or **ZENDAVESTA**, a book ascribed to Zoroaster, and containing his pretended revelations; which the ancient Magicians and modern Perfes, called also *Gaurs*, observe and reverence in the same manner as the Christians do the Bible, and the Mahometans the Koran, making it the sole rule both of their faith and manners. The word, it is said, originally signifies any instrument for kindling fire, and is applied to this book to denote its aptitude for kindling the flame of religion in the hearts of those who read it.

The Zend contains a reformed system of Magianism; teaching that there is a Supreme Being, eternal, self-existent, and independent, who created both light and darkness, out of which he made all other things; that these are in a state of conflict, which will continue till the end of the world; that then there shall be a general resurrection and judgment; and that just retributions shall be rendered unto men according to their works; that the angel of darkness with his followers shall be confined to a place of everlasting darkness and punishment, and the angel of light with his disciples introduced into a state of everlasting light and happiness; after which light and darkness shall no more interfere with each other. The Zend also enjoins the constant maintenance of sacred fires and fire-temples for religious worship; the distinction of clean and unclean beasts; the payment of tithes to priests, which are to be of one family or tribe; a multitude of washings and purifications, resembling those of the Jewish law; and a variety of rules and exhortations for the exercise of benevolence and charity. In this book there are many passages evidently taken out of the Scriptures of the Old Testament, particularly out of the Psalms of David. Moreover, Dr. Baumgarten asserts, that this work contains doctrines, opinions, and facts, actually borrowed from the Jews, Christians, and Mahometans; whence, and from other circumstances, he concludes that both the history and writings of this prophet were probably invented in the later ages, when the fire-worshippers

under the Mahometan government thought fit to vindicate their religion from the suspicion of idolatry.

At whatever period the Zend may have been written, we are assured by Dr. Hyde that it is in the pure old Persian language, and in the character called *Peplavi*. Some parts of it contain the original text, and others Zoroaster's second thoughts subjoined, for explaining more fully his doctrine. These were occasioned by the opposition of adversaries, and unforeseen circumstances which occurred during the fabrication of the imposture. About 300 years ago, when the old Persian language had become antiquated and little understood, one of the deffours or high-priests among the Perfes composed the *Sadda*, which is a compendium in the vulgar or modern Persian tongue, of those parts of the Zend that relate to religion, or a kind of code of canons and precepts, drawn from the theological writings of Zoroaster, serving as an authoritative rule of faith and practice for his followers. This *Sadda* is written in a low kind of Persian verse, and, as Dr. Hyde informs us, it is *bonorum & malorum faragdo*, having many good and pious things, and others very superstitious and trifling. See **PERSES** and **ZOROASTER**.

ZENITH, in astronomy, the vertical point, or a point in the heavens directly over our heads. See **ASTRONOMY**.

ZENO, **ELEATES**, an eminent Grecian philosopher, was born at Elea about 504 years before Christ. He was a zealous friend of civil liberty, and is celebrated for his courageous and successful opposition to tyrants; but the inconsistency of the stories related by different writers concerning him in a great measure destroys their credit. He chose to reside in his small native city of Elea rather than at Athens, because it afforded freer scope to his independent and generous spirit, which could not easily submit to the restraints of authority. It is related, that he vindicated the warmth with which he resented reproach, by saying, "If I were indifferent to censure, I should also be indifferent to praise." The invention of the dialectic art has been improperly ascribed to Zeno; but there can be no doubt that this philosopher, and other metaphysical disputants in the Eleatic sect, employed much ingenuity and subtlety in exhibiting examples of most of the logical arts, which were afterwards reduced to rule by Aristotle and others. If Seneca's account of this philosopher deserves credit, he reached the highest point of scepticism, and denied the real existence of external objects.

ZENO, the founder of the sect of the Stoics, was born about 300 years before Christ, at Citium in the island of Cyprus. This place having been originally peopled by a colony of Phœnicians, Zeno is sometimes called a Phœnician. His father was by profession a merchant, but discovering in the youth a strong propensity towards learning, he early devoted him to philosophy. In his mercantile capacity he had frequent occasion to visit Athens, where he purchased for his son several of the writings of the most eminent Socratic philosophers. These he read with great avidity; and when he was about 30 years of age, he determined to take a voyage to a city which was so celebrated both as a mart of trade and of science. If it be true, as some writers relate, that he brought with him a valuable cargo of Phœnician purple, which was lost by shipwreck upon the coast of Piræus, this circumstance will account for the facility with which he at first attached himself to a sect whose leading principle was the contempt of riches. Upon his first arrival in Athens, going accidentally into the shop of a bookseller, he took up a volume of the Commentaries of Xenophon; and after reading a few passages, was so much delighted with the work, and formed so high an idea of the author, that he asked the bookseller where he might meet with such men. Crates the Cynic philosopher happening at that instant to be passing by, the bookseller pointed to him, and

said, "Follow that man." Zeno attended upon the instructions of Crates, and admired the general principles of the Cynic school, though he could not easily reconcile himself to their peculiar manners. Besides, his inquisitive turn of mind would not allow him to adopt that indifference to every scientific enquiry which was one of the characteristic distinctions of the sect. He therefore attended the lectures of Stilpo several years, and passed over to other schools, particularly to those of Xenocrates and Diodorus Cronus. By the latter he was instructed in dialectics. He was so much delighted with this branch of study, that he presented to his master a large pecuniary gratuity, in return for his free communication of some of his ingenious subtleties. After attending almost every other master, he became a disciple of Polemo, and having at length collected materials from various quarters for a new system of his own, Zeno determined to become the founder of a new sect. The place which he made choice of for his school was a public portico, adorned with the pictures of Polygnotus, and other eminent painters. It was the most famous portico in Athens, and called, by way of eminence, *Stoa*, "the Porch." It was from this circumstance that the followers of Zeno were called *Stoics*.

In his person Zeno was tall and slender; his aspect was feverish, and his brow contracted. His constitution was feeble, but he preserved his health by great abstemiousness, and lived to the extreme age of 98; but at last, in consequence of an accident, he voluntarily put an end to his life. As he was walking out of his school he fell down, and in the fall broke one of his fingers; upon which he was so affected with a consciousness of infirmity, that, striking the earth, he said, "Why am I thus importuned? I obey thy summons;" and immediately went home and strangled himself. He died in the first year of the 129th Olympiad. The Athenians, at the request of Antigonus, erected a monument to his memory in the Ceramicus.—We ought not to confound the two Zenos already mentioned with

ZENO, a celebrated Epicurean philosopher, born at Sidon, who had Cicero and Pomponius Atticus for his disciples, and who wrote a book against the mathematics, which, as well as that of Pseudothodorus's refutation of it, is lost; nor with several other Zenos mentioned in history.

ZEOLITE. See CLAY and MINERALOGY.

ZEPHYR, the WEST-Wind, or that which blows from the cardinal point of the horizon opposite to the east.

ZEPHYRUS, one of the Pagan deities, was represented as the son of Aurora, and the lover of the nymph Chloris, according to the Greeks, or of Flora according to the Romans; and as presiding over the growth of fruits and flowers. He is described as giving a refreshing coolness to the air by his soft and agreeable breath, and as moderating the heat of summer by fanning the air with his silken wings. He is depicted under the form of a youth, with a very tender air, with wings resembling those of the butterfly, and with his head crowned with a variety of flowers. As the poets of Greece and Rome lived in a warm climate, they are lavish in their praise of this beneficent deity, and under his name describe the pleasure and advantage they received from the western breezes.

ZERDA. See CANIS, Sp. xiv.

ZERTA, the ZERTE, a fish caught in the rivers of Italy and some other places, of the figure of the chub, and called by authors *capito anadromus*, and the *blike*. It seldom grows to more than two pounds weight, and at times lives in rivers, at times in the sea; and is esteemed a very well tasted fish, especially a little before the season of its spawning. The zerte is that species of cyprinid described by Gesner and others under the name of *capito anadromus*.

ZEST, the woody thick skin quartering the kernel of a wal-

nut; prescribed by some physicians, when dried and taken with white-wine, as a remedy against the gravel. *Zest* is also used for a chip of orange or lemon peel; such as is usually squeezed into ale, wine, &c. to give it a flavour; or the fine oil which spouts out of that peel on squeezing it.

ZEUGMA, a figure in grammar, whereby an adjective or verb which agrees with a nearer word, is also, by way of supplement, referred to another more remote.

ZEUS, in ichthyology, a genus of fishes of the order of *thoracici*. The head is compressed, and declines, the upper lip being vaulted over by a transverse membrane; the tongue is fubulated; there are seven rays in the gill membrane; and the body is compressed.—The species are eight; of which the most remarkable is the *faber* or *doree*. It is of a hideous form, its body is oval, and greatly compressed on the sides; the head large; the snout vastly projecting; the mouth very wide; the teeth very small; the eyes great, the irides yellow; the lateral line oddly distorted, sinking at each end, and rising near the back in the middle; beneath it on each side is a round black spot. The tail is round at the end, and consists of fifteen yellow rays. The colour of the sides is olive, varied with light blue and white, and while living is very repeludent, and as if gilt; for which reason it is called the *doree*. The largest fish we have heard of weighed twelve pounds.

Superstition hath made the *doree* rival to the hadlock, for the honour of having been the fish out of whose mouth St. Peter took the tribute-money, leaving on its sides those incontestible proofs of the identity of the fish, the marks of his finger and thumb. Mr. Quin added this delicious fish to our table, and overcame the vulgar prejudices that prevailed on account of its deformity. This fish was supposed to be found only in the southern seas of this kingdom, but it has been discovered likewise on the coast of Anglesey. Those of the greatest size are taken in the Bay of Biscay, off the French coasts; they are also very common in the Mediterranean: Ovid must therefore have styled it *rarus faber*, on account of its excellency, not its scarcity.

ZEUXIS, a celebrated painter of antiquity, flourished about 400 years before Christ. He was born at Heraclea; but as there have been many cities of that name, it cannot be certainly determined which of them had the honour of his birth. Some learned men, however, conjecture, that it was the Heraclea near Crotona in Italy. He carried painting to a much higher degree of perfection than Apollodorus had left it; discovered the art of properly disposing of lights and shades, and particularly excelled in colouring. He amassed immense riches; and then resolved to sell no more of his pictures, but gave them away; saying very frankly, "That he could not set a price on them equal to their value." One of this painter's finest pieces was a Hercules strangling some serpents in his eradle, in the presence of his affrighted mother: but he himself chiefly esteemed his *Athleia*, or *Champion*, under which he placed a Greek verse that afterwards became very famous, and in which he says, "That it was easier to criticize than to imitate the picture." He made a present of his *Alemena* to the *Aggrigentines*. Zeuxis did not value himself on speedily finishing his pictures; but knowing that Agatharchus gloried in his being able to paint with ease, and in a little time, he said, "That for his part he, on the contrary, gloried in his slowness; and if he was long in painting, it was because he painted for eternity." Verrius Flaccus says, that Zeuxis, having painted an old woman, he laughed so very heartily at the sight of this picture, that he died: but as no other of the ancients have mentioned this particular, there is the greatest reason to believe it fabulous. Carlo Dati has composed in Italian the Life of Zeuxis, with those of Parrhasius, Apelles, and Protogenes. This work was printed at Florence in 1667.

ZICLAG, or **ZIKLAG** (anc. geog.), a town of the tribe of Simeon, on the borders of the Philistines (Joshua xv. and xix.), but in the hands of the Philistines till David's time (1 Sam. xxvii. and xxx).

ZIMB, in natural history, a pestilential fly described by Mr. Bruce in his account of Abyssinia. It is somewhat larger than a bee, thicker in proportion, and having broader wings, placed separate like those of a fly, and quite colourless. So alarmed are the cattle by these insects, that when they hear their buzzing, they forsake their pasture, and run about till they fall down with terror, fatigue, and hunger. It was to avoid this nuisance, as Mr. Bruce relates, that the city of Meroe was built in the low country, rather than in a more advantageous situation among the mountains.

ZIMENT-WATER, **COPPER-WATER**, in natural history, the name by which some have called water found in places where there are copper-mines, and lightly impregnated with particles of that metal. The most famous spring of this kind is about a mile distant from Newfol in Hungary, in the great copper-mine called by the Germans *herra grundt*. The water in this mine is found at different depths, and is received into basins, for the purpose of separating the copper from it: in some of these it is much more saturated with this metal than in others, and will make the supposed change of iron into that metal much sooner. The most common pieces of iron used in the experiments are horse-shoes, nails, and the like; and they are found very little altered in shape, after the operation, except that their surfaces are more raised. The water appears greenish in the basin, where it stands; but if a glass of it be taken up, it looks clear as crystal: it has no smell, but a strong vitriolic astringent taste, inasmuch that the lips and tongue are blistered and scorched upon tasting it.

ZIN (anc. geog.), a wilderness encompassing Idumæa, at least on the south and west, as far as Palestine or Canaan; but according to Wells, on the east of Edom, to the north of Ezion-gaber.

ZINC, a femimetal. For a description of the ores of this metal, the method of extracting it from these ores, and for its properties, see **CALAMINE**; **CHEMISTRY**; **MINERALOGY**; **METALLURGY**. Zinc, besides its medical qualities, is of great use in the arts: united with copper in different proportions, it forms brass and pinchbeck; and united with tin, it forms a kind of pewter. Brass is formed by mixing two parts of copper with one of zinc; pinchbeck by mixing three or four parts of copper to one of zinc: when the metals are mixed in equal quantities they form a very exact imitation of gold. Its inflammable property renders zinc a useful ingredient in fireworks.

It has been proposed to substitute this femimetal instead of tin in the lining of copper vessels; the latter being thought insufficient to prevent the dangerous effects of the copper. Mr. Malouin, who has made many experiments on the lining of vessels in this manner, asserts that it spreads more evenly on the copper than tin itself; that it is much harder and less fusible, and consequently more durable than tin. Mr. Macquer owns these advantages; but thinks it dangerous to be used in culinary vessels, as it is soluble in vegetable acids, and the combination of it with the vitriolic acid is known to be a strong emetic. Gaubius also mentions a celebrated remedy for convulsive disorders, named *luna fixata ludamvio* which Macquer affirms to be strongly emetic in very small doses. "But, may it not be presumed (says Fournoy), that properties which are applicable only to the vitriol and flower zinc, cannot be applied to the femimetal itself, nor even, without farther experiments, to the salts formed by its combination with the vegetable acids." Mr. de la Plandie took the salts of zinc, formed by its combination with vegetable acids, in a much

stronger dose than the aliments prepared in copper covered with zinc can possibly contain them, and found no dangerous effects to follow. The flowers of zinc have been used as an antispasmodic, and are an article of our present materia medica; but it does not clearly appear what success may be expected from them.

ZINNIA, in botany: a genus of plants of the class *syngenesia*, order *polygamia superflua*; and in the natural system arranged under the 49th order, *Compositæ*. The receptacle is paleaceous, the pappus consists of two erect awns, the calyx is ovato-cylindrical and umbicated; the rays consist of five persisting entire florets. There are two species, the *pauciflora* and *multiflora*, neither of which is a native of Britain.

ZINZENDORFF (Nicholas Lewis), count, was the noted founder of the German religious sect called *Moravians*, or *Herrnhuters*, or, as they pretend, the restorer of that society. From his own narrative it appears, that when he came of age in 1721, his thoughts were wholly bent on gathering together a little society of believers, among whom he might live, and who should entirely employ themselves in exercises of devotion under him. He accordingly purchased an estate at Bertholdsdorf in Upper Lusatia, where being joined by some followers, he gave the curacy of the village to a man of his own complexion; and Bertholdsdorf soon became talked of for a new mode of piety. One Christian David, a carpenter, brought a few proselytes from Moravia: they began a new town about half a league from the village, where Count Zinzendorf fixed his residence among them, and where great numbers of Moravians flocked and established themselves under his protection: so that in 1732 their number amounted to 600. An adjacent hill, called the *Hühberg*, gave occasion to these colonists to call their new settlement *Huth des Herrn*, and afterward *Herrnhuth*; which may be interpreted "The guard or protection of the Lord;" and from this the whole sect have taken their name. The count spared neither pains nor art to propagate his opinions; he went himself all over Europe, and at least twice to America; and sent his missionaries throughout the world. Count Zinzendorf died in 1760. Those who wish to know more of the Moravian tenets may consult Rimius's account of them, translated in 1753. See **UNITED BRETHREN**.

ZISCA (John), a famous general of the forces of the Hussites, in the 15th century, was a gentleman educated at the court of Bohemia, in the reign of Wenceslaus. He entered very young into the army, and after distinguishing himself on several occasions, lost an eye in a battle, whence he was called *Zisca*, or *One-eyed*. At length the Reformation, begun by John Huss, spreading through almost all Bohemia, Zisca placed himself at the head of the Hussites, and had soon under his command a body of 40,000 men. With this army he gained several victories over those of the Romish religion, who carried on a kind of crusade against them, and built a town in an advantageous situation, to which he gave the name of *Tabor*; whence the Hussites were afterwards called *Taborites*. Zisca lost his other eye by an arrow at the siege of the city of Rabi; but this did not prevent his continuing the war, his fighting battles, and gaining several great victories, among which was that of Augsp on the Elbe, in which 9000 of the enemy were left dead on the field. The Emperor Sigismund, alarmed at his progress, caused very advantageous proposals to be offered to him; which he readily accepted, and set out to meet Sigismund, but died on the road. He ordered that his body should be left a prey to the birds and wild beasts; and that a drum should be made of his skin, being persuaded that the enemy would fly as soon as they heard the sound. It is added, that the Hussites executed his will; and that the news of this order made such an impression on the disturbed imagi-

nations of the German Papists, that in many battles they actually fled at the beat of the drum with the utmost precipitation, leaving their baggage and artillery behind them.

ZINZIBER, or **ZINGIBER**, in botany. See **AMOMUM** and **GINGER**.

ZION, or **SION** (anc. geog.), a very famous mountain, standing on the north side of the city of Jerusalem (Psal. xlvii. 2.); containing the upper city, built by King David; and where stood the royal palace (Josephus). A part of Zion, situated at its extremity, was called *Millo*, or, in the city of David (2 Chron. xxxii. 5.) Modern travellers, who have been upon the spot, say, that Zion is the whole of the mountain on which Jerusalem stands at this day, though not to the extent in which it anciently stood on the same mountain, as appears, Psal. ix. 12. 15. lxxv. 1. lxxxvii. 2. 3. Il. lxii. 1. It is swelled into several eminences or tops; as Moriah, Acra Bezetha, and Zion a particular eminence of mount and Zion Proper, &c. encompassed on three sides, east, west, and south, with one continued very deep and steep valley; by means of which it was impregnable on these three sides, and always attacked and taken, according to Josephus, by the enemy on the north side, where mount Zion becomes level, and the vales of Gihon and Jehosaphat gradually lose themselves. This deep and steep valley incontestibly constitutes the compass of the old Jerusalem on those three sides, as plainly appears to any person who has been upon the spot. There is another *Zion*, the same with **HERMON**.

ZIPH, or **SIPH** (anc. geog.), the name of a wilderness or desert in the tribe of Judah, where David was a fugitive; lying to the south-east of Hebron; so called from *Ziph* or *Siph*, a twofold town in this tribe; the one more to the south towards Idumea, on the confines of Eleutheropolis (Jerome); the other eight miles to the east of Hebron, towards the Dead Sea, inclining southwards, became near mount Carmel. Here was a mountain, mentioned 1 Sam. xxiii. 14. in which David abode, said by Jerome to be rugged, dismal, and always overcast. *Ziphim*, *Ziphei*, or *Ziphenites*, the inhabitants of *Ziph*, ver. 10.

ZIRCHNITZER-SEE, otherwise called the *Lake of Csirknitz*, in Carniola, is about one German or four English miles in length, and half as much in breadth, contains three beautiful islands, and is encompassed at some distance with mountains and forests. But what is most remarkable is, that it disappears generally once a-year, about St. John's or St. James's day, running off through holes or pits in the bottom; sometimes it will disappear twice or thrice a-year, and sometimes even in winter, if the weather be dry. On the other hand, it has been known to continue two or three years without running off. Of the holes or pits, there are five much larger than the rest, each of which successively, when the water runs off, stands empty five days; so that the whole lake becomes dry in twenty-five. As soon as the beginning of the ebb is observed, the fishing in the pits begins, which belongs to five seigniories. The fish, which are carp, tench, pike, eels, and two other sorts called *schleien*, and *nuten*, are caught by laying nets over the holes. Mr. Keytler tells us, that upon the ringing of a bell at Zirknitz, when the waters begin to fall, the peasants, both men and women, run to the pools quite naked, notwithstanding both the clergy and magistrates have used their utmost endeavours to suppress so indecent a custom. When the water runs off early in the year, in about three weeks after it is gone there is good grass on the bottom, which is mowed down, and the bottom afterwards ploughed and sowed with millet. If the water runs not off early, nothing can be sown; and if it returns soon, the seed is lost.

With respect to its return, the water at first bursts out of some pits on the fourth side with great violence, a little rain always falling at the same time; but afterwards (when the rain falls heavier, and it thunders at the same time so loud as to shake the earth) it breaks out through all the apertures with great force, inasmuch, that the lake is filled in 18 or 24 hours, at which time it is in a manner covered with wild fowl; such as geese, ducks, &c. After the millet-harvest, all manner of game is hunted, caught, or killed in it. On the fourth side are two caverns, out of which, when it thunders, water issues with astonishing violence; and if it happens in harvest, a great many naked, black, and blind, but fat ducklings, are brought up with the water, which in 14 days receive their sight, and are covered with feathers.

ZIZANIA, in botany: a genus of plants of the class *monœcia*, order, *hexandria*; and in the natural system arranged under the 4th order, *Gramina*. There is no male calyx; the corolla is a bivalved, beardless glume, intermixed with the female flowers; there is no female calyx, the corolla is an univalved, cucullated, and aristated glume; the style is bipartite, and there is one seed covered with the plaited corolla. There are three species; the *aquatica*, the *palustris*, and *terrestris*, none of which are natives of Britain.

ZODIAC, in astronomy, a broad circle, whose middle is the ecliptic, and its extremes two circles parallel thereto, at such a distance from it as to bound or comprehend the excursions of the sun and planets (see **ASTRONOMY**). It is a curious enough fact, that the solar division of the Indian zodiac is the same in substance with that of the Greeks, and yet that it has not been borrowed either from the Greeks or the Arabians. The identity, or at least striking similarity, of the division, is universally known; and M. Montucla has endeavoured to prove, that the Bramins received it from the Arabs. His opinion, we believe, has been very generally admitted; but in the second volume of the Asiatic Researches, the accomplished president Sir William Jones has proved unanswerably, that neither of those nations borrowed that division from the other; that it has been known among the Hindoos from time immemorial; and that it was probably invented by the first progenitors of that race, whom he considers as the most ancient of mankind, before their dispersion. The question is not of importance sufficiently general, straitened as we are by the limits prescribed us, for our entering into the dispute; but we think it our duty to mention it, that our astronomical readers, if they think it worth their while, may have recourse to the original writers for further information.

ZOEGERA, in botany: a genus of plants of the class *syngenesia* and order *polygamia fruticosa*. The receptacle is bristly; the pappus setaceous; the corollulae of the radius ligulated; the calyx imbricated. There are two species, the *capensis* and the *leptaurea*, neither of which are natives of Britain.

ZONE, in geography and astronomy, a division of the terraqueous globe with respect to the different degrees of heat found in the different parts thereof. The zones are denominated torrid, frigid, and temperate. The torrid zone is a band, surrounding the terraqueous globe, and terminated by the two tropics. Its breadth is 46° 58'. The equator, running through the middle of it, divides it into two equal parts, each containing 23° 29'. The ancients imagined the torrid zone uninhabitable. The temperate zones are contained between the tropics and the polar circles. The breadth of each is 43. 2. The frigid zones are segments of the surface of the earth, terminated, one by the antarctic, and the other by the arctic circle. The breadth of each is 46. 58.

ZOOLOGY,

IS that part of Natural History, which relates to *Animals*.

In order to abridge the study of zoology, many methods of reducing animals to classes, genera, and species, have been invented: but as that of Linnaeus is undoubtedly the best, the most extensive, and the most generally adopted, we shall give a brief account of it.

Linnaeus divides the whole animal kingdom into six classes. The characters of these six classes are taken from the internal structure of animals, in the following manner:—

CLASS I. MAMMALIA, includes all animals that suckle their young. The characters of this class are these:—The heart has two ventricles and two auricles; the blood is red and warm; and the animals belonging to it are *viviparous*.

CLASS II. AVES, or BIRDS. The characters are the same with those of Class I. excepting that the animals belonging to it are *oviparous*. See **BIRD** and **ORNITHOLOGY**.

CLASS III. AMPHIBIA, or AMPHIBIOUS ANIMALS. The heart has but one ventricle and one auricle; the blood is red and cold; and the animals belonging to this class have the command of their lungs, so that the intervals between *inspiration* and *expiration* are in some measure *voluntary*. See **AMPHIBIOUS**.

CLASS IV. PISCES, or FISHES. The heart has the same structure, and the blood the same qualities with those of the *Amphibia*; but the animals belonging to this class are easily distinguished from the *Amphibia*, by having no such voluntary command of their lungs, and by having external *branchiae* or *gills*. See **FISH** and **ICHTHYOLOGY**.

CLASS V. INSECTA, or INSECTS. The heart has one ventricle, but no auricle; the blood is cold and white; and the animals are furnished with *antenna* or *feelers*. See **INSECT**.

CLASS VI. VERMES, or WORMS. The characters are the same with those of Class V. only the animals have no antennae, and are furnished with *tentacula*.

The *First Class*, **MAMMALIA**, is subdivided into seven **ORDERS**; the characters of which are taken from the number, structure, and situation of the **TEETH**.

ORDER I. THE PRIMATES have four incisores, or *fore-teeth*, in each jaw, and one *dog-tooth*. N.B. By one dog tooth, Linnaeus means one on each side of the *fore-teeth* in both jaws.—This order includes four genera, viz. *Homo*, *Simia*, *Lemur*, *Vespertilio*.

ORDER II. THE BRUTA have no *fore-teeth* in either jaw. This order includes seven genera, viz. *Rhinoceros*, *Elephas*, *Trichechus*, *Bradypus*, *Myrmecophaga*, *Manis*, *Dalypus*.

ORDER III. THE FERÆ have, for the most part, six *conical fore-teeth* in each jaw. This order includes ten genera, viz. *Phoca*, *Canis*, *Felis*, *Viverra*, *Mustela*, *Ursus*, *Didelphis*, *Talpa*, *Sorex*, *Erinaceus*.

ORDER IV. THE GLIRES have two *fore-teeth* in each jaw, and no *dog-teeth*.—This order includes ten genera, viz. *Hystrix*, *Lepus*, *Castor*, *Mus*, *Sciurus*, *Myoxus*, *Cavia*, *Arctomys*, *Dipus*, *Hyrox*.

ORDER V. THE PECORA, have no *fore-teeth* in the upper jaw, but six or eight in the under jaw.—This order includes eight genera, viz. *Camelus*, *Moschus*, *Giraffa*, *Cervus*, *Antelope*, *Capra*, *Ovis*, *Bos*.

ORDER VI. THE BELLUE have *obtusé fore-teeth* in each jaw.—This order includes four genera, viz. *Equus*, *Hippopotamus*, *Sus*, *Tapir*.

ORDER VII. THE CETÆ or whale kind, have no uniform character in their teeth, being very different in the different genera; but are sufficiently distinguished from the other orders of *Mammalia*, by living in the ocean, having pectoral fins, and a *fistula* or *spiraculum* upon the head.—This order includes four genera, viz. *Monodon*, *Balaena*, *Physeter*, *Delphinus*. See **CETACEOUS**.

The generic characters of the *Mammalia* are, like those of the orders, almost entirely taken from the **TEETH**, excepting the *Vespertilio*, which, besides the character of the order derived from the teeth, has this farther mark, that there is a membrane attached to the feet and sides, by means of which the creature is enabled to fly:—the *Hyftrix*, whose body is covered with sharp spines:—and the whole order of *Pecora*, whose genera, besides the characters taken from the teeth, are distinguished into those which have *horns*, those which have *no horns*, and by peculiarities in the horns themselves.

The specific characters are very various, being taken from any part of the body which possesses a peculiar uniform mark of distinction. As examples of these characters are to be found under the proper name of each genus, it is unnecessary to say any thing further concerning them in this place.

The *Second Class*, **AVES**, is subdivided into six **ORDERS**; the characters of which are taken chiefly from the structure of the **BILL**.

ORDER I. THE ACCIPITRES have a **HOOKEED BILL**, the superior mandible, near the base, being extended on each side beyond the inferior; and in some it is armed with *teeth*.—This order includes four species, viz. *Vultur*, *Falco*, *Strix*, *Lanius*.

ORDER II. THE PICÆ have a convex, compressed **BILL**, resembling a knife.—This order contains 23 genera, viz. *Trochilus*, *Certhia*, *Upupa*, *Glaucoptes*, *Buphaga*, *Sitta*, *Oriolus*, *Coracias*, *Gracula*, *Corvus*, *Paradisæa*, *Ramphastos*, *Trogon*, *Pittacus*, *Crotophaga*, *Picus*, *Yunx*, *Cuculus*, *Bucco*, *Boccorus*, *Alcedo*, *Merops*, *Todus*.

ORDER III. THE ANSERES have a smooth **BILL**, broadest at the point, covered with a smooth skin, and furnished with teeth: the tongue is fleshy; and the toes are palmated or webbed.—This order includes 13 genera, viz. *Anas*, *Mergus*, *Phaeton*, *Plotus*, *Rhynchops*, *Diomedea*, *Aptenodyta*, *Alca*, *Procellaria*, *Pelecanus*, *Larus*, *Sterna*, *Colymbus*.

ORDER IV. THE GRALLÆ have a somewhat cylindrical **BILL**: the tail is short, and the thighs are naked.—This order contains 20 genera, viz. *Phonocropterus*, *Platalea*, *Palamedes*, *Mycteria*, *Tantalus*, *Ardea*, *Coriira*, *Recurvirostra*, *Scolopax*, *Tringa*, *Fulica*, *Parra*, *Rallus*, *Vaginalis*, *Plophia*, *Cancroma*, *Scopus*, *Glareola*, *Hamatopus*, *Charadrius*.

ORDER V. THE GALLINÆ have a convex **BILL**; the superior mandible is vaulted over the inferior: the *nostrils* are half covered with a convex cartilaginous membrane; and the feet are divided, but connected, at the inmost joint.—This order contains 10 genera, viz. *Otis*, *Struthio*, *Didus*, *Pavo*, *Meleagris*, *Penelope*, *Crax*, *Phasianus*, *Nimidia*, *Tetrao*.

ORDER VI. THE PASSERES have a conical sharp pointed

BILL; and the *nostrils* are oval, wide, and naked.—This order contains 17 genera, *viz.* Loxia, Colius, Fringilla, Phytotoma, Emberiza, Caprimulgus, Hirundo, Pipra, Turdus, Ampelis, Tanagra, Mucicapa, Parus, Motacilla, Alauda, Sturnus, Columba.

The *generic* characters of this class are taken from peculiarities in the *bill*, the *nostrils*, the *tongue*, the *feet*, the *feathers*, the *face*, the *figure of the body*, &c.

The characters which serve to distinguish the *species* are very various: for example, the *colour* of the particular *feathers* or parts of *feathers*; *crests* of feathers on the head, disposed in different manners; the *colour* of the *cere* or *wax*; the *colour* of the *feet*; the *shape* and *length* of the *tail*; the *number*, *situation*, &c. of the *toes*; the *colour* and *figure* of the *bill*, &c.

The *Third Class*, AMPHIBIA, is divided into two ORDERS.

ORDER I. THE REPTILES have four *feet*, and breathe by the *mouth*.—This order contains four genera, *viz.* Testudo, Draco, Lacerta, Rana.

ORDER II. THE SERPENTES have no *legs*, and breathe by the *mouth*.—This order contains six genera, *viz.* Crotalus, Boa, Coluber, Anguis, Amphibena, Cæcilia.

The *generic* characters of this class are taken from the *general figure of the body*; from their having *tails* or *no tails*; being covered with a *shell*; having *teeth* or *no teeth* in the *mouth*; being furnished with *horns*; having covered or naked bodies; from the *number*, *situation*, and *figure* of the *scuta* and *scales*; from the *number* and *situation* of the *spiracula*; from the *situation* of the *mouth*, &c.

The *specific* characters are so very various, that it would be superfluous to enumerate them.

The *Fourth Class*, PISCES, is subdivided into six ORDERS, the characters of which are taken from the *situation* of the *belly fins*.

ORDER I. THE APODES have no *belly fins*.—This order contains eight genera, *viz.* Murena, Gymnotus, Trichiurus, Anarchichas, Ammodytes, Ophidium, Stromateus, Xiphias, Sternoptyx, Leptocephalus.

ORDER II. THE JUGALARES have the *belly fins* placed before the *pectoral fins*.—This order includes five genera, *viz.* Callionymus, Uranoscopus, Trachinus, Gadus, Blennius, Kurtus.

ORDER III. THE THORACICI have the *belly fins* placed under the *pectoral fins*.—This order comprehends 19 genera, *viz.* Cepala, Echenis, Coryphæna, Gobius, Cottus, Scrophæna, Zeus, Pleuronectes, Chætodon, Sparus, Scarus, Labrus, Sciaenæ, Perca, Gasterosteus, Scomber, Centrogaster, Mullus, Trigla.

ORDER IV. THE ABDOMINALES have the *belly fins* placed behind the *pectoral fins*.—This order contains 16 genera, *viz.* Cobitis, Amia, Silurus, Teuthis, Loricaria, Salmo, Ptilularia, Esox, Elops, Argentina, Aluterina, Mugil, Exocoetus, Polyne-mus, Clupea, Cyprinus.

ORDER V. THE BRANCHIOSTEGI have the *gills* destitute of bony rays.—This order contains 10 genera, *viz.* Mormyrus, Olfiracion, Tetradon, Diodon, Syngnathus, Pegafus, Centricetus, Balistes, Cyclopterus, Lophius.

ORDER VI. THE CHONDROPTERYGII have cartilaginous *gills*.—This order contains five genera, *viz.* Acipenser, Chimæra, Squalus, Raia, Petromyzon.

The *generic* characters of this class are taken from peculiarities in the *head*, the *mouth*, the *teeth*, the *nostrils*, the *rays* in the *membrane* of the *gills*, the *eyes*, the *general figure* of the *body*, the *figure* of the *tail*, the *situation* of the *spiracula*, &c.

The *specific* characters are taken from peculiarities in all the parts above enumerated, and many others.

See further the articles FISH and ICHTHYOLOGY.

The *Fifth Class*, INSECTA, is subdivided into seven ORDERS, the characters of which are taken from the wings: See the article INSECT.

ORDER I. THE COLEOPTERA have four wings, the two superior ones being crustaceous, and furnished with a *straight future*.—This order comprehends 47 genera, *viz.* Scarabæus, Lucanus, Dermestes, Melysrus, Byrrhus, Silpha, Tritoma, Hydrophilus, Hister, Psephenus, Bostrichus, Anthrenus, Nitidula, Coccinella, Curculio, Brentus, Attelabus, Erodium, Staphylinus, Scaurus, Zygia, Meloe, Tenebrio, Cassida, Opatrum, Mordella, Chryfomela, Horia, Apalus, Manticora, Pimelia, Gyrimus, Cucujus, Cryptoccephalus, Bruchus, Pissinus, Hispa, Buprestis, Necydalis, Lampyrus, Cantharis, Notoxus, Elater, Calopus, Alurnus, Carabus, Lytta, Serpophalus, Cerambyx, Leptura, Rhinomacrus, Zonitis, Cicindela, Dytiscus, Forficula.

ORDER II. THE HEMIPTERA have four wings, the two superior ones being *semicrustaceous* and *incumbent*, i. e. the *interior edges* lie above one another.—This order includes 14 genera, *viz.* Blatta, Pneumora, Mantis, Gryllus, Fulgora, Cicada, Notonecta, Nepa, Cimex, Macrocephalus, Aphis, Chermes, Coccus, Thrips.

ORDER III. THE LEPIDOPTERA have four wings, all of them imbricated with *scales*.—This order contains three genera, *viz.* Papilio, Sphinx, Phalaena.

ORDER IV. THE NEUROPTERA have four wings, interwoven with veins, like a piece of *network*, and *no wing* in the *anus*.—This order includes seven genera, *viz.* Libella, Ephemeræ, Hemerobius, Myrmelion, Phryganea, Panorpa, Rophidia.

ORDER V. THE HYMENOPTERA have the same characters with the former, only the *anus* is armed with a *sting*. But this mark is peculiar to the *females* and *neuters*; for the males have *no sting*. This order comprehends 15 genera, *viz.* Cynips, Tentredo, Sirex, Ichneumon, Spheg, Scolia, Thynnus, Leucospis, Tiphia, Chalcis, Chrysis, Vespa, Apis, Formica, Mutilla.

ORDER VI. THE DIPTERA have two wings, and two *clawed halteres* or *balances* behind each wing.—This order contains 12 genera, *viz.* Diopsis, Tipula, Musca, Tabanus, Empis, Conops, Oestrus, Ailus, Stomoxys, Culex, Bombylius, Hippoboscæ.

ORDER VII. THE APTERA have no wings.—This order contains 15 species, *viz.* Lepisma, Podura, Termites, Pediculus, Pulex, Acarus, Hydrachna, Aranea, Phalangium, Scorpio, Cancer, Monoculus, Oniscus, Scolopendra, Julus. See further the articles ENTOMOLOGY and INSECT.

The *Sixth Class*, VERMES, is divided into five ORDERS.

ORDER I. THE INTESTINA are the most *simple animals*, being perfectly *naked*, and without *limbs* of any kind.—This order contains 21 genera, *viz.* Ascaris, Trichocephalus, Uncinaria, Tilaria, Scolex, Ligula, Linguatula, Strongylus, Echinorhynchus, Hæruca, Cucullanus, Caryophyllæus, Fasciola, Trænia, Furia, Myxine, Gordius, Hirudo, Lumbricus, Sipunculus, Planaria.

ORDER II. THE MOLLUSCA are likewise *simple naked animals*, without any *shell*; but they are *beachiated*, or furnished with a kind of *limbs*.—This order comprehends 31 genera, *viz.* Aetina, Clava, Mammaria, Pedicellaria, Alcidia, Salpa, Dasyatis, Pterotrachea, Limax, Aplysia, Doris, Tethis, Holothuria, Terebella, Triton, Sepia, Clio, Lobaria, Lernæa, Scyllæa,

Glancus, Aphrodita, Amphitrite, Spio, Nereis, Nais, Physophora, Medusa, Lucernaria, Aterias, Echinus.

ORDER III. The TESTACEA have the same characters with those of Order II. but are covered with a *shell*.—This order includes 36 genera, *viz.* Chiton, Lepas, Pholas, Mya, Solen, Tellina, Cardium, Mastra, Donax, Venus, Spondylus, Chama, Arca, Ostrea, Anomia, Mytilus, Pinna, Argonauta, Nautilus, Conus, Cypraea, Bulla, Voluta, Buccinum, Strombus, Murex, Trochus, Turbo, Helix, Nerita, Haliotis, Patella, Dentalium, Serpula, Terebo, Sabella.

ORDER IV. The ZOOPHYTA are compound animals, furnished with a kind of *flowers*, and having a vegetating root and *stem*.—This order contains 15 genera, *viz.* Tubipora, Ma-

drepora, Millepora, Cellepora, Isis, Antipathes, Gorgonia, Alcyonium, Spongia, Flustra, Tubularia, Corallina, Sertularia, Pennatula, Hydra. See ANIMAL Flower.

ORDER V. The INFUSORIA consists of very small *simple animals*.—This order contains 15 genera, *viz.* Brachionus, Vorticella, Trichoda, Cercaria, Leacopera, Gonium, Colpoda, Paramacium, Cycloidium, Burfaria, Vibrio, Eichelis, Bacillaria, Volvox, Monas.

For more particular information concerning the several branches and subjects of zoology, the reader may consult the various articles above referred to, and he will find most of the genera described in their order in the alphabet.

Z O S

ZOOPHYTE, in natural history, the 4th order of the class of *Vermes*. See ZOOLOGY.

ZOOTOMY, the art of dissecting animals or living creatures, being the same with anatomy. See ANATOMY and COMPARATIVE Anatomy.

ZORILLE, in zoology, a species of weasel, having the back and sides marked with short stripes of black and white, the last tinged with yellow; the tail long and bushy, partly white and partly black; the legs and belly black. This animal inhabits Peru, and other parts of South America: its pestilential vapour overcomes even the panther of America, and supposes that formidable enemy.

ZOROASTER, or ZERDUSHT, a celebrated ancient philosopher, said to have been the reformer or the founder of the religion of the magi. It is wholly uncertain to how many eminent men the name of Zoroaster belonged. Some have maintained that there was but one Zoroaster, and that he was a Persian; others have said that there were six eminent founders of philosophy of this name. Ham, the son of Noah, Moses, Osiris, Mithras, and others, both gods and men, have, by different writers, been asserted to have been the same with Zoroaster. Many different opinions have also been advanced concerning the time in which he flourished. Aristotle and Pliny fix his date at so remote a period as 6000 years before the death of Plato. According to Laertius, he flourished 600 years before the Trojan war; according to Suidas, 500. If, in the midst of so much uncertainty, any thing can be advanced with the appearance of probability, it seems to be this; that there was a Zoroaster, a Perso-Median, who flourished about the time of Darius Hytaspes; and that besides him there was another Zoroaster, who lived in a much more remote period among the Babylonians, and taught them astronomy. The Greek and Arabian writers are agreed concerning the existence of the Persian Zoroaster; and the ancients unanimously ascribe to a philosopher, whom they call *Zoroaster*, the origin of the Chaldean astronomy, which is certainly of much earlier date than the time of Hytaspes: it seems, therefore, necessary to suppose a Chaldean Zoroaster distinct from the Persian. Concerning this Zoroaster, however, nothing more is known, than that he flourished towards the beginning of the Babylonish empire, and was the father of the Chaldean astrology and magic. All the writings that have been ascribed to Zoroaster are unquestionably spurious.

ZOSTERA, in botany: a genus of plants of the class *gyandria*, order *polyandria*; and in the natural system arranged under the second order, *Piperitæ*. The spadix is linear, and fertile only on one side; there is no calyx nor corolla; the stamina are alternate; the seeds solitary and alternate. There

Z U G

are two species, the marina and oceanica; neither of which is a native of Britain.

ZOSIMUS, an ancient historian who lived at the end of the fourth and beginning of the fifth centuries. There are six books of his history extant; in the first of which he runs over the Roman affairs in a very succinct manner from Augustus to Dioclesian; the other five are written more diffusely. Zosimus was a zealous Pagan; whence we find him frequently inveighing with great bitterness against the Christian princes, particularly against Constantine the Great, and the elder Theodosius. His history has been published with the Latin version of Leunclavius at Frankfort, 1590, with the other minor historians of Rome, in folio; and at Oxford in 8vo. 1679.

ZUG, a canton of Switzerland, bounded on the north and east by Zurich, on the south by Schweiz; and on the west by Lucern; only about ten miles long, and nearly as much in breadth. The pastures here are excellent, and it produces also a sufficiency of grain, with plenty of fruit, and some wine; on one side of the Zug Lake, the country is covered with chestnut-trees, which form a very profitable branch of trade, by the sale of the nuts to the neighbouring countries. This district, on the extinction of the counts of Lenzburg, devolved to those of Kyburg, which latter also failing, it came to the counts of Habsburg, and in them to the House of Austria, towards which it always manifested an inviolable attachment; but in the year 1352 the town of Zug being besieged by the Helvetic confederacy, and not only neglected by the archduke, but even recommended by him to surrender, it followed his advice, and was admitted into the confederacy, to which its territory had previously acceded. This canton is the seventh in rank, and among the lesser ones the fifth, besides which, it is in a particular manner connected with Lucern, Uri, Schweiz, and Unterwalden, commonly called the five territorial confederates. The government of this canton is entirely democratical; the supreme council being lodged in the landgemeine, which meets annually in the town of Zug. In this council, every male of sixteen years of age is possessed of a vote, and here also all public posts are conferred. It is composed of deputies from the several quarters of the canton. The chief person here is the amman, who is elected alternately from the town and the territory, though with this difference, that the town amman continues in office three years, but the country amman two; this officer must always reside in the town; next to him is the statthalter, who has the keeping of the provincial seal. The people of this canton are reckoned the most restless of Switzerland; their general assemblies are often tempestuous, though seldom attended with bloodshed.

ZUINGLIUS (**ULRICUS**), an able and zealous reformer of the church, was born at Wildehausen in Switzerland, in 1487.—He was sent to school at Basel early, and thence removed to Bern, where he learned the Greek and Hebrew tongues. He studied philosophy at Vienna, and divinity at Basel, where he was admitted doctor in 1505. He began to preach with good success in 1506, and was chosen minister of Olaris, a chief town in the canton of the same name, where he continued till 1516. Then he was invited to Zurich, to undertake the principal charge of that city, and to preach the word of God there. He died in 1531, having written several books in defence of his doctrines. His works amounted to 4 vols. in folio, the greatest part of which were written in German, and afterwards translated into Latin.

ZURIC, or **ZÜRICH**, a canton of Switzerland, and first in rank, bounded on the north by Swabia and the canton of Scaffhausen, on the east by the Thurgau and the county of Toggenburg, on the south by the cantons of Schwitz and Zug, and on the west by the county of Baden. This canton is not unaptly called an epitome of all Switzerland, as containing in it hills, valleys, plains, corn-lands, vineyards, lakes, rivers, vegetables of all kinds, and whatever else is necessary to the support of life. Grain is cultivated all over the country; but it ripens later in the mountainous parts, where the air is coldest, than in the levels or sunny valleys. The hilly grounds in the east, west, and south borders, afford a specimen of the fertile Alps, as abounding in cattle, milk, butter, and cheese: at first the wines have a tartness attending them, yet they improve by keeping; and, after lying some years in the cask, become smooth, pleasant, and wholesome. Fruits also are every-where found in great plenty, and very good. The most remarkable minerals and soils are chalk, potter's earth of several sorts and colours, sulphur, and pit-coal; some mineral springs are likewise found. The proportion of grain to the other productions of the earth, will appear from the following calculation: there are 217,424 acres laid out in grain, 134,466 in vines, 94,553 in meadows, 42,519 in pasturage, and 103,772 in forests. As sufficient corn is not produced for the interior consumption, the deficiency is chiefly supplied from Swabia. In order to prevent a scarcity of this material article, a public granary is maintained, at the expence of government, for grain at the common price; but, in seasons of scarcity, it is sold considerably cheaper than it can be purchased at the market. The canton contained, in 1784, 174,572 souls, including 10,500 in the capital: this large population, in proportion to the size of the canton, is owing to the trade of Zurich; as, at least, two-thirds of the inhabitants derive their livelihood by spinning thread and silk, and making linen for the manufactures of the town. The sovereign power resides exclusively in the burgesies of the town, consisting of about 2000. The reformation was begun by Zuinglius, in the year 1517, in the town of Zurich; and in 1524 gained footing in the whole canton.

ZURICH, a city of Switzerland, and capital of a canton of the same name, situated on a large lake, where the river Limmat is discharged, which divides it into two parts, supposed to have been built on the site of the ancient Tigurum, which was destroyed by the Allemanni. Zurich was formerly an imperial city, and obtained from the Emperor (Frederic II.) very considerable privileges, which were acknowledged and augmented by several of his successors. The civil war between the magistrates and the people, in the year 1335, nearly reduced the city to ruins; but the former being banished, the citizens, in 1337, established a new form of government, which was confirmed by the Emperor Louis of Bavaria. The ex-

iles, after several fruitless attempts, were at length re-admitted; but engaging in a conspiracy against the city, were discovered, and put to death. In consequence of this transaction, the nobles in the neighbourhood took up arms; and Zurich, after having ineffectually applied for assistance to the Emperor Charles IV. formed an alliance with Lucerne, Uri, Schwitz, and Underwalden, and was admitted a member of their confederacy: this event happened in the year 1351. The four cantons yielded the pre-eminence to Zurich: a privilege it enjoys at present; being the first canton in rank, and the most considerable in extent, both of territory and power, next to Berne. In the same year, Zurich was assisted by the four cantons against Albert duke of Austria, who besieged the town, and was repulsed with great loss. Zurich was the first town in Switzerland that separated from the church of Rome, being converted by the arguments of Zuinglius. The town is divided into two parts; the old part, surrounded with the same ancient battlements and towers which existed in the thirteenth century; and the suburbs, which are strengthened by fortifications in the modern style, but too extensive. The ditches, instead of being filled with stagnant water, are mostly supplied with running streams. The inhabitants are very industrious, and carry on with success several manufactures: the principal are those of linens and cottons, muslins and silk handkerchiefs. The manufacturers do not, in general, dwell within the walls; but the materials are mostly prepared, and the work is completed in the adjacent districts; for this reason, Zurich does not exhibit the activity and numbers of a great commercial city: the environs, on the contrary, are so extremely populous, that, perhaps, few districts in the neighbourhood of a town, whose population scarcely exceeds 10,500 inhabitants, contain, within so small a compass, so many souls. The streets are mostly narrow; the houses and public buildings accord more with plainness and convenience than with the elegance and splendour of a capital. The town contained, in 1780, 10,559 souls. Among their sumptuary laws, the use of a carriage in the town is prohibited to all sorts of persons, except strangers. The militia of the canton amounted, in 1781, to 25,718 infantry, 1025 artillery, 885 dragoons, and 405 chasseurs; in all, 28,235 effective men. The arsenal is well supplied with cannon, arms, and ammunition, and contains a reserve of muskets for 30,000 men: 41 miles S.E. Bâle, and 36 S.W. Constance. Long. 26. 9. E. Ferro. Lat. 47. 22. N. **ZURICH**, a lake of Switzerland, in a canton to which it gives name: 22 miles long, and two wide. It is divided into Upper and Lower.

ZUTPHEN, a strong and considerable town of the United Provinces in Guelderland, and capital of a county of the same name. It has a magnificent church, and is surrounded with walls. It was taken by the French in 1672, who, in 1674, delivered it up to the states-general. It is seated at the confluence of the rivers Berkel and Yessel, nine miles south-east of Deventer, and 55 east by south of Amsterdam. E. Long. 6. 0. N. Lat. 52. 10.

ZUYDER-ZEE, a great gulph or bay of the German Ocean, which extends from south to north in the United Provinces, between Friesland, Over-Yessel, Guelderland, and Holland. It is so called from its situation towards the south. It is said that the Zuyder-zee was formerly a lake, and that the land is swallowed up which united North-Holland with Friesland.

ZYGOMA, in anatomy, a bone of the head; or rather an union or assemblage of two processes or eminences of bones; the one from the os temporis, the other from the os maxillæ.

these processes are hence termed the *zygomatic processes*, and the future that joins them together is denominated the *zygomatic future*. See ANATOMY.

ZYGOMATICUS, in anatomy, a muscle of the head, arising from the *Os ZYGOMA*, whence its name, and terminating at the angle of the lips.

ZYGOPHYLLUM, BEAN-CAPER, in botany: a genus of plants of the class of decandria and order monogynia, and in the natural system arranged under the 14th order, *Grinales*. There are eleven species, partly shrubby and partly herbaceous

plants, all natives of warm climates, though some of them are hardy enough to endure the open air in this country.

ZYMOSIMETER (formed from *ζυμωσις* fermentation, and *μετρος* measure), an instrument proposed by Swammerdam in his book *De Respiratione*, wherewith to measure the degree of fermentation occasioned by the mixture of different matters, and the degree of heat which those matters acquire in fermenting, as also the heat or temperament of the blood of animals.

S U P P L E M E N T

TO THE

ENGLISH ENCYCLOPÆDIA;

CONTAINING,

1. Articles omitted.
2. Recent Improvements in the Arts and Sciences.
3. Additions to Articles already inserted (marked *En cycl.*).
4. The Correction of Errors.

AARON, high-priest of the Jews, and brother to Moses, was by the father's side great-grandson, and by the mother's grandson, of Levi. By God's command he met Moses at the foot of Mount Horeb, and they went together into Egypt to deliver the children of Israel: he had a great share in all that Moses did for their deliverance; the scriptures call him the prophet of Moses, and he acted in that capacity after the Israelites had passed over the Red Sea. He ascended Mount Sinai with two of his sons, Nadab and Abihu, and seventy elders of the people; but neither he nor they went higher than half way, from whence they saw the glory of God: only Moses and Joshua went to the top, where they staid forty days. During their absence, Aaron, overcome by the people's eager intreaties, set up the golden calf, which the Israelites worshipped by his consent. This calf has given rise to various conjectures. Some rabbies maintain, that he did not make the golden calf, but only threw the gold into the fire, to get rid of the importunities of the people; and that certain magicians, who mingled with the Israelites at their departure from Egypt, cast this gold into the figure of a calf. According to some authors, the fear of falling a sacrifice to the resentment of the people, by giving a refusal, made Aaron comply with their desire: and they allege also, that he hoped to elude their request, by demanding of the women to contribute their ear-rings, imagining they would rather choose to remain without a visible deity, than be deprived of their personal ornaments. This affair of the golden calf happened in the third month after the Israelites came out of Egypt. In the first month of the following year, Aaron was appointed high-priest by God, which office he executed during the time that the children of Israel continued in the wilderness. He died in the fortieth year after their departure from Egypt, upon Mount Hor, being then 123 years old; A. M. 2522, of the Julian period 3262, before the Christian era 1452.

AARON BEN ASER, a celebrated rabbi, who, in the fifth century, had a share in the invention of the Hebrew points and accents.

AARON of Alexandria, a Christian priest and physician, who flourished in Egypt about the year 621. He is the most ancient author who has treated of the small-pox.

AARON HARRISON, a learned rabbi and caraites in the 13th century, wrote an Hebrew grammar, printed at Constantinople 1581; probably the same with Aaron the caraites, who

wrote a commentary on the five books of Moses, which is in MS. in the French king's library.

AARENS (Peter), a painter, called in Italy Pietro Longo, because of his stature, was born at Amsterdam 1519. He was eminent for all kinds of subjects; but was particularly famous for altar-pieces, and for representing a kitchen with its furniture: he had the pain to see a fine altar-piece of his destroyed by the rabble in the insurrection 1566, though a lady of Alcmæer offered 200 crowns for its redemption.

AARENS (Francis), lord of Someldyck and Spyeck, was one of the greatest ministers for negotiation the United Provinces could ever boast of. Cornelius Aarfens, his father, was register to the States; and being acquainted with Mr. du Pleffis Mornay at the court of William prince of Orange, he prevailed upon him to take his son under him, with whom he continued some years. John Olden Barneveldt, who presided over the affairs of Holland and all the United Provinces, sent him afterwards agent into France; where he learned to negotiate under those profound politicians, Henry IV. Villeroy, Rosny, Sillery, Jeannin, &c.; and he acquitted himself so well as to obtain their approbation. Soon after he was invested with the character of ambassador, being the first who was recognized as such by the French court; at which time Henry IV. declared that he should take precedence next to the Venetian minister. He resided in France fifteen years; during which time he received great marks of esteem from the king, who created him a knight and baron; and for this reason he was received amongst the nobles of the province of Holland. However, he became at length so odious to the French court, that they desired to have him recalled. He was afterwards deputed to Venice, and to several German and Italian princes, upon occasion of the troubles in Bohemia: this was in 1620; "and it is to be observed," says Mr. Wicquefort, "that the French king ordered the Duke of Angoulême, the Count of Methune, and Abbé des Preaux, his three ambassadors, not to receive visits from Mr. Aarfens who came from the States of the United Provinces to negotiate with some German and Italian princes, upon the same affairs of Bohemia for which the ambassadors of France had been deputed. The order sent for this purpose signified, "that it was not intended as any indignity to the States, with whom the king was desirous to live always in friendship, but entirely upon account of Mr. Aarfens, for his having acted in a manner inconsistent with the interest and dignity of his majesty."

Mr. Aarsens was the first of three extraordinary ambassadors sent to England in 1620; and the second, in 1641. In this last embassy, his colleagues were the lord of Brederode, first ambassador, and Hermisvliet, as third; they were to treat about the marriage of Prince William, son to the Prince of Orange. He was also ambassador extraordinary at the French court in 1624; and Cardinal Richelieu having just taken the administration into his hands, and knowing he was an able man, made use of him to serve his own purposes. Aarsens died in a very advanced age; and his son, who survived him, was reputed the wealthiest man in Holland. He has left very accurate and judicious memoirs of all those embassies in which he was employed; and it must be observed, that the various instructions given him by the States, and all the credential letters he carried in his later embassies, were drawn by himself; "whence we may conclude," says Mr. Wicquefort, "that he was the ablest person in all that country, not only for conducting of negotiations, but for instructing ambassadors what to negotiate upon."—Du Maurier, in his memoirs, says, "that he was of a spirit the most dangerous which ever arose in the United Provinces, and the more to be dreaded, as he concealed all the malevolence and artifice of foreign courts under the appearance of Dutch bluntness and simplicity; that he was vehement and persuasive, could advance arguments in favour of the worst causes, had an intriguing genius, and had kept a secret correspondence with some great men in France, whose conduct was not only suspected, but highly offensive to the king; and that, having bribed the French ambassador's secretary at the Hague, he thereby discovered the most secret designs of the French court." By this account we may see that Aarsens was a man of great abilities, and had an excellent turn for political negotiations.

AARTGEN, or AERTGEN, a painter of merit, was the son of a wool-comber, and born at Leyden in 1498. He worked at his father's trade till he was eighteen, and then, having discovered a genius for designing, he was placed with Cornelius Engelhechtz, under whom he made a considerable progress in painting. He became so distinguished, that the celebrated Francis Floris went to Leyden out of mere curiosity to see him. He found him inhabiting a poor half-ruined hut, and in a very mean style of living; he solicited him to go to Antwerp, promising him wealth and rank suitable to his merit, but Aartgen refused, declaring, that he found more sweets in his poverty than others did in their riches. It was a custom with this painter never to work on Mondays, but to devote that day with his disciples to the bottle. He used to stroll about the streets in the night, playing on the German flute; and in one of those frolics he was drowned in 1564.

ABA (or rather ABAY) HANISAH, surnamed Al-Nooman, was the son of Thabet, and born at Cousah in the 80th year of the Hegira; this is the most celebrated doctor of the orthodox Mussulmans, and his sect holds the principal esteem among the four which they indifferently follow. Notwithstanding this, he was not very well esteemed during his life, inasmuch that the khaliff Almanzor caused him to be imprisoned at Bagdat, for having refused to subscribe to the opinion of absolute predestination, which the Mussulmans called Cadha. But afterwards Abou Joseph, who was the sovereign judge or chancellor of the empire, under the khaliff Hadi, brought his doctrine into such credit, that it became a prevailing opinion, that to be a good Mussulman was to be a Hanafite. He died in the 150th year of the Hegira, in the prison of Bagdat aforesaid. And it was not till 375 years after his death, that Melick Schah, a sultan of the Selgucidan race, built for him a magnificent monument in the same city, whereto he adjoined a college peculiarly appropriated to such as made a profession of this sect. This was in the 485th

year of the Hegira, and Anno Christi 1092. The most eminent successors of this doctor were Ahmed Benali, Al Giasias, and Al Razi, who was the master of Nassiri; and there is a mosque particularly appropriated to them in the temple of Mecca.

ABACISCUS, in architecture, the same with ABACUS; for which, see *Encyclopædia*.

ABADDON, is the name which St. John in the Revelations gives to the king of the locusts, the angel of the bottomless pit. The inspired writer says, this word is Hebrew, and in Greek signifies *Ἀβaddon*, i. e. a *destroyer*. That angel-king is thought to be Satan; or the devil: but Mr. le Clerc thinks, with Dr. Hammond, that by the locust which came out of the abyss, may be understood the zealots and robbers, who miserably afflicted the land of Judea, and laid it in a manner waste, before Jerusalem was taken by the Romans; and that Abaddon, the king of the locusts, may be John of Gischala, who, having treacherously left that town a little before it was surrendered to Titus, came to Jerusalem, where he soon headed part of the zealots, who acknowledged him as their king, whilst the rest would not submit to him. This subdivision of the zealot-party brought a thousand calamities on the Jews.

ABADIR, a title which the Carthaginians gave to gods of the first order. In the Roman mythology, it is the name of a stone which Saturn swallowed; by the contrivance of his wife Opa, believing it to be his new-born son Jupiter; hence it ridiculously became the object of religious worship.

ABÆ, or ΑΒΑ, a town of Phocis in Greece, near Helicon; famous for an oracle of Apollo older than that at Delphi, and for a rich temple plundered and burnt by the Persians. (Strabo.)

ABAKANSKOI, a fortified town of Siberia, in the province of Tobolsk, seated on the Janekka. Long. 94. 5. E. Lat. 53. 5. N.

ABALIENATUS, among physicians, means corrupted. When applied to the body, it signifies that a part is so destroyed as to require extirpation. When applied to the senses, it expresses their total destruction.

ABALLABA, now *Appleby*, a town in Westmoreland, remarkable only for its antiquity, having been a Roman station. (Notitia Imperii.) See *APPLEBY*.

ABANA (Bible), otherwise *Amara*, a river of Phœnicia, which, rising from Mount Hermon, washes the south and west sides of Damascus, and falls into the Phœnician sea, to the north of Tripolis, called *Corymborhoas* by the Greeks.

ABANTES, a people who came originally from Thrace, and settled in Phœcia, a country of Greece, where they built a town which they called Abas, after the name of Abas their leader; and, if we may credit some ancient authors, the Abantes went afterwards into the island Eubœa, now called Negropont: others say, the Abantes of Eubœa came from Athens. The Abantes were a very warlike people, closing with their enemies, and fighting hand to hand. See next article.

ABANTIAS, or ABANTIS, a name of the island Eubœa, in the Egean sea, extending along the coast of Greece, from the promontory Sunium of Attica to Thessaly; and separated from Bœotia by a narrow strait, called Euripus. From its length the island was formerly called *Macris*; afterwards *Abantias*, or *Abantis*, from the Abantes, a people originally of Thrace, called by Homer *ἰσθμίου νοτίωνες*, from wearing their hair long behind, having in a battle experienced the inconvenience of wearing it long before; and from cutting their forelocks, they were called *Curetes*. (*Abantæus*, the epithet.) Ovid.) See *ABANTES*, above.

ABARIM, high mountains of steep ascent, separating the

country of the Ammonites and Moabites from the land of Canaan, where Moses died. According to Josephus, they stood opposite to the territory of Jericho, and were the last station but one of the Israelites coming from Egypt. Nebah and Pithah were parts of these mountains.

ABARIS, the Hyperborean; a celebrated sage of antiquity, whose history and travels have been the subject of much learned discussion. Such a number of fabulous stories were told of him, that Herodotus himself seems to scruple to relate them. He tells us only, that this barbarian was said to have travelled with an arrow, and took no sustenance: but this does not acquaint us with the marvellous properties which were attributed to that arrow; nor that it had been given him by the Hyperborean Apollo. With regard to the occasion of his leaving his native country, Harpocration tells us, that the whole earth being infested with a deadly plague, Apollo, upon being consulted, gave no other answer, than that the Athenians should offer up prayers in behalf of all other nations; upon which, several countries deputed ambassadors to Athens, among whom was Abaris the Hyperborean. In this journey he renewed the alliance between his countrymen and the inhabitants of the island of Delos. It appears that he also went to Lacedæmon; since, according to some writers, he there built a temple consecrated to Proserpine the Salutory. It is asserted, that he was capable of foretelling earthquakes, driving away plagues, laying storms, &c. He wrote several books, as Suidas informs us, viz. Apollo's Arrival into the Country of the Hyperboreans; The Nuptials of the River Hebrus; *Θεογυνα*, or the Generation of the Gods; A Collection of Oracles; &c. Himerius, the sophist, applauds him for speaking pure Greek; which attainment will be no matter of wonder to such as consider the ancient intercourse there was between the Greeks and Hyperboreans. As to what relates to his abilities, Himerius informs us, that "he was affable and pleasant in conversation, in dispatching great affairs secret and industrious, quick-sighted in present exigencies, in preventing future dangers circumspect, a searcher after wisdom, desirous of friendship, trusting in deed little to fortune, and having every thing trusted to him for his prudence." Neither the Academy nor the Lyceum could have furnished a man with fitter qualities to travel so far abroad, and to such wise nations, about affairs no less arduous than important. And if we further attentively consider his moderation in eating, drinking, and the use of all those things which our natural appetites incessantly crave; joining the candour and simplicity of his manners with the solidity and wisdom of his answers, all which we find sufficiently attested; it must be owned, that the world at that time had few to compare with Abaris.

ABAS, in the heathen mythology, was the son of Hypochoon and Meganira, who entertained Ceres, and offered a sacrifice to that goddess; but Abas ridiculing the ceremony, and giving her opprobrious language, she sprinkled him with a certain mixture she held in her cup, on which he became a newt or water-lizard.

ABAS (Schah) the Great, was third son of Codabendi, seventh king of Persia, of the race of the Sophis. Succeeding to his father at 18, in 1585, he found the affairs of Persia at a low ebb, occasioned by the conquests of the Turks and Tartars. He regained several of the provinces they had seized; but death put a stop to his victories in 1629, after a reign of 44 years. He was the greatest prince that had reigned in Persia for many ages; and it was he who made Isfahan the metropolis of Persia; his memory is held in the highest veneration among the Persians.

ABAS (Schah), his grandson, ninth king of Persia, of the race of the Sophis, succeeded his father Sefi at 13 years of age.

age: he was but 18 when he made himself master of the city of Candahar, which had surrendered, in his father's reign, to the Great Mogul, and all the provinces about it; and he preserved it afterwards against this Indian emperor, though he besieged it more than once with an army of 300,000 men. He was a very merciful prince, and openly protected the Christians: he had formed a design of extending the limits of his kingdom toward the north, and had for that effect levied a powerful army; but death put a stop to all his great designs, at 37 years of age, in 1666.

ABASCIA, or ABASIA, a country in Asia, tributary to the Turks, situated on the coast of the Black Sea. The people are poor, thievish, and treacherous, inasmuch that there is no trading with them without the utmost caution. Their commodities are furs, buck and tyger skins, linen yarn, box-wood, and bees-wax: but their greatest traffic is in selling their own children, and even one another, to the Turks; inasmuch that they live in perpetual distrust. They are destitute of many necessities of life, and have nothing among them that can be called a town; though we find Anapocia, Dandar, and Czekorni, mentioned in the maps. They have the name of Christians; but have nothing left but the name, any more than the Mingrelians their northern neighbours. The men are robust and active, and the women are fair and beautiful; on which account the Turks have a great value for the female slaves, whom they purchase from among them. Their customs are more the same as those of the Mingrelians. E. Long. from 39 to 43. Lat. from 43 to 45.

ABASKAJA, a town of Siberia, on the river Iſchim. The church is surrounded by a rampart and palisades, and garrisoned by dragoons. Long. 69. 5. E. Lat. 50. 10. N.

ABATEMENT, in law. See TO ABATE.

ABATEMENT, in the customs, an allowance made upon the duty of goods, when the quantum damaged is determined by the judgment of two merchants upon oath, and ascertained by a certificate from the surveyor and land-waiter.

ABATIS, or ABATTIS, is, in military language, the name of a kind of entrenchment made of felled trees. When the emergency is sudden, the trees are merely laid lengthwise beside each other, with their branches pointed towards the enemy, to prevent his approach, whilst the trunks serve as a breastwork before those by whom the abatis is raised. When the abatis is meant for the defence of a pass or entrance, the boughs of the trees are generally stripped of their leaves and pointed; the trunks are planted in the ground; and the boughs are interwoven with each other. It is needless to add, that the closer the trees are laid or planted together, the more secure is the defence which they afford; and if, when they are planted, a small ditch be dug towards the enemy, and the earth thrown up properly against the lower part of the abatis, it will be very difficult to pass it if well defended.

ABATOR, in law, a term applied to a person who enters to a house or lands, void by the death of the last possessor, before the true heir.

ABATOS, an island in the lake Meiris, formerly famous for its flax and papyrus. It was the burial-place of Osiris, (Lucan.)

ABBADIE (James), an eminent Protestant divine, born at Nay in Bern, in 1654; first educated there under the famous John la Placette, and afterwards at the university of Sedan. From thence he went into Holland and Germany, and was minister in the French church of Berlin. He left that place in 1690; came into England; was some time minister in the French church in the Savoy, London; and was made dean of Killaloe in Ireland. He died at St. Mary le Bonne, near London, in 1727, aged 73. He was strongly attached to the cause of King William as appears in his el-

torate defence of the revolution, and his history of the assassination-plot. He had great natural abilities, which he improved by true and useful learning. He was a most zealous defender of the primitive doctrine of the Protestants, as appears by his writings; and that strong nervous eloquence, for which he was so remarkable, enabled him to enforce the doctrines of his profession from the pulpit with great spirit and energy. He published several works in French that were much esteemed; the principal of which are, *A Treatise on the Truth of the Christian Religion*; *The Art of knowing one's Self*; *A Defence of the British Nation*; and, *The History of the last Conspiracy in England*, written by order of King William III.

ABBAS, son of Abdalmothleb, and Mahomet's uncle, opposed his nephew with all his power, esteeming him an impious and infidel; but in the second year of the Hegira, being overcome and made a prisoner at the battle of Bendir, in 623, a great ransom being demanded for him, he represented to Mahomet, that his paying it would reduce him to poverty, which would redound to the dishonour of the family. But Mahomet having been informed of Abbas's having secreted large sums of money, asked him after the purses of gold he had left in his mother's custody at Mecca. Abbas, upon this, conceiving him to be really a prophet, embraced his new religion; became one of his principal captains; and saved his life when in imminent danger at the battle of Hainin, against the Thakefites, soon after the reduction of Mecca. But besides being a great commander, Abbas was a famous doctor of the Mussulman law, inasmuch that he read lectures upon every chapter of the Koran, as his nephew pretended to receive them one by one from heaven. He died in 652, and his memory is held in the highest veneration among the Mussulmans to this day.

Abul ABBAS, surnamed *Saffah*, was proclaimed khalif; and in him began the Dynasty of the

ABBASSIDES, who possessed the khalifate for 524 years; and there were 37 khalifs of this race who succeeded one another without interruption.

MILTON-ABBEY, a town of England, in the county of Dorset, so called on account of an abbey founded there by King Athelstan, said to be on account of the murder of his brother Edwin. This abbey, at the dissolution, was preserved entire by Sir John Tregonwell. In the year 1771, the whole, except the great hall, was taken down by Lord Milton. It has a weekly market on Tuesday. Eight miles S.W. of Blandford, and 112 W.S.W. of London.

ABBOT (George), Archbishop of Canterbury, was born October 29, 1562, at Guildford in Surrey. He went through his studies at Oxford, and in 1597 was chosen principal of University College. In 1599 he was installed dean of Winchester: the year following he was chosen vice-chancellor of the university of Oxford, and a second time in 1603. In 1604, that translation of the Bible now in use was begun by the direction of King James; and Dr. Abbot was the second of eight divines of Oxford, to whom the care of translating the whole New Testament (excepting the epistles) was committed. The year following, he was a third time vice-chancellor. In 1608 he went to Scotland with George Hume, earl of Dunbar, to assist in establishing an union betwixt the kirk of Scotland and the church of England; and in this affair he behaved with so much address and moderation, that it laid the foundation of all his future preferment. For King James ever after paid great deference to his advice and counsel; and upon the death of Dr. Overton, bishop of Lichfield and Coventry, he named Dr. Abbot for his successor, who was accordingly consecrated bishop of those two united sees in December 1609. About a month afterwards he was trans-

lated to the see of London; and on the second of November thereafter was raised to the archiepiscopal see. His great zeal for the Protestant religion made him a strenuous promoter of the match between the Elector Palatine and the Princess Elizabeth; which was accordingly concluded and solemnized the 14th of February, 1612, the archbishop performing the ceremony on a stage erected in the royal chapel. - In the following year happened the famous case of divorce betwixt the Lady Francis Howard, daughter of the Earl of Suffolk, and Robert earl of Essex: an affair which has been by many considered as one of the greatest blemishes of King James's reign; but the part acted therein by the archbishop, added much to the reputation he had already acquired for incorruptible integrity. The matter was by the king referred to a court of delegates. The archbishop saw plainly, that his majesty was very desirous the lady should be divorced; but he was, in his own judgment, directly against the divorce. He laboured all he could to extricate himself from this difficulty, by having an end put to the cause by some other way than by sentence: but it was to no purpose; for those who drove on this affair, had got too great power to be refrained from bringing it to the conclusion the king desired. The archbishop prepared a speech, which he intended to have spoken against the nullity of the marriage, in the court at Lambeth: but he did not make use of it, because the king ordered the opinions to be given in few words. He continued, however, inflexible in his opinion against the divorce; and drew up his reasons, which the king thought fit to answer himself. It need scarce be added, that sentence was given in the lady's favour. - In 1618, the king published a declaration, which he ordered to be read in all churches, permitting sports and pastimes on the Lord's day: this gave great uneasiness to the archbishop; who, happening to be at Croydon when it came thither, had the courage to forbid its being read. - Being now in a declining state of health, the archbishop used in the summer to go to Hamphire for the sake of recreation; and being invited by Lord Zouch to hunt in his park at Bramzill, he met there with the greatest misfortune that ever befel him; for he accidentally killed the game-keeper, by an arrow from a cross-bow which he shot at one of the deer. This accident threw him into a deep melancholy; and he ever afterwards kept a monthly fast on Tuesday, the day on which this fatal mischance happened, and he settled an annuity of 20l. on the widow. There were several persons who took an advantage of this misfortune, to lessen him in the king's favour; but his majesty said, "An angel might have miscarried in this sort." His enemies alleging that he had incurred an irregularity, and was thereby incapacitated for performing the offices of a primate; the king directed a commission to ten persons to enquire into this matter. The result, however, was not satisfactory to his Grace's enemies; it being declared, that, as the murder was involuntary, he had not forfeited his archiepiscopal character. The archbishop thenceforward seldom assisted at the council, being chiefly hindered by his infirmities; but in the king's last illness he was sent for, and attended with great constancy till his Majesty expired on the 27th of March, 1625. He performed the ceremony of the coronation of King Charles I. though very infirm and much troubled with the gout. He was never greatly in this king's favour; and the Duke of Buckingham being his declared enemy, watched an opportunity of making him feel the weight of his displeasure. This he at last accomplished, upon the archbishop's refusing to license a sermon, preached by Dr. Sibthorpe, to justify a loan which the king had demanded, and pregnant with principles which tended to overthrow the constitution. The archbishop was immediately suspended from all his functions as primate; and they were exercised by certain bishops commissioned by

the king, of whom Laud, the archbishop's enemy, and afterwards his successor, was one : while the only cause assigned for this procedure was, that the archbishop could not at that time personally attend those services, which were otherwise proper for his cognisance and direction. He did not, however, remain long in this situation ; for a parliament being absolutely necessary, his Grace was sent for, and restored to his authority and jurisdiction. But not proving friendly to certain rigorous measures adopted by the prevailing church-party, headed by Laud, whose power and interest at court was now very considerable, his presence became unwelcome there ; so that upon the birth of the Prince of Wales, afterwards Charles II. Laud had the honour to baptize him, as dean of the chapel. The archbishop, being worn out with cares and infirmities, died at Croydon, the 6th of August, 1633, aged seventy-one years ; and was buried at Guildford, the place of his nativity, and where he had endowed an hospital with lands to the amount of 300*l.* per annum. A stately monument was erected over the grave, with the effigy of the archbishop in his robes. He shewed himself, in most circumstances of his life, a man of great moderation to all parties ; and was desirous that the clergy should attract the esteem of the laity, by the sanctity of their manners, rather than claim it as due to their function. His notions and principles, however, not suiting the humour of some writers, have drawn upon him many severe reflections ; particularly, which is to be regretted, from the Earl of Clarendon. But Dr. Welwood has done more justice to his merit and abilities. He wrote several tracts upon various subjects ; and, as already mentioned, translated part of the New Testament, with the rest of the Oxford divines, 1611.

ABBOTS LANGLEY, a village of England, in the county of Hertford, the birth place of Nicholas Brakspear, afterwards Pope Adrian IV. Four miles S.W. from St. Albans.

ABBOTSBURY, a town of England, in the county of Dorset, near the sea ; it received its name from a celebrated abbot there, before the reformation : 75 miles from Dorchester, and 127 W. London.

ABBREVIATION OF FRACTIONS, in arithmetic and algebra, is the reducing of them to lower terms ; which is done by dividing the numerator and denominator by some number or quantity which will divide both without leaving a remainder either.

ABBUTALS (*Encycl.*) signify the buttings or boundings of land towards any point. Limits were anciently distinguished by artificial hillocks, which were called *butentines* ; and hence *butting*. In a description of the site of land, the sides on the breadth are more properly *adjacentes*, and those terminating the length are *abbutantes* ; which, in old surveys, were sometimes expressed by *capitare*, to head, whence abbutals are now called *head-lands*.

ABDALA, the son of Abdalmothleb, was the father of the prophet Mahomet.

ABDALMALEK, the son of Mirvan, and the 5th khelif of the race of the Omniads, surnamed *Kajsh al Hegarat*, i. e. the skinner of a stone, because of his extreme avarice ; as also *Aboulzebab*, because his breath was said to be so poisonous as to kill all the flies which rested on his face. Yet he surpassed all his predecessors in power and dominion ; for in his reign the Indies were conquered in the east, and his armies penetrated Spain in the west : he likewise extended his empire toward the south, by making himself master of Medina and Mecca. He began his reign in the 65 of the Hegira, A.D. 648 ; reigned 15 years ; and four of his sons enjoyed the khalfate one after another.

ABDALMELEK (Ben Zohar), an eminent physician, commonly called by the Europeans *Atenzour*.

ABDALMOTHLEB, or **ABDAL MATELEB**, the son of Hafsem, the father of Abdalla, and grandfather of Mahomet, the prophet of the Mussulmans, was, it is said, of such wonderful comeliness and beauty, that all women who saw him became enamoured : which may have given occasion to that prophetic light, which, according to the Arabians, shone on the foreheads of him, his ancestors, and descendants ; it being certain that they were very handsome and graceful men. He died when Mahomet, of whom he had taken peculiar care, was only eight or nine years old ; aged, according to some, 110, and according to other writers 120.

ABDALONYMUS, or **ABDOLONYMUS** (in classic history), of the royal family of Sidon, and descended from King Cinyras, was contented to live in obscurity, and get his subsistence by cultivating a garden, while Strato was in possession of the crown of Sidon. Alexander the Great having deposed Strato, enquired whether any of the race of Cinyras was living, that he might set him on the throne. It was generally thought that the whole race was extinct : but at last Abdalonymus was thought of, and mentioned to Alexander : who immediately ordered some of his soldiers to fetch him. They found the good man at work, happy in his poverty, and entirely a stranger to the noise of arms, with which all Asia was at that time disturbed ; and they could scarcely persuade him that they were in earnest. Alexander was convinced of his high descent, by the dignity that appeared in his person ; but was desirous of learning from him in what manner he bore his poverty. " I wish (said Abdalonymus) I may bear my new condition as well : these hands have supplied my necessities ; " I have had nothing, and I have wanted nothing." This answer pleased Alexander so much, that, besides giving him all that was Strato's, he augmented his dominions, and gave him a large present out of the Persian spoils.

ABDERA, a maritime town of Thrace, not far from the mouth of the river Nessus, on the east side. (Strabo.) The foundation thereof, according to Herodotus, was attempted to be laid by Timæus, the Clazomenian ; but he was forced by the Thracians to quit the design. The Teians undertook it, and succeeded ; settling there, in order to avoid the insults of the Persians. Several singularities are told of Abdera by historians.

ABDIAS, of Babylon, one of the boldest legend writers, who boasted he had seen our Saviour, was one of the 72 disciples, had been eye-witness of the actions and prayers at the deaths of several of the apostles, and had followed into Persia St. Simon and St. Jude, who, he said, made him the first bishop of Babylon. His book, entitled *Historia certaminis Apostolorum*, was published by Wolfgang Lazius, at Basil, 1551 ; and it has since borne several impressions in different places.

ABDON, one of the Levitical cities in the south, of the tribe of Asher. (Joshua.)

ABDON, the son of Hillel, a Pirathonite, succeeded Flon, and judged Israel eight years.

ABELARD (*Encycl.*), one of the most famous doctors of the twelfth century, was born at Palais, near Nantz, in Brittany : he was well learned in divinity, philosophy, and the languages ; but was particularly distinguished by his skill in logic, and his fondness for disputations, which led him to travel into several provinces in order to give public proof of his acuteness in that science. After having baffled many antagonists, he read lectures in divinity with great applause at Paris ; where he boarded with a canon, whose name was Fulbert, and who had a very beautiful niece named Heloise. The canon ardently wished to see this young lady make a figure among the learned, and Abelard was made her preceptor ; but instead of instructing her in the sciences, he taught her to love. Abelard now performed his public functions very

coldly, and wrote nothing but amorous verses. Heloise proving with child, Abelard lent her to a sister of his in Brittany, where she was delivered of a son. To soften the canon's anger, he offered to marry Heloise privately; and he was better pleased with the proposal than the niece; who, from a singular excess of passion, chose to be his mistress rather than his wife. She married, however; but used often to protest upon oath that she was single, which provoked the canon to use her ill. Upon this, Abelard sent her to the monastery of Argenteuil; where she put on a religious habit, but did not take the veil. Heloise's relations considering this as a second treachery, hired ruffians, who, forcing into his chamber in the dead of the night, encafeulated him. This infamous treatment made him fly to the gloom of a cloister. He assumed the monastic habit in the abbey of St. Denis; but the disorders of that house soon drove him from thence. He was afterwards charged with heresy; but after several persecutions for his religious sentiments, he settled in a solitude in the diocese of Troyes, where he built an oratory, to which he gave the name of the Paraclete. He was afterwards chosen superior of the abbey of Ruis, in the diocese of Vannes: when the nuns being expelled from the nunnery in which Heloise had been placed, he gave her his oratory; where he settled with some of her sister nuns, and became their prior. Abelard mixed the philosophy of Aristotle with his divinity, and in 1140 was condemned by the council of Rheims and Sens. Pope Innocent II. ordered him to be imprisoned, his books to be burnt, and forbade him ever teaching again. However, he was soon after pardoned, at the solicitation of Peter the Venerable, who received him into his abbey of Clugny, where he led an exemplary life. He died in the priory of Marcellus at Chalons, April 21, 1142, aged sixty-three. His corpse was sent to Heloise, who buried it in the Paraclete. He left several works: the most celebrated of which are those tender letters that passed between him and Heloise, with the account of their misfortunes prefixed; which have been translated into English, and one of them immortalized by the harmony of Mr. Pope's numbers.

ABEL-BETH-MAACHA, called also *Abel-maim*, a town in the tribe of Naphthali, in the north of Canaan, towards Syria, where was a district called Maacha. (1 Kings xv. 2 Chron. xvi.)

ABELLA, anciently a town of Campania, near the river Clanius. The inhabitants were called Abellani, and said to have been a colony of Chalcidians. The nux Avellana, called also Prænestina, or the hazel-nut, takes its name from this town, according to Macrobius. Now *Avella*.

ABELLINUM, anciently a town of the Hirpini, a people of Apulia: distant about a mile from the rivulet Sabbato, between Beneventum and Salernum. Pliny calls the inhabitants Abellinates, with the epithet Protopi, to distinguish them from the Abellinates Marii. Now *Avellino*. E. Long. 15. 20. Lat. 21.

ABEL-MEHOLA, the country of the prophet Elisha, situate in Manasseh, on this side Jordan, between the valley of Jezreel and the village Bethmaela in the plains of Jordan, where the Midianites were defeated by Gideon. (Judges vii. 22.)

ABEL-MIZRAIM, called also the Threshing-floor of *Atad*; signifying the lamentation of the Egyptians; in allusion to the mourning for Jacob. (Gen. i. 3, 10, 11.) Supposed to be near Hebron. (Wells.)

ABEL-MOLUCH (*Encycl.*). See PALMA CHRISTI.

ABELMOSCH (*Encycl.*). See HIBISCUS.

ABEL-SATTIM, or SITTIM, a town in the plains of Moab, to the N. E. of the Dead Sea, not far from Jordan, where the Israelites committed fornication with the daughters

of Moab: so called, probably, from the great number of sitim-trees there.

ABENEZRA (Abraham), a celebrated rabbi, born at Toledo in Spain, called by the Jews, the wife, great, and admirable Doctor, was a very able interpreter of the Holy Scriptures; and was well skilled in grammar, poetry, philosophy, astronomy, and medicine. He was also a perfect master of the Arabic. His principal work is, Commentaries on the Old Testament, which is much esteemed: these are printed in Bomberg's and Buxtorf's Hebrew Bibles. His style is clear, elegant, concise, and much like that of the Holy Scriptures: he almost always adheres to the literal sense, and everywhere gives proofs of his genius and good sense: he, however, advances some erroneous sentiments. The fear of all his books is entitled, *Jesud Mora*; which is a theological work, intended as an exhortation to the study of the Talmud. He died in 1174, aged 75.

ABEN MELLER, a learned rabbin, who wrote a Commentary on the Old Testament in Hebrew, entitled, *The Perfection of Beauty*. This rabbin generally follows the grammatical sense and the opinions of Kimchi. The best edition is that of Holland.

ABENOW, in geometry. See ABNOZA.

ABENRADE, a seaport town of Denmark, in the duchy of Sleswick, situated at the bottom of a bay, surrounded with hills which form a good harbour, deep and secure. The inhabitants are much employed in fishing: it is besides a place of considerable trade. Long. 27. 52. E. Lat. 54. 50. N.

ABERNETHY, a town in Strathern, a district of Perthshire, in Scotland. It is seated on the river Tay, a little above the mouth of the Erne. It is said to have been the seat of the Pictish kings; and was afterwards the see of an archbishop, since transferred to St. Andrews. It is now greatly decayed.

ABERRATION of the *visual ray* (*Encycl.*). See the articles ABERRATION and ASTRONOMY. Dr. Hutton explains this in the following satisfactory way:

"This effect (says he) may be explained and familiarized by the motion of a line parallel to itself, much after the manner that the composition and resolution of forces are explained. If light have a progressive motion, let the proportion of its velocity to that of the earth in her orbit be as the line BC (Plate 11. fig. 1.) to the line AC; then, by the composition of these two motions, the particle of light will seem to describe the line BA or DC, instead of its real course BC; and will appear in the direction AB or CD, instead of its true direction CB. So that if AB represent a tube, carried with a parallel motion by an observer along the line AC, in the time that a particle of light would move over the space BC, the different places of the tube being AB, ab, cd, CD; and when the eye, or end of the tube, is at A, let a particle of light enter the other end at B; then when the tube is at ab, the particle of light will be at e, exactly in the axis of the tube; and when the tube is at cd, the particle of light will arrive at f, still in the axis of the tube; and, lastly, when the tube arrives at CD, the particle of light will arrive at the eye or point C, and consequently will appear to come in the direction DC of the tube, instead of the true direction BC: and so on, one particle succeeding another, and forming a continued stream or ray of light in the apparent direction DC. So that the apparent angle made by the ray of light with the line AE is the angle DCE, instead of the true angle BCE; and the difference BCD, or ABC, is the quantity of the aberration."

ABERRATION of the Planets, is equal to: their geocentric motion, or, in other words, to the space which each appears to move as seen from the earth, during the time that light employs in passing from the planet to the eye of the observer.

Thus the sun's aberration in longitude is constantly $20''$, that being the space actually moved by the earth; but apparently by the sun in 8 minutes and 7 seconds, the time in which light passes from the sun to the earth. If then the distance of any planet from the earth be known, the time which light employs in passing from the planet to the earth must likewise be known; for as the distance of the sun is to the distance of the planet, so is 8 minutes and 7 seconds to that time; and the planet's geocentric motion in that time is its aberration, whether it be in longitude, latitude, right ascension, or declination. See *ASTRONOMY*.

ABERRATION (*Encycl.*), in astronomy, a small apparent motion of the fixed stars discovered by the late Dr. Bradley. The discovery was made by accident in the year 1725, when Mr. Molyneux and Dr. Bradley began to observe the bright star in the head of *Draco*, marked γ by Bayer, as it passed near the zenith, with an instrument made by Mr. Graham, in order to discover the parallax of the earth's annual orbit; and, after repeated observations, they found this star, about the beginning of March, 1726, to be $20''$ more southerly than at the time of the first observation. It now indeed seemed to have arrived at its utmost limit southward; because, in several trials made about this time, no sensible difference was observed in its situation. By the middle of April, it appeared to be returning back again toward the north; and, about the beginning of June, it passed at the same distance from the zenith as it had done in December, when it was first observed: in September following it appeared $39''$ more northerly than it was in March, just the contrary way to what it ought to appear by the annual parallax of the stars. This unexpected phenomenon perplexed the observers very much; and Mr. Molyneux died before the true cause of it was discovered. After this, Dr. Bradley, with another instrument more exact, and accurately adapted to this purpose, observed the same appearances not only in that but many other stars: and, by the great regularity that appeared in a series of observations made in all parts of the year, the doctor was fully satisfied with regard to the general laws of the phenomena; and therefore endeavoured to find out the cause of them. He was already convinced, that the apparent motion of the stars was not owing to a nutation of the earth's axis. The next thing that offered itself, was an alteration in the direction of the plumb line, with which the instrument was constantly rectified; but this, upon trial, proved insufficient. Then he had recourse to what refraction might do; but here also nothing satisfactory occurred. At last this acute astronomer found, that the phenomena in question proceeded from the progressive motion of light, and the earth's annual motion in its orbit: for he perceived, that if light was propagated in time, the apparent place of a fixed object would not be the same when the eye is at rest, as when it is moving in any other direction, than that of the line passing through the eye and object; and that, when the eye is moving in different directions, the apparent place of the object would be different.—*Vide Phil. Transf.* N^o. 406.

ABEX (*Encycl.*), a country in High Ethiopia, in Africa, bordering on the Red Sea, by which it is bounded on the east. It has Nubia or Sennar on the north; Sennar and Abyssinia on the west; and Abyssinia on the south. Its principal towns are Suaqueim and Arkeko. It is subject to the Turks, and has the name of Beglerbeg of Habeleth. It is about five hundred miles in length and one hundred in breadth, and is a wretched country; for the heat here is almost insupportable, and the air is so unhealthy, that an European cannot stay long there without the utmost hazard of his life. It is very mountainous, inasmuch that there are many more wild beasts than men. There are forests, in which grow a great number of ebony trees.

ABGAR, or **ABGARUS**, a name given to several of the kings of Edessa in Syria. The most celebrated of them is one who, it is said, was contemporary with Jesus Christ; and who having a distemper in his feet, and hearing of Jesus's miraculous cures, requested him, by letter, to come and cure him. Eusebius, who believed that this letter was genuine, and also an answer our Saviour is said to have returned to it, has translated them both from the Syriac, and asserts, that they were taken out of the archives of the city of Edessa.—After Jesus's ascension, Judas, who is also named Thomas, sent Thaddæus, one of the seventy, to Abgarus; who preached the gospel to him and his people, cured him of his disorder, and wrought many other miracles: this was done, says Eusebius, A. D. 43.—Though the letters are acknowledged to be spurious by the candid writers of the church of Rome; several protestant authors, as Dr. Parker, Dr. Cave, and Dr. Grabe, have maintained that they are genuine, and ought not to be rejected.

ABGILLUS (*Encycl.*), attended Charlemagne in his expedition to the Holy Land; but instead of returning with that monarch to Europe, it is pretended that he gained mighty conquests, and founded the empire of the Abyssinians, called, from his name, the empire of Prester John. He is said to have written the history of Charlemagne's journey into the Holy Land, and of his own into the Indies; but they are more probably trifling romances, written in the ages of ignorance.

ABHEL (*Encycl.*). See *JUNIPERUS*.

ABIAD, a town of Africa, on the coast of Abex, seated on a high mountain, and remarkable for its trade in ebony and aromatic plants.

ABIAGRASSO, a small town of Italy, seated on a canal, in the duchy of Milan. Long. 9. 24. E. Lat. 45. 20. N.

ABIANS, anciently a people of Thrace, or (according to some authors) of Scythia. They had no fixed habitations; they led a wandering life. Their houses were waggon, which carried all their possessions. They lived on the flesh of their herds and flocks, on milk, and cheese, chiefly on that of mares' milk. They were unacquainted with commerce: they only exchanged commodities with their neighbours. They possessed lands; but they did not cultivate them. They assigned their agriculture to any who would undertake it, reserving only to themselves a tribute; which they exacted, not with a view to live in affluence, but merely to enjoy the necessaries of life. They never took arms but to oblige those to make good a promise to them by whom it had been broken. They paid tribute to none of the neighbouring states. They deemed themselves exempt from such an imposition; for they relied on their strength and courage, and consequently thought themselves able to repel any invasion. The Abians, we are told, were a people of great integrity. This honourable eulogium is given them by Homer. (Strabo.)

ABIATHAR, high-priest of the Jews, son to Abimelech, who had borne the same office, and received David into his house. This so enraged Saul, who hated David, that he put Abimelech to death, and eighty-one priests; Abiathar alone escaped the massacre. He afterwards was high-priest; and often gave King David testimonies of his fidelity, particularly during Abiathar's conspiracy, at which time Abiathar followed David, and bore away the ark. But after this, conspiring with Adonijah, in order to raise him to the throne of King David his father; this so exasperated Solomon against him, that he dethroned him of the priesthood, and banished him, A. M. 3021, before Christ 1014.

ABIHU, brother to Nadab, and son to Aaron. The two former had the happiness to ascend mount Sinai with their father, and there to behold the glory of God: but afterward putting strange fire into their censers, instead of the sacred fire commanded by God, fire rushing upon them killed them.

Though all the people bewailed this terrible catastrophe, Moses forbade Aaron and his two sons, Eleazar and Ithamar, to join in the lamentation.

ABILITY, a term in law, denoting a power of doing certain actions in the acquisition or transferring of property.

ABIMELECH, king of Gerar, a country of the Philistines, contemporary with Abraham. This patriarch and his family being there, his wife Sarah, though 90 years of age, was not safe in it; for Abimelech carried her off, and was so enamoured of her, that he resolved to marry her. Abraham did not declare himself Sarah's husband; but gave out she was his sister. But the king being warned in a dream that she was married to a prophet, and that he should die if he did not restore her to Abraham, the king obeyed: at the same time reproving Abraham for his duplicity; who thereupon, among other excuses, said she was really his sister, being born of the same father, though of a different mother. Abimelech afterwards gave considerable presents to Abraham; and a covenant, that of Beer-sheba, was entered into between them. After the death of Abraham, there being a famine in the neighbouring countries, Isaac his son also withdrew into Gerar, which was at that time likewise governed by a king called Abimelech.

ABIMELECH, probably the successor of the former. Here Rebekah's beauty forced her husband to employ Abraham's artifice. Abimelech discovering that they were nearer related, chid Isaac for calling his wife his sister; and, at the same time, forbade all his subjects, upon pain of death, to do the least injury to Isaac or Rebekah.—Isaac's prosperity lost him the king's friendship, and he was desired to go from among them. He obeyed; but Abimelech afterward entered into a covenant with him.

ABIMELECH, the natural son of Gideon, by Druma his concubine. His violent acts and death are recorded in Judges, chap. ix.

ABIRAM, a seditious Levite, who, in concert with Korah and Dathan, rebelled against Moses and Aaron, in order to share with them in the government of the people; when Moses ordering them to come with their censers before the altar of the Lord, the earth suddenly opened under their feet, and swallowed up them and their tents; and at the same instant fire came from heaven, and consumed two hundred and fifty of their followers. Numb. xvi.

ABISHAI, son of Zeruiah, and brother to Joab, was one of the celebrated warriors who flourished in the reign of David; he killed with his own hand three hundred men, with no other weapon but his lance; and slew a Philistine giant, the iron of whose spear weighed three hundred shekels.—1 Sam. xvi. 2 Sam. xliii.

ABKHAS, one of the seven nations in the countries comprehended between the Black Sea and the Caspian. Their principal and most ancient establishments are on the southern slope of the mountains comprehended between the river Cuban and the Black Sea. They are tributary to the Turks, and are divided into two governments, the western and the eastern; each subject to a bathwa, commonly chosen out of the principal native families; one of whom resides at Sotchukkalé, and the other at Soghukmalé. The capital is Anacopir, formerly Nicopsis. The Abkhas speak an original language, essentially different from all the known languages, though appearing to have a remote affinity to that of the Circassians. They have, at present, very little religion, although they still preserve some traces of Christianity.

ABLACTATION, in the ancient agriculture, is a method of engrafting; wherein the cyon of one tree, being united for some time to the stock of another, is afterwards cut off, and, as it were, weaned from its mother-tree. Ablactation is only

practicable where the stock to be grafted on, and the tree from which the graft is to be taken, stand so near, that the branch or cyon may be applied without cutting off. Hence it is chiefly used on plants that grow in cafes; as orange, lemon, and pomegranate trees; vines, jalmains, &c. The season is April or May. To perform it, the usual method is, to take the branch intended for the graft, and pare it away, both the rind and wood, through the length of three inches; then paring likewise the stock, so that they may join closely to each other, they are bound together, and covered over with clay or grafting-wax. As soon as they are found well incorporated together, the head of the stock is to be cut off four inches above the binding; and the spring following, the graft, leaving the stock to subsist by itself. Or, the operation may be done by cutting off the head of the stock at first, and leaving the top a little sloped, and applying the graft thereto, as in shoulder-grafting. But this method is not found equally successful.

ABLATIVE ABSOLUTE, in grammar, is a word or phrase detached and independent of the rest of the discourse; neither governing, nor being governed of any other thing. This is frequent among the Latins; in imitation of whom the modern languages have likewise adopted it.

ABLE or **ABEL** (Thomas), was admitted B.A. at Oxford, July 4, 1513, and took his degrees of M. A. June 26, 1516. He was afterwards appointed chaplain to Queen Catherine, wife to King Henry VIII. Mr. Bouchier thus speaks of him: "Vir longe doctissimus, qui reginæ aliquando in musicarum tactu & linguis operam suam navaret!"—A man of great learning, who used sometimes to teach the queen music and the languages. He greatly distinguished himself by opposing the divorce of the queen, and was a violent enemy to the king in all his unlawful proceedings. He wrote a treatise, "De non dissolvendo Henrici & Catherinæ matrimonio." In the year 1534 he was attainted of misprision, for taking part and being active in the affair of Elizabeth Barton, the holy maid of Kent, as she was called. He was afterwards sentenced to die for denying the king's supremacy, and was accordingly executed July 30, 1540. It is thought that he wrote several pieces; but they have been lost. When in prison he was confined very closely; and the keeper of Newgate was once sent to the Marshalsea for allowing him and Dr. Powell to go out upon bail.

ABLOE, a town of Little Tartary, lying between the river Dnieper, and the Black Sea. E. long. 35. 15. N. lat. 46. 20.

ABNAKIS, Indians of North America, between New England and Canada. They have labour, and could never be brought to cultivate the ground.

ABNER, the son of Ner, father-in-law to Saul, and general of all his forces, who served him on all occasions with fidelity and courage. After the death of that prince, Abner set Ishboeth, Saul's son, on the throne. A war breaking out between the tribe of Judah, who had elected David king, and Israel, Abner marched against that prince with the flower of his troops, but was defeated. Abner afterward, being disguised, went over to David, and disposed the chiefs of the army and the elders of Israel to declare for him; and was received by David with such testimonies of affection, as gave umbrage to Joab, who killed him traitorously.

ABO (*Encycl.*), is the capital of the province of Finland, and is seated in the gulph of that name, at the mouth of the river Aurajoki. It has a good port; and is the see of a bishop, suffragan of Upsal. It has also an university, founded by Queen Christina in 1640.

ABOAB, cesses levied in India, under different denominations, beyond the standard rent.

ABO-FLOT, or **ABO-MUS**, an ancient fort in Finland, on a peninsula, near the mouth of the river Aura. It has often suffered from the enemy and by fire.

ABOARD (*Encycl.*), the inside of a ship. When an enemy enters in the time of battle, he is said to *board*; a phrase which always implies hostility. To *fall a-board of*, is to strike or encounter another ship when one or both are in motion, or to be driven upon a ship by the force of wind or current. *Aboard-main-tack*, the order to draw the main-tack, i. e. the lower corner of the main-sail, down to the chief-tree. See **CURSTREE**.

ABOMINATION, a term used in scripture with regard to the Hebrews, who, being shepherds, are said to have been an abomination to the Egyptians, because they sacrificed the sacred animals of that people, as oxen, goats, sheep, &c. which the Egyptians esteemed as abominations, or things unlawful. The term is also applied in the sacred writings to idolatry and idols, because the worship of idols is in itself an abominable thing, and at the same time ceremonies observed by idolaters were always attended with licentiousness and other odious and abominable actions. The *abomination of desolation*, foretold by the prophet Daniel, is supposed to imply the statue of Jupiter Olympius, which Antiochus Epiphanes caused to be placed in the temple of Jerusalem. And the *abomination of desolation*, mentioned by the Evangelists, signifies the ensigns of the Romans, during the last siege of Jerusalem by Titus, on whom the figures of their gods and emperors were embroidered, and placed upon the temple after it was taken.

ABON, **ABONA**, or **ABONIS** (Antonine); a town and river of Albion. The town, according to Camden, is Abington; and the river Abhon or Avon. But by Antonine's Itinerary, the distance is nine miles from the Venta Silurum, or Caer-Went: others, therefore, take the town to be Porstut, at the mouth of the river Avon, over against Bristol. Abhon or Avon, in the Celtic language, denotes a river.

ABOR, **CHABOR**, or **HABOR**, a district in Assyria on the river Gozan, bounding on Media, 2 Kings xviii.

ABOU-NAVAS, an Arabian poet of the first class, was born at Balisra; and flourished at the court of Aaron al Raschid, at the end of the 7th century.

ABRABANEL, **ABAREANEL**, or **AVRANVEL** (Isaac), a celebrated rabbi, descended from King David, and born at Lisbon, A.D. 1437. He became counsellor to Alphonso V. king of Portugal, and afterwards to Ferdinand the Catholic; but in 1492 was obliged to leave Spain with the other Jews. In short, after residing at Naples, Corfu, and several other cities, he died at Venice in 1508, aged 71. Abrabanel passed for one of the most learned of the rabbis; and the Jews gave him the name of the Sage, the Prince, and the Great Politician. We have a Commentary of his on all the Old Testament, which is pretty scarce: he there principally adheres to the literal sense; and his style is clear, but a little diffuse. His other works are, A Treatise on the Creation of the World; in which he refutes Aristotle, who imagined that the world was eternal: A Treatise on the Explication of the Prophecies relating to the Messiah, against the Christians: a book concerning articles of Faith; and some others less sought after. Though Abrabanel discovers his aversion to Christianity, yet in all his writings he treats the Christians with politeness and good manners.

ABRAHAM, the father and stock whence the faithful sprung, was the son of Terah. He was descended from Noah by Shem, from whom he was nine degrees removed. Some fix his birth in the 130th year of Terah's age, but others place it in his father's 70th year. It is highly probable he was born in the city of Ur, in Chaldea, which he and his father left

when they went to Canaan, where they remained till the death of Terah; after which, Abraham resumed his first design of going to Palestine. The Scriptures mention the several particulars of his life, which it would be of little use to dwell long upon. Tradition also has supplied numberless others, respecting his conversion from idolatry. Abraham is said to have been well skilled in many sciences, and to have wrote several books. Josephus tells us that he taught the Egyptians arithmetic and geometry; and, according to Eupolemus and Artapan, he instructed the Phoenicians, as well as the Egyptians, in astronomy. A work which treats of the Creation has been long ascribed to him: it is mentioned in the Talmud, and the Rabbis Chanina and Hofchaia used to read it on the eve before the sabbath. In the first ages of Christianity, according to St. Epiphanius, an heretical sect, called Sethinians, dispersed a piece which had the title of *Abraham's Revelation*. Origen mentions also a treatise supposed to be wrote by this patriarch. All the several works which Abraham composed in the plains of Mamre, are said to be contained in the library of the monastery of the Holy Cross on Mount Amaria, in Ethiopia. The book on the Creation was printed at Paris 1552, and translated into Latin by Poffel: Rittangel, a converted Jew, and professor at Konigberg, gave also a Latin translation of it, with remarks, in 1642. Abraham died at the age of 175.

ABRAHAM BEN MEIR, or **ABEN EZRA**. See **ABEN EZRA**. **ABRAHAM USQUE**, a Portuguese Jew, who translated the Bible out of Hebrew into Spanish. It was printed at Ferrara in 1553, and reprinted in Holland in 1630. This Bible, especially the first edition, which is most valuable, is marked with stars at certain words, which are designed to shew that these words are difficult to be understood in the Hebrew, and that they may be used in a different sense.

ABRAHAM (Nicholas), a learned Jesuit, born in the diocese of Toul, in Lorraine, in 1589. He obtained the rank of divinity professor in the university of Pont-a-Mousson, which he enjoyed 17 years, and died September 7, 1655. He wrote Notes on Virgil and on Nonnius; A Commentary on some of Cicero's Orations, in 2 vols. folio. An excellent collection of theological pieces, in folio, entitled *Pharus Veteris Testamenti*; and some other works.

ABRAHAMSDORF, a small town of Hungary, but well inhabited. E. long. 19. 50. N. lat. 46. 20.

ACREIRO, a town of Tra-os-montes, in Portugal, in a district which comprehends ten parishes. W. long. 7. 10. N. lat. 41. 20.

ABRETTENE (Strabo); **ABRETTINE** (Stephanus); a district of Myria, in Asia. Hence the epithet *Abrettinus* given Jupiter (Strabo); whose priest was Cleon, formerly at the head of a gang of robbers, and who received many and great favours at the hand of Antony, but afterwards went over to Augustus. The people were called *Abrettini*; inhabiting the country between Ancyra of Phrygia, and the river Rhyndacus.

ABRODITICALL; delicate or nice in diet.

ABROTONUM, a town and harbour on the Mediterranean, in the district of Syrtis Parva, in Africa (Strabo, Pliny): one of the three cities that went to form Tripoly.

ABRUG-BANYA, a populous town in Transylvania, on the river Ompay, 35 miles above Alba Julia, near which are mines of gold and silver. E. long. 23. 24. N. lat. 46. 50.

ABRUZZO (*Encycl.*), a province in Naples. The river Pescara divides it into two parts; one of which is called *Uterior*, whereof Aquila is the capital; and the other *Citerior*, whose capital is Solomona. Besides the Appennines, there are two considerable mountains, the one called Monte Cavallo, and the other Monte Maiello. The top of this last is always covered with snow. Abruzzo is a cold but fruitful country;

and abounds with corn, rice, also several good fruits, and saffron.

ABISALOM, the son of David by Maacah, was brother to Thamar, David's daughter, who was ravished by Amnon, their eldest brother by another mother. He waited two years for an opportunity of revenging the injury done to his sister, and at last procured the assassination of Amnon, at a feast which he had prepared for the king's sons. He took refuge with Halmi king of Gethur; and was no sooner restored to favour, but he engaged the Israelites to revolt from his father. Abisalom was defeated in the wood of Ephraim: as he was flying, his hair caught hold of an oak, where he hung till Joab came and thrust him through with three darts: David had expressly ordered his life to be spared, and extremely lamented him.

ABSCEDENTIA, in surgery, a term applied to decayed parts of the body, which, in a morbid state, are separated from the found, or lose that union which was preserved in a natural state.

ABSCISS, **ABSCISSA**, or **ABSCISSE**, is a part cut off from a straight line, and terminated at some certain point by an ordinate to a curve; as AP (Pl. II. fig. 2.), or BP (fig. 3.). The absciss may commence either at the vertex of the curve, or at any other fixed point; and it may be taken either upon the axis or upon the diameter of the curve, or upon any other line drawn in a given position. Hence there are on the same given line, or diameter, an infinite number of variable abscisses, terminated all at one end by the same fixed point. In the common parabola (fig. 4.), each ordinate PQ has but one absciss AP. In the ellipse or circle (fig. 2.), the ordinate has two abscisses lying on the opposite sides of it. In general, to each ordinate a line of the second kind, or a curve of the first kind, may have two abscisses; a line of the third order, three; a line of the fourth order, four; and so on.

ABSCISSION, a figure in rhetoric, whereby the speaker stops short in the middle of his discourse, leaving the audience to make the inference.

ABSCISSION, in surgery, the same with amputation.

ABSOLUTE EQUATION (*Encycl.*), in astronomy. See **ASTRONOMY**.

ABSORUS, **APSORUS**, **ABSYRTIS**, **ABSYRTIDES**, **APSYRTIDES**, **APSYRTIS**, and **ABSYRTIUM** (*Encycl.*), (Strabo, Mela, Ptolemy); islands in the Adriatic; so called from Absyrtus, Medea's brother, there slain. They are either one island, or two, separated by a narrow channel, and joined by a bridge; and are now called *Cherso* and *Osero*.

ABSPERG, a small town in Suabia, in the Norgow, near Anspach.

ABSTEINEN, a bailiwick beyond the river Memel, in the circle of Tapien, belonging to the kingdom of Prussia. It is a mountainous, but pleasant country, and abounds in corn and cattle.

ABSTEMIUS (Laurentius), an Italian writer, born at Macerata, in La Marca de Ancona, who devoted himself early to the study of polite literature, and made a surprising progress therein. He taught the belles lettres at Urbino, where he was librarian to Duke Guido Ubaldo; to whom he dedicated a small piece, explaining some dark passages in the ancient authors. He published it under the pontificate of Alexander VI.; and another treatise also, entitled *Hecatomythium*, from its containing a hundred fables, which he inscribed to Octavian Ubal dini, count de Mercatelli. His Fables have been often printed with those of Æsop, Phædrus, Gubrias, Avienus, &c. He has these ancient mythologists generally in view, but does not always strictly follow their manner; sometimes intermixing his fable with a merry story, and now and then somewhat satirical upon the clergy. His 204th fable of the Talents Multiplied, is a proof of this. A

priest, as we are there told, was ordered by his bishop to superintend a monastery, where there were five nuns, by each of whom he had a son before the year was out. The bishop, hearing of this, was highly enraged; and, sending for the priest, reprimanded him severely, calling him a pernicious sacrilegious villain, for having thus defiled the temples of the Holy Ghost. "Lord," said the priest, "thou deliverest unto me five talents; behold I have gained, besides them, five talents more." The prelate was so taken with this facetious answer, that he gave the priest plenary absolution.

ABSURDUM, a term made use of by mathematicians when they demonstrate any truth, by showing that its contrary is impossible, or involves an absurdity. Thus, Euclid demonstrates the truth of the fourth proposition of the first book of his Elements, by showing that its contrary implies this obvious absurdity—"that two straight lines may inclose a space."—This mode of demonstration is called *reductio ad absurdum*, and is every whit as conclusive as the direct method; because the contrary of every falsehood must be truth, and of every truth, falsehood.

ABSYRTUS (*Encycl.*), in the heathen mythology, the son of Æta and Hypsea, and the brother of Medea. The latter running away with Jason, after her having assisted him in carrying off the golden fleece, was pursued by her father; when, to stop his progress, she tore Absyrtus in pieces, and scattered his limbs in his way.

ABUCARAS (Theodorus), metropolitan of Caria in the ninth century, was remarkable for his zeal in defending what he believed to be the truth, and was the author of above forty controversial treatises against the Saracens, Jews, and reputed heretics. This metropolitan at first embraced the doctrines of Photius; for which, begging pardon of the council of Constantinople in 869, he was restored to the communion of the church, and obtained a seat in the council. His works are inserted in the Supplement of the *Bibliothèque des Pères*, the Paris edition.

ABULFARAGIUS (Gregory), son to Aaron, a physician, born in 1226, in the city of Malatia, near the source of the Euphrates in Armenia. He followed the profession of his father; and practised with great success, numbers of people coming from the most remote parts to ask his advice. However, he would hardly have been known at this time, had his knowledge been confined to physic: but he applied himself to the study of the Greek, Syriac, and Arabic languages, as well as philosophy and divinity; and he wrote a history which does honour to his memory. It is written in Arabic, and divided into dynasties. It consists of ten parts, being an epitome of universal history from the creation of the world to his own time. Dr. Pocock published it with a Latin translation in 1663; and added, by way of supplement, a short continuation relating to the history of the eastern princes.

ABUS (Tacitus); a river of Britain, formed by the confluence of the Ure, the Derwent, Trent, &c. falling into the German sea, between Yorkshire and Lincolnshire, and forming the mouth of the Humber.

ABYDOS, anciently a town built by the Milesians in Asia, on the Hellespont, where it is scarce a mile over, opposite to Sestos on the European side (Dionysius Periegetes). Now both called the *Dardanelles*. Abydos lay midway between Lampacus and Ilium, famous for Xerxes's bridge (Herodotus, Virgil); and for the loves of Leander and Hero (Musaëus, Ovid); celebrated also for its oysters (Ennius, Virgil). The inhabitants were a soft, effeminate people, given much to detraction; hence the proverb, *Ne temere Abydum*, when we would caution against danger (Stephanus).

ABYDOS (Strabo, Pliny); anciently an inland town of Egypt, between Ptolemais and Diopolis Parva, towards

Syene; famous for the palace of Memnon, and the temple of Ophris. A colony of Milesians (Stephanus).

ABYO, or ABURO, one of the Philippine islands, in the East Indies, between Mindanao and Luzon, where the Spaniards have a fort. Long. 122. 15. E. lat. 10. 0.

ABYSSINIA (*Encycl.*), a kingdom of Africa, bounded on the N. by Sennar, or Nubia; on the E. partly by the Red Sea, and partly by Dancalia; on the W. by Gorcham; and on the S. by Gingiro and Alaba; lying between 6° and 20° N. lat. and 20° and 40° E. long. It is about 900 miles long, and 800 broad, and contains 378,000 square miles. The rainy season continues for six months, from April to September. This is succeeded, without interval, by a cloudless sky, and a vertical sun. Cold nights as instantly follow these scorching days.

The earth, notwithstanding these days, is perpetually cold, so as to feel disagreeable to the soles of the feet; partly owing to the six months' rains, when no sun appears, and partly to the perpetual equality of nights and days. There is no country in the world that produces a greater variety of quadrupeds, both wild and tame; but there are no tigers. The hyenas, however, are very numerous, and dreadful in their ravages. Besides many species of eagles, vultures, &c. (of which Mr. Bruce, in his celebrated Travels to discover the Source of the Nile, has given ample descriptions), there is a species of glede, called baddayn, which is likewise very frequent in Egypt, and comes punctually into Abyssinia, at the return of the sun, after the tropical rains. Vast variety of flocks cover the plains in May, when the rains become constant. There are few owls; but these are of an immense size and beauty. Of insects, the most remarkable is the Tlalatal or fly, which is so fatal to cattle, and even to the camel, that, in some particular countries, great emigrations are obliged to take place in the beginning of the rainy season, to prevent all their stock of cattle from being destroyed. According to Mr. Bruce, the celebrated river Nile has its source in this country, near the village of Geesh, in long. 36. 55. E. and lat. 10. 59. N. Gondar is the metropolis. There is a remarkable coincidence between the customs in the court of ancient Persia and those of Abyssinia. The religion of the country is a mixture of Judaism and of the Christianity of the Greek church.

ACACIUS; surnamed LUSCUS, because he was blind of one eye, was bishop of Cæsarea in Palestine, and succeeded the famous Eusebius; he had a great share in the banishment of Pope Liberius, and bringing Felix to the see of Rome. He gave name to a sect, and died about the year 365. He wrote the life of Eusebius, and several other works.

ACACIUS (St.), bishop of Amida, in Mesopotamia, 420, was distinguished by his piety and charity. He sold the plate belonging to his church, to purchase seven thousand Persian slaves who were ready to die with want and misery; and giving each of them some money, sent them home. Veranius, their king, was so affected with this noble instance of benevolence, that he desired to see the bishop; and this interview procured a peace between that prince and Theodosius I.

There have been several other eminent persons of the same name; particularly, a martyr under the emperor Decius: a patriarch of Antioch, who succeeded Basil in 458, and died in 459: a bishop of Miletum in the fifth century: a famous rhetorician in the reign of the Emperor Julian: and a patriarch of Constantinople in the fifth century; who was ambitious to draw the whole power and authority of Rome by degrees to Constantinople, for which he was delivered over irrevocably to the devil by Pope Felix III.

ACADEMY (*Encycl.*). The first academy we read of was composed of the chief wits of the court, the emperor himself being a member. In their academical conferences, every per-

son was to give an account of what ancient authors he had read; and each even assumed the name of some ancient author who pleased him most, or some celebrated person of antiquity. Alcuin, from whose letters we learn these particulars, took that of Flaccus, the surname of Horace: a young lord, named Angilbert, took that of Homer: Adclard, bishop of Corbie, was called Augustin: Riculf, bishop of Metz, was Dametas; and the king himself, David. See SCHOLAR. This shews the mistake of some modern writers, who relate, that it was in conformity with the genius of the learned men of those times, who were great admirers of Roman names, that Alcuin took the name of Flaccus Albinus.

Most nations have now their academies; but Italy has by far the greatest number. The French have many flourishing academies, most of which were established by Louis XIV.—We have but few in Britain; and those of chiefest note go by a different name. There are, however, in London, the *Academy of Painting*, and that of *Musick*; established by letters-patent, and governed by their respective directors.

In giving an account of the principal Academies, it seems most proper to arrange them according to their subjects.

I. *MEDICAL Academies*; as that of the *Natura Curiosi* in Germany; that founded at Palermo in 1645; another at Venice in 1701, which meets weekly in a hall near the grand hospital; another at Geneva in 1715, in the house of M. Le Clerc. The colleges of physicians at London and Edinburgh are also, by some, ranked in the number of *Academies*. See COLLEGE.

The Academy of *Natura Curiosi*, called also the Leopoldine Academy, was founded in 1652, by Jo. Laur. Baufchius, a physician: who, in imitation of the English, published an invitation to all physicians to communicate their extraordinary cases; and, meeting with success, was elected president. Their works were at first published separately; but in 1670 a new scheme was laid for publishing a volume of observations every year. The first volume appeared in 1684, under the title of *Ephemerides*, and the work has been continued with some interruptions and variations of the title, &c. In 1687, the Emperor Leopold took the society under his protection, granting the members several privileges, particularly that their presidents should be counts palatine of the holy Roman empire. This academy has no fixed residence or regular assemblies: instead of these, there is a kind of bureau, or office, first established at Breslau, and afterwards removed to Nuremberg, where letters, observations, &c. from correspondents or members are taken in. The academy consists of a president, two adjuncts or secretaries, and colleagues or members without restriction. The colleagues, at their admission, oblige themselves to two things: first, to choose some subject out of the animal, vegetable, or mineral kingdom, to handle, provided it had not been treated of by any colleague before; the second, to apply themselves to furnish materials for the Annual *Ephemerides*. Each member to bear a symbol of the academy, viz a gold ring, whereon, instead of a stone, is a book open, and, on the face thereof, an eye; on the other side the motto of the academy, *Namquam otiosus*.

II. *CHIRURGICAL Academies*; as that instituted some years ago, by public authority, at Paris: the members of which were not only to publish their own and correspondents observations and improvements; but to give an account of all that is published on surgery, and to compose a complete history of the art, by their extracts from all the authors, ancient and modern, who have wrote on it. A question in surgery is annually propounded by the academy, and a gold medal of two hundred livres value given to him who furnishes the most satisfactory answer.

III. *ECCLESIASTICAL Academies*; as that at Bologna in

Italy, instituted in 1687, employed in the examination of the doctrine, discipline, and history, of each age of the church.

IV. *COSMOGRAPHICAL Academies*; as that at Venice, called the *Argonauts*. This was instituted at the solicitation of F. Coronelli, for the improvement of geographical knowledge. Its design was to publish exact maps, both celestial and terrestrial, as well particular as general, together with geographical, historical, and astronomical descriptions. Each member, in order to defray the expence of such a publication; was to subscribe a proportional sum, for which they were to receive one or more copies of each piece published. For this end, three societies are settled; one under F. Moro, provincial of the Minorites in Hungary; another under the Abbot Laurence au Rue Payenne au Marais; the third under F. Baldigiani, Jesuit, professor of mathematics in the Roman college. The device of this academy is the terraqueous globe, with the motto *Plus ultra*; and at its expence all the globes, maps, and geographical writings, of F. Coronelli have been published.

V. *Academies of SCIENCES*.—These comprehend such as are erected for improving natural and mathematical knowledge. They are otherwise called *Philosophical and Physical Academies*.

The first of these was instituted at Naples, about the year 1560, in the house of Baptista Porta. It was called the *Academy Secretorum Nature*; and was succeeded by the *Academy of Lyncei*, founded at Rome by Prince Frederic Cesi, towards the end of that century. Several of the members of this academy rendered it famous by their discoveries; among these was the celebrated Galileo. Several other academies were instituted about that time, which contributed greatly to the advancement of the sciences; but none of them comparable to that of the *Lyncei*.

Some years after the death of Toricelli, the *Academy del Cimento* made its appearance, under the protection of Prince Leopold, afterwards Cardinal de Medicis. Redi was one of its chief members; and the studies pursued by the rest may be collected from those curious experiments published in 1667, by their secretary, Count Laurence Magliotti, under the title of *Saggi di Naturali Esperienze*; a copy of which was presented to the Royal Society, translated into English by Mr. Waller, and published at London in 4to.

The *Academy degl' Inquireti*, afterwards incorporated into that of Della Traccia in the same city, followed the example of that of Del Cimento. Some excellent discourses on physical and mathematical subjects, by Geminiano Montanari, one of the chief members, was published in 1667, under the title of *Pensieri Fifico Matematici*.

The *Academy of Ruffano*, in the kingdom of Naples, was originally an academy of Belles Lettres, founded in 1540, and transformed into an Academy of Sciences in 1605 at the solicitation of the learned abbot, Don Giacinto Gimma; who being made president, under the title of Promoter General thereof, gave them a new set of regulations. He divided the academists into the following classes:—Grammarians, Rhetoricians, Poets, Historians, Philosophers, Physicians, Mathematicians, Lawyers, and Divines, with a class apart for Cardinals and persons of quality. To be admitted a member, a man must have some degrees in the faculty. The members are not allowed to take the title of *Academists* in the beginning of their books, without a written permission from their president, which is not granted till the work has been examined by the censors of the Academy; and the permission is the greatest honour the Academy can confer, as they thereby adopt the work, and are answerable for it against all criticisms that may be made upon it. To this law the president or promoter himself is subject; and no academist is allowed to publish any thing against the writings of another, without leave from the society.

Several other Academies of Sciences have been founded in Italy; but, for want of being supported by princes, did not continue long. The loss of them, however, was abundantly repaired by the institution of others still subsisting; such as, the *Academy of Filarmooni* at Verona; of *Ricovatri* at Padua, where a learned discourse on the origin of springs was delivered by Sig. Vallinieri, first professor of physic in the university of that city, and which was afterwards printed. To the Academy of the *Muti de Regio*, at Modena, the same Sig. Vallinieri presented an excellent discourse on the scale of created beings, since inserted in his history of the generation of man and animals printed at Venice in the year 1721.

F. Merfenne is said to have given the first idea of a philosophical Academy in France, towards the beginning of the 17th century, by the conferences of naturalists and mathematicians occasionally held at his lodgings; at which Gassendi, Des Cartes, Hobbes, Roherval, Paical, Blondel, and others, assisted. F. Merfenne proposed to each certain problems to examine, or certain experiments to be made. These private assemblies were succeeded by more public ones, formed by Mr. Montmort, and Mr. Thevenot, the celebrated traveller. The French example animated several Englishmen of distinction and learning to erect a kind of philosophical academy at Oxford, towards the close of Oliver Cromwell's administration; which, after the Restoration, was erected into a Royal Society, See SOCIETY. The English example, in its turn, animated the French. Lewis XIV. in 1666, assisted by the counsels of Mr. Colbert, founded an Academy of Sciences at Paris, with a sufficient revenue to defray the charge of experiments, and salaries to the members.

Royal Academy of Sciences.—After the peace of the Pyrenees, Lewis XIV. being desirous of establishing the arts, sciences, and literature, upon a solid foundation, directed M. Colbert to form a society of men of known abilities and experience in the different branches, who should meet together under the king's protection, and communicate their respective discoveries. Accordingly Mr. Colbert, having conferred with those who were at that time most celebrated for their learning, resolved to form a society of such persons as were conversant in natural philosophy and mathematics, to join to them other persons skilled in history and other branches of erudition, along with those who were entirely engaged in what are called the *Belles Lettres*, grammar, eloquence, and poetry. The geometricians and natural philosophers were ordered to meet on Tuesdays and Saturdays, in a great hall of the king's library, where the books of mathematics and natural philosophy were contained; the learned in History to assemble on Mondays and Thursdays, in the hall where the books of history were contained; and the class of Belles Lettres to assemble on Wednesdays and Fridays. All the different classes were likewise ordered to meet together upon the first Thursday of every month; and, by their respective secretaries, make a report of the proceedings of the foregoing month.

In a short time, however, the classes of History, Belles Lettres, &c. were united to the French Academy, which was originally instituted for the improvement and refining the French language, so that the Royal Academy contained only two classes, viz. that of natural philosophy and mathematics.

In year 1696 the king, by a proclamation dated the 26th of January, gave this Academy a new form, and put it upon a more respectable footing.—It was now to be composed of four kinds of members, viz. *honorary, pensionary, associates, and élèves*. These last were a kind of pupils, or scholars, each of whom was attached to one of the pensionaries. The first class to contain ten persons, and each of the rest twenty. The honorary academists to be all inhabitants of France; the pensionaries all to reside at Paris; eight of the associates allowed to be foreigners; and the élèves all to live at Paris. The offi-

cers to be, a president named by the king, out of the class of honorary academicians; and a secretary and treasurer, to be perpetual. Of the pensionaries, three to be geometricians, three astronomers, three mechanics, three anatomists, three chemists, three botanists, and the remaining two to be secretary and treasurer. Of the twelve associates, two to apply themselves to geometry, two to botany, and two to chemistry. The eleven to apply themselves to the same kind of science with the pensionaries they were attached to; and not to speak, except when called by the president. No regular or religious to be admitted, except into the class of honorary academicians; nor any person to be admitted either for associate or pensionary, unless known by some considerable printed work, some machine, or other discovery. The assemblies were held on Wednesdays and Saturdays, unless either of them happened to be a holiday, and then the assembly was held on the preceding day.—To encourage the members to pursue their labours, the king engaged not only to pay the ordinary pensions, but even to give extraordinary gratifications, according to the merit of their respective performances; furnishing withal the expence of the experiments and other enquiries necessary to be made. If any member gave in a bill of charges of experiments he had made, or desired the printing of any book, and brought in the charges of gravings, the money was immediately paid by the king, upon the president's allowing and signing the bill. So, if an anatomist required live tortoises, for instance, for making experiments about the heart, &c. as many as he pleased were brought him at the king's charge. Their motto was, *Invent et perfice*.

In the year 1716, the Duke of Orleans, then regent, made an alteration in their constitution; augmenting the number of honoraries, and of associates capable of being foreigners, to 12; admitting regulars among such associates; and suppressing the class of elves, as it appeared to be attended with some inconveniences, particularly that of making too great an inequality among the Academicians, and being productive of some misunderstandings and animosities among the members. At the same time he created other two classes; one consisting of 12 adjuncts, who, as well as the associates, were allowed a deliberative voice in matters relative to science; and the other six free associates, who were not attached to any particular science, nor obliged to pursue any particular work.

After its re-establishment in 1699, this Academy was very exact in publishing, every year, a volume containing either the works of its own members, or such memoirs as had been composed and read to the Academy during the course of that year. To each volume is prefixed the history of the Academy, or an extract of the memoirs, and, in general, of whatever has been read or said in the Academy; at the end of the history, are the eulogiums on such Academicians as have died that year.—M. Rouille de McClay, counsellor to the parliament of Paris, founded two prizes, one of 2500, and the other of 2000 livres, which are alternately distributed by the parliament every year; the subject for the first must relate to physical astronomy, and those for the latter to navigation and commerce.

Notwithstanding the advantages which the members of this Academy enjoyed over others, in having their expences defrayed, and even being paid for their time and attendance, they have fallen under some imputations, particularly that of plagiarism. The French revolution, however, occasioned this Academy to be new modelled. See *INSTITUTE*.

The *Royal Society at Berlin* was founded in 1700, by Frederick II. king of Prussia, on the model of that of England, excepting that, besides natural knowledge, it likewise comprehends the Belles Lettres. In 1710 it was ordained that the president shall be one of the counsellors of state, and nominat-

ed by the king. The members were divided into four classes: the first for prosecuting physics, medicine, and chemistry; the second for mathematics, astronomy, and mechanics; the third for the German language and the history of the country; the fourth for oriental learning, particularly as it may concern the propagation of the gospel among infidels. Each class to elect a director for themselves, who shall hold his post for life. The members of any of the classes have free admission into the assemblies of any of the rest.

The great promoter of this institution was the celebrated Mr. Leibnitz, who accordingly was made the first director. The first volume of their Transactions was published in 1710, under the title of *Miscellanea Berolinensia*; and though they received but few marks of the royal favour for some time, they continued to publish new volumes in 1723, 1727, 1734, and 1740. At last, however, Frederick III. the late king of Prussia, gave new vigour to this Academy, by inviting to Berlin such foreigners as were most distinguished for their merit in literature, and encouraged his subjects to prosecute the study and cultivation of the sciences by giving ample rewards; and thinking that the academy, which till that time had had some minister, or opulent nobleman for its president, would find an advantage in having a man of letters at its head, he conferred that honour on M. Maupertuis. At the same time, he gave a new regulation to the academy, and took upon himself the title of its protector.

The Academicians held two public assemblies annually; one in January, on the late king's birth-day; and the other in May, on the day of his accession to the throne. At the latter of these was given, as a prize, a gold medal of 50 ducats value; the subject for this prize is successively, natural philosophy, mathematics, metaphysics, and erudition.

The *Imperial Academy at Petersburg* was projected by Czar Peter the Great, who had taken the necessary measures for its establishment, when he was prevented by death from putting them into execution. His successor, the Czarina Catherine, laboured on the same plan; and in a short time formed one of the most celebrated academies in Europe, composed of the most considerable foreigners, some of them settled at Petersburg. The memoirs of this academy, which are published in Latin, are highly valuable, particularly for the mathematical part. The academy, however, was in a very languishing condition, when the Empress Czarina Elizabeth attended the throne; but that princess, happily, naming Count Ralomowiki president, he gave it a new body of statutes, and quickly restored it to its ancient splendour.

The building and apparatus of this academy are extraordinary, there being a fine library, observatory, &c. It partakes much of what we call an *University*; having regular professors in the several faculties, who read lectures as in our schools. The ordinary assemblies are held twice a-week, and public or solemn ones thrice a-year. In the public assemblies an account is given of what has been done in the private ones. The academy has this modest motto, "*Parlatim*."

The *Academy of Sciences*, called the *Institute of Bologna*, was founded by Count Marsigli in 1712, for the cultivating of physics, mathematics, medicine, chemistry, and natural history. Its history is written by M. de Limiers, from memoirs furnished by the founder himself.

VI. *Academies of Law*; as that famous one at Beryta, and that of the Stientes at Bologna.

VII. *Academies of History*; as the *Royal Academy of Portuguese History* at Lisbon. This academy was instituted by King John V. in 1720. It consists of a director, four censors, a secretary, and 50 members; to each of which is assigned some part of the ecclesiastical or civil history of the nation, which he is to treat either in Latin or Portuguese. In the

church-history of each diocese, the prelates, synods, councils, churches, monasteries, academies, persons illustrious for sanctity or learning, places famous for miracles or relics, must be distinctly related in twelve chapters. The civil history comprises the transactions of the kingdom from the government of the Romans down to the present time. The members who reside in the country are obliged to make collections and extracts out of all the registers, &c. where they live. Their meetings to be once in fifteen days.

A medal was struck by this academy, in honour of their prince: the front of which was his effigy, with the inscription *Johannes V. Lusitanorum Rex*; and, on the reverse, the same prince is represented standing, and raising History almost prostrate before him, with the legend *Historia Rejuvenges*. Underneath are the following words in abbreviation: REGIA ACADEMIA HISTORIAE LUSITANÆ, INSTITUTA VI. Idus Decembris MDCCXX.

VIII. *Academies of Antiquities*; as that at Cortona in Italy, and at Upsal in Sweden. The first is designed for the study of Etruscan antiquities; the other for illustrating the northern languages, and the antiquities of Sweden, in which notable discoveries have been made by it. The head of the Etruscan Academy is called *Lucumon*, by which the ancient governors of the country were distinguished. One of their laws is to give audience to poets only one day in the year; another is to fix their fellows, and impose a tax of a dissertation on each member in his turn.

The *Academy of Medals and Inscriptions* at Paris was set on foot by M. Colbert, under the patronage of Lewis XIV. in 1663, for the study and explanation of ancient monuments, and perpetuating great and memorable events, especially those of the French monarchy, by coins, reliefs, inscriptions, &c. The number of members at first was confined to four or five, chosen out of those of the French Academy; who met in the library of Mr. Colbert, from whom they received his majesty's orders. The days of their meetings were not determined; but generally they met on Wednesdays, especially in the winter season; but, in 1691, the king having given the inspection of this academy to M. de Pontchartrain, comptroller-general, &c. he fixed their meetings on Tuesdays and Saturdays.

By a new regulation, dated the 16th of July, 1701, the academy was composed of ten *honorary* members; ten *associates*, each of whom had two declarative voices; ten *pensionaries*; and ten *élèves*, or pupils. They then met every Tuesday and Wednesday, in one of the halls of the Louvre; and had two public meetings yearly, one the day after Martinmas and the other the 16th after Easter. The class of *élèves* has been suppressed, and united to the associates. The king nominates their president and vice-president yearly; but their secretary and treasurer are perpetual. The rest are chosen by the members themselves, agreeably to the constitutions on that behalf given them.

One of the first undertakings of this academy was to compose, by means of medals, a connected history of the principal events of Lewis XIV.'s reign; but in this design they met with great difficulties, and of consequence it was interrupted for many years; but at length it was completed down to the advancement of the Duke of Anjou to the crown of Spain.

In this celebrated work, the establishment of the academy itself was not forgot. The medal on this subject represents Mercury sitting, and writing with an antique stylus on a table of brass; he leans with his left hand upon an urn full of medals, and at his feet are several others placed upon a card: the legend, *Rerum gestarum fides*; and on the exergue, *Academia regiae inscriptionum et numismatum, instituta M.DC.LXIII.* signifying that the Royal Academy of Medals and Inscriptions, founded in 1663, ought to give to future ages a faithful testi-

mony of all great actions. Besides this work, we have several volumes of their memoirs; and their history, written and continued by their secretaries.

IX. *Academies of Belles Lettres*, are those wherein eloquence and poetry are chiefly cultivated. There are very numerous in Italy, and not uncommon in other countries.

The *Academy of Umidi* at Florence has contributed greatly to the progress of the sciences by the excellent Italian translations given, by some of its members, of the ancient Greek and Latin historians. Their chief attention is to the Italian poetry, at the same time that they have applied themselves to the polishing of their language, which produced the *Academy La Crusca*.

The *Academy of Humorists, Umoristi*, had its origin at Rome from the marriage of Lorenzo Marini, a Roman gentleman; at which several persons of rank were guests; and, it being carnival time, to give the ladies some diversion, they betook themselves to the reciting of verses, sonnets, speeches, first *ex tempore*, and afterwards premeditated; which gave them the denomination of *Belli Humori*. After some experience, coming more and more into the taste of these exercises, they resolved to form an Academy of Belles Lettres; and changed the title of *Belli Humori* for that of *Humoristi*; choosing for their device a cloud, which, after being formed of exhalations from the salt waters of the ocean, returns in a gentle sweet shower; with this motto from Lucretius, *Redit agmine dulci*.

In 1699, the *Academy of Arcadi* was established at Rome, for reviving the study of Poetry and of the Belles Lettres. Besides most of the politer wits of both sexes in Italy, this academy comprehends many princes, cardinals, and other ecclesiastics; and, to avoid disputes about pre-eminence, all appear masked after the manner of Arcadian shepherds. Within ten years from its first establishment, the number of *Academists* amounted to six hundred. They hold assemblies seven times a-year, in a mead or grove, or in the gardens of some nobleman of distinction. Six of these meetings are employed in the recitation of poems and verses of the Arcadi residing at Rome; who read their own compositions; except ladies and cardinals, who are allowed to employ others. The seventh meeting is set apart for the compositions of foreign or absent members.

This academy is governed by a *Custos*, who represents the whole society, and is chosen every four years, with a power of electing 12 others yearly for his assistance. Under these are two sub-custodes, one vicar or pro-custos, and four deputies or superintendants, annually chosen. The laws of the society are immutable, and bear a near resemblance to the ancient model.

There are five manners of electing members. The first is by *acclamation*. This is used when sovereign princes, cardinals, and ambassadors of kings, desire to be admitted; and the votes are then given *vice voce*. The second is called *an- numeration*. This was introduced in favour of ladies and academical colonies, where the votes are taken privately. The third, *representation*, was established in favour of colonies and universities, where the young gentry are bred; who have each a privilege of recommending one or two members privately to be ballotted for. The fourth, *surrogation*, whereby new members are substituted in the room of those dead or expelled. The last, *destination*, whereby, when there is no vacancy of members, persons of poetical merit have the title of Arcadi conferred upon them, till such time as a vacancy shall happen. All the members of this body, at their admission, assume new pastoral names; in imitation of the shepherds of Arcadia. The academy has several colonies of Arcadi in different cities of Italy, who are all regulated after the same manner.

X. *ACADEMIES of Languages*; called, by some, *Grammatical Academies*; as,

The *Academy della Crusca* at Florence, famous for its vocabulary of the Italian tongue, was formed in 1582, but scarce heard of before the year 1584, when it became noted for a dispute between Tassio and several of its members. Many authors confound this with the Florentine academy. The discourses which Toricelli, the celebrated disciple of Galileo, delivered in the assemblies, concerning levity, the wind, the power of percussion, mathematics, and military architecture, are a proof that these academists applied themselves to things as well as words.

The *Academy of Tricasseri* had its rise in 1617, at an assembly of several princes and nobility of the country, who met with a design to refine and perfect the German tongue. It flourished long under the direction of princes of the empire, who were always chosen presidents. In 1668 the number of members arose to upwards of 900. It was prior in time to the French academy, which only appeared in 1629, and was not established into an academy before the year 1635. Its history is written in the German tongue, by George Neumark.

The *French Academy*, which had its rise from a meeting of men of letters in the house of M. Conrart, in 1629. In 1635 it was erected into an academy, by Cardinal Richieu, for refining and ascertaining the French language and style.—The number of its members was limited to 40; out of whom a director, chancellor, and secretary, were to be chosen: the two former held their post for two months, the latter perpetual. The members of this academy enjoyed several privileges and immunities, among which was that of not being obliged to answer before any court but that of the king's household. They met three times a-week in the Louvre; at breaking up, forty silver medals were distributed among them, having on one side the King of France's head, and on the reverse, *Protecteur de l'Académie*, with laurel, and this motto, *A l'immortalité*. By this distribution, the attendance of the *Academists* was secured, those who were present receiving the surplus otherwise intended for the absent. To elect or expel a member, at least eighteen were required; nor could any be chosen unless he petitioned for it: by this expedient, the affront of refusals from persons elected was avoided. Religious were not admitted; nor could any nobleman, or person of distinction, be admitted on another footing than as a man of letters. None have been expelled, except for base and dishonest practices; and there are but two instances of such expulsions, the first of M. Granier for refusing to return a deposit, the other of the Abbé Furetiere for plagiarism.—The design of this academy was to give not only rules, but examples, of good writing. They began with making speeches on subjects taken at pleasure, about twenty of which were printed. They met with great opposition from the parliament at their first institution; it being two years before the patents granted by the king would be registered. They have been severely satyrized, and their style has been ridiculed as enervating instead of refining the French language. They are also charged with having surfeited the world by flattery, and having exhausted all the topics of panegyric in praise of their founder; it having been a duty incumbent on every member, at his admission, to make a speech in praise of the King, the Cardinal, the Chancellor Segulier, and the person in whose place he was elected. The most remarkable work of this academy is a dictionary of the French tongue; which, after 50 years spent in settling the words and phrases to be used in writing, was at last published in 1694.

The *Royal Spanish Academy* at Madrid held its first meeting in July, 1713, in the palace of its founder, the Duke d'Escalona. It consisted at first of eight academists, including the duke; to which number 14 others were afterwards added, the founder being chosen president or director. In 1714 the

king granted them his confirmation and protection. Their device is a crucible in the middle of the fire, with this motto, *Limpia, fya, y da Eplendor*.—"It purifies, fixes, and gives brightness." The number of members is limited to 24; the Duke d'Escalona to be director for life, but his successors chosen yearly, and the secretary to be perpetual. Their object, as marked out by the royal declaration, was to cultivate and improve the national language: they were to begin with choosing carefully such words and phrases as have been used by the best Spanish writers; noting the low, barbarous, or obsolete ones; and composing a dictionary wherein these may be distinguished from the former.

XI. *ACADEMIES of Dancing*; as that once erected by Lewis XIV. with privileges above all the rest.

XII. *ACADEMIES of Painting*; as the celebrated *Academy of Painting and Sculpture* at Paris. This took its rise from the disputes that happened between the master painters and sculptors in that capital; in consequence of which, M. Le Brun, Sarazin, Comille, and others of the king's painters, formed a design of instituting a particular academy; and, having presented a petition to the king, obtained an arret, dated January 20, 1648. In the beginning of 1655 they obtained, from Cardinal Mazarin, a brevet, and letters patent, which were registered in parliament; in gratitude for which favour, they chose the cardinal for their protector, and the chancellor for their vice-protector. In 1663, by means of M. Colbert, they obtained a pension of 4000 livres. The academy consisted of a protector, a vice-protector, a director, a chancellor, four rectors, adjuncts to the rectors, a treasurer, four professors, one of which was professor of anatomy, and another of geometry; several adjuncts and counsellors, an historiographer, a secretary, and two others.

The Academy of Painting held a public assembly every day for two hours in the afternoon, to which the painters resorted either to design or to paint, and where the sculptors modelled after a naked person. There were 12 professors, each of whom kept the school for a month; and there were 12 adjuncts to supply them in case of need. The professor upon duty placed the naked man as he thought proper, and set him in two different attitudes every week. This they called *setting the model*. In one week of the month he sets two models together, which was called *setting the group*. The paintings and models made after this model, were called *academics*, or *academy-figures*. They had likewise a woman who stood for a model in the public school. Every three months, three prizes for design were distributed among the *élèves* or disciples; two others for painting, and two for sculpture, every year.

There was also an Academy of Painting, Sculpture, &c. at Rome, established by Lewis XIV. wherein those who had gained the annual prize at Paris were entitled to be three years entertained at the king's expence, for their further improvement.

XIII. *Academies of ARCHITECTURE*; as that established by M. Colbert in 1671, consisting of a company of skilful architects, under the direction of the superintendent of the buildings.

XIV. *Academies of POLITICS*; as that at Paris, which consisted of six persons, who met at the Louvre, in the chamber where the papers relating to foreign affairs were lodged. But this academy proved of little service, as the kings of France were unwilling to trust any but their ministers with the inspection of foreign affairs.

ACALANDRA, a town of Lucania, on the other side the Appennine (Strabo); now *Salandra*, in the Basilicata, on the river Acalandrus.

ACAMANTIS, the ancient name of the island Cyprus, taken from one of its promontories, situate to the west.

ACAMAS, son of Theseus, followed the rest of the Grecian princes to the siege of Troy; and was deputed, with Diomedes, to the Trojans, in order to get Helen restored. Laodice, Priam's daughter, fell in love with him, stole a night with him, and had a son by him, called Munitus. He was one of the heroes who concealed themselves in the wooden horse. One of the tribes of Athens was called *Acamantides* from him, by the appointment of the oracle. He founded a city in Phrygia Major, called *Acamantium*; and made war against the Solymis.

ACAMBOU, or *ΑΚΑΜΒΟΕ*, a country of Africa, and one of the most powerful kingdoms on the coast of Guinea. The country is populous, and the commerce considerable; the people are brave, and fond of war, inclined to rapine, and cruel. Long. about 20. W. Greenwich. Lat. 6. N.

ACANTHOS (*Encycl.*), a town of Egypt, near which was shewn Xerxes's ditch, of seven stadia, in order to separate mount Athos from the continent, and convey his ships, without doubling Athos, into the Singitic Bay. *Acanthus* is also a town of Epirus.

ACANTHUS (*Encycl.*), bears-breach. There are five species. 1. *The mollis*, or common bear's-breach, a native of Italy, is the sort that is used in medicine, and is supposed to be the *mollis acanthus* of Virgil: the leaves of this species are famous for having given rise to the capital of the Corinthian pillars. 2. *The spinosus*, or prickly bear's-breach; the leaves of which are deeply jagged in very regular order, and each segment is terminated with a sharp spine, as are also the foot-stalks of the leaves and the empalement of the flower, which renders it troublesome to handle them. 3. *Illiciifolius*, or shrubby bear's-breach, grows naturally in both the Indies. It is an evergreen shrub, which rises about four feet high; and is divided into many branches, garnished with leaves like those of the common holly, and armed with spines in the same manner: the flowers are white, and shaped like those of the common acanthus, but smaller. 4. *The nigra*, or Portugal bear's-breach, with smooth sinuated leaves of a livid green colour, was discovered in Portugal by Dr. Jussieu of the royal garden at Paris. 5. *The middle bear's-breach*, with entire leaves, having spines on their border, is supposed to be the acanthus of Dioscorides.

They are all perennial plants. The first and second species may be propagated either by seeds, or by off-sets from the roots. The third, fourth, and fifth sorts, are propagated only by seeds; which, as they do not ripen in Europe, must be obtained from the places in which they grow naturally: the plants are so tender, that they cannot be preserved out of the stove in this country.

ACANTHUS is likewise used by Theophrastus as a synonyme of the acacia.

ACANUS, in botany, a synonyme of *carduus calceolaria* of Linnaeus. See *CARDUUS*.

ACARNANIA, the first country of Free Greece, or Greece Proper, bounded on the west by the Sinus Ambracius, and separated from Ætolia by the river Achelous on the east, and by the Sinus Ambracius from Epirus. The people were called *Acarnanes*, denoting persons unshorn: other Ætolians, to the east of the Achelous, being called *Curetes* (Homer), from being shorn. According to Lucian, they were noted for effeminacy and incontinence; hence the proverb, *Porcellus Acarnanius*. This country was famous for an excellent breed of horses; so that *Ακαρνες ιππες*, is a proverbial saying for a thing excellent in its kind. It is now called *la Carnia* and *il Delipotato*.

ACARON, or *ACCARON* (*Encycl.*), a town of Palestine. It was the boundary of the Philistines to the north; stood at some distance from the sea, near Bethisemeth; and was famous for the idol of Baalzebub.

ACARUS (*Encycl.*), a genus of insects belonging to the order of aptera. The description of a few of the most remarkable we here introduce. 1. *The firo*, or cheele-mite, a very minute species, already described. 2. *The sanguifugus*. The hinder part of the abdomen is crenated, the scutellum is oval and yellowish, and the beak is trifid. It is a native of America, and sticks to fast on the legs of travellers, sucking their blood, that they can hardly be extracted. 3. *The telarius*, is of a greenish yellow colour. It has a small sting or weapon, with which it wounds the leaves of plants, and occasions them to fold backward. They are very frequently to be met with in the autumn, inclosed in the folded leaves of the lime-tree. 4. *The exulcerans*, or itch-acarus, is a very small species: its body is of a figure approaching to oval, and lobated; the head is small and pointed; its colour is whitish, but it has two dusky semicircular lines on the back. It has long setaceous legs, but the two first are short. It is found in the pustules of the itch: authors in general have supposed that it causes that disease; but if this were so, it would be found more universally in those pustules. It is more probable that these only make a proper nidus for it. 5. *The batatas*, is of a blood-colour, and a little rough; the fore pair of legs are as long as the body. It inhabits the potatoes of Surinam. 6. *The ovinus*, or sheep tick, has a flat body, of a roundish figure, but somewhat approaching to oval, and of a yellowish white colour, and has a single large round spot on the back: the anus is visible in the lower part of the body; the thorax is scarce conspicuous; the head is very small and black; the mouth is blind: the antennæ are of a clavated figure, and of the length of the snout; the legs are short and black. It is common on sheep, and its excrements stain the wool green: it will live in the wool many months after it is shorn from the animal. 7. *The coleoptratorum*, or acarus of insects, is extremely minute: its body is round, reddish, and covered with a firm and hard skin; the head is very small, the neck scarce visible; the legs are moderately long, the anterior pair longer than the others; it has a whiteness about the anus. It is frequent on the bodies of many insects, which it infects, as the louse does others; it runs very swiftly: the humble-bee, and many other of the larger insects, are continually infested with it; but none so much as the common black beetle, which has thence been called the lousy beetle. 8. *The baccarum*, or scarlet tree-mite, is a small species: its body is roundish, and the back not at all flattened, as it is in many others; the skin is smooth, shining, and glossy; and the whole animal seems distended, and ready to burst; the colour is a bright red, but a little duskier on the sides than elsewhere: the head is very small, and the legs short; there is on each side a small dusky spot near the thorax, and a few hairs grow from different parts of the body. It is very common on trees, particularly on the currant, on the fruit of which we frequently see it running. 9. *The longicorvus*, or red stone-acarus, is very small, and of a bright red colour: the body is round, and distended; the head is very small, and pointed; the legs are moderately long, and of a paler red than the body: the antennæ are much longer than in any other species. It is frequent about old stone-walls and on rocks, and runs very nimbly. 10. *The aquaticus* is a small species: the body is of a figure approaching to an oval, and the back appears depressed: it is of a bright and strong scarlet colour. The head is small; the legs are moderately long and firm, and are of a paler red than the body. It is common in shallow waters, where it runs very swiftly along the bottom. 11. *The holycericeus* is a small species: its body is roundish, but a little approaching to oval; the back somewhat depressed: it is of a fine scarlet colour, and covered with a velvety down. The head is very small; the eyes are two, and very small; the legs are short and of a

paler red, and there is a small black spot near the insertion of the anterior ones. It is very common under the surface of the earth, and sometimes on herbs and among hay. It is supposed to be poisonous, if swallowed; but we do not seem to have any certain account of such an effect. 12. The *longipennis* (Pl. 9.) is the largest of the acarus kind: its body is roundish, of a dusky brown on the back, with a duskiest spot of a rhomboidal figure near the middle of it; the belly is whitish; the legs are extremely long and slender. On the back part of the head there stands a little eminence, which has on it a kind of double crest, formed as it were of a number of minute spines: the eyes are small and black, and are two in number. It is very common in our pastures, towards the end of summer. Ray and Lister call it *araneus cryfatus longipennis*; Mouffet, *araneus longipennis*; and, notwithstanding its having but two eyes, it has been almost universally ranked among the spiders.

ACASTUS, in classic history, the son of Pelias king of Thessaly, and one of the most famous hunters of his time, married Hippolyta, who falling desperately in love with Pelus her son-in-law, and her refusing to gratify her wishes, the accursed him to her husband of a rape; on which he slew them both.

ACATALUS, the juniper berry.

ACAT-ASTAIOS, *inconstant*, is an ancient physical term, applied to irregular fevers, whose paroxysms are uncertain, and which are indicated by frequent changes in the urine. It is likewise applied to those shivering fits in fevers, which have no constant return; and to turbid urine, that deposits no regular sediment.

ACAULOSE, or ACAULOUS, is applied, by botanists, to those plants which have no proper stem, or CAULIS.

ACBAB, in natural history, a name given by the people of the Philippine islands to a bird, very like our common hen, which is very frequently wild among them. It lives on rice, and other vegetables, and does a great deal of mischief; but is short-winded, and does not fly well, so that it is easily destroyed.

ACBAR, the name of an idol of enormous size, which the Arabians are said formerly to have worshipped. It was with difficulty that Mahomet restrained them from this species of idolatry. Hyde's *Disc.* vol. i. p. 257.

ACCASDIR, a name given to a metal which we call TIN.

ACCEDONES. See ACCENDONES, below.

ACCENDONES (*Encycl.*). See GLADIATOR. The orthography of the word is contested: the first edition of Tertullian, by Rhenanus, has it *accedones*; an ancient manuscript, *accendones*. Aquinas adheres to the former, Pitiscus to the latter. The origin of the word, supposing it *accendones*, is from *accendo*, I kindle; supposing it *accedones*, from *accedo*, I accede, am added to. The former places their distinguishing character in enlivening the combat by their exhortations and suggestions; the latter supposes them to be much the same with what among us are called *seconds*, among the Italians *patroni*; excepting that these latter only stand by to see the laws of the sword duly observed, without intermeddling to give advice or instruction.

ACCENSI (*Encycl.*). Vegetius calls these *supernumerarii legionum*. Cato calls them *ferentarii*, in regard they furnished those engaged in battle with weapons, drink, &c. Though Nonnius suggests another reason of that appellation, viz. because they fought with stones, slings, and weapons *que feruntur*, such as are thrown, not carried in the hand. They were sometimes also called *velites*, and *relati*, because they fought clothed, but not in armour; sometimes *adscripticii*, and *adscriptici*; sometimes *rorarii*. The *accensi*, Livy observes, were placed at the rear of the army, because no great matter was

expected from them: they were taken out of the fifth class of citizens.

ACCENT, in music (*Encycl.*). Every bar or measure is divided into *accented* and *unaccented* parts. The accented parts are the principal; being those intended chiefly to move and affect: it is on these the spirit of the music depends. The beginning and middle, or the beginning of the first half of the bar, and of the latter half of it, in common time; and the beginning of the three notes in triple time, are always the accented parts of the measures.

In common time, the first and third crotchet of the bar are on the accented part of the measure.—In triple time, where the notes always go by three and three, that which is in the middle of every three is always unaccented; the first and last accented. But the accent in the first is so much stronger, that in many cases the last is accounted as if it had no accent. The harmony is always to be full and void of discords in the accented parts of the measure. In the unaccented parts this is not so absolutely necessary; discords here passing without any great offence to the ear.

ACCENTER, in music, one of the three fingers in a trio, viz. the person who sings the highest part. See TRIO.

ACCEPTANCE, in commerce (*Encycl.*). The acceptance is usually performed by him on whom the bill is drawn; upon its being presented to him by the person on whose behalf it was drawn, or by some others by his order.

A small matter amounts to an acceptance, so that there be a right understanding between both parties; as, "Leave your bill with me, and I will accept it;" or, "Call for it to-morrow, and it shall be accepted." This obliges as effectually by the custom of merchants, and according to law, as if the party had actually subscribed, or signed it, which is usually done. But should a man say, "Leave your bill with me; I will look over my accounts and books between the drawer and me, and call to-morrow, and accordingly the bill shall be accepted;" this shall not amount to a complete acceptance; for this mention of his books and accounts was really intended to give him an opportunity of examining if there were effects in his hands to answer; without which perhaps he would not accept the same; and so it was ruled by the Lord Chief-justice Hale, at Guildhall, London.

A bill may be accepted for part; because the party, upon whom the same was drawn, had no more effects in his hands; which being usually done, there must be a protest, if not for the whole sum, yet at least for the residue; however, after payment of such part there must be a protest for the remainder.

Bills payable at sight are not to be accepted; as being to be acquitted at their presenting; or in defect of payment, to be protested.—In bills drawn for a certain number of days after sight, the acceptance must be dated; because the time is to be accounted therefrom.—The form of this acceptance is, *Accepted, such a day*; and then the signature.

Bills drawn, payable on a day named, or at usance, or double usance, need not be dated; usance being reckoned from the date of the bill itself.—On these it is sufficient to write, *Accepted*, and the signature.

If the bearer of a bill be contented with an acceptance to be paid in twenty days after sight, where, in the bill itself, only eight days are expressed, he runs the risk of the twelve additional days: so that if the acceptor fail he has no remedy against the drawer. And if the bearer contents himself to receive a less sum than is expressed, in part, he is to stand the chance of the rest.

ACCI, a town of Tarraconensis (Pliny, Ptolemy); formerly called *Adi*, supposed to be Guadix, to the east of the city

of Granada, at the foot of a mountain, near the source of the rivulet Guadalatin. Now greatly decayed. It is the Colonia Accitana Gemella (coins); and was of some repute among the Roman colonies. The people were called Gemellenses, because the colony consisted of colonists from the third and sixth legions.

ACCIAIOLI (Donato), a man famous for his learning and the honourable employments he possessed in Florence his native country, in the 15th century. He wrote, a Latin translation of some of Plutarch's Lives; Commentaries on Aristotle's Ethics and Politics; and the Life of Charlemagne. He was sent to France by the Florentines, to sue for succour from Lewis XI. against Pope Sixtus IV. but died on his journey at Milan; his body was carried to Florence, and buried in the church of the Carthusians. The small fortune he left his children is a proof of his probity and disinterestedness. His daughters, like those of Aristides, were married at the public expense, as an acknowledgment of his services. His funeral eulogium was spoken by Christopher Landini; and an elegant epitaph, by Politian, was inscribed on his tomb.

ACCIPESIU, in ichthyology, a name given by Athenæus and others of the Greek writers, to theurgeon, called by others *oncos*. See **ACCIPENSER**, below.

ACCIPENSER (*Encycl.*), in ichthyology, a genus of fishes belonging to the Amphibia Nantes of Linnæus. See Pl. 10. The ancients were acquainted with the huso, the fish that affords isinglass. Pliny mentions it under the name of *ICHTHYOCOLLA*; and says, that the glue that was produced from it had the same title; and afterwards adds, that it was made out of the belly of the fish. The huso is the largest of the genus, and grows to 24 feet in length. It inhabits the Danube and the rivers of Russia.

The sturio, orurgeon, is probably the *ὐστρυον* of Dorion, as quoted by Athenæus, who says its mouth is always open, and that it conceals itself in the hot months. This shews it to be a fish of a cold nature; which is confirmed by the history of the European fish of this species given by Mr. Foster, in his Essay on the *Volga*. He relates, that they are scarce ever found in that river in spring or summer, but in vast quantities in autumn and winter, when they crowd from the sea under the ice, and are then taken in great numbers. Theurgeon is seldom taken far out at sea, but frequents such parts as are not remote from the æstuaries of great rivers. It is admired for the delicacy and firmness of its flesh, which is white as veal, and extremely good when roasted. It is generally pickled. The most we receive comes either from the Baltic rivers, or North America: those cured at Pillau have been, till of late, in the greatest repute; but through the encouragement given by the society instituted for promoting trade and manufactures, theurgeon from our colonies begins to rival those of the Baltic. Great numbers are taken during summer in the lakes Frische-haff, and Curisch-haff near Pillau, in large nets made of small cord. The adjacent shores are formed into districts, and farmed out to companies of fishermen, some of which are rented for six thousand guilders, or near three hundred pounds, *per annum*. They are found in vast abundance in the American rivers in May, June, and July; at which time they leap some yards out of the water, and, falling on their sides, make a noise to be heard in still weather at some miles distance. Caviare is made of the roes of this; and also of all the other sorts of sturgeons, dried, salted, and packed up close. Ichthyocolla, or isinglass, is also made of the sound of our fish, as well as that of the others; but in very small quantity. Theurgeon grows to a great size, to the length of 18 feet, and to the weight of 500 pounds, but it is seldom taken in our rivers of that bulk. The largest we have known caught in those of Great Britain, weighed 460 pounds; which was

taken about three years ago in the Elk, where they are more frequently found than in our southern waters. In the manner of breeding, this fish is an exception among the cartilaginous kind; being, like the bony fish, oviparous, spawning in water.

ACCIPITER (*Encycl.*). Pliny tells us, that in some cases, particularly in marriage, this was esteemed a bird of good omen, because it never eats the hearts of other birds; intimating thereby, that no differences in a married state ought to reach the heart. The accipiter was worshipped as a divinity by the inhabitants of Tentyra, an island in the Nile, being considered by them as the image of the sun; and hence we find that luminary represented, in hieroglyphics, under the figure of a hawk.

ACCIPITRINA, in botany, a name by which some authors have expressed the hawk-weed, and others, the flax-weed or *sophia chirurgorum*. Ger. Emac.

ACCIIUS (Lucius), a Latin tragic poet, the son of a freedman, and, according to St. Jerom, born in the consulship of Hostilius Mancinus and Attilius Serranus, in the year of Rome 583; but there appears somewhat of confusion and perplexity in this chronology. He made himself known before the death of Pacuvius, a dramatic piece of his being exhibited the same year that Pacuvius brought one upon the stage, the latter being then eighty years of age, and Accius only thirty. We do not know the name of this piece of Accius's, but the titles of several of his tragedies are mentioned by various authors. He wrote on the most celebrated stories which had been represented on the Athenian stage; as Andromache, Andromeda, Atreus, Clytemnestra, Medea, Meleager, Philocletes, the civil wars of Thebes, Tereus, the Troades, &c. He did not always, however, take his subjects from the Grecian story; for he composed one dramatic piece wholly Roman: it was entitled *Brutus*, and related to the expulsion of the Tarquins. It is affirmed by some, that he wrote also comedies; which is not unlikely, if he was the author of two pieces, the *Wedding*, and the *Merchant*, which have been ascribed to him. He did not confine himself to dramatic writing; for he left other productions, particularly his *Annals*, mentioned by Macrobin, Priscian, Festus, and Nonius Marcellus. He has been censured for writing in too harsh a style, but in all other respects has been esteemed a very great poet. He was so much esteemed by the public, that a comedian was punished for only mentioning his name on the stage. Cicero speaks with great derision of one Accius who had written a history; and, as our author had written annals, some insist that he is the person censured: but as Cicero himself, Horace, Quintilian, Ovid, and Paterculus, have spoken of our author with so much applause, we cannot think it is him whom the Roman orator censures with so much severity.

There was also in this age a pretty good orator of the same name, against whom Cicero defended Cluentius. He was born in Pisa, and perhaps was a relation of our poet.

ACCIIUS, a poet of the 16th century, to whom is attributed *A Paraphrase on Esop's Fables*, on which Julius Scaliger bestows great encomiums.

ACCLAMATION (*Encycl.*). The acclamations of the Roman senate were somewhat more serious than the popular ones; but arose from the same principle, viz. a desire of pleasing the prince or his favourites; and aimed likewise at the same end, either to express the general approbation and zeal of the company, or to congratulate him on his victories, or to make him new protestations of fidelity. These acclamations were usually given after a report made by some senator, to which the rest all expressed their consent by crying *OMNES, OMNES*; or else, *ÆAVUM EST, JUSTUM EST*. Sometimes

Aconitum Pyrenaicum
Yellow Pyrenean Aconite



Acarus



Achillea Nobilis
Purple Tansy-leaved Yarrow





they began with acclamations, and sometimes ended with them without other debates. It was after this manner that all the elections and proclamations of emperors, made by the senate, were conducted; something of which practice is still retained at modern elections of kings and emperors, where *Vivat Rex, Vive le Roy, and Long live the King*, are customary forms.

The Greeks borrowed the custom of receiving their emperors in the public places from the Romans. Luitprand relates, that at a procession where he was present, they sung to the emperor Nicephorus, *πολλὰ ἔτη*; that is, "*Many years!*" which Codin expresses thus, by *το ἄλλοτε το πολυχρονία*, or by *το πολυχρονία*; and the wish of salutation by *πολυχρονία*. And at dinner, the Greeks then present wished with a loud voice to the emperor and Bardas, *Ὡς θεὸς ἀνὸς πολλαί*; as he translates the Greek. Plutarch mentions an acclamation of loud, upon occasion of Flaminius's restoring liberty to Greece, that the very birds fell from heaven with the shout. The Turks practise something like this on the sight of their emperors and grand viziers, to this day.

For the acclamations wherewith authors, poets, &c. were received, who recited their works in public; it is to be observed, the assemblies for this purpose were held with great parade in the most solemn places, as the capitol, temples, the Athæneum, and the houses of great men. Invitations were sent every-where, in order to get the greater appearance. The chief care was that the acclamations might be given with all the order and pomp possible. Men of fortune who pretended to wit, kept able applauders in their service, and lent them to their friends. Others endeavoured to gain them by presents and treats. Philostratus mentions a young man named Vavus, who lent money to the men of letters, and forgave the interest to such as applauded his exercises. These acclamations were conducted much after the same manner as those on the theatre, both as to the music and the accompaniments: they were to be suited both to the subject and to the person. There were particular ones for the philosophers, for orators, for historians, and for poets. It would be difficult to rehearse all the forms of them; one of the most usual was *Sophos*, which was to be repeated three times. Martial comprehends several other usual forms in this verse:

Graviter, Cito, Nequiter, Euge, Barre.

Neither the Greeks nor Romans were barren on this head. The names of gods and heroes were given those whom they would extol. It was not enough to do it after each head of discourse, chiefly after the exordium; but the acclamations were renewed at every fine passage, frequently at every period.

The acclamations wherewith the spectators honoured the victories of the athlete, were a natural consequence of the impetuous motions which attended the gymnastic games. The cries and acclamations of the people, sometimes expressing their compassion and joy, sometimes their horror and disgust, are strongly painted by different poets and orators.

ACCOLTI (Bernardo), secretary to the republic of Florence, was surnamed L'Unico, or the Non-Such, probably from the great extent of his understanding, the variety of sciences he had acquired, and the excellency of his poetic vein; which not only gained him a seat among the academicians of the court of Urbino, but made that great Mæcenas, Pope Leo X. in 1520, create him prince of the state of Nepi. He wrote many pieces; among others, a collection of choice poems, printed at Venice in 1519 and 1553.

ACCORD, in music. See CONCORD.

ACCORD, in painting, is the harmony that reigns among the lights and shades of a picture.

ACCURIUS, a law professor in the 13th century, born Vol. X.

in Florence. His authority was for some time so great, that he was called the Idol of the Lawyers.

ACCURIUS (Mariangelus), a famous critic of the 16th century, born at Aquilo in the kingdom of Naples. His Diatribes, printed at Rome in folio, in 1524, on Ovid and Solinus, are a proof of his abilities in that kind of erudition. In his edition of Ammianus Marcellinus there are five books more than in any of the preceding ones; and he affirms he had corrected 5000 errors in that historian. His predominant passion was the searching for and collecting of old manuscripts: yet he made Latin and Italian verses; was complete master of the French, German, and Spanish tongues; and understood optics and music. He purged himself by oath, being charged for being a plagiarist with regard to his Antonius; it being reported, that he had appropriated to himself the labours of Fabricio Varanæ, bishop of Camerino.

ACCUSATION (*Encycl.*). In Britain, by Magna Charta, no man shall be imprisoned or condemned on any accusation, without trial by his peers, or the law: none shall be vexed with any accusation, but according to the law of the land: and no man may be molested by petition to the king, &c. unless it be by indictment or presentment of lawful men, or by process at common law. Promoters of suggestions, are to find surety to pursue them; and if they do not make them good, shall pay damages to the party accused, and also a fine to the king. No person is obliged to answer upon oath to a question whereby he may accuse himself of any crime.

ACCUSIUM COLONIA (Ptolemy); an inland town in the Cavares, in Gallia Norbonensis: now *Grenoble*, in Dauphiné. See *GRENOBLE*.

ACCERRÆ, the ancient name of a town on the Clanius, in Campania, not far from Naples (Virgil); now *ACCERRA*,—The name also of another town (Plutarch, Polybius), now called *la Girola*, in the territory and to the south-east of Lodi, where the rivulet Serio falls into the Adda, to the west of Cremona and north of Piacenza.

ACCIOLI (Donatus), a Florentine of great learning, who lived in the fifteenth century. He was honoured with many considerable employments in his native country; but, notwithstanding his public engagements, he found means to devote part of his time to study. He had been a disciple of Argyropylus the Byzantine; and he published commentaries on this professor's Latin translation of Aristotle's Ethics. He acknowledges, in his epistle dedicatory to Cosmo de Medicis, that he collected these commentaries from the lectures of Argyropylus; and that he had only enlarged the explanations which he had heard. Simon Simonius and Gabriel are therefore in the wrong, after such a declaration, when they accuse him of publishing in his own name a work of Argyropylus. He translated the lives of Alcibiades and Demetrius from Plutarch; to which were also added those of Annibal and Scipio, which some have imagined to be likewise from Plutarch; but this must be a mistake, since we find neither of these two generals in this author. He wrote an abridgment of the life of Charlemagne; and some other works are also ascribed to him.

He was sent to France by the Florentines, to sue for succour from Louis XI. against Pope Sixtus IV. but died on his journey at Milan; his body was carried to Florence, and buried in the church of the Carthusians. The small fortune he left his children is a proof of his probity and disinterestedness. His daughters, like those of Arifides, were married at the public expense, as an acknowledgment of his services.

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ACCORDS (Stephen Tabourot, seigneur des), advocate in the parliament of Dijon in France, and king's advocate in the bailiwick and chancery of that city, born in the year 1549. He was a man of genius and learning, but too much addicted to trifles, as appears by his piece entitled "Les Bigarrures," printed at Paris in 1582. This was not his first production, for he had before printed some sonnets. His work entitled "Les Touches," was published at Paris in 1585; which is indeed a collection of witty poems, but most of them upon obscene subjects, and worked up rather in too loose a manner, according to the licentious taste of that age. His Bigarrures are written in the same strain. He was censured for this way of writing, which obliged him to publish an apology. La Croix du Maine says in one place, that Accords wrote a dictionary of French rhymes; but he afterwards corrected himself, having found that John le Fevre of Dijon, secretary to Cardinal De Givre, and canon of Langres, was the author thereof. Accords himself mentions him as the author, and declares his intention of compiling a supplement to his uncle Le Fevre's work; but, if he did, it never appeared in print. The lordship of Accords is an imaginary fief or title from the device of his ancestors, which was a drum, with the motto *à tous accords*, chiming with all. He died July 24, 1561, in the 46th year of his age.

ACEPHALI, the levellers in the reign of King Henry I.

who acknowledged no head or superior. They were reckoned so poor, that they had not a tenement by which they might acknowledge a superior lord.

ACEPHALOUS, or ACEPHALUS, (*Encycl.*) Several opinions have been framed as to the origin of the fable of the Acephali. The first is that of Thomas Bartholin, who turns the whole into a metaphor; being convinced that the name Acephali was anciently given to such as had less brain, or conducted themselves less by the rules of prudence, than others. Olearius rather apprehends, that the ancient voyagers, viewing certain barbarous people from the coasts, had been imposed on by their uncouth dress; for that the Samogitians, being short of stature, and going in the severity of winter with their heads covered in hoods, seem at a distance as if they were headless. F. Lafitau says, that by Acephali are only meant, people whose heads are sunk below their shoulders. In effect, Hulfius, in his epitome of Sir Walter Raleigh's voyage to Guiana, also speaks of a people which that traveller found in the province of Iripinama, between the lakes of Panama and Cassipa, who had no head or neck; and Hondius, in his map, marks the place with the figures of these monsters. Yet De Laet rejects the story; being informed by other hands, that the inhabitants of the banks of the Caora, a river that flows out of the lake of Cassipa, have their head so far sunk between their shoulders, that many believed they had their eyes in their shoulders and their mouths in their breasts.

ACERNUM, a town of the Picentini (Pliny;) now ACERNO.

ACETITE, a new term used in chemistry to denote the combination of the acetic acid with other substances. The acetites named in the table of Chemical Nomenclature, proposed by De Morveau, Lavoisier, and Fourcroy, are those of pot-ash, soda, lime, ammoniac, lead, and copper.

An instance occurs in the improved method of preparing acetite of lead, formerly called *figar of lead*, communicated to the *Conférence des Mines*, in France, by M. Pontier.

After some historical details, a description of the apparatus required, &c. he proceeds to detail the process in the following way:

"When lead (says he) is almost entirely melted in the iron pot, it is taken out with an iron ladle, and before pouring it out, the ladle is rested upon one of the extremities of the copper pan, from whence, as from a centre, it is made with the hand to describe a semicircular motion, from left to right. By this means the lead is made to lie flat upon the surface of the copper, and it is obtained in plates of the thickness of a millimetre, more or less. These plates are detached by a workman with a pair of pincers, whilst another lades a fresh quantity of lead out of the melting pot, in order to continue the operation. When a sufficient number of these plates have been prepared, they are cut with a hatchet, upon a block of wood, into pieces of different sizes, which are put into the pans of stone-ware. Prepared in this manner, the lead dissolves in the vinegar much more readily than when it has been hammered, the effect of which operation is to bring its particles into closer contact with each other.

"Two or three kilogrammes are put into each of the stone-ware pans, the number of which is regulated according to the quantity of vinegar which we have, and that of the acetite of lead which we intend to prepare.

"To proceed to the distillation of the vinegar—we fill two-thirds of the cucurbit of the alembic with this liquid, and lute the jointings of the apparatus with a paste of rye-flour and water, which is covered with strips of linen or paper; after which we heat the furnace.

* For this purpose we employ, according to the local circumstances, either pit-coal or wood; when we use the latter, there is no necessity for a grate. It is necessary that the water in the recipient should be renewed from time to time during the course of the distillation, lest it should acquire too high a temperature: if there is a cistern, or well in the neighbourhood of the place in which the distillation is carried on, it greatly facilitates this labour.

"The acetic acid which passes over is received into vessels of glass or wood; but as this acid is less volatile than water, the distillation is continued almost to dryness; otherwise a large quantity of it would be lost.

"Into each of the plates, upon which the lead has been placed, about a litre of this acetic acid is poured, after which they are disposed upon shelves, one above the other, in order that, aided by the contact of the air, the oxygenation of the lead may take place. We find a white oxide to be produced upon the surface of the metal that remains above the vinegar: the solution of this oxide is effected by plunging the plates, upon which it has been produced, below the surface of the liquid, whilst we put in their place those which till then had remained immersed. These alternate changes are repeated twice or thrice a day, according to the degree of rapidity with which the plates become oxydized, the elevation of the temperature, the concentration of the acid, and the dryness of the atmosphere. When, by the continued action of the vinegar, these plates have become thinner, and diminished in bulk, new ones are added, in order that the pans may always be full.

"The acetic acid gradually assumes a greyish milky colour, because, in dissolving the oxide of lead, it at the same time carries away some metallic parts, which are detached by the friction. Experience has shewn, that the weaker the vinegar is, the less the lead whitens, and the more considerable becomes the quantity of detached metallic parts; on which account we ought to employ the strongest vinegar that we can procure.

"This liquor is poured into boilers of tinned copper, in which the combination is completed by ebullition, which, by vaporizing the humidity, condenses the particles of the vinegar, and renders them more capable of saturating and dissolving that portion of the lead which before was only suspended in the liquid. The volume of this solution is reduced to two-thirds, and, after having been filtrated, it is put into the other boiler, and evaporated to that point, at which a small quantity of the liquid, when taken out, and suffered to cool, affords crystals. It is then filtrated once more, and put into earthen pans to crystallize.

"The residuum of the first filtration is either distilled in earthen pans with a fresh quantity of lead, or kept for an use of which we shall speak hereafter. Twenty-four hours afterwards, when the crystals have properly deposited themselves, they are taken out, and suffered to dry in the shade; not in the sun, as they easily effloresce. This salt generally forms itself into oblong prisms, more or less white or yellowish, in proportion to the density of the mother-waters in which it has crystallized.

"The mother-water is again put to crystallize, but as it becomes more and more exhausted, the crystals acquire more of the yellow tinge; on which account the manufacturers distinguish two species of salt; the one, greasy to the feel, pulverulent, apt to form into balls, and of a greater specific weight; the other very white, in the form of fine needles, and much lighter than the former, in consequence of its containing none of the mother-water."

After having given a clear explanation of the operations

practised in the manufacture of the acetite of lead, in the southern provinces of France, M. Pontier proposes some important improvements, and concludes his memoir with some remarks on the alterations, which he proposes to be made in the manufacture of salt of lead: he justly considers the process which oxydates and dissolves at the same time the vinegar, to be the most economical; for, in his opinion, it would not be advantageous to dissolve directly the white oxide of lead, both on account of its high price, and the carbonate of lime which it contains, whereby a portion of the vinegar would be saturated and lost. The same, however, would not hold good, in case the lead mines which exist in the country should be wrought, and the metal converted into litharge on the spot: it would then be more advantageous to use it in this state.

ACETOSA (*Encycl.*) Sorrel. According to Linnaeus's method, Sorrel seems more properly ranked in his 22d class, entitled *Diacia*.—Of this genus there are reckoned eight *Species*. 1. The *pratensis*, or common sorrel, grows naturally in pasture-grounds in most places of England and Scotland, &c. requires no description. It is also cultivated in gardens for culinary uses, where it produces large leaves, though it is generally small when growing in the fields. It is a perennial plant, and with proper management will continue many years. Its acid has been found by modern chemists to possess peculiar properties. See *CHEMISTRY*. 2. The *acetifolia*, or sheep's sorrel, grows naturally on dry banks, and on gravelly ground, where by its creeping roots it proves a very troublesome weed, so is not admitted into gardens. It possesses the same medicinal virtues with the former. 3. The *scutata*, round-leaved garden or French sorrel, is a more grateful acid than either of the former; so is preferably cultivated for culinary uses. About Paris it is cultivated in almost as great quantity as any other esculent plant. It has also been much cultivated in England since the introduction of French cookery; being an ingredient in many of their sauces and soups. 4. The *digyna*, or low creeping sorrel, grows naturally in the northern counties of England, Wales, and Scotland. The leaves have very short footstalks, are indented at both ends, and thick in proportion to their size. They grow near the ground, and seldom rise above six inches high. The roots creep in the ground, whereby it multiplies exceedingly in a proper situation. It is sometimes preserved in gardens for the sake of variety, but is not used in the kitchen, though it is applicable to the same purposes with the other species. 5. The *alpina*, or alpine sorrel, is full as hardy as the common, and fitter for the use of the kitchen, as having larger and more succulent leaves, of an equally grateful acid taste. 6. The *vesicaria*, or American annual sorrel, is kept in some gardens for variety, but is not of any use. It is a native of America and Egypt. 7. The *rosea*, or Egyptian sorrel, grows naturally only in that country; it has its name from the bladders of the seeds being of a fine rose colour. 8. The *clunaria*, or sorrel-tree, is a native of the Canary Islands, and rises with a strong woody stalk to the height of 10 or 12 feet. It is frequently kept in Britain in gardens. 9. The *sterilis*, or northern barren sorrel, is used for culinary purposes; and is preferable to the common-kind, very rarely running to seed, and being fit for use all the year round.

ACETUM *Esuriens*, a distilled vinegar, rectified by the help of verdigrise. It obtained this quaint name, because concentrated vinegar creates an appetite.

ACETUM *Radicatum*, is likewise used to denote concentrated vinegar; but Boerhaave thinks the *tartarus regeneratus* is the *acetum radicum* of the old chemists.

ACGIAH-SARAI, a town on the north shore of the Caspian sea.

ACHÆANS; the inhabitants of Achæa Propria, a Peloponnesian state. This republic was not considerable in early times, for the number of its troops, nor for its wealth, nor for the extent of its territories; but it was famed for its probity, its justice, and its love of liberty. Its high reputation for these virtues was very ancient. The Crotonians and Sybarites, to re-establish order in their towns, adopted the laws and customs of the Achæans. After the famous battle of Leuctra, a difference arose betwixt the Lacedæmonians and Thebans, who held the virtue of this people in high veneration, that they terminated the dispute by their decision. The government of the Achæans was democratical. They preserved their liberty till the time of Philip and Alexander. But in the reign of those princes, and afterwards, they were either subject to the Macedonians, who had made themselves masters of Greece, or oppressed by cruel tyrants. The Achæan commonwealth consisted of twelve inconsiderable towns in Peloponnesus. Its first annals are not marked by any great action, for they are not graced with one eminent character. After the death of Alexander, this little republic was a prey to all the evils which flow from political discord. A zeal for the good of the community was now extinguished. Each town was only attentive to its private interest. There was no longer any stability in the state; for it changed its masters with every revolution in Macedonia. Towards the 124th Olympiad, about the time when Ptolemy Soter died, and when Pyrrhus invaded Italy, the republic of the Achæans recovered its old institutions and unanimity. The inhabitants of Patra and of Dymæ were the first assertors of ancient liberty. The tyrants were banished, and the towns again made one commonwealth. A public council was instituted, in which affairs of importance were discussed and determined. A register was appointed to record the transactions of the council. This assembly had two presidents, who were nominated alternately by the different towns. But instead of two presidents, they soon elected but one. Many neighbouring towns which admired the constitution of this republic, founded on equality, liberty, the love of justice, and of the public good, were incorporated with the Achæans, and admitted to the full enjoyment of their laws and privileges.—The arms which the Achæans chiefly used, were slings. They were trained to the art from their infancy, by flinging from a great distance, at a circular mark of a moderate circumference. By long practice they took so nice an aim, that they were sure, not only to hit their enemies on the head, but on any part of the face they chose. Their slings were of a different kind from those of the Bælearians, whom they far surpassed in dexterity.

ACHÆI (Achæans); the inhabitants of Achæa Propria. In Livy, the people of Greece; for the most part called *Ævivi*, by the Roman poets. In Homer, the general name for Grecians. See **ACHÆANS**.

ACHÆMENES, according to Herodotus, was father of Cambyse, and grandfather of Cyrus the first, king of Persia. Most of the commentators of Herodotus are of opinion, that the Achæmenes whom that poet mentions, ode xii. of his 2d book, was one of the Persian monarchs; but, if that were true, he must have reigned before the Medes subdued the Persians; for we do not hear of any king of that name from the time that the Persians founded that great monarchy, which is looked upon as the second universal one. However this be, the epithet *Achæmenians* is frequently given to the Persians, in the old Latin poets.

ACHEMENES, son of Darius I. king of Persia, and brother of Xerxes, had the government of Egypt bestowed on him, after Xerxes had forced the Egyptians to return to their allegiance. He some time after commanded the Egyptian fleet in the celebrated expedition which proved so fatal to all

Greece. The Egyptians having again taken up arms after the death of Xerxes, Achæmenes was sent into Egypt to suppress the rebellion; but was vanquished by Inarus, chief of the rebels, succoured by the Athenians.

ACHÆUS, cousin-german to Seleucus Ceraunus and Antiochus the Great, kings of Syria, became a very powerful monarch, and enjoyed the dominions he had usurped for many years; but at last he was punished for his usurpations in a dreadful manner, in the 140th year of Rome, as related by Polybius.

ACHAIA, a name taken for that part of Greece which Ptolemy calls *Hellas*; the younger Pliny, *Græcia*; now called *Livadia*: bounded on the north by the Thessaly, the river Sperchius, the Sinus Maliacus, and mount Oeta; on the west by the river Achelous; on the east, turning a little to the north, it is washed by the Archipelago, down to the promontory of Sunium; on the south, joined to the Peloponnesus, or Morea, by the isthmus of Corinth, five miles broad. See **LIVADIA**.

ACHAIA PROPRIA, anciently a small district in the north of Peloponnesus, running westward along the bay of Corinth, and bounded on the west by the Ionian Sea, on the south by Elis and Arcadia, on the east by Sicynia: inhabitants, the **ACHÆANS**, properly so called; its metropolis, *Patrae*. It is now called *Romania Alta*, in the Morea.

Achæia was also taken for all those countries that joined in the Achæan league, reduced by the Romans to a province. Likewise for Peloponnesus.

ACHAÏE PRESBYTERI, or the Presbyters of Achæia, were those who were present at the martyrdom of St. Andrew the apostle, A.D. 59; and are said to have written an epistle in relation to it. Bellarmine, and several other eminent writers in the church of Rome, allow it to be genuine; while Du Pin, and some others, expressly reject it.

ACHAIUS, son of Ethwin, was raised to the crown of Scotland after the death of Soluatus, A.D. 788. The Emperor Charlemagne sent an embassy to desire an alliance with him against the English, whose pirates so infested the seas, that the merchants could not carry on their trade. This alliance was concluded in France upon conditions so advantageous to the Scots, that Achaius, to perpetuate the memory of it, added to the arms of Scotland a double field sowed with lilies. He died in 819.

ACHAN, the son of Carmi, of the tribe of Judah, at the taking of Jericho concealed two hundred shekels of silver, a Babylonish garment, and a wedge of gold, contrary to the express command of God. This sin proved fatal to the Israelites, who were repulsed at the siege of Ai. In this dreadful exigence, Joshua prostrated himself before the Lord, and begged that he would have mercy upon his people. Achan was discovered by casting lots, and he and his children were stoned to death. This expiation being made, Ai was taken by stratagem. Josh. vii. 8, 9.

ACHAÏVA, in the Materia Medica of the ancients, the name of an herb much celebrated in many distempers; but we are not assured at present, what is the plant that it truly belongs to. Some have esteemed it, what is called in Egypt *achove*, an herb nearly resembling chamomile, but lower, and with broader leaves, approaching to those of feverfew, and of a faint, but not disagreeable smell. Avicenna seems however to have meant a different plant by this name, and probably the herb we call *MARU-M. Prosper. Alp.*

ACHARACA, anciently a town of Lydia, situate between Tralles and Nyfa; in which were the temple of Plato, and the cave Charonium, where patients slept in order to obtain a cure.

ACHARISTON, from *αχ*, without; and *χαρις*, value; under

this name Galen describes some compositions of singular efficacy, which cured so quickly, that they were undervalued; as the Greek name implies.

ACHATES, the companion of Eneas, and his most faithful friend, celebrated in Virgil.

ACHATES (Sil. Italicus); a river of Sicily, now the *Drillo* (Claverius); which runs from north to south, almost parallel with, and at no great distance from, the Gela; and rises in the north of the territory of Noto. It gave name to the Achates, or Agate, said to be first found there.

ACHAZIB, or ACHIZ, a town of Galilee, in the tribe of Asher, nine miles from Ptolemais.—Also a town in the more southern parts of the tribe of Judah.

ACHELOUS, in fabulous history, wrestled with Hercules, for no less a prize than Deianira, daughter to King Oenus; but as Achelous had the power of assuming all shapes, the contest was long dubious: at last, as he took that of a bull, Hercules tore off one of his horns; so that he was forced to submit, and to redeem it by giving the conqueror the horn of Amalthea, the same with the Cornucopia or horn of plenty; which Hercules having filled with a variety of fruits, consecrated to Jupiter. Some explain this fable, by saying, that Achelous is a winding river of Greece, whose stream was so rapid, that it roared like a bull, and overflowed its banks; but Hercules, by bringing it into two channels, broke off one of the horns, and so restored plenty to the country.

ACHELOUS, a river of Acarnania; which rises in mount Pinus, and, dividing Ætolia from Acarnania, falls from north to south into the Sinus Corinthiacus. It was formerly called *Thos* from its impetuosity, and *king of rivers* (Homer). The epithet *Achelous* is used for *Aqueus* (Virgil); the ancients calling all water *Achelous*, especially in oaths, vows, and sacrifices, according to Ephorus: now called *Alpho Potamo*. Rivers are by the ancient poets called *Tauriformes*, either from the flowing of their waters, or from their ploughing the earth in their course: Hercules, restraining by dykes and mounds the inundations of the *Achelous*, is said to have broken off one of his horns, and to have brought back plenty to the country. See the preceding article.

ACHELOUS, a rivulet of Thessaly, running by the city Lamia (Strabo, Pausanias). Also a river of Peloponnesus, running by Dymæ, in Achaia (Strabo); and by mount Lycæus in Arcadia (Pausanias).

ACHERIL (Luce D'), a learned Benedictine of the congregation of St. Maur, was born at St. Quintin, in Picardy, in 1609; and made himself famous by printing several works, which till then were only in manuscript: particularly, the epistle attributed to St. Barnabas; the works of Lanfrank, archbishop of Canterbury; a collection of scarce and curious pieces, under the title of *Piscilegium, i. e.* Gleanings, in thirteen volumes, quarto. The prefaces and notes, which he annexed to many of these pieces, shew him to be a man of genius and abilities. He had also some share in the pieces inserted in the first volumes of The acts of the saints of the order of St. Bennet, the title whereof acquaints us that they were collected and published by him and father Mabillon. After a very retired life, till the age of 73, he died at Paris the 29th of April, 1685, in the abbey of St. Germain in the fields, where he had been librarian.

ACHERON, a river of Epirus. The poets feigned it to have been the son of Ceres, whom the hid in hell for fear of the Titans, and turned into a river, over which souls departed were ferried in their way to Elysium.

ACHERON, a river of Thesprotia, in Epirus; which, after forming the lake Acherusia, at no great distance from, falls into the sea near, the promontory of Chimerium, to the west of the Sinus Abracius, in a course from north to south.

ACHERON, or ACHEROS, a river of the Brutii in Italy running from east to west; where Alexander king of Epirus was slain by the Lucani, being deceived by the oracle of Dodona, which bid him beware of Acheron.

ACHERUSIA PALUS, a lake between Cumæ and the promontory Misenum, now it *Lago della Colliccia* (Claverius). Some confound it with the *Lacus Lucrinus*, and others with the *Lacus Averni*. But Strabo and Pliny distinguish them. The former takes it to be an effusion, exundation, or washes of the sea, and therefore called by Lycophron, *Αχχουσια χροις*.—Also a lake of Epirus, through which the Acheron runs.—There is also an *Acherusia*, a peninsula of Bithynia on the Euxine, near Heraclea; and a cave there of the same name, through which Hercules is said to have descended to hell to drag forth Cerberus.

ACHIA, a kind of cane that grows in the East Indies, which is pickled green in the country, with strong vinegar, pepper, and some other spices and ingredients. This pickle comes to Europe in a sort of earthen jars, about a foot high, and the same in breadth, growing narrower at the mouth. The bits of cane are an inch and a half in diameter, and a little above two inches long, almost of the same consistency with pickled cucumbers. They are of a pale yellow colour; and, instead of pulps, their inside is a close, fibrous substance, like that of the common canes when the outside coat is off. The Dutch bring home great quantities of this pickle, which their cold climate makes them think wholesome. They generally eat it towards the end of their meals, judging it very good to quicken the appetite and strengthen the stomach.

ACHILLEA (*Eucyl.*) YARROW, MILFOIL, or NOSE-BLEED. Of this plant the principal species are, 1. The *millefolium*, or common yarrow, is found naturally on banks, and by the sides of foot-paths, in most parts of England. It most commonly bears white flowers, though a variety of it is found which bears purple ones. These however do not long continue to bear flowers of this colour, if transplanted into gardens. It becomes a troublesome weed where it is once allowed to get a footing. The cultivation of it is recommended by Mr. Anderson, in his *Essays on Agriculture*, as a proper food for cattle. 2. The *sanctolina*, or eastern fieseezwort, is sometimes cultivated in gardens; it has large yellow flowers, which stand upon pretty long footstalks placed singly, not in bunches as in the common kind. It has leaves like lavender-cotton, which, when rubbed, emit a strong oily odour. The flowers appear in June and July. 3. The *tomentosa*, or woolly yarrow, is a native of the south of France and Spain, but lives in the open air in England. The flowers are of a bright yellow, and continue long in beauty, growing in clusters at the top of the stalks, which seldom rise above a foot high. The leaves are finely cut, and very hoary. 4. The *abrotanifolia*, or tall eastern yarrow, is a native of the islands in the Archipelago: it grows to the height of two feet and a half, with large umbels of yellow flowers on the top; the leaves resemble those of the common wormwood, and are cut into long narrow segments. 5. The *clavenna*, or Alpine umbelliferous wormwood, takes its name from the mountains of which it is a native. It seldom grows above six or seven inches in height; it supports umbels of white flowers, like those of the common fieseezwort, which appear in April and May. The leaves are silvery, and shaped like those of wormwood, which often decay in the autumn and winter. 6. The *tanacetifolia*, or eastern fieseezwort, with tansey leaves, is a very humble plant, seldom rising above six inches in height. The flowers are nearly as large as those of the common fieseezwort, white, and growing in flat umbels. They appear in June and July. The leaves of the plant have some likeness to those of the common wormwood, are very hoary, grow close to the ground, and decay in au-

turn to so as to make little appearance in winter. Like the last species, this is a native of the Alps. 7. The *ageratum*, or sweet maudlin, formerly much used in medicine and for culinary purposes. The common maudlin flowers in June and July, and the seeds are ripe in September. 8. The *Egyptiaca*, or hoary sneezwort, is a native of the Archipelago. It hath very hoary leaves, which remain all the year; and the plants growing close and low, make a pretty appearance at all seasons. The flowers are yellow, and are produced in umbels on the top of the stalks; they appear in June, and continue till the end of September. 9. The *platnica*, or common sneezwort, grows wild. There is a variety, however, with double flowers, commonly known by the name of double maudlin. This species creeps greatly by the roots, so as soon to overspread a large spot of ground. If planted in pots, so as to confine its roots from creeping, the stalks grow close together, and make a tolerable appearance when in flower. 10. The *macrophylla*, or Alpine sneezwort, with few leaves, is a native of the Alps. It produces many stalks rising near three feet high; having loose branching umbels of white flowers on their top, resembling those of the common sneezwort, but larger. 11. The *nana*, or hoary Alpine milfoil, is likewise a native of the Alps; the leaves are hoary, and the umbels of its flowers are more compact than the former: the stalks do not rise more than a foot high. 12. The *nobilis*, or sweet milfoil (see Pl. 6.), approaches to the nature of the common milfoil; but its leaves are of a paler green, and are neither so long nor so much cut off as those of the common milfoil are: they have a strong sweet scent when bruised. 13. The *alpina*, or white maudlin, bears some resemblance to the common sneezwort; but the leaves are longer, of a deeper green colour, and deeply indented in their edges; the flowers are white, and the roots creep far under ground. The plant will rise, in good land, to the height of four feet.

ACHILLEA, a name frequently given by the ancients to the gum called dragons-blood.

ACHILLES (*Encycl.*). He was a native of Phthia, in Thessaly; and, according to the poets, his mother fed him by day with ambrosia, and by night covered him with celestial fire. She dipped him also in the waters of the river Styx, by which his whole body became invulnerable, except that part of his heel by which she held him; and afterwards intrusted him to the care of the centaur Chiron, who, to give him the strength necessary for martial toil, fed him with honey, and the marrow of lions and wild boars, &c. To prevent his going to the siege of Troy, she disguised him in female apparel, and hid him among the maidens at the court of King Lycomedes: but Ulysses discovering him, persuaded him to follow the Greeks. Achilles distinguished himself by a number of heroic actions at the siege. Being disguised, however, with Agamemnon for the loss of Briseis, he retired from the camp. But returning to avenge the death of his friend Patroclus, he slew Hector, fastened his corpse to his chariot, and dragged it round the walls of Troy. At last Paris, the brother of Hector, wounded him in the heel with an arrow, while he was in the temple treating about his marriage with Philoxena, daughter to King Priam. Of this wound he died, and was interred on the promontory of Sigæum; and after Troy was taken, the Greeks sacrificed Philoxena on his tomb. It is said, that Alexander, seeing this tomb, honoured it by placing a crown upon it; at the same time crying out, that "Achilles was happy in having, during his life, such a friend as Patroclus; and, after his death, a poet like Homer."

ACHILLES, a name which the schools give to the principal argument alleged by each sect of philosophers in behalf of their system. In this sense we say, this is his Achilles; that is, his master proof; alluding to the strength and im-

portance of Achilles among the Greeks. Zeno's argument against motion, is peculiarly termed Achilles.—That philosopher made a comparison between the swiftness of Achilles, and the slowness of a tortoise: arguing, that if the tortoise were one mile before Achilles, and the motion of Achilles 100-times swifter than that of the tortoise, yet he would never overtake it. But this sophism is easily solved, by expressing the whole relative distance run by the tortoise before Achilles overtook him, by the following series, $\frac{1}{100} + \frac{1}{10000} + \frac{1}{1000000}$, &c. the sum of which is $\frac{1}{99}$ of a mile; and the distance run by Achilles is one mile more; so that when Achilles had run $1\frac{1}{99}$ of a mile, he would have overtaken the tortoise.

ACHILLINI (Alexander), born at Bologna, and doctor of philosophy in that university. He flourished in the 15th and 16th centuries, and by way of eminence was styled the Great Philosopher. He was a steadfast follower and accurate interpreter of Averroes upon Aristotle, but most admired for his acuteness and strength of arguing in private and public disquisitions. He made a surprising quick progress in his studies, and was very early promoted to a professorship in the university, in which he acquitted himself with so much applause, that his name became famous throughout all Italy. He continued at Bologna till the year 1506; when the university of Padua made choice of him to succeed Antonio Francatiano in the first chair of philosophy, and his fame brought vast numbers of students to his lectures at Padua: but the war, wherein the republic of Venice was engaged against the league of Cambray, putting a stop to the lectures of that university, he withdrew to his native country, where he was received with the same marks of honour and distinction as before, and again appointed professor of philosophy in Bologna. He spent the remainder of his life in this city, where he died, and was interred with great pomp in the church of St. Martin the Great, which belongs to the Carmelite friars. Jovius, who knew Achillini, and heard his lectures, says; that he was a man of such exceeding simplicity, and so unacquainted with address and flattery, that he was a laughing-stock to the pert and saucy young scholars, although esteemed on account of his learning. He wrote several pieces on philosophical subjects, which he published, and dedicated to John Bentivoglio.

ACHILLINI (Claudius), grandson of the former, read lectures at Bologna, Ferrara, and Parma; where he was reputed a great philosopher, a learned divine, an excellent lawyer, an eloquent orator, a good mathematician, and an elegant poet. He accompanied Cardinal Ludovino, who went as legate into Piedmont; but being afterward neglected by this cardinal, when he became pope under the name of Gregory XV. he left Rome in disgust and retired to Parma; where the duke appointed him professor of law, with a good salary. He published a volume of Latin Letters, and another of Italian poems, which gained him great reputation: he died in 1640, aged 66.

ACHIOITE, or ACHIOITY (*Encycl.*). The same with what the French commonly call *Rocou*, and the Dutch *Orleanse*. It has been commonly esteemed a kind of argilla, or earth; but later observers find it a flower, or seed of a tree, which grows chiefly in very hot countries, as Yucatan or Campechy, and Guatimala. It is about the size of a plum-tree, only more tufted; its branches being longer than the trunk. The fruit is inclosed in a rind like a chestnut, except that it is of an oval figure. It begins to open cross-wise from the middle to the top; and subdivides into four parts, having in the middle a beautiful carmine-coloured flower. The tree has no leaves; but instead thereof shoots out filaments like those of saffron, only bigger and longer. Between these

Surio, or Surgeon.



Huso or Singlasp Fish.



*Apparatus for the distillation
of ACIDS.*



Scale 1 In. to a Foot.

grow little soft vermilion-coloured grains, about the size of pepper-corns; which the Indians, separating from the filaments, bake in cakes of about half a pound each; in which form the drug is brought into Europe. The poor people use Achiotte instead of saffron: others mix it as an ingredient in chocolate, during the grinding of the cacao, the quantity of two drams to a pound, to give it a reddish colour, &c.; though this practice was formerly more frequent than at present; the opinion of its being an earth, which even Mr. Ray fell into, having discredited its use. Some also use it to dye wax of a vermilion colour. F. Labat describes the achiotte somewhat differently; especially the preparation of it for dyeing. The tree, according to him, produces yearly its crops of flowers, of a carnation colour, not unlike wild roses. These are succeeded by a kind of rough pods, or fruit resembling chestnuts, full of small grains; which being fermented in water, and this water afterwards passed through a caribbe sieve, it contracts a red colour. It is then boiled, scummed, set on the fire again, and stirred; till at length it thickens, and will fall loose from the spatula; which is the achiotte or rocou in perfection; though to make it more beautiful, they have two further processes, which are described by F. Labat. According to Savary, to procure the achiotte, they shake out the grains in an earthen vessel, soak and then wash them in several repeated warm waters, till they have discharged all their vermilion colour: after which, letting the water stand to settle, the fecula at the bottom is taken and formed into little cakes and balls; which when pure and not adulterated either with red earth or fine brick-dust, are highly valued. Some also use fire to boil the achiotte, and give it a farther consistence.

ACHISH, king of Gath, to whom David retired; and who gained a complete victory over Saul, which was fatal both to that prince and his son Jonathan.

ACHTOPHEL, a counsellor, who, revolting from David king of Israel, sided with his rebellious son Abialom; to whom he gave crafty advice, which not being complied with, he hanged himself.

ACHLAR, a river of the greater Armenia, otherwise called *Aras*, *Caucæ*, and by the ancients *Araris*.

ACHMET, son of Sarim, has left a book concerning the interpretation of dreams according to the doctrine of the Indians, Persians, and Egyptians, which was transcribed out of Greek into Latin by Leo Tuscus in 1160. He lived in the 9th century.

ACHMET GEDUC, a famous general under Mahomet II. and Bajazet II. in the 15th century. When Mahomet II. died, Bajazet and Zezan both claimed the throne: Achmet sided with the former, and by his bravery and conduct fixed the crown on his head. But Bajazet took away his life; shining virtue being always an unpardonable crime in the eyes of a tyrant.

ACHOR, a valley of Jericho, lying along the river Jordan, not far from Gilgal; so called from Achan, the troubler of Israel, being there stoned to death.

ACHOR (*Encycl.*), in medicine, Trallian says, is a sore on the outside of the head, full of little perforations, which discharge a humour like ichor, whence its name. He further says, that the orion resembles an achor; but that the mouths of the perforations are larger, resembling the cells of a honey-comb, whence the name; the matter is also nearly of the consistence of thin honey. When these discharges spread, the serum which oozes out dries, and forms a scab.—The achor differs from the favus and tineæ only in the degree of virulence. It is called *favus* when the perforations are large, and *tineæ* when they are like those which are made by moths in cloth. But generally, by *tineæ* is understood a dry scab on

the hairy scalp of children, with thick scales and an offensive smell. When this disorder affects the face, it is called *crusta lactea*; which, when it happens to children, if in other respects they are healthy, the best treatment, besides keeping the belly moderately lax, is anointing the part now and then with *Ung. hydrarg. nitrat.* Attention should also be paid to cleanliness and a moderate diet. An issue may be made and continued, keeping the hair short and washing the head with soap suds.—Some cases are very difficult of cure, and attended with violent itching, a pale countenance, &c. but still the same method generally succeeds in all the species and degrees of virulence. Small doses of calomel may be given as an alternative, rather than as a laxative; and the vin. antim. in such doses, at proper intervals, as the stomach will easily retain. Externally, the *unguent à pice* may also do good, or cream mixed with salt in fine powder. If the humour is repelled, give warm fomentities until it return. Writers of medical observations afford divers anomalous instances of *achores*, viz. Some found even in aged people; some not on the head, but the feet; others resembling the venereal disease; others which disappeared upon cutting the hair, and returned on its growing anew; others followed by a thickness of hearing, others by panics, and others by a gutta serena. Their drying up has sometimes been followed by a fever, their repulsion inwards by an epilepsy.

ACHRADINA (Plutarch, Cicero, Livy); one of the four cities or divisions of Syracuse, and the strongest, largest, and most beautiful part of it; separated by a very strong wall from the outer town, *Tyche* and *Neapolis*. It was adorned with a very large forum, with beautiful porticos, a most elegant prytæneum, a spacious senate-house, and a superb temple of Jupiter Olympius. (Plutarch.)

ACHRAS (*Encycl.*). In Vol. I. a botanical error (repeated also in some succeeding instances) has occurred: Monogynia order, and hexandria class, is there too obvious a blunder to pass unobserved by the botanist; and too obvious indeed to require, on our part, minute correction in every instance.

ACIDALUS, a fountain in Orchomenus a city of Boeotia, in which the Græces, who are sacred to Venus, bathed. Hence the epithet *Acidulia*, given to Venus (Virgil).

ACIDS (*Encycl.*). To this article we are induced to add an account of an apparatus for the distillation of acids and other substances; the invention of the ingenious translator of Berthollet's Elements of the Art of Dyeing, and by him annexed to that work. See Plate 10.; where A represents the retort, the neck of which is ground into and passed through the thick stopper B; represented below separately at *b*; with its ground stopper *a*, which may be put in when the neck of the retort is withdrawn. The external part of the stopper B is accurately ground into the wide neck of the receiver C, the narrow neck of which is ground into the wide neck of the receiver D, the narrow neck of which is ground into that of the receiver E; in the receiver D there is also another aperture in its superior part, into which the tube H, open at both ends, is fitted by grinding, so that its lower extremity may reach to the lowermost part of the receiver; and consequently be immersed in any fluid that may be contained in it. Into the small neck of the receiver D, there is also ground a crooked tube I, forming a little more than one fourth of a circle, open at both ends, and extending to very near the lower part of the receiver E, the small neck of which receives a similar crooked tube K; and is received into the wider neck of K, which receives the tube L in like manner; and is received into G; the narrow neck of which also receives a crooked tube M N, open at both ends, and bent as represented in the plate; so as to convey any aerial fluid into the small inverted cup, where it is collected and directed to pass by

the hole represented in the plate, into one of the four inverted bottles placed above it, by means of the moveable frame P; which having four notches to retain the bottles in an upright inverted position, is moveable on the centre support kept steady by means of a heavy leaden foot, in the centre of a flat pan of water, which covers the mouths of the bottles. The water which issues from the bottles when the air is introduced, and which would make the pan overflow, is directed by a notch in its lip, and the pipe Q into the bucket R placed under the frame, which raised upon four legs serves to support the whole apparatus, the different parts of which being successively applied to each other, beginning with the receiver C, are kept in a fixed position by slips of wood hollowed out so as to fit the curvature of the receivers, as represented below detached at S s. Heat is applied to the matter contained in the retort A, by means of the lamp placed below it, which is upon Mr. Argand's principle, and a very useful acquisition to the laboratory: of this 1 represents the chimney, which is most conveniently made of thin metal, as brass, copper, or common tinned iron plate; which being opaque, the flame of the lamp within is not seen. Metallic chimneys are preferred, because they are not liable to be broken, and because it is the heat and not the light which is here wanted; 2 is the bent wire serving to elevate, or depress the wick; 3, the reservoir for the oil; 4 the support of this, with a small cup to receive the oil which may drop from within the wick without being consumed; 5 a pin with its screw for fixing the lamp at any distance from the retort."

The use and advantages of this apparatus are thus explained by the inventor.

"In the plate, the apparatus is represented as employed in the distillation of a substance, the vapours of which condense with difficulty, such as the oxygenated marine acid. Let it be supposed then that the common salt, and calx or oxyd of manganese, have been put into the retort: the vitriolic acid is next introduced by means of a retort funnel; and this being withdrawn, the neck of the retort is immediately introduced into the stopper B, the other parts of the apparatus being previously disposed as in the plate. The lamp is then brought under the retort, but at a moderate distance, that the retort may not be cracked by the too sudden application of the heat, nor the vapours be driven over too rapidly into the receivers. As soon as the heat is applied, the salt is rendered fluid by the vitriolic acid, and the marine acid getting pure air from the manganese, begins to pass over into the receiver C, in the state of oxygenated marine acid: into this, no water has been put, in order that the vapours of the common marine acid may here be condensed separately. The vapours of the oxygenated acid meeting with no water here, pass into the receiver D, where a small quantity is put, by which a part is condensed, but another part passes over into the receiver E; but for this purpose it must go through the tube I to the bottom of the water which is placed in that receiver, and that part which is not condensed there, must rise up through it in bubbles, as represented in the plate: these, circulating in the receiver E if not condensed, will pass through K, and the water in F into its upper part, and in like manner to L, where if not condensed, they will be conveyed through the tube M N by means of the cup into the bottles, each of which will in its turn be brought over the little cup, while the others being filled with the air, will be removed and replaced by fresh ones filled with water, without any loss of the air, or interruption to the process: at the same time all inconvenience from the overflowing of the water will be obviated by the tube Q. To those who have been accustomed to employ the different kinds of apparatus hitherto in use for the distillation of the acids, particularly the marine acid, I conceive the ad-

vantages of this will be sufficiently evident; but to those who have had little or no experience in this respect, it may not be improper to mention a few particulars. First then, in this apparatus, there is no necessity for having the retort tubulated, for the neck of the retort being ground into the stopper B, is as easily introduced into that while fitted into the first receiver, as the stopper would be into the superior opening in the retort. This joint is more likely also to be close, as the neck of the retort is expanded when heat is applied, rather sooner than the orifice into which it is inserted, because it is to the retort that the heat is more immediately applied; whereas in the tubulated retort, the reverse of this takes place, the opening being in the retort itself, and the stopper being foreign, and heated only through the medium of the retort. The neck of the retort is ground into the piece B, and not into the receiver C, because the retorts being much more frequently broken, the neck of this receiver would soon be worn out by the grinding; besides in this way, when the retort is broken, the receiver being large, is not so conveniently ground as the piece B, and it is also in this way constantly preserved clean, and never dirtied by the sand or other substances used in grinding. In the receiver D, there is the tube H, which being open at both ends, but having its lower extremity immersed in the water, allows a passage for the atmospheric air downwards, when the vapour is suddenly condensed by the diminution of heat; but prevents the escape of the vapour upwards: for when the vapour presses on the surface of the fluid in D with an increased force, a column of the fluid there, is raised in the tube, which is somewhat more than equal in height to the perpendicular altitude of the immersed part of all the other tubes taken together.

"This tube, which has been called a tube of safety, is an useful addition to the apparatus, and is said to be the invention of a Mr. Welter. In Mr. Lavoisier's apparatus there is one to each of the bottles, but this does not appear to me to be necessary, as the absorption is never rapid except in the retort, and the first, or at most, the two first receivers; and in the apparatus here represented, there is no crooked tube between the first and second receiver, which might convey the liquor of the second into the first receiver. When only one tube is employed, the quantity of fluid at first put into D should be but small, as a part of that from E may possibly pass over into D.

"This apparatus has many advantages over any that I have seen. Its joints are ground instead of being luted, and I always find that the purity of the product is injured by lute, either during the operation, or when the product is removed: as all the joints are concentric, they are easily ground; the joints are very strong: many of the joints cover others, so that some of them may be bad without much injury to the apparatus; any of the joints of the tubes I, K, L, for instance, may be bad, with very little inconvenience, as any person may be convinced by leaving any of the tubes a little loose. When a moderate degree of heat only is required, we have no occasion for a furnace, a lamp answering the purpose of one completely, and indeed having several advantages over it.

"For first, we have the heat more immediately in our power, as we can raise, or lower, or remove it altogether, by merely changing the elevation of the lamp; and we have an easy rule for this management of the heat, in the velocity with which the air bubbles pass through the fluid in the different receivers, and in the height of the fluid in the tube H. It may not be improper to remark, that when the heat is suddenly removed, if the diameter of the tube H be small, it will be proper to blow a little air through it, lest the water should get into the receiver D from E.

" Secondly, it enables us to estimate the weight of the products at any time during an operation: the weight of the retort and ingredients having been previously noted, we can at any time during the process that we judge proper, remove the retort, stopping the hole from which it was withdrawn with the small stopper *a*, weigh it and return it (this need not take up more than half a minute), and in the difference of the weights, we have the weight of the product.

" In every case where the lamp is suddenly withdrawn while the retort is hot, and always when an operation is finished, it will be proper to surround the retort with a quantity of dry tow, flannel, or any other rare substance which transmits heat very slowly, that it may not be cracked by the sudden change of temperature: another circumstance which should be attended to, in order to prevent the breaking of the retort, is, that its neck should be placed with such a degree of inclination, as to allow the drops formed in it by the condensed steam, to run freely into the receiver; as if they should fall back, when the residuum in the retort is growing dry, they will certainly crack the hot glass. In the apparatus which the annexed plate represents, this end is accomplished by inclining the support of the whole apparatus as there represented; but it may be done in a way which I have adopted, since that drawing was made, and which seems preferable in some respects, particularly in this, that it admits of the support being horizontal, which enables us to put more water into the receivers. The retort is made to incline by the hole in the piece *B*, which receives its neck passing obliquely through it, so as to make the end of the retort within the receiver, to dip considerably, while its own external part ground into the receiver *C*, is in a horizontal position: it is perhaps needless to add, that by varying the shape of the receivers, their effect may in some measure be varied; thus, by making them of an elliptical shape instead of globular, if the short axis of the ellipses be placed horizontally, we may proportionally increase the pressure of the condensed vapour on the surface of the fluid they contain, whereas, if the long one be placed in that direction, we may increase the surface of the fluid exposed to its action. It seems also unnecessary to observe, that if the use of a furnace be preferred to that of the lamp, all the other advantages of the apparatus remain the same: and if the retort be of a large size, that a furnace must necessarily be employed, as the neck of the retort might not be able to support the weight of the matter it contained."

ACIDALIUS (Valens), would, in all probability, have been one of the greatest critics in these latter ages, had he lived longer to perfect those talents which nature had given him. He was born at Wittkock, in Brandenburg; and having visited several academies in Germany, Italy, and other countries, where he was greatly esteemed, he afterwards took up his residence at Breslaw, the metropolis of Silesia. Here he remained a considerable time, in expectation of some employment; but nothing offering he turned Roman-catholic, and was chosen rector of a school at Niesla. It is related, that about four months after, as he was following a procession of the host, he was seized with a sudden phrenzy; and being carried home, expired in a very short time. But Thuanus tells us, that his excessive application to study was the occasion of his untimely death; and that his sitting up a-nights in composing his Conjectures on Plautus, brought upon him a distemper which carried him off in three days, on the 25th of May, 1595, being just turned of 28. He wrote a Commentary on Quintus Curtius; also, Notes on Tacitus, on the Twelve Panegyrics; besides speeches, letters, and poems. His poetical pieces are inserted in the *Deliciae* of the German poets, and consist of epic verses, odes, and epigrams. A little

piece, printed in 1593, under the title of *Mulieris non esse homines*, "That women were not of the human species," was falsely ascribed to him. But the fact was, that Acidalius happening to meet with the manuscript, and thinking it very whimsical, transcribed it, and gave it to the bookseller, who printed it. The performance was highly exclaimed against, inasmuch that the bookseller being seized, he discovered the person who gave him the manuscript, and a terrible outcry was made against Acidalius. A story goes, that being one day to dine at a friend's house, there happened to be several ladies at table, who supposing him to be the author, were moved with so much indignation, that they threatened to throw their plates at his head. Acidalius, however, ingeniously diverted their wrath. In his opinion, he said, the author was a judicious person, the ladies being certainly more of the species of *angels* than of *men*.—Mr. Baillet has given him a place among his *Enfants Célèbres*; and says, that he wrote a comment upon Plautus when he was but 17 or 18 years old, and that he composed several Latin poems at the same age.

ACIDULÆ. Mineral waters that contain a brisk spirit, when unaccompanied with heat, are thus named; but if they are hot also, they are called *thermae*.

ACILA (Strabo); OCILA (Pliny); and OCELIS (Ptolemy); a staple or mart town in Arabia Felix, on the Arabian gulf, from which, according to Pliny, they set sail for India. Now Ziden.

ACILIUS GLABRIO (Marcus), consul in the year of Rome 562, and 211 years before the Christian æra, distinguished himself by his bravery and conduct in gaining a complete victory over Antiochus the Great, king of Syria, at the Straits of Thermopylæ in Thessaly, and on several other occasions. He built the Temple of Piety at Rome, in consequence of a vow he made before the above-mentioned battle; and the reason of his giving it that name, is very remarkable. The story is mentioned by Pliny, Valerius Maximus, and others.

ACINIPPO, a town of Bætica (Pliny); its ruins, called *Romla la Vega*, are to be seen near Arunda, in the kingdom of Granada.

ACIS, in fabulous history, the son of Faunus and Simelethis, was a beautiful shepherd of Sicily, who being beloved by Galatea, Polyphemus the giant was so enraged, that he dashed out his brains against a rock; after which Galatea turned him into a river, which was called by his name.

Acis (Ovid, Theocritus); a river of Sicily, running from a very cold spring, in the woody and shady foot of mount Ætna, eastward into, and not much above a mile from, the sea, along green and pleasant banks, with the speed of an arrow, from which it takes its name. It is now called *Sci Iaci*, or *Chinci*, according to the different Sicilian dialects: Antonine calls it *Actus*. Also the name of a hamlet at the mouth of the *Acis*.

ACOMINATUS (Nicetas), was secretary to Alexius Comnenus and to Isaacus Angelus successively: he wrote an history from the death of Alexius Comnenus in 1118, where Zonaras ended his; to the year 1203, which has undergone many impositions, and is much applauded by the best critics.

ACONITUM (*Encycl.*). See a figure of this poisonous plant in Plate 10.

ACONITUM Hyemale. See HELLEBORUS.

ACONTIUS (James), a philosopher, civilian, and divine, born at Trent, in the 16th century: he embraced the reformed religion; and, coming into England in the reign of Queen Elizabeth, was much honoured by her, which he acknowledged in a book dedicated to that queen. This work is his celebrated Collection of the Stratagems of Satan, which has been so often translated, and borne so many editions.

ACOUSTICS (*Encycl.*), the science which instructs us in the nature of sound, is divided by some writers into DIACOUSTICS, which explains the properties of those sounds that come directly from the sonorous body to the ear; and CATACOUSTICS, which treats of reflected sounds: but such distinction does not appear to be of any real utility.

ACQUA-CHE-TAVELLA, a celebrated fountain of Italy, in Calabria Citerior, a province of Naples. It is near the mouth of the river Crata, and the ruins commonly called *Sibari Rovinata*. It has been said to beautify those who washed in it.

ACRA (Josephus); one of the hills of Jerusalem, on which stood the lower town, which was the Old Jerusalem; to which was afterwards added Zion, or the city of David. Probably called *Acra*, from the fortrefs which Antiochus built there, in order to annoy the temple, and which Simon Maccabæus took and razed to the ground.

ACRA JAPYGINA (Pliny); *Salentina* (Ptolemy); now *Capo di Santa Maria di Leuca*; a promontory in the kingdom of Naples, to the south-east of Otranto, where formerly was a town, now lying in ruins, on the Ionian sea, over against the Montes Acroceranunii of Epirus.

ACRÆ, in the ancient geography, a town of Sicily, whose inhabitants were called *Acreses*. It stood to the south of Syracuse, at the distance of 24 miles, near the place now called the monastery of *Santa Maria d'Arcia*, on an eminence, as appears from Silius Italicus. The Syracusans were the founders of it, according to Thucydides, 70 years after the building of Syracuse, or 665 before Christ. Hence the epithet *Acraus*.

ACRAGAS, or AGRAGAS (anc. geog.), so called by the Greeks, and sometimes by the Romans (Virgil); but more generally *Agrirentum* by the latter; a town of Sicily. In Greek Medals the inhabitants are called *AKPITANTINOI*, and *Agrirentini* by Cicero. The town stood upon a mountain, at the confluence of the Acragas and Hypsa, near the port called *Eutæque* by Ptolemy, but *Estænos*, or the Dock, by Strabo; and in the time of the latter, scarce a trace of all that side remained. In the year before Christ 584, the people of Gela built Acragas, 108 years after building their own city. It took its name from the river running by it; and being but two miles from, enjoying all the conveniences that could come by, the sea. It was a place of great strength, standing on the top of a very steep rock, and washed on the south side by the river Acragas, now called *Fiume di Gergenti*, and on the south-west by the Hypsa, with a citadel to the south-east, externally surrounded by a deep gulf, which made it inaccessible but on the side next the town. It was famous for the tyrant Phalaris and his brazen bull. They were a people luxurious in their tables, and magnificent in their dwellings; of whom Empedocles, in Diogenes Laertius, says, that they lived to-day as if they were to die to-morrow, and built as if they were to live for ever. The country round the city was laid out in vine and olive yards, in the produce of which they carried on a great and profitable commerce with Carthage. E. long. 13. 30. Lat. 37. 20.

ACRATH (anc. geog.), a place in Mauritania Tingitana (Ptolemy); now supposed to be *Velex de Gomara*; a fortified town in the kingdom of Fez, with a citadel and commodious harbour on the Mediterranean, scarce a mile distant from Penon de Velex, a Spanish fort. W. Long. 5. Lat. 34. 45.

ACRIBEA, a term purely Greek, literally denoting an exquisite or delicate accuracy; sometimes used in our language for want of a word of equal signification.

ACRIDOPHAGI (*Encycl.*) Though the circumstances of these people, as related by Diodorus Siculus, should be deemed fabulous, yet may the *acridophagia* be true. It is well known, that to this day the inhabitants of Ethiopia, Arabia,

&c. frequently use locusts as food. The reader will not be displeased if we lay before him the result of Dr. Hædeltquitt's enquiries as to this particular, who travelled in Syria and Egypt so late as the year 1752. This ingenious gentleman, who travelled with a view to improve natural history, informs us, that he asked Franks, and many other people who had lived long in these countries, whether they had ever heard that the inhabitants of Arabia and Ethiopia, &c. used locusts as food. They answered that they had. He likewise asked the same question of Armenians, Cophtes, and Syrians, who lived in Arabia, and had travelled in Syria and near the Red-sea; some of whom said they had heard of such a practice, and others that they had often seen the people eat these insects. He at last obtained complete satisfaction on this head from a learned sheik at Cairo, who had lived six years in Mecca. This gentleman told him, in presence of M. le Grand, the principal French interpreter at Cairo, and others, that a famine frequently rages at Mecca when there is a scarcity of corn in Egypt, which obliges the inhabitants to live upon coarser food than ordinary: That when corn is scarce, the Arabians grind the locusts in hand-mills, or stone-mortars, and bake them into cakes, and use these cakes in place of bread: That he has frequently seen locusts used by the Arabians, even when there was no scarcity of corn; but then they boil them, stew them with butter, and make them into a kind of fricasse, which he says is not disagreeably tasted, for he had sometimes tasted these locust-fricassees out of curiosity. From this account, we may see the folly of that dispute among the divines about the nature of St. John's food in the wilderness: some maintaining the original word to signify the fruits of certain trees; others, a kind of birds, &c.: but those who adhered to the literal meaning of the text were at least the most orthodox, although their arguments were perhaps not so strong as they might have been, had they had an opportunity of quoting such an author as Hædeltquitt.

ACRISIUS, king of Argos (fab. hist.), being told by the oracle that he should be killed by his grandchild, shut up his only daughter Danae in a brazen tower: but Jupiter coming down in a golden shower, begot Perseus upon her: after Perseus had slain the Gorgons, he carried Medusa's head to Argos; which Acrisius seeing, was turned into a statue.

ACRITAS (anc. geog.), a promontory of Messenia, near Methone (Ptolemy); running into the sea, and forming the beginning of the bay of Messene. Now called *Capo di Gallo*, between Methone to the west, and Corone to the east, where the Sinus Coroneus begins.

ACROATHOUM, or ACROTHOUM (anc. geog.), a town situated on the top of mount Athos, where the inhabitants, according to Mela, were longer lived by half than in any other country: called by the modern Greeks, *Άγιος ορος*; by the Italians, *La Cima di Monte Santo*.

ACROCERAUNIA, or MONTES CERAUNII (anc. geog.), mountains running out into the sea (so called from their being often thunder-struck; separating the Ionian sea from the Adriatic; where Illyria ends and Epirus begins (Horace); now called *Monti della Chimera*.

ACROCORINTHUS (anc. geog.), a high and steep hill, hanging over the city of Corinth, which was taken within the walls, as an acropolis, or citadel. On its top stood a temple of Venus; and lower down issued the fountain Pyrene, yielding not a plentiful, but a clear stream of water (Pliny).

ACRON, a celebrated physician of Agrirentum, who first thought of lighting large fires, and purifying the air with perfumes, to put a stop to the pestilence that ravaged Athens, and which was attended with success. He lived about four hundred and seventy-three years before the Christian æra.

ACROPOLIS (anc. geog.), the citadel, and one of the divi-

mons, of Athens; called *Polis*, because constituting the first and original city; and the *Upper Polis*, to distinguish it from the Lower, which was afterwards built round it in a large open plain; and hence its name (Pausanias). To the north it had a wall, built by the Pelasgi, and therefore called *Pelasgic*; and to the south a wall, by Cymon the son of Miltiades, out of the Persian spoils, many ages after the building of the north wall (Plutarch). It had nine gates, and was therefore called *Enneapylon*; yet but one principal gate or entrance, the ascent to which was by a flight of steps of white marble, built by Pericles with great magnificence (Plutarch).

ACROPOLITA (George), one of the writers of the Byzantine history, was born at Constantinople, in the year 1220, and brought up at the court of the emperor John Ducas at Nice. He was employed in the most important affairs of the empire; being sent ambassador to Larissa, to establish a peace with Michael of Epirus; and was constituted judge to try Michael Comnenus, suspected of engaging in a conspiracy. Theodorus Lascaris, the son of John, whom he had taught logic, appointed him governor of all the western provinces in the empire. In 1255 he was taken prisoner in a war with Michael Angelus; but gaining his liberty in 1260, by means of the emperor Palaeologus, he was sent by him ambassador to Constantine prince of Bulgaria; and was employed on several other negotiations. He wrote, *A Continuation of the Greek History*, from the Taking of Constantinople by the Latins, till it was recovered by Michael Palaeologus in 1261, which makes part of the Byzantine history; *A Treatise concerning Faith, Virtue, and the Soul*; *An Exposition upon the Sermons of St. Gregory Nazianzen*; and other pieces. Gregory Cyprian, patriarch of Acropolis's history, in his encomium upon him, prefixed to Acropolis's history, is perhaps somewhat extravagant in his praise, when he says he was equal to Aristotle in philosophy, and to Plato in the knowledge of divine things and attic eloquence.

ACROSTICUM, or **RUSTYBACK** (*Encycl.*), in botany; erroneously there spelt **ACROSTICHUM**.

Acts of the Apostles (*Encycl.*). The council of Laodicea places the Acts of the Apostles among the canonical books, and all the churches have acknowledged it as such without any controversy. There were several spurious ACTS OF THE APOSTLES; particularly, I. *Acts*, supposed to be written by Abdias, the pretended bishop of Babylon, who gave out that he was ordained bishop by the apostles themselves when they were upon their journey into Persia. II. *The Acts of St. Peter*: this book came originally from the school of the Abonites. III. *The Acts of St. Paul*, which is entirely lost. Eusebius, who had seen it, pronounces it of no authority. IV. *The Acts of St. John the Evangelist*; a book made up of by the Encratites, Manicheans, and Priscillianists. V. *The Acts of St. Andrew*; received by the Manicheans, Encratites, and Apotactics. VI. *The Acts of St. Thomas the Apostle*; received particularly by the Manicheans. VII. *The Acts of St. Philip*: this book the Gnostics made use of. VIII. *The Acts of St. Matthias*. Some have imagined, that the Jews for a long time had concealed the original acts of the life and death of St. Matthias, written in Hebrew; and that a monk of the abbey of St. Matthias at Treves, having got them out of their hands, procured them to be translated into Latin, and published them. But the critics will not allow them to be authentic. See **CANON**.

ACTS of Pilate; a relation sent by Pilate to the emperor Tiberius, concerning Jesus Christ, his death, resurrection, ascension, and the crimes of which he was convicted before him. It was a custom among the Romans, that the proconsuls and governors of provinces should draw up acts, or memoirs, of what happened in the course of their government,

and send them to the emperor and senate. The heretics corrupted these acts, at least forged others in imitation of them; and, in the reign of the Emperor Maximian, the Gentiles, to throw an odium on the Christian name, spread about spurious Acts of Pilate; which the emperor, by a solemn edict, ordered to be sent into all the provinces of the empire, and enjoined the school-masters to teach and explain them to their scholars, and make them learn them by heart. These acts, both the genuine and the spurious, are lost. There is indeed extant, in the Pseudo-Hegesippus, a letter from Pilate to the emperor Claudius, concerning Jesus Christ. But it discovers itself at first sight not to be authentic.

ACTIÆA (*Encycl.*). The first species hath a perennial root, but the stalks annually decay. It may be propagated either by seeds, or parting the roots, which should be transplanted in autumn. The seeds should be sown soon after they are ripe, or they will lie a whole year in the ground before they vegetate. They should be sown in a shady border; and as all the plants do not come up at the same time, the border should not be disturbed till the following autumn, when they should be transplanted into a shady border, where they may be allowed to remain and flower.—The second species may be propagated in the same manner; only the plants should be allowed three feet every way, on account of their wide-spreading leaves. This species delights in a light moist soil, and a shady situation.—The third is usually propagated by seeds sent annually from North America: it thrives in the same kind of soil as the former; and is very hardy, requiring no other culture than the common flowering shrubs. The plants should not be often removed, for that will prevent their flowering strong.—The fourth requires a moist loamy soil, and shady situation. It may be propagated in the same manner as the others.

ACTÆON, in fabulous history, the son of Aristeus and Autonoe; a great hunter. He was turned by Diana into a stag, for looking on her while bathing; and died by his own dogs.

ACTE, ACTÆA, or ATTIS, ancient names of Attica. Pliny extends it to the isthmus of Corinth, so as to include Megaris. Others make this last a distinct district, because Megara was always the rival and enemy of the Athenians. If so, then Attica was bounded on the west by Megara; on the north by Boeotia, separated from it by high mountains, through which there was a difficult passage; on the south by the Saronic bay, with the Egean sea on the east. It was called *Acte* from its maritime situation; hence *Actica* and *Attica*, and the epithets *Actæus* and *Atticus* (Ovid). Hence also *Attias* for *Atheniense* (Virgil).

ACTION (*Encycl.*). The abbé Girard makes a further distinction between the words *Action* and *Act*. The former, according to him, has more relation to the power that acts than the latter; whereas the latter has more relation to the effect produced than the former: and hence the one is properly the attribute of the other. Thus we may properly say, "Be sure to preserve a presence of mind in all your actions," and take care that they are all acts of equity." Dr. Reid is of opinion that no being can be an agent, or perform an action, in the proper sense of the word, which does not possess, in some degree, the powers of will and understanding. If this opinion be just, it is obvious, that what they call the powers of nature, such as *impulse, attraction, repulsion, electricity*, &c. are not, strictly speaking, powers or causes, but the effects of the agency of some active and intelligent being; and that *physical causes*, to make use of common language, are nothing more than *laws or rules*, according to which the agent produces the effect. This doctrine has been very ably controverted.

ACTIUM (anc. geog.), a town situated on the coast of Acarnania, in itself inconsiderable, but famous for a temple of Apollo, a safe harbour, and an adjoining promontory of the same name, in the mouth of the Sinus Ambracius, over against Nicopolis, on the other side of the bay: it afterwards became more famous on account of Augustus's victory over Antony and Cleopatra; and for quinquennial games instituted there, called *Adia*, or *Ludi Adriaci*. Hence the epithet *Adrius*, given to Apollo (Virgil). *Adiaca ara*, a computation of time from the battle of Actium. The promontory is now called *Capo di Pigale*.

ACTIUS, in mythology, a surname of Apollo, from Actium, where he was worshipped.

ACTUARIUS, a celebrated Greek physician, of the 13th century, and the first Greek author who has treated of mild purgatives, such as cassia, manna, senna, &c. His works were printed in one volume folio, by Henry Stephens, in 1567.

ACUNA (Christophero de), a Spanish Jesuit, born at Burgos. He was admitted into the society in 1612, being then but 15 years of age. After having devoted some years to study, he went to America, where he assisted in making converts in Chili and Peru. In 1640 he returned to Spain, and gave the king an account how far he had succeeded in the commission he had received to make discoveries on the river of the Amazons; and the year following he published a description of this river, at Madrid. Acuna was sent to Rome, as procurator of his province. He returned to Spain with the title of Qualificator of the Inquisition; but soon embarked again for the West Indies, and was at Lima in 1675, when Father Southwell published at Rome the *Bibliothèque* of the Jesuit writers. Acuna's work is entitled, *Nuevo descubrimiento del gran río de las Amazonas*; i.e. "A new discovery of the great river of the Amazons." He was ten months together upon this river, having had instructions to enquire into every thing with the greatest exactness, that his majesty might thereby be enabled to render the navigation more easy and commodious. He went on board a ship at Quito with Peter Texeira, who had already been so far up the river, and was therefore thought a proper person to accompany him in this expedition. They embarked in February 1639, but did not arrive at Para till the December following. It is thought that the revolutions in Portugal, by which the Spaniards lost all Brasil, and the colony of Para at the mouth of the river of the Amazons, were the cause that the relation of this Jesuit was suppressed; as it could not be of any advantage to the Spaniards, they were afraid it might prove of great service to the Portuguese. The copies of this work became extremely scarce, so that the publishers of the French translation at Paris asserted, that there was not one copy of the original extant, excepting one in the possession of the translator, and, perhaps, that in the Vatican library. M. de Gomberville was the author of this translation: it was published after his death, with a long dissertation. An account of the original may be seen in the Paris Journal, in that of Leipzig, and in Chevereau's History of the World.

ADAM (ROBERT), a celebrated architect, was born in 1728, at Kirkcaldy, in the county of Fife. He was the second son of W. Adam, esq. of Maryburgh, an architect of distinguished merit. He received his education at the university of Edinburgh. The friendships he formed were with men who have since eminently distinguished themselves by their literary productions; among whom were Mr. David Hume, Dr. Robertson, Dr. Adam Smith, Dr. Adam Ferguson, and Mr. John Home. At a more advanced time of life he had the good fortune to enjoy the friendship and society of Archibald Duke of Argyle, the late Mr. Charles Townsend, the Earl of

Mansfield, and several other of the most illustrious men of the age.—Mr. Adam, after his return from Italy, was appointed architect to his majesty, in the year 1762; which office, being incompatible with a seat of parliament, he resigned in 1769, on his being elected to represent the county of Kinross. It is somewhat remarkable that the arts should be deprived at the same time of two of their greatest ornaments, Sir Joshua Reynolds and Mr. Adam; and it is difficult to say which of them excelled most in his particular profession. Sir Joshua introduced a new and superior style of portrait-painting. It is equally true that Mr. Adam produced a total change in the architecture of this country; and his fertile genius in elegant ornament was not confined to the decoration of buildings, but has been diffused into almost every branch of manufacture. His talents extended beyond the line of his own profession; he displayed in his numerous drawings in landscape a luxuriance of composition, and an effect of light and shadow, which have scarcely ever been equalled. To the last period of his life, Mr. Adam displayed an increasing vigour of genius and refinement of taste; for, in a space of one year preceding his death, he designed eight great general works, beside 25 private buildings, so various in their style, and beautiful in their composition, that they have been allowed, by the best judges, sufficient of themselves to establish his fame unrivaled as an artist. His death, which happened March 2, 1792, was occasioned by the bursting of a blood-vessel in his stomach.

ADAM'S Apple. See CITRUS.

ADAM'S Needle. See YUCCA.

ADAM'S Peak, a high mountain of the East Indies, in the island of Ceylon, on the top of which they believe the first man was created.

ADAM or ADOM, a town in Persia, or on the other side the Jordan, over-against Jericho, where the Jordan began to be dried up on the passage of the Israelites; (Joshua).

ADAMA, or **ADMAH**, one of the towns that were involved in the destruction of Sodom; (Moses).

ADAMAS, in astrology, a name given to the moon.

ADAMITES (*Enech.*). Epiphanius tells us, that the Adamites were so called from their pretending to be re-established in the state of innocence, and to be such as Adam was at the moment of his creation, whence they ought to imitate him in his nakedness. They detested marriage; maintaining, that the conjugal union would never have taken place upon earth had sin been unknown; and that the privilege of enjoying women in common, was one of the rights which flowed from their establishment in original purity.

This obscure and detestable sect did not at first last long; but it was revived in the twelfth century by one Tandamus, since known by the name of *Tanchelin*, who propagated his errors at Antwerp, in the reign of the emperor Henry V. He maintained, that there ought to be no distinction between priests and laymen, and that fornication and adultery were meritorious actions. Tanchelin had a great number of followers, and was constantly attended by 3000 of these followers in arms. His sect did not however continue long after his death: but another appeared under the name of *Turlupin*, in Savoy and Dauphiny, where they committed the most brutal actions in open day.

About the beginning of the fifteenth century, one Picard, a native of Flanders, spread these errors in Germany and Bohemia, particularly in the army of the famous Zisca, notwithstanding the severe discipline he maintained. Picard pretended that he was sent into the world as a new Adam, to re-establish the law of nature; and which, according to him, consisted in exposing every part of the body, and having all the women in common. This sect found also some partizans in Poland, Holland, and England: they assembled in the night; and it

is asserted, that one of the fundamental maxims of their society was contained in the following verse: "*Jura, perura, secretum prodere noli.*"

ADDERSTONGUE. See OPHIOGLOSSUM.

ADDISON (Lancelot), son of Lancelot Addison, a clergyman, was born at Moulshelmaburne, in the parish of Crosby Ravenfworth, in Westmoreland, in the year 1632. He was educated at Queen's College, Oxford; and at the Restoration of King Charles II. accepted of the chaplainship of the garrison of Dunkirk: but that fortress being delivered up to the French in 1652, he returned to England, and was soon after made chaplain to the garrison of Tangier; where he continued seven years, and was greatly esteemed. In 1670 he returned to England, and was made chaplain in ordinary to the king; but his chaplainship of Tangier being taken from him on account of his absence, he found himself frightened in his circumstances, when he seasonably obtained the rectory of Milston in Wiltshire, worth about 120*l.* per ann. He afterwards became a prebendary of Sarum; took his degree of doctor of divinity at Oxford; and in 1683 was made dean of Lichfield, and the next year archdeacon of Coventry. His life was exemplary; his conversation pleasing, and greatly instructive; and his behaviour as a gentleman, a clergyman, and a neighbour, did honour to the place of his residence. He wrote, 1. A Short Narrative of the Revolutions of the Kingdoms of Fez and Morocco: 2. The present History of the Jews: 3. A Discourse on Catechising: 4. A modest Plea for the Clergy: 5. An Introduction to the Sacrament: 6. The First State of Mahometism: and several other pieces. This worthy divine died on the 20th of April, 1703, and left three sons: Joseph, the subject of the next article; Gullion, who died while governor of Fort St. George; Lancelot, master of arts, and fellow of Magdalen College in Oxford; and one daughter, first married to Dr. Sarte, prebendary of Westminster, and afterwards to Daniel Combes, esq.

ADDISON (Joseph), one of the brightest geniuses that this or any other country has produced; was the son of Dean Addison, the subject of the last article. He was born at Milston, near Ambresbury, in Wiltshire, on the 11th of May, 1672; and not being thought likely to live, was baptized the same day. He received the first rudiments of his education at the place of his nativity, under the reverend Mr. Nash; but was soon removed to Salisbury, under the care of Mr. Taylor; and from thence to the Charter-house, where he commenced his acquaintance with Sir Richard Steele. About fifteen, he was entered at Queen's College, Oxford, where he applied very closely to the study of classical learning, in which he made a surprising proficiency. In the year 1687, Dr. Lancaster, dean of Magdalen College, having, by chance, seen a Latin poem of Mr. Addison's, was so pleased with it, that he immediately got him elected into that house, where he took up his degrees of bachelor and master of arts. His Latin pieces, in the course of a few years, were exceedingly admired in both universities; nor were they less esteemed abroad, particularly by the celebrated Boileau, who is reported to have said, that he would not have written against Perrault, had he before seen such excellent pieces by a modern hand. He published nothing in English before the twenty-second year of his age; when there appeared a short copy of verses written by him, and addressed to Mr. Dryden, which procured him great reputation from the best judges. This was soon followed by a translation of the Fourth Georgic of Virgil (omitting the story of Aristæus), much commended by Mr. Dryden. He wrote also the Eilay on the Georgics prefixed to Mr. Dryden's translation. There are several other pieces written by him about this time; among the rest, one dated the 3d of April, 1694, addressed to H. S. that is, Dr. Sacheverel, who became

afterwards so famous, and with whom Mr. Addison lived once in the greatest friendship; but their intimacy was some time after broken off by their disagreement in political principles. In the year 1695, he wrote a poem to King William on one of his campaigns, addressed to Sir John Somers, lord-keeper of the great seal. This gentleman received it with great pleasure, took the author into the number of his friends, and bestowed on him many marks of his favour. Mr. Addison had been closely pressed, while at the university, to enter into holy orders; and had once resolved upon it: but his great modesty, his natural diffidence, and an uncommonly delicate sense of the importance of the sacred function, made him afterwards alter his resolution; and having expressed an inclination to travel, he was encouraged thereto by his patron above mentioned, who, by his interest, procured him from the crown a pension of 300*l.* per annum to support him in his travels. He accordingly made a tour to Italy in the year 1699; and, in 1701 he wrote a poetical epistle from Italy to the Earl of Halifax, which has been universally esteemed as a most excellent performance. It was translated into Italian verse by the Abbot Antonio Maria Salvini, Greek professor at Florence. In the year 1705 he published an account of his travels, dedicated to Lord Somers; which, though at first but indifferently received, yet in a little time met with its deserved applause. In the year 1702, he was about to return to England, when he received advice of his being appointed to attend Prince Eugene, who then commanded for the emperor in Italy: but the death of King William happening soon after, put an end to this affair, as well as his pension; and he remained for a considerable time unemployed. But an unexpected incident at once raised him, and gave him an opportunity of exerting his fine talents to advantage: for in the year 1704, the lord-treasurer Godolphin happened to complain to Lord Halifax, that the Duke of Marlborough's victory, at Blenheim, had not been celebrated in verse in the manner it deserved; and intimated, that he would take it kindly, if his lordship, who was the known patron of the poets, would name a gentleman capable of doing justice to so elevated a subject. Lord Halifax replied, somewhat hastily, that he did know such a person, but would not mention him; adding, that long had he seen, with indignation, men of no merit maintained in luxury at the public expence, whilst those of real worth and modesty were suffered to languish in obscurity. The treasurer answered very coolly, that he was sorry there should be occasion for such an observation, but that he would do his endeavour to wipe off such reproaches for the future; and he engaged his honour, that whoever his lordship named, as a person capable of celebrating this victory, should meet with a suitable recompence. Lord Halifax thereupon named Mr. Addison; insisting, however, that the treasurer himself should send to him; which he promised. Accordingly he prevailed on Mr. Boyle (afterwards Lord Carlton), then chancellor of the exchequer, to make the proposal to Mr. Addison; which he did in so polite a manner, that our author readily undertook the task. The lord-treasurer had a sight of the piece, when it was carried no farther than the celebrated simile of the angel; and was so pleased with it, that he immediately appointed Mr. Addison a commissioner of appeals, vacant by the promotion of Mr. Locke, chosen one of the lords commissioners for trade. The Campaign is addressed to the Duke of Marlborough; it gives a short view of the military transactions in 1704, and contains a noble description of the two great actions at Schellenberg and Blenheim. The poem will be admired as long as the victory is remembered. In 1705 he attended Lord Halifax to Hanover; and the ensuing year was appointed under-secretary to Sir Charles Hedges, secretary of state; in which office he acquitted himself so well, that the Earl of Sand-

land, who succeeded Sir Charles in December, continued Mr. Addison in his employment. A taste for operas beginning at this time to prevail in England, and many persons having solicited Mr. Addison to write one, he complied with their request, and composed his *Rosamond*. This however, whether from the defect of the music, for which our language is said by some to be very improper, or from the prejudices in favour of the Italian taste, did not succeed upon the stage: but the poetry of it has, and always will be, justly admired. About this time, Sir Richard Steele composed his comedy of the *Tender Husband*, to which Mr. Addison wrote a prologue. Sir Richard surprised him with a dedication of this play, and acquainted the public, that he was indebted to him for some of the most excellent strokes in the performance. The Marquis of Wharton, being appointed lord-lieutenant of Ireland in 1709, took Mr. Addison with him as his secretary. Her Majesty also made him keeper of the records of Ireland, and, as a farther mark of her favour, considerably augmented the salary annexed to that place. Whilst he was in this kingdom, the *Tatler* was first published; and he discovered his friend Sir Richard Steele to be the author, by an observation on *Virgil*, which he had communicated to him. He afterwards assisted considerably in carrying on this paper, which the author acknowledges. The *Tatler* being laid down, the Spectator was set on foot, and Mr. Addison furnished great part of the most admired papers; those which he wrote are distinguished by one of the letters of the muse, C, L, I, O. The Spectator made its first appearance in March 1711, and was brought to a conclusion in September 1712. He had likewise a considerable share in the *Guardian*, another paper in the same taste, which entertained the town in 1713 and 1714. His celebrated *Cato* appeared in 1713. He formed the design of a tragedy upon this subject when he was very young, and wrote it when on his travels: he retouched it in England, without any intention of bringing it on the stage; but his friends being persuaded it would serve the cause of liberty, he was prevailed on by their solicitations, and it was accordingly exhibited on the theatre with a prologue by Mr. Pope, and an epilogue by Dr. Garth. It was received with the most uncommon applause, having run thirty-five nights without interruption; and all parties, however divided, agreed in giving this play the commendation it deserved. It was no less esteemed abroad, having been translated into French, Italian, and German; and it was acted at Leghorn, and several other places, with vast applause. The Jesuits at St. Omer's made a Latin version of it, and the students acted it with great magnificence. Her Majesty Queen Anne signified an inclination of having the play dedicated to her; but the author having proposed to dedicate it elsewhere, to avoid giving offence, published it without a dedication. He had formed a design of writing another tragedy upon the death of Socrates; but this he never carried into execution. He intended also to have composed an English dictionary upon the plan of the Italian (*Della Crusca*); but, upon the death of the queen, being appointed secretary to the lords justices, he had no leisure to carry on such a work. When the Earl of Sunderland was appointed lord-lieutenant of Ireland, Mr. Addison was again made secretary for the affairs of that kingdom; and, upon the earl's being removed from the lieutenancy, he was chosen one of the lords of trade. In 1715 he began the *Freeholder*, a political paper, which was much admired, and proved of great use at that juncture. He published also, about this time, verses to Sir Godfrey Kneller upon the king's picture, and some to the Princess of Wales with the tragedy of *Cato*. In April 1717, his Majesty King George appointed our author one of his principal secretaries of state; but the fatigue of his employment having brought upon him an asthmatic disorder,

with which he had been before afflicted, he resigned his office, and retired from business. In his retirement he applied himself to a religious work, the Evidences of the Christian Religion, which he had begun long before; part of which, scarce finished, has been printed in his works. He intended also to have given an English paraphrase of some of David's psalms; but a long and painful relapse cut short all his designs, and carried off this great man on the 17th of June, 1719, in the 54th year of his age. He died at Holland-house, near Kensington, leaving behind him one daughter by the countess of Warwick, to whom he was married in 1716. After his decease, Mr. Tickell, by the author's instructions, published his works in four volumes 4to. In this edition, there are several pieces hitherto unmentioned, viz. The Dissertation on Medals; which, though not published till after his death, yet he had collected the materials, and began to put them in order, at Vienna, in 1702. A pamphlet, entitled, The Present State of the War, and the Necessity of an Augmentation, considered. The late Trial and Conviction of Count Tariff. The Whig Examiner came out on the 14th of September, 1716: there were five of these papers attributed to Mr. Addison, and they are the severest pieces he ever wrote. The *Drummer*, or the *Haunted House*, a comedy not taken notice of in this edition, was published afterwards as Mr. Addison's, by Sir Richard Steele. He is said also to have been the author of a performance, entitled *Dissertatio de insignioribus Romanorum Poetis*, and of a Discourse on Ancient and Modern Learning.

ADEL (*Encycl.*) This country produces corn, and feeds a great number of cattle. The inhabitants drive a trade in gold, silver, ivory, oil, frankincense, a sort of pepper, and other merchandizes of Arabia and the Indies. The king was formerly a vassal to the grand negus of Abyssinia: but being Mahometans, and the Abyssinians a sort of Christians, they could not agree; and in 1535 came to an open rupture, when the Adelines threw off the yoke, seeking protection from the Grand Signior. The principal places are, Adela, seated in the centre of the country, and is the town where the king resides: Zeila, near the Arabian Sea, is a rich town, and has a good trade: Barbora, near the sea-coast, is an ancient trading town. It rains very seldom in this country.

ADELME, or **ADELHELM**, son to Kenred, nephew to Ina, king of the West Saxons; after having been educated abroad, was abbot of Malmshury 30 years. He was the first Englishman who wrote in Latin, the first who brought poetry into England, and the first bishop of Sherburn. He lived in great esteem till his death, which happened in 709. He was canonized, and many miracles were told of him. He is mentioned with great honour by Camden and Bayle, and his life was written by William of Malmshury.

AFFECTED equation is that where the unknown quantity is found in two or more different degrees, or powers, E. gr. $x^3 - px^2 + qx = a^2b$; where there are three different powers of x ; viz. x^3 , x^2 , and x^1 . See **EQUATION**.

AD FINES (*Antonie*), a town of Switzerland, supposed to be the modern *Phin*, in the north of the district of Turgow, on the rivulet Thur, not far from the borders of Suabia, about half-way between Constanz and Frauenfeld. So called, because when Cecinna, general of the emperor Vitellius, with the auxiliary Rhetians, defeated the Helvetii, the former extended their borders thus far, their territory ending here; and, in time of the Romans, it was the last town in this quarter, and of some repute.

ADHA. (*Arab.*) A festival, which the Mahometans celebrate on the tenth day of the month *Dhoul-hegiat*, which is the twelfth and last of their year. This month being particularly destined for the ceremonies which the Pilgrims observe

at Mecca, it takes its name from thence, for the word signifies the *month of Pilgrimage*. On that day they sacrifice with great solemnity, at Mecca, and no-where else, a sheep, which is called by the same name as the festival itself. The Turks commonly call this festival the *Great Beiram*, to distinguish it from the lesser, which ends their fast, and which the Christians of the Levant call the *Egler of the Turks*. The Mahometans celebrate this festival, out of the city of Mecca, in a neighbouring valley; and sometimes they sacrifice there a camel. See *BAIRAM*.

ADMIRAL (*Encycl.*). Authors are divided with regard to the origin and denomination of this important officer, whom we find established in most kingdoms that border on the sea. But the most probable opinion is that of Sir Henry Spelman, who thinks, that both the name and dignity were derived from the Saracens, and, by reason of the holy wars, brought amongst us; for *admiral*, in the Arabian language, signifies a prince, or chief ruler, and was the ordinary title of the governors of cities, provinces, &c. and therefore they called the commander of the navy by that name, as a name of dignity and honour. And indeed there are no instances of admirals in this part of Europe before the year 1284, when Philip of France, who attended St. Louis in the wars against the Saracens, created an admiral. Du Cange assures us, that the Sicilians were the first, and the Genoese the next, who gave the denomination of admiral to the commanders of their naval armaments; and that they took it from the Saracen or Arabic *Emir*, a general name for every commanding officer. As for the exact time when the word was introduced among us, it is uncertain: some think it was in the reign of Edward I. Sir Henry Spelman is of opinion that it was first used in the reign of Henry III. because neither the laws of Oleron made in 1266, nor Bracton, who wrote about that time, make any mention of it; and that the term *admiral* was not used in a charter in the eighth of Henry III. wherein he granted this office to Richard de Lacey, by these words *Maritimam Angliæ*; but in the 56th year of the same reign, not only the historians, but the charters themselves, very frequently use the word *admiral*.

ADMIRATION, in general, denotes surprise, wonder, or astonishment, at any extraordinary event. Sometimes also it signifies the expression of wonder. The point of admiration, in grammar, is marked thus [!].

ADMONITION, in ecclesiastical affairs, a part of discipline much used in the ancient church. It was the first act, or step, towards the punishment or expulsion of delinquents. In case of private offences, it was performed according to the evangelical rule, privately: in case of public offence, openly, before the church. If either of those fulfilled for the recovery of the fallen person, all further proceedings in the way of censure ceased: if they did not, recourse was had to excommunication.

ADOLLAM, or **ODOLLAM** (anc. geog.), a town in the tribe of Judah, to the east of Eleutheropolis. David is said to have hid himself in a cave near this town (Bible).

ADONI, a town in the peninsula of Hindostan, on one of the branches of the river Tungabadda. It was, not many years ago, a fine city, extremely well fortified, and the capital of a small feudatory province of Golconda. It is 175 miles S. W. of Hydrabad, and 310 N. W. of Madras. E. long. 77. 0. N. Lat. 15. 37.

ADONIS, son to Cinyras, king of Cyprus, the darling of the goddess Venus: being killed by a wild boar in the Italian woods, he was turned into a flower of a blood-colour, supposed to be the Anemone. Venus was inconsolable; and no grief was ever more celebrated than this, most nations having perpetuated the memory of it by a train of anniversary ceremonies. See *ADONIA*. Among Shakspeare's poems, is a

long one on the subject of Venus's extraordinary affection for Adonis.

ADRA, a sea-port town of Granada, in Spain, 47 miles S. E. of Granada. W. Long. 2. 37. N. lat. 36. 42.

ADRAMMELECH, one of the gods of the inhabitants of Sepharvaim, who were settled in the country of Samaria, in the room of those Israelites who were carried beyond the Euphrates. The Sepharvaim made their children pass through fire, in honour of this idol, and another called Anamelech. It is supposed, that Adrammelech meant the sun, and Anamelech the moon: the first signifies the *magnificent king*; the second the *gentle king*. See *ANAMELECH*.

ADRAMYTIIUM (anc. geog.), now *Adramiti*: a town of Myfia Major, at the foot of mount Ida, an Athenian colony, with a harbour and dock near the Caicus. *Adramyttenus* the epithet; as, *Adramyttenus Sinus*, a part of the Egean Sea, on the coast of Myfia; *Adramyttenus Conventus*, sessions or assizes. The eighth in order of the nine *Conventus Juridici* of the province of Asia.

ADRANUM, or **HADRANUM** (anc. geog.), now *Aderno*, a town of Sicily, built by the elder Dionysius, at the foot of mount Ætna (Diodorus Siculus), four hundred years before Christ. So called from the temple of Aranus, or Hadranus, a god much worshipped by the Sicilians; with a river of the same name (Stephanus), now *Fiume d'Aderno*. The inhabitants, *Hadrantiani*, and *Adraniti*.

ADRASTUS, king of Argos, son of Talaua and Lyfiastis, daughter of Polybius, king of Sicyon, acquired great honour in the famous war of Thebes, in support of Polynices his son-in-law, who had been excluded the sovereignty of Thebes by Eteocles his brother, notwithstanding their reciprocal agreement. Adrastus, followed by Polynices and Tydeus, his other son-in-law, by Capaneus and Hippomedon his sister's sons, by Amphiarus his brother-in-law, and by Parthenopeus, marched against the city of Thebes; and this is the expedition of the Seven Worthies, which the poets have so often sung. They all lost their lives in this war, except Adrastus, who was saved by his horse called Arion. This war was revived ten years after by the sons of those deceased warriors, which was called the war of the Epigones, and ended with the taking of Thebes. None of them lost their lives, except Ægialeus son of Adrastus; which afflicted him so much, that he died of grief in Megara, as he was leading back his victorious army.

ADRAZZO, or **AIACCIO**. The same with *ADJAZZO*.

ADRIA, or **HADRIA** (anc. geog.), the name of two towns in Italy. One in the country of the Veneti, on the river Tartarus, between the Padus and the Athesis, called *Adria* by Pliny and Ptolemy, but *Adrius* by Strabo. Another on the river Vomanus, in the territory of the Piceni (to which Antonine's Itinerary from Rome is directed), the country of the ancestors of the emperor Adrian. From which of these the Adriatic sea is denominated, is matter of doubt. A third opinion is, that it is so called from Adrias the son of Joan, of Italian origin (Eustathius in Dionysium).

ADRIAN, or **HADRIAN** (Publius Ælius), the Roman emperor, was born at Rome Jan. 24, in the year of Christ 76. His father left him an orphan, at ten years of age, under the guardianship of Tragan, and Cælius Tatianus, a Roman knight. He began to serve very early in the armies, having been tribune of a legion before the death of Domitian. He was the person chosen by the army of Lower Æstia, to carry the news of Nerva's death to Trajan, successor to the empire. The extravagant expences which Adrian ran into in his youth, made him lose this emperor's favour; but having recovered it by a reformation in his behaviour, he was married to Sabina, a grand niece of Trajan's, and the empress Plotina became his great friend and patroness. When he was *quæstor*,

he delivered an oration in the senate; but his language was then so rough and unpolished, that he was hissed; this obliged him to apply to the study of the Latin tongue, in which he became a great proficient, and made a considerable figure for his eloquence. He accompanied Trajan in most of his expeditions, and particularly distinguished himself in the second war against the Daci; and having before been quaestor, as well as tribune of the people, he was now successively praetor, governor of Pannonia, and consul. After the siege of Atrax in Arabia was raised, Trajan, who had already given him the government of Syria, left him the command of the army; and at length, when he found death approaching, it is said he adopted him. The reality of this adoption is by some disputed, and is thought to have been a contrivance of Plotina; but however this may be, Adrian, who was then in Antiochia, as soon as he received the news thereof, and of Trajan's death, declared himself emperor, on the 11th of August, 117. No sooner had he arrived at the imperial dignity, than he made peace with the Persians, to whom he yielded up great part of the conquests of his predecessors; and from generosity, or policy, he remitted the debts of the Roman people, which according to the calculation of those who have reduced them to modern money, amounted to twenty-two millions five hundred thousand golden crowns; and he caused to be burnt all the bonds and obligations relating to those debts, that the people might be under no apprehension of being called to an account for them afterwards. He went to visit all the provinces, and did not return to Rome till the year 118, when the senate decreed him a triumph, and honoured him with the title of Father of his country; but he refused both, and desired that Trajan's image might triumph. The following year he went to Maxia, to oppose the Sarmatae. In his absence several persons of great worth were put to death; and though he protested he had given no orders for that purpose, yet the odium thereof fell chiefly upon him. No prince travelled more than Adrian; there being hardly one province in the empire which he did not visit. In 120 he went into Gaul, and from thence to Britain, where he took care to have a wall or rampart built, as a defence against those who would not submit to the Roman government. In 121 he returned into France; thence he went into Spain, to Mauritania, and at length into the East, where he quieted the commotions raised by the Parthians. After having visited all the provinces of Asia, he returned to Athens in 125, where he passed the winter, and was initiated in the mysteries of Eleusinia Ceres. He went from thence to Sicily, and saw Mount Aetna. He returned to Rome the beginning of the year 129; and, according to some, he went again, the same year, to Africa; and, after his return from thence, to the East. He was in Egypt in the year 132, revisited Syria the year following, returned to Athens in 134, and to Rome in 135. The persecution against the Christians was very violent under his reign; but it was at length suspended, in consequence of the remonstrances of Quadratus bishop of Athens, and Aritides, two Christian philosophers, who presented the emperor with some books in favour of the Christian religion. He conquered the Jews; and, by way of insult, erected a temple to Jupiter, on Mount Calvary, and placed a statue of Adonis in the manger

of Bethlehem: he caused also the images of swine to be engraved on the gates of Jerusalem.

Adrian reigned 21 years, and died at Baiae in the 63d year of his age. The Latin verses he addressed to his soul on his death-bed *, shew his uncertainty and doubts in regard to the other world. He was a prince adorned with great virtues, but they were mingled with great vices. He was generous, industrious, polite, and exact; he maintained order and discipline; he administered justice with indefatigable application, and punished rigorously all those who did not faithfully execute the offices with which they were entrusted; he had a great share of wit and a surpassing memory; he was well versed in most of the polite arts and sciences, and is said to have written several works. On the other hand, he was cruel, envious, lascivious, superstitious, and so weak as to give himself up to the study of magic: and what can be more infamous than his passion for Antinous?

Adrian, having no children by Sabina, adopted Lucius Aurelius Annus Ceionius Commodus as Verus; but Lucius dying the 1st of January, 138, he then adopted Titus Antoninus, on condition that he should adopt Marcus Annus Verus, and the son of Lucius Verus.

ADRIAN IV. (Pope), the only Englishman who ever had the honour of sitting in the papal chair. His name was Nicholas Brekepere; and he was born at Langley, near St. Alban's, in Hertfordshire. His father having left his family, and taken the habit of the monastery of St. Alban's, Nicholas was obliged to submit to the lowest offices in that house, for daily support. After some time, he desired to take the habit in that monastery, but was rejected by the abbot Richard. "He was examined," says Matthew Paris, "and being found insufficient, the abbot civilly enough said to him, Wait, my son, and go to school a little longer, till you are better qualified." But if the character given of young Brekepere, by Pitts, be a just one, the abbot was certainly to be blamed for rejecting a person who would have done great honour to his house: he was, according to that author, a handsome and comely youth, of a sharp wit, and ready utterance; circumspect in all his words and actions, polite in his behaviour, neat and elegant; full of zeal for the glory of God, and that according to some degree of knowledge; so possessed of all the most valuable endowments of mind and body, that in him the gifts of Heaven exceeded nature: his piety exceeded his education; and the ripeness of his judgment and his other qualifications exceeded his age. Having met with this repulse, he resolved to try his fortune in another country, and accordingly went to Paris; where, though in very poor circumstances, he applied himself to his studies with great assiduity, and made a wonderful proficiency. But having still a strong inclination to a religious life, he left Paris, and removed to Provence, where he became a regular clerk in the monastery of St. Rufus. He was not immediately allowed to take the habit; but passed some time, by way of trial, in recommending himself to the monks by a strict attention to all their commands. This behaviour, together with the beauty of his person, and prudent conversation, rendered him so acceptable to those religious, that after some time they treated him to take the habit of the canonical order. Here he distinguished

This translated by Pope:

Ah! fleeting spirit! wand'ring fire,
That long hast warm'd my tender breast,
Must thou no more this frame inspire?
No more a pleasing, cheerful guest,
Whither, ah whither art thou flying?
To what dark undiscover'd shore?
Thou seem'st all trembling, shivering, dying,
And wit and humour are no more!

* The verses are these:

Animula vagula, blandula,
Hesperes, comelque corporis,
Quæ nunc abibis in loca
Pallidula, rigida, nudula,
Nec, ut soles, dabis jocos!

himself so much by his learning and strict observance of the monastic discipline, that, upon the death of the abbot, he was chosen superior of that house; and we are told that he rebuilt that convent. Pope Eugenius III. being apprised of the great merit of Nicholas, and thinking he might be serviceable to the church in a higher station, created him cardinal-bishop of Alba in 1146. In the same year his Holiness sent him legate to Denmark and Norway; where, by his fervent preaching and diligent instructions, he converted those barbarous nations to the Christian faith: and erected Upsal into an archiepiscopal see. When he returned to Rome, he was received by the pope and cardinals with great marks of honour: and Pope Anastasius, who succeeded Eugenius, happening to die at this time, Nicholas was unanimously chosen to the holy see, in November 1154, and he took the name of *Adrian*. When the news of his promotion reached England, king Henry II. sent Robert abbot of St. Alban's, and three bishops, to Rome, to congratulate him on his election; upon which occasion Adrian granted very considerable privileges to the monastery of St. Alban's, particularly an exemption from all episcopal jurisdiction, excepting to the see of Rome. Adrian, in the beginning of his pontificate, boldly withstood the attempts of the Roman people to recover their ancient liberty under the consuls, and obliged those magistrates to abdicate their authority, and leave the government of the city to the pope. In 1155 he drove the heretic Arnald of Breffe, and his followers, out of Rome. The same year he excommunicated William king of Sicily, who ravaged the territories of the church, and absolved that prince's subjects from their allegiance. About the same time, Frederic king of the Romans, having entered Italy with a powerful army, Adrian met him near Sutrium, and concluded a peace with him. At this interview, Frederic consented to hold the pope's stirrup whilst he mounted on horseback. After which, his holiness conducted that prince to Rome, and in St. Peter's church placed the imperial crown on his head, to the great mortification of the Roman people, who assembled in a tumultuous manner, and killed several of the Imperialists. The next year a reconciliation was brought about between the pope and the Sicilian king, that prince taking an oath to do nothing farther to the prejudice of the church, and Adrian granting him the title of *king of the two Sicilies*. He built and fortified several castles, and left the papal dominions in a more flourishing condition than he found them. But notwithstanding all his success, he was extremely sensible of the disquietudes attending so high a station; and declaring to his countryman John of Salisbury, that all the former hardships of his life were mere amusement to the misfortunes of the popedom; that he looked upon St. Peter's chair to be the most uneasy seat in the world; and that his crown seemed to be clapped burning on his head. He died September 1, 1159, in the fourth year and tenth month of his pontificate; and was buried in St. Peter's church, near the tomb of his predecessor Eugenius.—There are extant several letters, and some homilies, written by Pope Adrian.

ADRIAN, cardinal priest, of the title of St. Chrysgonus, was a native of Cornetto in Tuscany. Innocent VIII. sent him nuncio into Scotland and into France; and after he had been clerk and treasurer of the apostolic chamber, pope Alexander VI. whose secretary he had been, honoured him with the cardinal's hat. His life was a continued scene of odd alterations. He narrowly escaped death the day Alexander VI. poisoned himself by mistake. Afterwards he drew upon himself the hatred of Julius II. so that he was obliged to go and hide himself in the mountains of Trent. Having been recalled by Leo X. he was so ungrateful, that he engaged in a conspiracy against him. The pope pardoned his fault: but the cardinal, not caring to trust to this, made his escape, and it

could never be known exactly what was become of him. He was one of the first that effectually reformed the Latin style. He studied Cicero with great success, and made many excellent observations on the propriety of the Latin tongue. The treatise he composed *De Sermone Latino*, is a proof of this. He had begun a Latin translation of the Old Testament. He wrote *De Vera Philosophia*: this treatise was printed at Cologne, 1548.

ADRIAN VI. (Pope), was born at Utrecht in 1459. His father was not able to maintain him at school, but he got a place at Louvain in a college in which a certain number of scholars were maintained *gratis*. It is reported that he used to read in the night-time by the light of the lamps in the churches or fire-places. He made a considerable progress in all the sciences; led an exemplary life; and there never was a man less intriguing and forward than he was. He took his degree of doctor of divinity at Louvain; was soon after made canon of St. Peter's, and professor of divinity at Utrecht, and then dean of St. Peter's and vice-chancellor of the university. He was obliged to leave an academical life, to be tutor to the archduke Charles. This young prince made no great progress under him: however, never was a tutor more considerably rewarded; for it was by Charles V.'s credit he was raised to the papal throne. Leo X. had given him the cardinal's hat in 1517. After this pope's death, several cabals in the conclave ended in the election of Adrian, with which the people of Rome were very much displeased. He would not change his name, and in every thing he shewed a great dislike for all ostentation and sensual pleasures, though such an aversion had been long ago out of date. He was very partial to Charles V. and did not enjoy much tranquillity under the triple crown. He lamented much the wicked morals of the clergy, and wished to establish a reformation of manners among them. He died Sept. 14, 1523.

ADRIANI (Joanni Battista), was born of a patrician family at Florence, in 1511. He wrote a History of his own times, in Italian; which is a continuation of Guicciardini, beginning at the year 1526; to which, Thuanus acknowledges himself greatly indebted: beside which, he composed six funeral orations, on the emperor Charles V. and other noble personages; and is thought to have been the author of a long letter on ancient painters and sculptors, prefixed to the third volume of Vafari. He died at Florence in 1579.

ADRIANISTS, in ecclesiastical history, a sect of heretics divided into two branches; the first were disciples of Simon Magus, and flourished about the year 34. Theodoret is the only person who has preserved their name and memory; but he gives us no account of their origin. Probably this sect, and the six others which sprung from the Simonians, took their name from the particular disciples of Simon. The second were the followers of Adrian Hamstead, the anabaptist; and held some particular errors concerning Christ.

ADRIANO A SIERRA, or mountain of Adriano, in the province of Biscay, in Spain. There is a road over it to Aalba and Old Castile, which is very difficult: at its beginning there is a dark path of 50 paces cut through a rock; after which is the mountain that must be passed over, which is one of the highest of the Pyrenées. These mountains are little frequented; and there are no inhabitants, except a few shepherds.

ADR'ANUM (or ADRIATICUM) MARE (anc. geog.), now the Gulf of Venice, a large bay in the Mediterranean, between Dalmatia, Sclavonia, Greece, and Italy. It is called by the Greeks, *Adria*; *Kadmos*; and *Adria* by the Romans, as *Arbiter Adriæ Notus* (Hor.); Cicero calls it *Hadrianum Mare*; Virgil has *Hadriaticas Undas*. It is commonly called *Mare Adriaticum*, without an aspiration; but whether it ought to have one, is a dispute; if the appellation is from *Hadria*, the town

of the Piceni, it must be written *Hadriaticum*, because the emperor's name, who thence derives his origin, is on coins and stones *Hadrarius*; but if from the town in the territory of Venice, as the more ancient, and of which that of the Piceni is a colony, this will justify the common appellation *Adriaticum*.

ADUACA (Antonic); or **ATUACA** (*Encycl.*); contracted from *Atuaca* (Cæsar); anciently a large and famous city of the Tungri; now a small and inconsiderable village, called *Tongeren*, in the bishopric of Liege, to the north-west of the city of Liège, in the territory of Haspengow, on the rivulet Jecker, that soon after falls into the Maese. E. Long. 5. 22. Lat. 50. 54.

ADVENTURE ISLAND, a small island in the South Sea, so called from the ship Adventure, in which Capt. Furneaux failed to the South Sea. Capt. Cook found the people to be mild and cheerful, with little of that wild appearance which savages in general have. They were, however, almost totally devoid of activity or genius, and were nearly on a level with the wretched natives of Tierra del Fuego. Long. 147. 29. W. Lat. 43. 21. S.

ADVENTURERS (*Encycl.*). The society of adventurers had its first establishment from John duke of Brabant in 1243. It was afterwards translated into England, and successively confirmed by Edward III. and IV. Richard III. Henry IV. V. and VII. who gave it the appellation of *Merchant Adventurers*.

ADULA, a mountain of Navarre, in Spain, lying between Pampeluna and St. Jean de Pic de Port.

ADULE, or **ADULIS** (anc. geog.), a town of Egypt built by fugitive slaves, distant from its port on the Red Sea twenty stadia. Pliny calls the inhabitants *Adulite*. The epithet is either *Adulitanus*; as, *Monumentum Adulitanum*, or the pompous inscription of the statue of Ptolemy Euergetes, published by Leo Alatus at Rome in 1631, and to be found in Spon and Thevenot: or *Adulicus*; as *Adulicus Sinus*, a part of the Red Sea.

ADULTERY (*Encycl.*). In many countries this crime has been capital; in others venial, and attended only with slight pecuniary mulcts. Some of the penalties are serious, and even cruel; others of a humorous kind. Even contrary things have been enacted as punishments for adultery. By some laws, the criminals are forbid marrying together, in case they became single; by others, they are forbid to marry any besides each other; by some, they are incapacitated from ever committing the same crime again; by others, they are glutted till it becomes nauseous to themselves, as in the reign of Theodosius already alluded to.

Among the rich Greeks, adulterers were allowed to redeem themselves by a pecuniary fine; the woman's father, in such cases, returned the dowry he had received from her husband, which some think was refunded by the adulterer. Another punishment among those people was, putting out the eyes of adulterers.

The Athenians had an extraordinary way of punishing adulterers, called *παράνομος ἀσφαλιστικός*, practised at least on the poorer sort who were not able to pay the fines. This was an awkward sort of empalement, performed by thrusting one of the largest radishes up the anus of the adulterer, or, in defect thereof, a fish with a large head, called *mugil*, mullet. Alcæus is said to have died this way, though it was doubted whether the punishment was reputed mortal. Juvenal and Catullus speak of this custom, as received also among the Romans, though not authorized by an express law, as it was among the Greeks.

Among the Romans, we are told, that the wife's father was allowed to kill both parties, committing adultery, when caught in the fact, provided he did it immediately, killing both

together, and as it were with one blow. The same power ordinarily was not indulged the husband, except the crime were committed with some mean or infamous person; though, in other cases, if his rage carried him to put them to death, he was not punished as a murderer. On many occasions, however, revenge was not carried so far; but mutilating, castrating, cutting off the ears, noses, &c. served the turn. The punishment allotted by the *lex Julia*, was not, as many have imagined, death; but rather banishment, or deportation, being interdicted fire and water: though Octavius appears, in several instances, to have gone beyond his own law, and to have put adulterers to death. Under Macrinus, many were burnt at a stake. Constantine first by law made the crime capital. Under Constantius and Constant, adulterers were burnt, or sewed in sacks and thrown into the sea. Under Leo and Marcian, the penalty was abated to perpetual banishment, or cutting off the nose. Under Justinian, a further mitigation was granted; at least in favour of the wife, who was only to be scourged, lose her dowry, and be shut up in a monastery: after two years, the husband was at liberty to take her back again; if he refused, she was shaven, and made a nun for life; but it still remained death in the husband. The reason alleged for this difference is, that the woman is the weaker vessel. Mattheus declaims against the empress Theodora, who is supposed to have been the cause of this law, as well as of others procured in favour of the sex from that emperor.

Under Theodosius, women convicted of this crime were punished after a very singular manner, *viz.* by a public conspurcation; being locked up in a narrow cell, and forced to admit to their embraces all the men that would offer themselves. To this end, the gallants were to dress themselves on purpose, having several little bells fastened to their clothes, the tinkling of which gave notice to those without of every motion. This custom was again abolished by the same prince.

To the scandal of Britain, adultery is a growing crime, notwithstanding the heavy pecuniary damages given in our courts of justice, in many cases. It is reckoned a spiritual offence, that is, cognizable by the spiritual courts. The common law takes no further notice of it, than to allow the party grieved an action and damages. This practice is often censured by foreigners, as making too light of a crime, the bad consequences of which, public as well as private, are so great. But perhaps this penalty, by civil action, is more wisely calculated to prevent the frequency of the offence, which ought to be the end of all laws, than a severer punishment. He that by a judgment of law is, according to circumstances, stripped of great part of his fortune, thrown into prison till he can pay it, or forced to fly his country, will, no doubt, in most cases, own that he pays dearly for his amusement.

ADVOW, in law, signifies the patron of a church, or he who has a right to present to a benefice.

ADZENOTA, a small town of Valencia, in Spain, seated on the mountains Pegna Golosa. Long. 2. 16. W. Lat. 39. 10. N.

ÆACUS, the son of Jupiter by Ægina. When the isle of Ægina was depopulated by a plague, his father, in compassion to his grief, changed all the ants upon it into men and women, who were called *Myrmidons*, from *μύρμηξ* an ant. The foundation of the fable is said to be, that when the country had been depopulated by pirates, who forced the few that remained to take shelter in caves, Æacus encouraged them to come out, and by commerce and industry recover what they had lost. His character for justice was such, that, in a time of universal drought, he was nominated by the Delphic oracle to intercede for Greece, and his prayer was answered. The Pagans also imagined that Æacus, on account of his impartial justice, was

chosen by Pluto one of the three judges of the dead; and that it was his province to judge the Europeans.

ÆGADES, or **ÆGATES**, three small islands, lying on the W. side of Sicily, opposite the main land, between Marsella and Trapani; their names are Levenzo, Favignana, and Maretana.

ÆGÆ, or **ÆGÆA** (anc. geog.), the name of *Ædessa*, so called from the following adventure: Caranus, the first king of Macedonia, being ordered by the oracle to seek out a settlement in Macedonia, under the conduct of a flock of goats, surprised the town of *Ædessa*, during a thick fog and rainy weather, in following the goats, that fled from the rain; which goats ever after, in all his military expeditions, he caused always to precede his standard; and in memory of this he called *Ædessa* *Ægæa*, and his people *Ægææ*. And hence probably, in the prophet Daniel, the he-goat is the symbol of the king of Macedon.

ÆGEAN SEA (anc. geog.), now the *Archipelago*, a part of the Mediterranean, separating Europe from Asia and Africa; washing, on one hand, Greece and Macedonia; on the other, Caria and Ionia. The origin of the name is greatly disputed. Festus advanced three opinions: one, that it is so called from the many islands therein, at a distance appearing like so many goats; another, because *Ægæa* queen of the Amazons perished in it: a third opinion is, because *Ægeus*, the father of Theseus, threw himself headlong into it.

ÆGELSTAWIK, a good harbour, lying about half a mile from the town of Soddertledge in Sudermania, in Sweden.

ÆGEUS, in fabulous history, was king of Athens, and the father of Theseus. The Athenians having basely killed the son of Minos king of Crete, for carrying away the prize from them, Minos made war upon the Athenians; and being victorious, imposed this severe condition on *Ægeus*, that he should annually send into Crete, seven of the noblest of the Athenian youths, chosen by lot, to be devoured by the Minotaur. On the fourth year of this tribute, the choice fell on Theseus: or, as others say, he himself intreated to be sent. The king, at his son's departure, gave orders, that as the ship sailed with black sails, it should return with the same in case he perished; but if he became victorious, he should change them into white. When Theseus returned to Crete, after killing the Minotaur, and forgot to change the sails in token of his victory, according to the agreement with his father; the latter, who watched the return of the vessel, supposing by the black sails that his son was dead, cast himself headlong into the sea, which afterwards obtained the name of the *Ægean Sea*. The Athenians decreed *Ægeus* divine honours; and sacrificed to him as a marine deity, the adopted son of Neptune.

ÆGIMURUS (anc. geog.), an island on the bay of Carthage, about 30 miles distant from that city (Livy); now the *Galleta*: this island being afterwards sunk in the sea, two of its rocks remained above water, which were called *Aræ*, and mentioned by Virgil, because the Romans and Carthaginians entered into an agreement or league to settle their mutual boundaries on these rocks.

ÆGINA, in fabulous history, the daughter of *Æolus*, king of Beotia, was beloved by Jupiter, who debauched her in the similitude of a lambent flame, and then carried her from Epidaurus to a desert island called *Oenope*, which afterwards obtained her own name.

ÆGINA (anc. geog.), now *Engia*, an island on the Saronic Bay, or Bay of Engia, twenty miles distant from the Piræus, formerly vying with Athens for naval power, and at the sea-fight of Salamin disputing the palm of victory with the Athenians. It was the country and kingdom of *Æacus*, who called it *Ægina* from his mother's name, it being before called *Oenopia* (Ovid). The inhabitants were called *Æginetæ* and

Æginetis. The Greeks had a common temple in *Ægina*. The soil was gleby underneath, but rocky on the surface: yet yielding plenty of barley. The *Æginetæ* applied to commerce; and were the first who coined money, called *Νεμισμα Ἀγιναιον*: hence *Ægineticum æi*, formerly in great repute. The inhabitants were called *Myrmydoni*, or a nation of ants, from their great application to agriculture. See *Æacus*, (Suppl.).

ÆGINETA (Paulus), a celebrated surgeon of the island of *Ægina*, from whence he derived his name. According to Mr. Le Clerc's calculation, he lived in the fourth century; but Abulpharagus the Arabian, who is allowed to give the best account of those times, places him with more probability in the seventh. His knowledge in surgery was very great, and his works are deservedly famous. Fabricius ab Aquapendente has thought fit to transcribe him in a great variety of places. Indeed the doctrine of Paulus *Ægineta*, together with that of Celsus, and Albucasis, make up the whole text of this author. He is the first writer who takes notice of the cathartic quality of rhubarb; and according to Dr. Milward, is the first in all antiquity who deserves the title of man-midwife.

ÆGINHARD, the celebrated secretary and supposed son-in-law of Charlemagne. He is said to have been carried through the snow on the shoulders of the affectionate and ingenious Imma, to prevent his being tracked from her apartments by the emperor her father: a story which the elegant pen of Addison has copied and embellished from an old German chronicle, and inserted in the third volume of the Spectator. He was a native of Germany, and educated by the munificence of his imperial master, of which he has left the most grateful testimony in his preface to the life of that monarch. *Æginhard*, after the loss of his lamented wife, is supposed to have passed the remainder of his days in religious retirement, and to have died soon after the year 840. He wrote the life of Charlemagne, and Annals from 741 to 889.

ÆGIPAN, in heathen mythology, a denomination given to the god Pan, because he was represented with the horns, legs, feet, &c. of a goat.

ÆGISTHUS, son of Thyestes by his own daughter Philœpeia, who, to conceal her shame, exposed him in the woods: some say he was taken up by a shepherd, and suckled by a goat, whence he was called *Ægisthus*. He corrupted Clytemnestra the wife of Agamemnon; and with her assistance slew her husband, and reigned seven years in Mycenæ. He was, together with Clytemnestra, slain by Orestes. Pompey used to call Julius Cæsar *Ægisthus*, on account of his having corrupted his wife Mutia, whom he afterward put away, though he had three children by her.

ÆGIUM (anc. geog.), a town of Achaia Propria, five miles from the place where Helice stood, and famous for the council of the Achæans, which usually met there, on account either of the dignity, or commodious situation of the place. It was also famous for the worship of *Οὐρανὸς Ζεὺς*, *Conventional Jupiter*, and of *Παναχæαν Ceres*. The territory of *Ægium* was watered by two rivers, viz. the Phœnix and Meganitis. The epithet is *Ægienis*. There is a coin in the cabinet of the king of Prussia, with the inscription of AIT, and the figure of a tortoise, which is the symbol of Peloponnetus, and leaves no doubt as to the place where it was struck.

ÆGLEFINUS, or *Haddock*, in ichthyology, a species of the gadus. See *GADUS*.

ÆGOS POTAMOS (anc. geog.), a river in the Thracian Chersonesus, falling with a south-east course into the Hellespont, to the north of Sestos; also a town, station, or road for ships, at its mouth. Here the Athenians, under Conon, through the fault of his colleague Ilocrates, received so fatal a blow from the Lacedæmonians under Lyfander, in a sea-engagement, as to cost them their liberty and their all.

ÆGYPTILLA (*Æncycl.*), in natural history, the name of a fene described by the ancients. The descriptions left us of this remarkable fossil tell us, that it was variegated with, or composed of, veins of black and white, or black and blueish, with sometimes a plate or vein of whitish red. The authors of these accounts seem to have understood by this name the feral fones of the onyx, fardonyx, and camea kind, all which we have at present common among us, but none of which possess any of the strange properties attributed to this.

ÆGYPTUS (fab. hist.) was the son of Beicus, and brother of Danaus.

ÆINATEÆ, in antiquity (*Æncycl.*), erroneously there spelt **ÆINAUTEÆ**.

ÆILIAN (Claudius), born at Præneste in Italy. He taught rhetoric at Rome, according to Perizonius, under the empéror Alexander Severus. He was furnished *Μετὰ λόγον*, Honey-mouth, on account of the sweetness of his style. He was likewise honoured with the title of Sophist, an appellation in his days given only to men of learning and wisdom. He loved retirement, and devoted himself to study. He greatly admired and studied Plato, Aristotle, Ilocrates, Plutarch, Homer, Anacreon, Archilochus, &c. and, though a Roman, gives the preference to the writers of the Greek nation. His two most celebrated works are, his Various History, and History of Animals. He composed likewise a book on Providence, mentioned by Eustathius; and another on Divine Appearances, or The Declarations of Providence. There have been several editions of his Various History.

ÆLII PONS (anc. geog.), one of the fortresses near the wall or rampart, or, in the words of the Notitia, through the line of the higher wall; built, as is thought, by Adrian. Now Portland (Camden), in Northumberland, between Newcastle and Morpeth.

ÆMILIUS (Paulus), the son of Lucius Paulus, who was killed at the battle of Cannæ, was twice consul. In his first consulate he triumphed over the Ligurians; and in the second subdued Perseus king of Macedonia, and reduced that country to a Roman province, on which he obtained the surname of Macedonicus. He returned to Rome loaded with glory, and triumphed for three days. He died 168 years before Christ.

ÆMILIUS (Paulus), a celebrated historian, born at Verona, who obtained such reputation in Italy, that he was invited into France by the Cardinal of Bourbon, in the reign of Lewis XII. in order to write the history of the kings of France in Latin, and was given a canonry in the cathedral of Paris. He was near thirty years in writing that history, which has been greatly admired; and died at Paris on the 5th of May, 1529.

ÆNARIA (anc. geog.), an island on the bay of Cumæ, or over-against Cumæ in Italy (Pliny). It is also called *Inarime* (Virgil); and now *Ischia*: scarce three miles distant from the coast, and the promontory Misenus to the west; twenty miles in compass; called *Pithecusæ* by the Greeks. It is one of the Oenotrides, and fenced round by very high rocks, so as to be inaccessible but on one side: it was formerly famous for its earthen ware. See *ISCHIA*.

ÆNEAS (fab. hist.), a famous Trojan prince, the son of Anchises and Venus. At the destruction of Troy, he bore his aged father on his back, and saved him from the Greeks; but being too solicitous about his son and household gods, lost his wife Creusa in the escape. Landing in Africa, he was kindly received by Queen Dido: but quitting her coast, he arrived in Italy, where he married Lavinia the daughter of King Latinus, and defeated Turnus, to whom the had been contracted. After the death of his father-in-law, he was made king of the Latins, over whom he reigned three years: but joining

with the Aborigines, he was slain in a battle against the Tuscans. Virgil has rendered the name of this prince immortal, by making him the hero of his poem.

ÆNEAS (Gazeus), or **ÆNEAS** of Gaza, by profession a sophist, was originally a Platonic philosopher, but afterwards became a Christian, and flourished about the year 487. His age is ascertained from his assuring us, that he saw the African confessors, whose tongues were cut out by Hunneric, king of the Vandals, in 484, under the reign of the emperor Zeno; and in this we may believe him. But can we so safely believe him, when he affirms, that he heard these confessors speak very plainly and distinctly, after their tongues were indeed cut out? He wrote a dialogue, entitled, Theophrastus, concerning the immortality of the soul, and the resurrection of the body; and which he has enlivened with many curious enquiries into the sentiments of the philosophers, and with many agreeable stories. This dialogue was first translated into Latin, and published at Basil, in 1516: afterwards in Greek and Latin at Basil, in 1560, with other pieces: afterwards at Leipzig, 1658, with a translation and notes, by Barthius, in quarto.

ÆNCINA (*Æncycl.*). This island lies in the bay of Engia, and the town of that name contains about 800 houses and a castle; and near it are the ruins of a magnificent structure, which was probably a temple.

ÆNIGMA (*Æncycl.*). In Greek, *Ανigma*, is formed of *ανιστομαι*, *obscure* *invenire*, to hint a thing darkly, and of *ανος*, an obscure speech or discourse. The popular name is *riddle*; from the Belgic *raeden*, or the Saxon *araethan*, to interpret. Fa. Bouhours, in the Memoirs of Trevoux, defines an *ænigma*, A discourse, or painting, including some hidden meaning, which is proposed to be guessed.

The alchemists are great dealers in the *ænigmatic* language, their processes for the philosophers stone being generally wrapped up in riddles: e. g. *Fac ex mare et femina circum, inde quadrangulum, hinc triangulum, fac circum, et habebis lapidem philosophorum*.—F. Menestrier has attempted to reduce the composition and resolution of *ænigmas* to a kind of art, with fixed rules and principles, which he calls the philosophy of *ænigmatic* images.

There are some *ænigmas* in history, complicated to a degree which much transcends all rules, and has given great perplexity to the interpreters of them. Such is that celebrated ancient one, *Ælia Lælia Crispis*, about which many of the learned have puzzled their heads. There are two exemplars of it: one found 140 years ago, on a marble near Bologna; the other in an ancient MS. written in Gothic letters, at Milan. It is controverted between the two cities, which is to be reputed the more authentic.

The Bononian *Ænigma*.

D. M.

Ælia Lælia Crispis,

Nec vir, nec mulier,

Nec androgyna;

Nec puella, nec juvenis,

Nec anus;

Nec casta, nec meretrix,

Nec pudica;

Sed omnia;

Sublata

Neque fame, neque ferro,

Neque veneno;

Sed omnibus:

Nec celo, nec terris,

Nec aquis,

Sed ubique jacet.

Lucius Agatho Prifcius,

Nec muritus, nec amator,

Nec necerarius;

Neque morrens, neque gaudens,

Neque flens;

Hanc,

Nec molem, nec pyramidem,

Nec sepulchrum,

Sed omnia,

Scit et nescit, cui posuerit.

That is to say, To the gods manes, *Ælia Lælia Crispis*, neither man, nor woman, nor hermaphrodite; neither girl, nor young woman, nor old; neither chaste, nor a whore; but all these: killed neither by hunger, nor steel, nor poison; but by all these: rests neither in heaven, nor on earth, nor in the waters; but every-where. *Lucius Agatho Prifcius*, neither her husband, nor lover, nor friend; neither sorrowful, nor joyful, nor weeping, certain, or uncertain, to whom he rears this monument, neither erects her a temple, nor a pyramid, nor a tomb, but all these. In the MS. at Milan, instead of D.M. we find A.M. P.P.D. and at the end the following addition:

Hoc est sepulchrum intus cadaver non habens.

Hoc est cadaver sepulchrum extra non habens,

Sed cadaver idem est & sepulchrum.

We find near 50 several solutions of this ænigma advanced by learned men. Marius Michael Angelus maintains *Ælius Lælia Crispis* to signify rain-water falling into the sea. Ri. Vitus first explained it of Niobe turned to a stone, afterwards of the rational soul, and afterwards of the Platonic idea; Jo. Torrius, of the *materia prima*; Fr. Schottus, of an eunuch; Nic. Bernardus, of the philosophers-stone, in which he is followed by Borrichius; Zach. Pontinus, of three human bodies in the same situation, and buried by three different men at the same time; Nesmondus, of a law-suit; Jo. Gal. Gerardus, of love; Zu. Boxhornius, of a shadow; P. Taronus, of music; Fort Licetus, of generation, friendship, and privation; M. Ov. Montalbani, of hemp; Car. Cæf. Malvasia, of an abortive girl promised in marriage; Pet. Mengulus, of the rule of chastity, prescribed by the founder of the military religion of St. Mary; M. de Ciconia, of pope Joan; Heumannus, of Lot's wife; and lastly, J.C.S. an anonymous writer in the Leipzig Acts, of the Christian church.

ÆOLIE INSULÆ, now *Isole di Lipari* (anc. geog.), seven islands, situated between Sicily and Italy (Strabo, Diodorus Siculus, Mela); so called from *Æolus*, who reigned there about the time of the Trojan war. The Greeks called them *Hephæstides*; and the Romans, *Vulcania*, from their fiery eruptions. They are also called *Liparorum Insulæ*, from the principal island Lipara. Dionysius Periegetes calls them *Insulæ*, because circumnavigable.

ÆOLUS, in mechanics, a small machine, the invention of Mr. Tidd, calculated for changing the air in rooms when too hot or unfit for respiration. It supplies the place of a square in the window, and works with very little noise, like the sails of a common window ventilator.

Æon (*Æon*). The Valentinians, who, in the first ages of the church, blended the conceits of the Jewish cabalists, the Platonists, and the Chaldean philosophers, with the simplicity of the Christian doctrine, invented a kind of Theogony, or Genealogy of Gods (not unlike that of Hesiod), whom they called by several glorious names, and all by the general appellation of *Æons*: among which they reckoned *Zon, Life, Aëon, Word, Monens, Only-begotten; Παρρησια, Fulness*; and

Vol. X.

many other divine powers and emanations, amounting in number to thirty: which they fancied to be successively derived from one another; and all from one self-originated deity, named *Bythus*, i. e. profound or unfathomable; whom they called likewise, *The most high and ineffable Father*. See VALENTINIANS.

ÆQUIMELIUM, in antiquity, a place in Rome, where stood the house of Spurius Melius, who, by largesses corrupting the people, affected the supreme power: refusing to appear before the dictator Cincinnatus, he was slain by Servilius Ahala, master of the horse; his house was razed to the ground; and the spot on which it stood was called *Area Æquimeli*. (Livy.)

FLOS ÆRIS, among alchemists, small scales procured from copper melted by a strong heat; it is sometimes used for arguro or verdigrise.

AEROGRAPHY (*Ænecy.*), a description of the air. In the last line but two of that article for "rational" read "rationale."

ÆSCHINES, a Socratic philosopher, the son of Charinus a sausage-maker. He was continually with Socrates; which occasioned this philosopher to say, that the sausage-maker's son was the only person who knew how to pay a due regard to him. It is said that poverty obliged him to go Sicily, to Dionysius the Tyrant; and that he met with great contempt from Plato, but was extremely well received by Aristippus, to whom he shewed some of his dialogues, and received from him a handsome reward. He would not venture to profess philosophy at Athens, Plato and Aristippus being in such high esteem; but he set up a school to maintain himself. He afterwards wrote orations for the Forum. Phrynus, in Photius, ranks him amongst the best orators, and mentions his orations as the standard of the pure Attic style. Hermogenes has also spoken very highly of him.—He also wrote several dialogues, of which there are only three extant: 1. Concerning Virtue, whether it can be taught. 2. Eryxias, or Erastriatus; concerning riches, whether they are good. 3. Axiochus; concerning death, whether it is to be feared. Mr. Le Clerc has given a Latin translation of them, with notes, and several dissertations, entitled *Sylve Philologicæ*.

ÆSCHINES, a celebrated orator, contemporary with Demosthenes, and but just his inferior. Some say that Isocrates, some say that Socrates, some that Gorgias, was his master. Being overcome by Demosthenes, he went to Rhodes, and opened a school there; and afterwards removed to Samos, where he died at the age of seventy-five. There are only three of his orations extant, which however are so very beautiful, that Fabricius compares them to the three graces. One is against Timarchus, his accuser, whom he treated so severely, as to make him weary of life; and some have said, that he did actually lay violent hands upon himself. Another is an Apology for himself against Demosthenes, who had accused him of perjury in an embassy to Philip. The third, against Ctesiphon, who had decreed the golden crown to Demosthenes. This excellent oration, together with that of Demosthenes against it, was translated by Cicero into Latin, as St. Jerome and Sdonius informs us.—The three orations were published by Aldus, 1515, and by Henry Stephens among other orators 1575, in Greek.

ÆSCHYLUS, the tragic poet, was born at Athens. Authors differ in regard to the time of his birth, some placing it in the 65th, others in the 70th Olympiad; but according to Stanley, who relies on the Arundelian marbles, he was born in the 63d Olympiad. He was the son of Euphorion, and brother to Cynegirus and Aminias, who distinguished themselves in the battle of Marathon, and the sea-fight of Salamis, at which engagements Æschylus was likewise present. In this

last action, according to Diodorus Siculus, Aminias, the younger of the three brothers, commanded a squadron of ships, and behaved with so much conduct and bravery, that he sunk the admiral of the Persian fleet, and signalized himself above all the Athenians. To this brother our poet was, upon a particular occasion, obliged for saving his life: Ælian relates, that Æschylus being charged by the Athenians with certain blasphemous expressions in some of his pieces, was accused of impiety, and condemned to be stoned to death: they were just going to put the sentence in execution, when Aminias, with a happy presence of mind, throwing aside his cloak, shewed his arm without a hand, which he had lost at the battle of Salamis, in defence of his country. This sight made such an impression on the judges, that, touched with the remembrance of his valour, and with the friendship he shewed for his brother, they pardoned Æschylus. Our poet, however, resented the indignity of this prosecution, and resolved to leave a place where his life had been in danger. He became more determined in this resolution when he found his pieces less pleasing to the Athenians than those of Sophocles, though a much younger writer. Some affirm, that Æschylus never sat down to compose but when he had drank liberally. He wrote a great number of tragedies, of which there are but seven remaining: and notwithstanding the sharp censures of some critics, he must be allowed to have been the father of the tragic art. In the time of Theſpis, there was no public theatre to act upon; the strollers driving about from place to place in a cart. Æschylus furnished his actors with masks, and dressed them suitably to their characters. He likewise introduced the buskin, to make them appear more like heroes.—The ancients give Æschylus also the praise of having been the first who removed murders and shocking sights from the eyes of the spectators. He is said likewise to have lessened the number of the chorus. M. Le Fevre has observed, that Æschylus never represented women in love, in his tragedies; which, he says, was not suited to his genius: but, in representing a woman transported with fury, he was incomparable. Longinus says, that Æschylus has a noble boldness of expression; and that his imagination is lofty and heroic. It must be owned, however, that he affected pompous words, and that his sense is too often obscured by figures: this gave Salmastius occasion to say, that he was more difficult to be understood than the scripture itself. But notwithstanding these imperfections, this poet was held in great veneration by the Athenians, who made a public decree that his tragedies should be played after his death. He was killed in the 69th year of his age, by an eagle letting fall a tortoise upon his head as he was walking in the fields. He had the honour of a pompous funeral from the Sicilians, who buried him near the river Gela; and the tragedians of the country performed plays and theatrical exercises at his tomb.—The best edition of his plays is that of London, 1663, fol. with a Latin translation and a learned commentary by Tho. Stanley.

ÆSCULANUS, or **ÆRES**, in mythology, a deity who presided over the coinage of copper-money.

ÆSCULAPIUS, in the heathen mythology, the god of physic, was the son of Apollo and the nymph Coronis. He was educated by the centaur Chiron, who taught him physic; by which means Æsculapius cured the most desperate diseases. But Jupiter, enraged at his restoring to life Hippolitus who had been torn in pieces by his own horses, killed him with a thunderbolt. According to Cicero, there were three deities of this name: the first, the son of Apollo, worshipped in Arcadia, who invented the probe, and bandages for wounds; the second, the brother of Mercury, killed by lightning; and the third, the son of Arisippus and Arisnoe, who first taught the

art of tooth-drawing and purging. At Epidaurus, Æsculapius's statue was of gold and ivory, with a long beard, his head surrounded with rays, holding in one hand a knotty stick, and the other entwined with a serpent; he was seated on a throne of the same materials as his statue, and had a dog lying at his feet. The Romans crowned him with laurel, to represent his descent from Apollo; and the Phalasiæni represented him as beardless. The cock, the raven, and the goat, were sacred to this deity. His chief temples were at Pergamus, Smyrna, Tricca a city in Ionia, and the Isle of Cos; in all which, votive tablets were hung up, shewing the diseases cured by his assistance. But his most famous shrine was at Epidaurus; where, every five years, games were instituted to him, nine days after the Isthmian games at Corinth.

ÆSOP, the Phrygian, lived in the time of Solon, about the 50th Olympiad, under the reign of Croesus the last king of Lydia. As to genius and abilities, he was greatly indebted to nature; but in other respects not so fortunate, being born a slave and extremely deformed. St. Jerom, speaking of him, says he was unfortunate in his birth, condition in life, and death; hinting thereby at his deformity, servile state, and tragical end. His great genius however enabled him to support his misfortunes; and in order to alleviate the hardships of servitude, he composed those entertaining and instructive fables which have acquired him so much reputation. He is generally supposed to have been the inventor of that kind of writing; but this is contested by several; particularly Quintilian, who seems to think that Hesiod was the first author of fables. Æsop, however, certainly improved this art to a very great degree; and hence it is that he has been accounted the author of this sort of productions.

The first master whom Æsop served, was one Caranus Demarchus, an inhabitant of Athens; and there in all probability he acquired his purity in the Greek tongue. After him he had several masters; and at length came under a philosopher named Idmon or Iadmon, who enfranchised him. After he had recovered his liberty, he soon acquired a great reputation amongst the Greeks; so that, according to Meziriac, the report of his wisdom having reached Croesus, he sent to enquire after him, and engaged him in his service. He travelled through Greece, according to the same author; whether for his own pleasure, or upon the affairs of Croesus, is uncertain; and passing Athens soon after Pisistratus had usurped the sovereign power, and finding that the Athenians bore the yoke very impatiently, he told them the fable of the frogs who petitioned Jupiter for a king. The images made use of by Æsop are certainly very happy inventions to instruct mankind; they possess all that is necessary to perfect a precept, having a mixture of the useful with the agreeable. "Æsop the fabulist (says Aulus Gellius) was deservedly esteemed wise, since he did not, after the manner of the philosophers, rigidly and imperiously dictate such things, as were proper to be advised and persuaded; but, framing entertaining and agreeable apologies, he thereby charms and captivates the human mind."—Æsop was put to death at Delphi. Plutarch tells us, that he came there with a great quantity of gold and silver, being ordered by Croesus to offer a sacrifice to Apollo, and to give a considerable sum to each inhabitant: but a quarrel arising betwixt him and the Delphians, he sent back the money to Croesus; for he thought those for whom the prince designed it, had rendered themselves unworthy of it. The inhabitants of Delphi contrived an accusation of sacrilege against him; and pretending they had convicted him, threw him headlong from a rock. For this cruelty and injustice, we are told, they were visited with famine and pestilence; and consulting the oracle, they received for answer, that the god de-

signed this as a punishment for their treatment of Æsop: they endeavoured to make an atonement, by raising a pyramid to his honour.

Æsop, a Greek historian, who wrote a romantic history of Alexander the Great: it is not known at what time he lived. His work was translated into Latin by one Julius Valerius, who is not better known than Æsop. Freinhemius has the following passage concerning this work: "Julius Valerius wrote a fabulous Latin history of Alexander, which by some is ascribed to Æsop, by others to Calisthenes. Hence Antoninus, Vincentius, Uspargensis, and others, have greedily taken their romantic tales. It may not be amiss to quote here the opinion of Barthius, in his *Adversaria*: "There are many things (says this author) in the learned monk, who some years ago published a life of Alexander the Great, full of the most extravagant fictions; yet this romance had formerly so much credit, that it is quoted as an authority even by the best writers. It is the same author that Franciscus Juretus mentions under the name of Æsop." This work was published in German at Straßburg, in 1486.

Æsop (Clodius), a celebrated actor, who flourished about the 670th year of Rome. He and Roscius were contemporaries, and the best performers who ever appeared upon the Roman stage, the former excelling in tragedy, the latter in comedy. Cicero put himself under their direction to perfect his action. Æsop lived in a most expensive manner, and at one entertainment is said to have had a dish which cost above eight hundred pounds; this dish, we are told, was filled with singing and speaking birds, some of which cost near 50*l*. The delight which Æsop took in this sort of birds proceeded, as Mr. Boyle observes, from the expence. He did not make a dish of them because they could speak, this motive being only by accident, but because of their extraordinary price. If there had been any birds that could not speak, and yet more scarce and dear than these, he would have procured such for his table. Æsop's son was no less luxurious than his father, for he dissipated pearls for his guests to swallow. Some speak of this as a common practice of his; but others mention his falling into this excess only on a particular day, when he was treating his friends. Horace speaks only of one pearl of great value, which he dissipated in vinegar, and drank. Æsop, notwithstanding his expences, is said to have died worth above 160,000*l*. When he was upon the stage, he entered into his part to such a degree, as sometimes to be seized with a perfect ecstacy: Plutarch mentions it as reported of him, that whilst he was representing Atreus deliberating how he should revenge himself on Thyestes, he was so transported beyond himself in the heat of action, that with his truncheon he smote one of the servants crossing the stage, and laid him dead on the spot.

ÆSYMNIUM (*Encycl.*). Æsymnus the Megarean, consulting the oracle in what manner the Megareans might be most happily governed, was answered, *If they held consultation with the more numerous*: whom he taking for the dead, built the *Æsymnium*, and a senate-house that took within its compass the monument; imagining, that thus the dead would assist at their consultations. (Pausanias.)

ÆTHIOPS Mineral (*Encycl.*). For the reference to "PHARMACY," read CHEMISTRY, p. 445.

ÆTION, a celebrated painter, who has left us an excellent picture of Roxana and Alexander, which he exhibited at the Olympic games: it represents a magnificent chamber, where Roxana is sitting on a bed of a most splendid appearance, which is rendered still more brilliant by her beauty. She looks downwards, in a kind of confusion, being struck with the presence of Alexander standing before her. A number of

little Cupids flutter about, some holding up the curtain, as if to shew Roxana to the prince, whilst others are busied in undressing the lady; some pull Alexander by the cloak, who appears like a young bathful bridegroom, and present him to his mistress: he lays his crown at her feet, being accompanied by Ephection, who holds a torch in his hand, and leans upon a youth, who represents Hymen. Several other little Cupids are represented playing with his arms; some carry his lance, stooping under its heavy weight, others bearing along his buckler, upon which one of them is seated, whom the rest carry in triumph; another lies in ambush in his armour, waiting to frighten the rest as they pass by. This picture gained Ætion so much reputation, that the president of the games gave him his daughter in marriage.

ÆTIUS, one of the most zealous defenders of Arianism, was born in Syria, and flourished about the year 336. After being servant to a grammarian, of whom he learned grammar and logic, he was ordained deacon, and at length bishop, by Eudoxus patriarch of Constantinople. St. Epiphanius has preserved 47 of his propositions against the Trinity. His followers were called ÆTIANIS.

ÆTIUS, a famous physician, born at Amida in Mesopotamia, and the author of a work entitled *Tetrabiblos*, which is a collection from the writings of those physicians who went before him. He lived, according to Dr. Freind, at the end of the 5th or the beginning of the 6th century.

ÆTIUS, governor of Gallia Narbonensis in the reign of Valentinian III. forced the Franks who were passing into Gaul to repass the Rhine. He defeated the Goths; and routed Attila king of the Huns, who invaded Gaul with an army of 700,000 men. But the emperor, jealous of the merit of this great man, killed him in 454 with his own hand, under the pretence that he had permitted the invasion of the Huns, after Attila's defeat.

ÆTNA (*Encycl.*). Concerning the dimensions of mount Ætna, we can scarce extract any thing consistent, even from the accounts of the latest and most ingenious travellers. Pindar, who lived about 435 years before Christ, calls it the *Pillar of Heaven*, on account of its great height. All modern writers likewise agree, that this mountain is very high, and very large; but differ excessively as to its height and magnitude: some making it no less than twelve miles high, others eight, others six, some four, while Mr. Brydone, and Sir William Hamilton, who lately ascended to its highest summit, reduce its height to little more than two miles; nay, by some, it is reduced to 10,036 feet, somewhat less than two miles. No less remarkable are the differences concerning its circumference: some making it only sixty miles round, others 100; and Signior Recupero, from whom Mr. Brydone had his information in this respect, affirms it to be no less than 183 miles in circuit.

But if we are embarrassed with the circumference of Ætna, we are much more so with the accounts relating to its height; and one circumstance, particularly, creates almost insurmountable difficulties. It is agreed upon by all travellers, and among the rest by Sir William Hamilton, that from Catania, where the ascent first begins, to the summit, is not less than thirty miles. The descent on the other side we have no account of; but, whatever supposition we make, the height of the mountain must be prodigious. If we suppose it likewise to be thirty miles, and that mount Ætna can be represented by an equilateral triangle, each of whose sides is thirty miles, we will have an amazing elevation indeed, no less than twenty-six miles perpendicular!—Such a height being beyond all credibility, we must contract the sides of our triangle, in proportion to its basis. We shall begin with allowing ten miles for the

difference between a straight line from Catania to the summit, and the length of the road, occasioned by the inequalities of the mountain; and supposing the descent on the other side to be somewhat shorter, we may call it fifteen miles. Mount Ætna will now be represented by a scalene triangle, whose base is thirty miles, its longest side twenty, and its shortest fifteen; from which proportions we will find its height to be betwixt eight and nine miles.—This is still incredible; and when all the various relations concerning the height of Ætna are compared, we hope it will not be thought presumptuous in us to give it as our opinion, that the true dimensions of this mountain are as yet unknown.

Concerning the products and general appearance of this volcano, authors are much better agreed.—The journey from Catania to its summit has been lately described by three travellers, M. D'Orville, Mr. Brydone, and Sir William Hamilton. All these agree, that this single mountain affords an epitome of the different climates throughout the whole world: towards the foot, it is very hot; farther up, more temperate; and grows gradually more and more cold the higher we ascend. At the top, it is perpetually covered with snow: from thence the whole island is supplied with that article, so necessary in a hot climate, and without which the natives say Sicily could not be inhabited. So great is the demand for this commodity, that the bishop's revenues, which are considerable, arise from the sale of mount Ætna's snow; and he is said to draw 1000*l.* a-year from one small portion lying on the north side of the mountain. Great quantities of snow and ice are likewise exported to Malta and Italy, making a considerable branch of commerce. On the north side of this snowy region, Mr. Brydone was assured, that there are several small lakes which never thaw; and that the snow mixed with the ashes and salts of the mountain are accumulated to a vast depth. The quantity of salts contained in this mountain, he, with great probability, conjectures to be one reason of the preservation of its snows; for salt increases the coldness of snow to a surprising degree.

In the middle of the snowy region stands the great crater, or mouth of Ætna; from which, though contrary to the usual method of travellers, we shall begin our particular account of this mountain. Sir William Hamilton describes the crater as a little mountain, about a quarter of a mile perpendicular, and very steep, situated in the middle of a gently inclining plain, of about nine miles in circumference. It is entirely formed of stones and ashes; and, as that gentleman (then Mr. Hamilton) was told by several people of Catania, had been thrown up about twenty-five or thirty years before that time (1762). Before this mountain was thrown up, there was only a prodigious large chasm, or gulph, in the middle of the above-mentioned plain; and it has been remarked, that about once in 100 years the top of Ætna falls in; which undoubtedly must be the case at certain periods, or the mountain behaved continually to increase in height. As this little mountain, though emitting smoke from every pore, appeared solid and firm, Mr. Hamilton and his companions went up to the very top. In the middle is a hollow, about two miles and a half in circumference, according to Mr. Hamilton; three miles and a half, according to Mr. Brydone; and three or four according to Mr. D'Orville. The inside is cruised over with salts and sulphur of different colours. It goes shelving down, from the top, like an inverted cone; the depth, in Mr. Hamilton's opinion, nearly corresponding to the height of the little mountain. From many places of this space issue volumes of sulphureous smoke, which being much heavier than the circumambient air, instead of ascending in it, roll down the side of the mountain, till, coming to a more dense atmosphere, it shoots off horizon-

tally, and forms a large tract in the air, according to the direction of the wind; which, happily for our travellers, carried it exactly to the side opposite to which they were placed. In the middle of this funnel is the tremendous and unfathomable gulph, so much celebrated in all ages, both as the terror of this life, and the place of punishment in the next. From this gulph continually issue terrible and confused noises, which in eruptions are increased to such a degree as to be heard at a prodigious distance. Its diameter is probably very different at different times: for Mr. Hamilton observed, by the wind clearing away the smoke from time to time, that the inverted hollow cone was contracted almost to a point; while Mr. D'Orville and Mr. Brydone found the opening very large. Both Mr. Brydone and Mr. Hamilton found the crater too hot to descend into it: but Mr. D'Orville was bolder; and accordingly he and his fellow-traveller, fastened to ropes which two or three men held at a distance for fear of accidents, descended as near as possible to the brink of the gulph; but the small flames and smoke which issued from it on every side, and a greenish sulphur and pumice-stones, quite black, which covered the margin, would not permit them to come so near as to have a full view. They only saw distinctly in the middle, a mass of matter which rose, in the shape of a cone, to the height of sixty feet, and which towards the base, as far as their sight could reach, might be 600 or 800. While they were observing this substance, some motion was perceived on the north side, opposite to that whereon they stood; and immediately the mountain began to send forth smoke and ashes. This eruption was preceded by a sensible increase of its internal roarings; which, however, did not continue; but after a moment's dilatation, as if to give it vent, the volcano resumed its former tranquillity; but as it was by no means proper to make a long stay in such a place, our travellers immediately returned to their attendants.

On the summit of mount Ætna, Mr. Hamilton was sensible of a difficulty in respiration from the too great subtilty of the air, independent of what arose from the sulphureous smoke of the mountain. Mr. Brydone takes no notice of this; which probably arose from the air being in a more rarefied state at the time of Mr. Hamilton's observation, than of Mr. Brydone's; the barometer, as observed by the former, standing at eighteen inches and ten lines, by the latter at nineteen inches six and one half lines.

In these high regions there is generally a very violent wind, which, as all our travellers found it constantly blowing from the south, may possibly be commonly directed from that point. Here Mr. Brydone's thermometer fell to 27°.

The top of Ætna being above the common region of vapours, the heavens appear with exceeding great splendor.—Mr. Brydone and his company observed, as they ascended in the night, that the number of stars seemed to be infinitely increased, and the light of each of them appeared brighter than usual; the whiteness of the milky way was like a pure flame which shone across the heavens; and, with the naked eye, they could observe clusters of stars that were invisible from below. Had Jupiter been visible, he is of opinion that some of his satellites might have been discovered with the naked eye, or at least with a very small pocket-glass. He likewise took notice of several of those meteors called *falling-stars*; which appeared as much elevated as when viewed from the plain; a proof, according to Mr. Brydone, that “these bodies move in regions much beyond the bounds that some philosophers have assigned to our atmosphere.”

To have a full and clear prospect from the summit of mount Ætna, it is necessary to be there before sun-rise; as the vapours raised by the sun, in the day-time, will obscure every

object: accordingly, our travellers took care to arrive there early enough; and all agree, that the beauty of the prospect from thence cannot be expressed.—Here Mr. Brydone and Mr. Hamilton had a view of Calabria in Italy, with the sea beyond it; the Lipari islands, and Stromboli, a volcano at about seventy miles distance, appeared just under their feet; the whole island of Sicily, with its rivers, towns, harbours, &c. appeared distinct, as if seen on a map. Malfa, a Sicilian author, affirms, that the African coast as well as that of Naples, with many of its islands, have been discovered from the top of Ætna. The visible horizon here, is not less than 800 or 900 miles in diameter. The pyramidal shadow of the mountain reaches across the whole island, and far into the sea on the other side, forming a visible tract in the air, which, as the sun rises above the horizon, is shortened, and at last confined to the neighbourhood of Ætna. The most beautiful part of the scene, however, in Mr. Brydone's opinion, is the mountain itself, the island of Sicily, and the numerous islands lying round it. These last seem to be close to the skirts of Ætna; the distances appearing reduced to nothing.

This mountain is divided into three zones, which might properly enough be distinguished by the names of *torrid*, *temperate*, and *frigid*: they are, however, known by the names of the *Piedmontese*, or *Regione culta*, the cultivated, or fertile region; the *Sylvestra*, woody, or temperate zone; and the *Regione deserta*, the frigid, or desert zone, or region. All these are plainly distinguished from the summit. The *Regione deserta* is marked out by a circle of snow and ice, which extends on all sides to the distance of about eight miles, beginning at the foot of the crater. Greatest part of this region is smooth and even. This is immediately succeeded by the *Sylvestra*, or woody regions; which forms a circle of the most beautiful green, surrounding the mountain on all sides. This region is variegated with a vast number of mountains of a conical form, thrown up by Ætna in those eruptions which burst out from its sides. Mr. Hamilton counted forty-four on the Catania side, each having its crater, many with large trees flourishing both within and without the crater. All these, except a few of late date, have acquired a wonderful degree of fertility. The circumference of this zone, or great circle, according to Recupero, is not less than seventy or eighty miles. It is everywhere succeeded by the *Regione culta*; which is much broader than the rest, and extends on all sides to the foot of the mountain. Here terrible devastations are sometimes committed by the eruptions; and the whole region is likewise full of conical mountains thrown up by them. The circumference of this region is, by Recupero, reckoned 183 miles; but we have already given our reasons for rejecting these dimensions.—This region is bounded by the sea to the south and south-east; and on all other sides by the rivers Semeus and Alcantara, which form the boundaries of mount Ætna.

About a mile below the foot of the great crater, are found the ruins of an ancient structure, called *Il Torre del Filosofo*, by some supposed to have been built by the philosopher Empedocles, who took up his habitation here, the better to study the nature of mount Ætna. By others they are supposed to be ruins of a temple of Vulcan. They are of brick, and seem to have been ornamented with marble. Somewhere in this region also, Mr. D'Orville found a great oblong block of polished marble, eight or ten feet high, and three or four thick; though how it came there was quite unaccountable to him. From Mr. D'Orville's and Mr. Brydone's accounts, we must reckon this part of the mountain pretty steep: but Mr. Hamilton says, that the ascent was so gradual, as not to be in the least fatiguing; and had it not been for the snows, they might have rode on their mules to the very foot of the crater.

The woody region descends eight or nine miles below the

Regione deserta, but differs greatly in the temperature of its climate. Mr. Hamilton observed a gradual decrease of the vegetation as he advanced; the under part being covered with large timber trees, which grew gradually less as he approached the third region, at last they degenerated into the small plants of the northern climates. He also observed quantities of juniper and tansey; and was informed by his guide, that later in the season (he visited Ætna in June 1769) there are a great many curious plants, and in some places rhubarb and saffron in great plenty. In Carrera's history of Catania, there is a list of all the plants and herbs of Ætna, in alphabetical order.

This region is extolled by Mr. Brydone as one of the most delightful spots on earth. He lodged for a night in a large cave near the middle, formed by one of the most ancient lavas. It is called *La Spelonca del Capriolo*, or the goats cavern; because it is frequented by those animals, which take refuge there in bad weather. Here his rest was disturbed by a mountain thrown up in the eruption 1766. It discharged great quantities of smoke, and made several explosions like heavy cannon fired at a distance; but they could observe no appearance of fire.

This gentleman likewise visited the eastern side of the *Regione sylvestra*, intending to have ascended that way to the summit, and descended again on the south side to Catania; but found it impracticable; though what the insurmountable difficulties were, he does not mention. On this side, part of the woody region was destroyed, in 1755, by an immense torrent of boiling water, which issued from the great crater. Its traces were still very visible, about a mile and a half broad, and in some places more. The soil was then only beginning to recover its vegetative power, which it seems this torrent had destroyed for 14 years.—Near this place are some beautiful woods of cork, and evergreen oak, growing absolutely out of the lava, the soil having hardly filled the crevices; and not far off, our traveller observed seven little mountains that seemed to have been formed by a late eruption. Each of these had a regular cup, or crater, on the top; and, in some, the middle gulph, or *Voragine*, as the Sicilians call it, was still open. Into these gulphs Mr. Brydone tumbled down stones, and heard the noise for a long time after. All the fields round, to a considerable distance, were covered with large burnt stones discharged from these little volcanoes.

The woody region, especially the east side, called *Carpinetta*, abounds with very large chestnut-trees; the most remarkable of which has been called, from its size, *Castagno de Cento Cavalli*, or chestnut-tree of a hundred horses. Mr. Brydone was greatly disappointed at the sight of this tree, as it is only a bush of five large ones growing together: but his guides assured him, that all these five were once united into one stem; and Signor Recupero told him, that he himself had been at the expense of carrying up peasants with tools to dig round this bush of trees, and found all the stems united below ground in one root. The circumference, as measured by Messrs Brydone and Glover, who accompanied him, amounted to 204 feet. Another of these, about a mile and a half higher on the mountain, is called *Castagna del Galea*: it rises from one solid stem to a considerable height; after which it branches out, and is a much finer object than the other: this was measured two feet above the ground, and found to be 76 feet in circumference. A third, called *Castagna dei Nove*, is pretty nearly of the same size; and Malfa, one of the most esteemed Sicilian authors, affirms that he has seen solid oaks there upwards of 40 feet round. All these grow on a thick rich soil, which seems originally to have been formed of ashes thrown out by the mountain. Here the barometer stood at 26 inches 5 lines and a half, indicating an elevation of near 4000 feet.

The Piedmontese district is covered with towns, villages, monasteries, &c. and is well peopled, notwithstanding the danger of such a situation: but the fertility of the soil tempts people to inhabit that country; and their superstitious confidence in their saints, with the propensity mankind have to despise danger which they do not feel, render them as secure there as in any other place. Here, Sir William Hamilton observes, they keep their vines low, contrary to the custom of those who inhabit mount Vesuvius; and they produce a stronger wine, but not in such abundance: here also many terrible eruptions have burst forth; particularly one in 1669. At the foot of the mountain raised by that eruption; is a hole, through which Sir William Hamilton descended, by means of a rope, into several subterraneous caverns, branching out, and extending much farther than he chose to venture, the cold there being excessive, and a violent wind extinguishing some of the torches. Many other caverns are known in this and the other regions of Ætna; particularly one near this place called *La Spelonca della Palomba* (from the wild pigeons building their nests there). Here Mr. Brydson was told that some people had lost their senses, from having advanced too far, imagining they saw devils and damned spirits.—Some of these caverns are made use of as magazines for snow; which they are well adapted for, on account of their extreme cold. These are with great probability supposed by Sir William Hamilton to be the hollows made by the issuing of the lava in eruptions.

In this region the river *Acis*, so much celebrated by the poets, in the fable of *Acis* and *Galatea*, takes its rise. It bursts out of the earth at once in a large stream, runs with great rapidity, and about a mile from its source throws itself into the sea. Its water is remarkably clear; and so extremely cold, that it is reckoned dangerous to drink it: it is said, however, to have a poisonous quality, from being impregnated with vitriol; in consequence of which, cattle have been killed by it. It never freezes, but is said often to contract a greater degree of cold than ice.

Having thus given an account of this mountain in its quiet and peaceable state, we must now describe the appearance it puts on during the time of an eruption, when it spreads destruction for many miles round, and is capable of striking the boldest with terror.—Here we are surprised to find ourselves at a loss; for though there are many particular accounts of the eruptions of Vesuvius, we cannot, after the most diligent search, find that any writer hath accurately described the phenomena attending an eruption of Ætna.—Borelli, indeed, an Italian writer, published a natural history of this mountain for the year 1669, when a very terrible eruption happened; but as this treatise is not now to be found, in this part of the world at least, we must supply the deficiency in the best manner we can, by such hints as can be obtained from the writings of Sir William Hamilton and Mr. Brydson, together with a very imperfect account given by some English merchants who happened to be in Catania at that time, and recorded in the Philosophical Transactions, No. 51.

Sir William Hamilton, who has examined both Vesuvius and Ætna in a very accurate manner, never had an opportunity of seeing an eruption of the latter; but as he is of opinion that the two volcanoes agree perfectly in all respects, only that the latter is on a much larger scale than the former, we hope it will not be unacceptable to our readers to give an account of some of the general appearances of Vesuvius when in a state of eruption, the better to help their ideas concerning Ætna.

It has been already observed, that a smoke constantly issues from the top of Ætna, and that its internal noises never cease. The case is the same with Vesuvius: and Sir William Hamilton observed, that in bad weather the smoke was more

considerable, as well as the noises much louder, than when it was fair; so that in bad weather he had frequently heard the inward explosions of the mountain at Naples, six miles distant from Vesuvius. He also observed the smoke that issued from the mountain in bad weather to be very white, moist, and not near so offensive as the sulphureous streams from various cracks in the side of the mountain.

The first symptom of an approaching eruption is an increase of the smoke in fair weather: after some time, a puff of black smoke is frequently seen to shoot up in the midst of the white, to a considerable height. These puffs are attended with considerable explosions: for while Vesuvius was in this state, Sir William Hamilton went up to its top, which was covered with snow; and perceiving a little hillock of sulphur, about six feet high, which had been lately thrown up, and burnt with a blue flame at the top, he was examining this phenomenon, when suddenly a violent report was heard, a column of black smoke shot up with violence, and was followed by a reddish flame. Immediately a shower of stones fell; upon which he thought proper to retire. Phenomena of this kind, in all probability, precede the eruptions of Ætna, in a much greater degree.—The smoke at length appears wholly black in the day-time, and in the night has the appearance of flame; showers of ashes are sent forth, earthquakes are produced, the mountain discharges volleys of red-hot stones to a great height in the air. The force by which these stones are projected, as well as their magnitude, seems to be in proportion to the bulk of the mountain. Signior Recupero assured Mr. Brydson, that he had seen immensely large ones thrown perpendicularly upwards to the height of 7000 feet, as he calculated from the time they took to arrive at the earth after beginning to descend from their greatest elevation. The largest stone, or rather rock, that was ever known to be emitted by Vesuvius, was 12 feet long, and 45 in circumference. This was thrown a quarter of a mile; but much larger ones have been thrown out by mount Ætna, almost in the proportion in which the latter exceeds Vesuvius in bulk. Along with these terrible symptoms, the smoke that issues from the crater is sometimes in a highly electrified state. In this case, the small ashes which are continually emitted from the crater, are attracted by the smoke, and rise with it to a great height, forming a vast black, and to appearance dense, column; from this column continual flashes of forked or zig-zag lightning issue, sometimes attended with thunder, and sometimes not, but equally powerful with ordinary lightning. This phenomenon was observed by Sir William Hamilton in the smoke of Vesuvius, and has also been taken notice of in that of Ætna; and where this electrified smoke hath spread over a tract of land, much mischief hath been done by the lightning proceeding from it.

When these dreadful appearances have continued sometimes four or five months, the lava begins to make its appearance. This is a stream of melted mineral matters, which in Vesuvius commonly boils over the top; but very seldom does so in Ætna; owing to the great weight of the lava, which, long before it can be raised to the vast height of mount Ætna, bursts out through some weak place in its side. Upon the appearance of the lava, the violent eruptions of the mountain generally, though not always, cease; for if this burning matter gets not sufficient vent, the commotions increase to a prodigious degree.—In the night-time the lava appears like a stream of fire, accompanied with flame: but in the day-time it has no such appearance; its progress is marked by a white smoke, which by the reflection of the red-hot matter in the night assumes the appearance of flame. All the above-mentioned symptoms preceded the great eruption of Ætna in 1669. As we cannot find a particular account of what happened at the breaking forth of the lava in mount Ætna in 1669, we

must content ourselves with giving the reader some idea of this tremendous process of nature from Sir William Hamilton's account of the breaking forth of the lava in Vefuvius, no more than a quarter of a mile's distance from the place where he stood. "I was making my observations," says he, "on the lava, which had already, from the spot where it first broke out, reached the valley; when, on a sudden, about noon, I heard a violent noise within the mountain, and about a quarter of a mile off the place where I stood; the mountain split, and with much noise; from this new mouth, a fountain of liquid fire shot up many feet high, and then, like a torrent, rolled on directly towards us. The earth shook, at the same time that a volley of pumice-stones fell thick upon us; in an instant, clouds of black smoke and ashes caused almost a total darkness; the explosions from the top of the mountain were much louder than any thunder I ever heard, and the smell of sulphur was likewise very offensive. My guide, alarmed, took to his heels; and I must confess I was not at my ease. I followed close, and we ran near three miles without stopping; as the earth continued to shake under our feet, I was apprehensive of the opening of a fresh mouth, which might have cut off our retreat. I also feared that the violent explosions would detach some of the rocks off the mountain of Somma, under which we were obliged to pass; besides, the pumice-stones, falling upon us like hail, were of such a size as to cause a disagreeable sensation upon the part where they fell. After having taken breath, as the earth still trembled greatly, I thought it most prudent to leave the mountain and return to my villa; where I found my family in a great alarm at the continual and violent explosions of the volcano, which shook our house to its very foundation, the doors and windows swinging upon their hinges.—The noise and smell of sulphur increasing, we removed from our villa to Naples: and I thought proper, as I passed by Portici, to inform the court of what I had seen; and humbly offered it as my opinion, that his Sicilian majesty should leave the neighbourhood of the threatening mountain.—I observed, in my way to Naples, which was in less than two hours after I had left the mountain, that the lava had actually covered three miles of the very road through which we had retreated. It is astonishing that it should have run so fast; as I have since seen, that the river of lava in the *Atrio di Cavallo* was 60 and 70 feet deep, and in some places near two miles broad. When his Sicilian majesty quitted Portici, the noise was greatly increased; and the concussion of the air from the explosions was so violent, that, in the king's palace, doors and windows were forced open, and even one door there, which was locked, was nevertheless burst open. At Naples, the same night, many windows and doors flew open: (the windows at Naples open like folding-doors). In my house, which is not on the side of the town next Vefuvius, I tried the experiment of unbolting my windows, when they flew wide open upon every explosion of the mountain. Besides these explosions, which were very frequent, there was a continued subterraneous and violent rumbling noise, which lasted this night about five hours."

No doubt the same terrible appearances are put on by *Ætna* at the time its lavas break forth; but in a much greater degree, in proportion to the superior size of the mountain.—The appearance, and indeed the effects, of the lava itself, are very dreadful. When it first issues, the lava appears very fluid, and runs with the rapidity of a swift river: but even then it surprisingly resists the impression of solid bodies; for Sir William Hamilton could not pierce that of Vefuvius with a stick driven against it with all his force; nor did the largest stone he was able to throw upon it sink, but made a slight impression, and then floated along. This happened almost at the very mouth, when the lava appeared liquid as water, and

when he saw it running with a rapidity equal to the river Severn at the passage near Bristol.—A description of the lava issuing from mount *Ætna* in 1669 was sent to the court of England by Lord Winchelsea, who at that time happened to be at Catania in his way home from an embassy at Constantinople. His account is not now to be procured; but Mr. Hamilton found a copy in Sicily, and hath given an extract, part of which follows. "When it was night, I went upon two towers in divers places; and I could plainly see, at ten miles distance, as we judged, the fire begin to run from the mountain in a direct line, the flame to ascend as high and as big as one of the greatest steeples in your majesty's kingdoms, and to throw up great stones into the air; I could discern the river of fire to defend the mountain of a terrible fiery or red colour, and stones of a paler red to swim thereon, and to be some as big as an ordinary table. We could see this fire to move in several other places, and all the country covered with fire, ascending with great flames in many places, smoking like to a violent furnace of iron melted, making a noise with the great pieces that fell, especially those that fell into the sea. A cavalier of Malta, who lives there, and attended me, told me, that the river was as liquid, where it issues out of the mountain, as water, and came out like a torrent with great violence, and is five or six fathom deep, and as broad, and that no stones sink therein."

The account given in the Philosophical Transactions is to the same purpose. We are there told, that the lava is "nothing else than diverse kinds of metals and minerals, rendered liquid by the fierceness of the fire in the bowels of the earth, boiling up and gushing forth as the water doth at the head of some great river; and having run in a full body for a stone's cast or more, began to crust or curdle, becoming, when cold, those hard porous stones which the people call *Sciarrì*." Those, though cold in comparison of what first issues from the mountain, yet retained so much heat as to resemble huge cakes of sea-coal strongly ignited, and came tumbling over one another, bearing down or burning whatever was in their way.—In this manner the lava proceeded slowly on till it came to the sea, when a most extraordinary conflict ensued betwixt the two adverse elements. The noise was vastly more dreadful than the loudest thunder, being heard through the whole country to an immense distance; the water seemed to retire and diminish before the lava, while clouds of vapour darkened the sun. The whole fish on the coast were destroyed; the colour of the sea itself was changed, and the transparency of its waters lost for many months.

While this lava was issuing in such prodigious quantity, the merchants, whose account is recorded in the Philosophical Transactions, attempted to go up to the mouth itself; but durst not come nearer than a furlong, lest they should have been overwhelmed by a vast pillar of ashes, which to their apprehension exceeded twice the bigness of St. Paul's steeple in London, and went up into the air to a far greater height; at the mouth itself was a continual noise, like the beating of great waves of the sea against rocks, or like distant thunder, which sometimes was so violent as to be heard 60, or even 100 miles off, to which distance also part of the ashes were carried.—Some time after, having gone up, they found the mouth from whence this terrible deluge issued to be only a hole about 10 feet diameter. This is also confirmed by Mr. Brydone: and is probably the same through which Sir William Hamilton descended into the subterranean caverns already mentioned.

Mount *Ætna*, as we have already remarked, has been a celebrated Volcano from the remotest antiquity. Diodorus Siculus mentions eruptions of it as happening 500 years before the Trojan war, or 1693 years before the Christian era,

Many others are recorded by historians in different ages, but none are particularly described. The mountain seems sometimes to lie dormant for many years, or even centuries; when it breaks out again with great fury, and will sometimes burn for years together. Since 1669 there have been several eruptions, but none of them comparable to that one. The last happened in 1766. The lava sprang up into the air to a considerable height, twelve miles below the summit; but formed a stream only six miles in length, and one mile in breadth.

The extent, antiquity, &c. of the lavas, as well as the opinions of philosophers concerning the origin of the internal fire, are subjects which belong to the general article VOLCANO.

AFER (Domitius), born at Nîmes, a famous orator under Tiberius and the three succeeding emperors. Quintilian makes frequent mention of him, and commends his pleadings. But he disgraced his talents, by turning informer against some of the most distinguished personages in Rome. He died A.D. 59.

AFFINITY, in Chemistry (*Encycl.*). See CHEMISTRY. Consult also the copious tables given under ELECTIVE Attraction.

AFGHANS, are a people in India who inhabit a province of CABUL or CABULISTAN (see *Encycl.*), and have always been connected with the kingdoms of Persia and Hindostan. They boast of being descended from Saul the first king of Israel; of whose advancement to the royal dignity they give an account which deviates not very widely from the truth. They say indeed, that their great ancestor was raised from the rank of a shepherd, not from any princely qualities which he possessed, but because his stature was exactly equal to the length of a rod which the angel Gabriel had given to the prophet Samuel as the measure of the stature of him whom God had destined to fill the throne of Israel.

SAUL, whose descent, according to some of them, was of Judah, and according to others of Benjamin, had, they say, two sons, BERKIA and IRMIA, who served David, and were beloved by him. The sons of Berkia and Irmia were AFGHAN and USEBK, who during the reigns of David and Solomon, distinguished themselves, the one for his corporeal strength, and the other for his learning. So great indeed was the strength of *Afghan*, that we are told it struck terror even into demons and genii.

This hero used frequently to make excursions to the mountains, where his progeny, after his death, established themselves, lived in a state of independency, built forts, and exterminated infidels. When the select of creatures (the appellation which this people gave to *Mahomet*) appeared upon earth, his fame reached the *Afghans*, who fought him in multitudes under their leaders *Khalid* and *Abdul Kefid*, sons of *Walid*; and the prophet honouring them with this reception—"Come, O *Mulhe*, or Kings!" they assumed the title of *Melic*, which they retain to this day.

The history, from which this abstract is taken, gives a long and uninteresting detail of the exploits of the *Afghans*, and of their zeal in overthrowing the temples of idols. It boasts of the following monarchs of their race who have sat upon the throne of *Delhi*: Sultan BEHLOLE, *Afghan* LODI, Sultan SECANDER, Sultan IBRAHIM, SHIR SHAH, ISLAM SHAH, ADIL SHAH SUR. It also numbers the following kings of *Gaur* descended from the *Afghan* chiefs: SOLAIMAN *Shah Garzani*, BEYAZID *Shah*, and KUTB *Shah*; besides whom, their nation, we are told, has produced many conquerors of provinces. The *Afghans* are sometimes called *Solaimani*, either because they were formerly the subjects of Solomon king of Israel, or because they inhabit the mountains of Solomon. They are likewise called *PATANS*, a name derived from the

Hindi verb *Paitna* "to rush," which was given to them by one of the Sultans whom they served, in consequence of the alacrity with which they had attacked and conquered his enemies. The province which they occupy at present was formerly called *Roh*; and hence is derived the name of the *Rohillas*. The city which was established in it by the *Afghans* was called by them *Paishawer* or *Paikher*, and is now the name of the whole district. The sects of the *Afghans* are very numerous; of which the principal are, *Lodi*, *Lohouni*, *Sur*, *Servani*, *Tufufzabi*, *Bangish*, *Dilazani*, *Kbetti*, *Tafin*, *Khalil*, and *Beleje*. They are *Muhammants*, partly of the *Sunni*, and partly of the *Shiik* persuasion.

Though they are great boasters, as we have seen, of the antiquity of their origin, and the reputation of their race, other *Muhammants* reject their claim, and consider them as of modern, and even of base, extraction.

This is probably a calumny; for it seems inconsistent with their attention to the purity of their descent—an attention which would hardly be paid by a people not convinced of their own antiquity. They are divided into four classes. The first is the *pure* class, consisting of those whose fathers and mothers were *Afghans*. The second class consists of those whose fathers were *Afghans* and mothers of another nation. The third class contains those whose mothers were *Afghans* and fathers of another nation. The fourth class is composed of the children of women whose mothers were *Afghans* and fathers and husbands of a different nation. Persons who do not belong to one of these classes are not called *Afghans*.

This people have at all times distinguished themselves by their courage, both singly and unitedly, as principals and auxiliaries. They have conquered for their own princes and for foreigners, and have always been considered as the main strength of the army in which they served. As they have been applauded for virtues, they have also been reproached for vices, having sometimes been guilty of treachery, and of acting the base part even of assassins.

Such is the account of the *Afghans* published in the second volume of the *Asiatic Researches*. It was translated from a Persian abridgment of a book written in the Pushto language, and called *The Secrets of the Afghans*, and communicated by Henry Vanittart, esq. to Sir William Jones, then president of the Asiatic Society. Their claim to a descent from Saul king of Israel, whom they called MELIC TALUT, is probably of not a very ancient date; for the introduction of the angel Gabriel with his rod, gives to the whole story the air of one of those many fictions which Mahomet borrowed from the later rabbins. Sir William Jones, however, though he surely gave no credit to this fable, seems to have had no doubt but the *Afghans* are descendants of Israel. "We learn (says he) from ESDRAS, that ten tribes, after a wandering journey, came to a country called *Arjareth*, where we may suppose they settled; now the *Afghans* are said by the best Persian historians to be descended from the Jews. They have traditions among themselves of such a descent; and it is even asserted, that their families are distinguished by the names of Jewish tribes, although, since their conversion to *Islam*, they studiously conceal their origin from all whom they admit not to their secrets. The Pushto language, of which I have seen a dictionary, has a manifest resemblance to the Chaldaic; and a considerable district under their dominion is called *Hazareth*, or *Hazaret*, which might easily have been changed into the word used by ESDRAS. I strongly recommend an enquiry into the literature and history of the *Afghans*."

A circumstantial account of the *Afghans* has been written by a late Chief of the *Rohillahs*, HAFIZ RHAMAT Khan; and from this work the oriental scholar may derive much useful information.

AFRANIUS, a Latin poet, who wrote comedies in imita-

tion of Menander, commended by Tally and Quintilian: he lived in the 170th Olympiad.

AFRICANUS (Julius), an excellent historian of the third century, the author of a chronicle which was greatly esteemed, and in which he reckons 5500 years from the creation of the world to Julius Cæsar. This work, of which we have now no more than what is to be found in Eusebius, ended at the 221st year of the vulgar æra. Africanus also wrote a letter to Origen on the history of Sufama, which he reckoned supposititious; and we have still a letter of his to Arillides, in which he reconciles the seeming contradictions in the two genealogies of Christ recorded by St. Matthew and St. Luke.

AFRIQUE, St. a small town in France, in the department of Aveiron, late Rouergue; 6 miles E. of Vabres.

AGA (*Encycl.*). The aga of the janissaries is the only person who is allowed to appear before the Grand Signior without his arms across his breast in the posture of a slave. Eunuchs at Constantinople are in possession of most of the principal posts of the seraglio: the title *aga* is given to them all, whether in employment or out. For some years, the *aga* of Algiers was the supreme officer; and governed the state in the place of bashaw, whose power dwindled to a shadow. But the soldiery rising against the *bashuk bashis*, or *agas*, massacred most of them, and transferred the sovereign power to the calif, with the title of *Dei*, or King.

AGAMEMNON, the son of Atreus by Erope, was captain-general of the Trojan expedition. It was foretold to him by Cassandra, that his wife Clytemnestra would be his death: yet he returned to her: and accordingly was slain by Ægisthus, who had gained upon his wife in his absence, and by her means got the government into his own hands.

AGAMENTICUS, a mountain of North America, in the province of Main. It is a noted landmark for sailors, about eight miles from the sea, in lat. 43. 16. a few miles westward from Wells.

AGANIPPE (*Encycl.*). This fountain was sacred to the muses, and ran into the river Permeus; (Pliny, Pausanias). Ovid seems to make *Aganippe* and *Hippocrene* the same. Solinus more truly distinguishes them, and ascribes the blending them to poetical licence.

AGARD (Arthur), a learned English antiquarian, born at Toston in Derbyshire, in the year 1540. His fondness for English antiquities induced him to make many large collections; and his office as deputy chamberlain of the exchequer, which he held 45 years, gave him great opportunities of acquiring skill in that study. Similarity of taste brought him acquainted with Sir Robert Cotton, and other learned men, who associated themselves under the name of *The Society of Antiquarians*, of which society Mr. Agar was a conspicuous member. He made the doom-day-book his peculiar study; and composed a work purposely to explain it, under the title of *Tractatus de usu et obscurioribus verbis libri de Domesday*: he also compiled a book for the service of his successors in office, which he deposited with the officers of the king's receipt, as a proper index for succeeding officers. All the rest of his collection, containing at least twenty volumes, he bequeathed to Sir Robert Cotton; and died in 1615.

AGATHA, St. a town in the kingdom of Naples, with a bishop's see. It is 20 miles N. E. of Naples. Long. 14. 36. E. lat. 41. 5. N.

AGATHIAS, or as he calls himself in his epigrams, **AGATHRIUS**, distinguished by the title of *Sebastianus*, a Greek historian in the 6th century under Justinian. He was born at Myrina, a colony of the ancient Ælians, in Asia the Less, at the mouth of the river Phrygius. He was an advocate at Smyrna. Though he had a taste for poetry, he was yet more famous for his history, which begins with the 20th year of

Justinian's reign, where Procopius ends. It was printed in Greek and Latin, with Bonaventure Vulcanius's, at Leyden, 1594, in 4to.; and in Paris at the king's printing-house, 1660, in folio.

AGATHO, a tragic and comic poet, disciple to Prodicus and Socrates, applauded in Plato's dialogues for his virtue and beauty. His first tragedy obtained the prize; and he was crowned in the presence of upwards of 30,000 men, the 4th year of the 90th Olympiad. There is nothing now extant of his, except a few quotations in Aristotle, Athenæus, and others.

AGATHOCLES, the famous tyrant of Sicily, son of a potter at Reggio. He was a thief, common soldier, centurion, general, and a pirate, all in a regular succession. He defeated the Carthaginians several times in Sicily, and was once defeated himself. He first made himself tyrant of Syracuse, and then of all Sicily; after which, he vanquished the Carthaginians again both in Sicily and Africa. But at length having ill success, and being in arrears with his soldiers, they mutinied, forced him to fly his camp, and cut the throats of his children, whom he left behind. Recovering himself again, he relieved Corfu, besieged by Cassander; burnt the Macedonian fleet; returned to Sicily, murdered the wives and children of those who had murdered his; afterwards meeting with the soldiers themselves, he put them all to the sword; and ravaging the sea-coast of Italy, took the city of Hipponium. He was at length poisoned by his grandson Archagathus, in the 72d year of his age, 250 years before Christ, having reigned 28 years.

AGATHYRNA, or **AGATHYENUM**, **AGATHYRSA** (Polybius); **AGATHYRSUM** (Strabo); a town of Sicily; now *S. Marco*; as old as the war of Troy, being built by Agathyrus, son of Æolus, on an eminence. The gentilitious name is *Agathyrneus*; or, according to the Roman idiom, *Agathyrnenis*.

AGATTON, a town near the mouth of the Formoso, on the coast of Guinea, 80 miles S. of Benin. Long. 7. 6. E. Lat. 7. 20. N.

AGDE (*Encycl.*), a town of France, situated in the department of Herault and late province of Languedoc; with a bishop's see. The diocese is small, but it is one of the richest countries in the kingdom. It produces fine wool, wine, oil, corn, and silk. It is seated on the river Herault, a mile and a quarter from its mouth, where it falls into the gulph of Lyons, and where there is a fort built to guard its entrance. It is well peopled; the houses are built of black stone, and there is an entrance into the city by four gates. The greatest part of the inhabitants are merchants or seamen. The public buildings are but mean; the cathedral is small, and not very handsome: the bishop's palace is an old building, but convenient enough. The city is extended along the river, where it forms a little port, wherein small craft may enter. Before the revolution, there was a great concourse of pilgrims and other devout people to the chapel of Notre Dame de Grace. It is a little without the city, between which and the chapel there are about 13 or 14 oratories, which they visited with naked feet. The convent of the Capuchins is well built, and on the outside are lodgings and apartments for the pilgrims who came to perform their *neuvaine* or nine days' devotion. The chapel is distinct from the convent.

AGENABAT, a town of Transylvania, 10 miles N. E. of Hermanstadt. Long. 24. 50. E. Lat. 46. 32. N.

AGENORIA, in mythology, the goddess of courage and industry, as *Vacuna* was of indolence.

AGER, a town of Catalonia, in Spain. Long. 1. 50. E. Lat. 41. 50. N.

AGER PICENUS (Cicero, Sallust, Livy); and sometimes

Picenum (Cæsar; Pliny); a territory of Italy to the south-east of Umbria, reaching from the Apennine to the Adriatic. The people are called *Picentes* (Cicero, Livy); distinct from the Picentini on the Tulfcan fea, though called by Greek writers Πικεντινοι. This name is faid to be from the bird *Picus*, under whose conduct they removed from the Sabines, of whom they were a colony.

AGESILAUS, king of the Lacedæmonians, the fon of Archidamus, was raifed to the throne notwithstanding the fuperior claim of Leotychides. As foon as he came to the throne, he advifed the Lacedæmonians to be beforehand with the King of Perfia, who was making great preparations for war, and to attack him in his own dominions. He was himfelf chofen for this expedition; and gained fo many advantages over the enemy, that if the league which the Athenians and the Thebans formed againft the Lacedæmonians had not obliged him to return home, he would have carried his victorious arms into the very heart of the Perfian empire. He gave up, however, all thefe triumphs readily, to come to the fuccour of his country, which he happily relieved by his victory over the allies in Boetia. He obtained another near Corinth; but to his great mortification, the Thebans afterwards gained feneral over the Lacedæmonians. Thefe misfortunes at firft raifed fomewhat of a clamour againft him. He had been fick during the firft advantages which the enemy gained; but as foon as he was able to act in perfon, by his valour and prudence he prevented the Thebans from reaping the advantages of their victories; infomuch that it was generally believed, had he been in health at the beginning, the Lacedæmonians would have fufained no loffes, and that all would have been loft had it not been for his affiftance. It cannot be denied but he loved war more than the intereft of his country required; for if he could have lived in peace, he had faved the Lacedæmonians feveral loffes, and they would not have been engaged in many enterprifes which in the end contributed much to weaken their power. He died in the third year of the 104th Olympiad, being the 84th year of his age, and 41ft year of his reign.

AGESIPOLIS I. king of Lacedæmon, fucceeded his father Pausanias, colleague of Agesilaus II. He ravaged the country of Mantinea, fubdued that city, and pillaged Olynthia. He died about 380 years before Jefus Chrift, and was embalmed in honey, according to the cuftom of the Lacedæmonians. He died without ifue, and was fucceeded by Cleombrotus his brother, the father of Agesipolis II. who was more remarkable for his apophthegms than his actions.

AGIMERE, or **AZMERE**, the capital of a territory of the fame name in Hindooftan Proper, built at the foot of a very high mountain; on the top of which is a fortrefs of great ftrength. It is about 230 miles by the road W. from Agra; and yet the famous emperor Achar, fays Major Rennell, made a pilgrimage on foot, to the tomb of a faint there, to implore the divine bleffing on his family, which at that time confifted only of daughters: but after this pilgrimage, he had three fons added to it. Jehanguire, his fon, occasionally kept his court here; and this occafioned the vifits of Sir Thomas Roe to this place from Surat. Long. 75. 20. E. Lat. 26. 35. N.

AGISYMBLA (anc. geog.), a diftrict of Libya Interior, according to Agathemerus, fituated to the fouth-eaft of the Æthiopes Anthropophagi; the parallel paffing through which, at 16° to the fouth of the equator, was the utmoft extent of the knowledge of the ancients to the fouth (Ptolemy).

AGLIONBY (John), an Englifh divine, chaplain in ordinary to king James I. a man of univerfal learning, who had a very confiderable hand in the tranflation of the New Teftament appointed by King James I. in 1604.

AGMAT, a town of Africa, on the river of the fame name,

in Morocco. It is feated on the declivity of one of the mountains of Atlas, where the air is good, and the country fertile, 16 miles S. of Morocco. Long. 7. 15. W. Lat. 30. 56. N.

AGNADELLOA, a village of the Milanefe, famous for two battles: the firft, in 1509; the fecond, in 1705. It is feated on the canal between Adda and Serio, five miles S. E. of Caffiana. Long. 9. 26. E. Lat. 45. 25. N.

AGNANO, a circular lake, in the kingdom of Naples, feven miles from Puzzoli. It is about half a mile in diameter, furrounded by mountains; and on its margin is fituated the famous Grotta del Cane.

AGNOETE (*Encycl.*). Eulogius, patriarch of Alexandria, afcribes this hereby to certain folitaries in the neighbourhood of Jerufalem, who built their opinion upon the text Mark xiii. 32. "Of that day and hour knoweth no man, no not the angels who are in heaven; neither the Son, but the Father only."—The fame paffage was made ufe of by the Arians; and hence the orthodox divines of thofe days were induced to give various explications thereof. Some allege, that our Saviour here had no regard to his divine nature, but only fpoke of his human. Others underftand it thus, That the knowledge of the day of judgment does not concern our Saviour confidered in his quality of Mefiah, but God only: which is the moft natural folution.

AGNON, a small river of Bourgogne in France, otherwife called *Ignon*.

AGNONE, a city of the kingdom of Naples, in the province of the Higher Abruzzo, called by fome *Ancione*.

AGON (*Encycl.*). Among the games of this kind celebrated at Athens, were the *agon gymnicus*, the *agoneus* inflituted by the Argives in the 53d Olympiad, and the *agon olympicus* inflituted by Hercules 450 years before the firft Olympiad. The Romans alfo in imitation of the Greeks, inflituted contefts of this kind. The emperor Aurelian eftablifhed one under the name of *agon folis*, the conteft of the fun; Dioclefan another, which he called *agon capitulinus*, which was celebrated every fourth year, after the manner of the Olympic games. Hence the years, inftead of *lustra*, are fometimes numbered by *agones*.

AGONY, any extreme pain. It is alfo ufed for the pangs of death. Much of the terror of death confifts in the pangs and convulfions wherewith the agony feems attended; though we have reafon to believe, that the pain in fuch cafes is ordinarily not extremely acute; a courfe of pain and ficknels having ufually ftupified and indifpofed the nerves for any quick fenfations. However, various means have been thought of for mitigating the agony of death. Lord Bacon confiders this as part of the province of a phyfician; and that not only when fuch a mitigation may tend to a recovery, but alfo when, there being no further hopes of a recovery, it can only tend to make the paffage out of life more calm and eafy. Complacency in death, which Auguftus fo much defired, is certainly no fmall part of happinefs. Accordingly the author laft cited ranks *embafia*, or the art of dying eafy, among the defiderata of fciences; and does not even feem to difapprove of the courfe Epicurus took for that end,

—*Hinc fignis ebrius haufti equas.*

Opium has been applied for this purpofe, with the applaufe of fome, but the condemnation of more.

AGOSTA, a town of Sicily, with an excellent harbour. The greateft part of it was fwallowed up by an earthquake in 1693. Long. 15. 15. E. Lat. 37. 35. N.

AGRA (*Encycl.*). This is looked upon as the largeft city in the province, and is in the form of a half-moon. A man on horfeback can hardly ride round it in a day. It is furrounded with a wall of red ftone, and with a ditch 100 feet wide. The Great Mogul, of whole dominions it is a part,

Sometimes resides here: his palace is prodigiously large, and the seraglio commonly contains above 1000 women. There are upwards of 800 baths in this town; but that which travellers most admire, is the mausoleum of one of the Mogul's wives, which was 20 years in building. The indigo of Agra is the most valuable of all that comes from the East Indies. It is seated on the river Jemna, about 50 miles above its confluence with the Tehemel, and is 300 miles N. E. of Surat. E. long. 79. 12. N. lat. 26. 29.

AGREEMENT, in law, signifies the consent of several persons to any thing done or to be done. It also denotes a kind of writing or legal instrument by which the subscribing parties are bound to the performance of some specific act or covenant, on certain terms and conditions therein specified. Written agreements are not valid unless legally stamped within a limited time.

AGRESTÆ, among physicians, denotes unripe grapes, said to be of a cooling nature.

AGRI, or **AGRI**, a river of the kingdom of Naples, which arising in the Apennine mountains, not far from Marisco Nuovo, falls into the gulph of Tarento.

AGRICOLA (Cneus Junius), born at Frejus in Provence, was made lieutenant in Vespasian's time, to Vettius Bolanus in Britain; and, upon his return, was ranked by that emperor among the patricians, and made governor of Aquitania. This post he held three years; and upon his return was chosen consul, and afterward appointed governor of Britain, where he greatly distinguished himself. He reformed many abuses occasioned by the avarice or negligence of former governors; put a stop to extortion; and caused justice to be impartially administered. Vespasian dying about this time, his son Titus, knowing the great merit of Agricola, continued him in the government. In the spring, he marched towards the north, where he made some new conquests, and ordered forts to be built for the Romans to winter in. He spent the following winter in concerting schemes to bring the Britons to conform to the Roman customs: he thought the best way of diverting them from rising and taking arms, was to soften their rough manners, by proposing to them new kinds of pleasure, and inspiring them with a desire of imitating the Roman manners. Soon after this, the country was adorned with magnificent temples, porticos, baths, and many other fine buildings. The British nobles had at length their sons educated in learning; and they who before had the utmost aversion to the Roman language, now began to study it with great assiduity: they were likewise the Roman habit; and, as Tacitus observes, they were brought to consider those things as marks of politeness, which were only to many badges of slavery. Agricola, in his third campaign, advanced to far as the Tweed; and in his fourth, he subdued the nations betwixt the Tweed and the friths of Edinburgh and Dunbritton, into which the rivers Glotta and Bodotria discharge themselves; and here he built fortresses to shut up the nations yet unconquered. In his fifth, he marched beyond the friths; where he made some new acquisitions, and fixed garrisons along the western coasts, over against Ireland. In his sixth campaign he passed the river Bodotria, ordering his fleet, the first which the Romans ever had in those parts, to row along the coasts, and take a view of the northern parts. In the following spring, the Britons raised an army of 30,000 men; and the command was given to Galgacus, who, according to Tacitus, made an excellent speech to his countrymen on this occasion. Agricola likewise addressed his men in very strong and eloquent terms. The Romans gained the victory, and 10,000 of the Britons are said to have been killed. This happened in the reign of the emperor Domitian; who, growing jealous of the glory of Agricola, recalled him, under pre-

tence of making him governor of Syria. Agricola died soon after, and his death is suspected to have been occasioned by poison given to him by that emperor. Tacitus the historian married his daughter, wrote his life, and laments his death in the most pathetic manner.

AGRICOLA (George), a German physician, famous for his skill in metals. He was born at Glaucha in Misnia, the 24th of March, 1494. The discoveries which he made in the mountains of Bohemia gave him so great a desire of examining accurately into every thing relating to metals, that though he had engaged in the practice of physic at Joachimsthal by advice of his friends, he still prosecuted his study of fossils with great assiduity; and at length removed to Chemnitz, where he entirely devoted himself to this study. He spent in pursuit of it the pension he had of Maurice duke of Saxony, and part of his own estate; so that he reaped more reputation than profit from his labours. He wrote several pieces upon this and other subjects; and died at Chemnitz the 21st of November, 1555, a very firm Papist. In his younger years he seemed not averse to the Protestant doctrine; and he highly disapproved of the scandalous traffic of indulgences, and several other things in the church of Rome. In the latter part of his life, however, he attacked the Protestant religion; which rendered him so odious to the Lutherans, that they suffered his body to remain unburied for five days together; so that it was obliged to be removed from Chemnitz to Zeitz, where it was interred in the principal church.

AGRICOLA (John), a Saxon divine born at Ilsebe in 1492. He went as chaplain to Count Mansfeld, when that nobleman attended the Elector of Saxony to the diet of Spire in 1526, and that of Aulburgh in 1530. He was of a restless ambitious temper, rivalled and wrote against Melancthon, and gave Count Mansfeld occasion to reproach him severely. He obtained a professorship at Wittenberg, where he taught particular doctrines, and became founder of the sect of Antinomians; which occasioned warm disputes between him and Luther, who had before been his very good friend. But though he was never able to recover the favour either of the Elector of Saxony, or of Luther, he received some consolation from the fame he acquired at Berlin; where he became preacher at court; and was chosen in 1548, in conjunction with Julius Plug, and Michael Heldingus, to compose the famous *Interim*, which made so much noise in the world. He died at Berlin in 1566.

AGRIMONOIDES, the trivial name of a species of the agrimonia.

AGRIGNAN, one of the islands of the Ladrões, about 40 miles in compass. Long. 146. 0. E. Lat. 19. 40. N.

AGRIPPA (Herod), son of Aristobulus, by Berenice, and the grandson of Herod the Great. He was cast into prison by Tiberius for wishing Caius emperor, who gave him a chain of gold equal in weight to those which he had worn in prison, and afterwards made him king of Judea. He put St. James to death, imprisoned St. Peter, and, for allowing the deifying shouts of the people, was eaten up with worms.

AGRIPPA II. son of the preceding Herod, was made king of Chalcide; but three or four years after, he was deprived of that kingdom by Claudius, who gave him in the place of it other provinces. In the war Vespasian carried on against the Jews, Herod sent him a succour of 2000 men; by which it appears, that, though a Jew by religion, he was yet entirely devoted to the Romans, whose assistance indeed he wanted, to secure the peace of his own kingdom. He lived to the third year of Trajan, and died at Rome A. C. 100. He was the seventh and last king of the family of Herod the Great. It was before him and Berenice his sister, that St. Paul pleaded his cause at Cæsarea.

AGRIPIA (Marcus Vipsanius), son-in-law to Augustus, of mean birth, but one of the most considerable generals among the Romans. Augustus's victory over Pompey and Mark Anthony was owing to his counsel: he adorned the city with the pantheon, baths, aqueducts, &c.

AGRIPIA (Cornelius), born at Cologne in 1486, a man of considerable learning, and, by common report, a great magician; for the monks at that time suspected every thing of heresy or sorcery which they did not understand. He composed his *Treatise of the Excellence of Women*, to infaminate himself into the favour of Margaret of Austria, governess of the Low-countries. He accepted of the charge of historiographer to the emperor, which that prince gave him. The treatise of the *Vanity of the Sciences*, which he published in 1530, enraged his enemies extremely; as did that of *Occult Philosophy*, which he printed soon after at Antwerp. He was imprisoned in France for something he had written against Francis I.'s mother; but was enlarged, and went to Grenoble, where he died in 1534. His works are printed in two volumes octavo.

AGRIPIINA, daughter of Germanicus, sister of Caligula, and mother of Nero; a woman of wit, but excessively lewd: she was thrice married; the last time to Claudius, her own uncle, whom she poisoned to make way for Nero, her son. Nero afterward caused her to be murdered in her chamber, when she bid the executioner stab her first in the belly, that had brought forth such a monster.

AGRIPIINA COLONIA UBIORUM (Pliny, Suetonius), now *Cologne*: so called from Agrippina, the daughter of Germanicus, and mother of Nero, who had a colony sent thither at her request by the Emperor Claudius, to honour the place of her birth. See *COLOGNE*.

AGUA DE PAO, a town in the island of St. Michael, one of the Azores. Long. 25. 40. W. Lat. 38. 0. N.

AGUAS BELLAS, a town of Portugal, in Estramadura. Long. 8. 5. W. Lat. 39. 40. N.

AGUE (*Encycl.*). That article should have referred to Intermittent Fever, under *MEDICINE*.

AGUILA, a town of the kingdom of Fez, in Africa, seated on the river Aguilu.

AGUILONIUS (Francis), a Jesuit, born at Brussels: he was rector of the Jesuits' college at Antwerp, and eminent for his skill in mathematics. He was the first who introduced that science among the Jesuits in the Low-countries: he wrote a book of Optics, and was employed in finishing his Catoptrics and Dioptrics, when death prevented him in 1617.

AGUIRRA (Joseph Sienz de), a Benedictine, and one of the most learned men of the 17th century, was born March 24, 1630. He was censor and secretary of the supreme council of the Inquisition in Spain, and interpreter of the scriptures in the university of Salamanca. He printed three volumes in folio upon Philosophy, a Commentary upon Aristotle's ten books of Ethics, and other pieces. He died at Rome, August 19, 1699.

AGURANDE, a small town of France, in the department of Indre, and late province of Berry. Long. 2. 10. E. Lat. 47. 20. N.

AGURIUM, or **AGYRIUM** (anc. geog.), a town of Sicily in the Val di Demona, near the river Senetus. The people were called *Populus Agrimenfis*, by Cicero; *Agrinus*, by Pliny. It was the birth-place of Diodorus Siculus, as he himself testifies; but he calls it *Argyrium*, as it is now called *S. Philippo d'Argirone*, which modern name seems to confirm that *Argyrium* is the true reading.

AHAB, son of Omri king of Israel, succeeded his father, A.M. 3686, and surpassed all his predecessors in impiety and wickedness.

AHALOTH. See *XYLO-ALOES*.

AI (anc. geog.), a town in Judea, to the north of Jericho, called *Aias* by Josephus, and the inhabitants *Ainates*.

AICH, a town of Bavaria, on the Par. It was taken by the Swedes in 1634, and afterward reduced to ashes. Long. 11. 20. E. Lat. 48. 30. N.

AIALON (anc. geog.), a town of the tribe of Dan, one of the Levitical. Another in the tribe of Benjamin, in whose valley Joshua commanded the moon to stand still, being then in her decrease, and consequently to be seen at the same time with the sun.

AJAX, the son of Oileus, was one of the principal generals that went to the siege of Troy: he ravished Cassandra, the daughter of Priam, even in the temple of Minerva, where he thought to have found sanctuary. It is said he made a serpent, of fifteen feet long, so familiar with him, that it ate at his table, and followed him like a dog. The Locrians had a singular veneration for his memory.

AJAX, the son of Telamon, was, next to Achilles, the most valiant general among the Greeks at the siege of Troy: he commanded the troops of Salamis, and performed many great actions, of which we have an account in the *Iliad*, in *Ditty Cretensis*, and in the 23d book of Ovid's *Metamorphoses*. He was so enraged, that the arms of Achilles were adjudged to Ulysses, that he immediately became mad. The Greeks paid great honours to him after his death, and erected a magnificent monument to his memory upon the promontory of Rheum.

AICHSTAT (*Encycl.*). This town is remarkable for a curious piece of workmanship, called the Sun of the Holy Sacrament, which is in the church: it is of massy gold, of great weight, and is enriched with 350 diamonds, 1400 pearls, 250 rubies, and other precious stones. This place is moderately large, and seated in a valley on the river Altmul, 10 miles N. of Newburgh, and 37 S. of Neuremberg. The bishopric is 45 miles in length, and 17 in breadth; and the bishop is chancellor of the church of Mayence or Mentz.

AIDAN, a famous Scottish bishop of Lindisfarne, or Holy Island, in the 7th century, was employed by Oswald king of Northumberland in the conversion of the English, in which he was very successful. He died in 651.

AIELLO, a small town in Abruzzo Ulteriore, in the kingdom of Naples, belonging to the hereditary prince of Modena. Long. 15. 20. E. Lat. 41. 40. N.

AIGLE (*Encycl.*). Through the Aigle and Bex lies the great road from Valais into Italy. When you pass by Ville-neuve, which is at the head of the lake of Geneva, you enter into a deep valley three miles wide, bordered on one side with the Alps of Switzerland, and on the other with those of Savoy, and crossed by the river Rhone. Six miles from thence you meet with Aigle, a large town, seated in a wide part of the valley, where there are vineyards, fields, and meadows. The governor's castle is on an eminence that overlooks the town, and has a lofty marble tower. This government has nine large parishes; and is divided into four parts, Aigle, Bex, Olon, and Ormont. This last is among the mountains, and joins to Rougemont. It is a double valley, abounding in pasture-lands. Ivorna, in the district of Aigle, was in part buried by the fall of a mountain, occasioned by an earthquake in 1884.

AIGLE (*Encycl.*), a small town in France, in the department of Orne. It is 23 miles from D'Evereux, and 38 from Rouen. It is surrounded with walls and ditches, has six gates, three suburbs, and three parishes. It trades in corn, toys, and more particularly in needles and pins. E. long. 1. 5. N. lat. 48. 35.

AIGNAN, St. a small town of France, in the department of Loire and Cher, and late province of Blaisois. It is in the form of an amphitheatre, at the foot of which runs the Cher, at the distance of 60 miles from Bourges.

AIGUE-PERSE, a small town of France, in the department of Puy-de-Dome, and late province of Auvergne. It is 18 miles N. of Clermont, and 261 S. of Paris. It has a fountain, once regarded as a prodigy, its cold water having the appearance of boiling. But the chemists can now imitate these cold fermentations by a mixture of ferruginous and vitriolic particles. The water of this spring is said to be fatal to the animals that drink it. Long. 3. 20. E. Lat. 46. 6. N.

AILAH, a small ancient town of Arabia Petraea, on the E. side of the Red Sea, near the road which the pilgrims take from Egypt to Mecca. Long. 36. 40. E. Lat. 29. 10. N.

AILANA, **AILATH**, or **AHELOTH**, anciently a town of Arabia Petraea, situated near the Sinus Elanites of the Red Sea. It was also called *Elath*, and *Eloth* (Stephanus, Strabo, Moses). The same with *Elana*.

AILRED, or **EALRED**, abbot of Revesby in Lincolnshire, in the reigns of Stephen and Henry II. He was born in 1109, of a noble family, and educated in Scotland with Henry the son of King David. On his return to England, he became a monk of the Cistercian order, in the monastery of Revesby, of which he afterwards was made abbot. He died on the 12th of January, 1166, aged 57, and was buried in his monastery. "He was (says Leland) in great esteem during his life; celebrated for the miracles wrought after his death; and admitted into the catalogue of saints." He was author of several works; most of which were published by Gilbo the Jesuit, at Douay, 1631; part of them may be also found in the *Bibliotheca Cisterciensis*, and *Bibliotheca Patrum*. His principal work is the *Speculum charitatis*. Leland, Bale, and Pits, mention several manuscripts which never were published.

AILSA, a great insulated rock, to the south of the isle of Arran, in Scotland. Its base is about two miles in circumference. It consists of a stupendous assemblage of precipitous cliffs, rising in a wild series, forming a pyramidal mountain, 900 feet high, accessible only on the north-east. The ruins of a chapel, and of a castle, are still seen; and within 30 yards of the latter, is a spring of fresh water. The lower parts are inhabited by goats and rabbits; and the lofty summits are the refuge of innumerable sea-fowl.

AIME, or **AXIMA**, a small town in Savoy, on the river Isere.

AIN, a department of France, lately the province of Bresse. It takes its name from a river which rises at the foot of Mount Jura, and falls into the Rhone above Lyons.

AINSA, a town of Spain, in Arragon, on the river Ara.

AINSWORTH (Dr. Henry), an eminent nonconformist divine, who, about the year 1590, distinguished himself among the Brownists; which drew upon him such troubles, that he was obliged to retire to Holland, and became minister of a church at Amsterdam. His skill in the Hebrew language, and his excellent Annotations on the Holy Scriptures, which are still highly esteemed, gained him great reputation. He also wrote several pieces in defence of the Brownists, and several other works.

AINSWORTH (Robert), born at Woodyale in Lancashire, in 1660, was master of a boarding-school at Bethnal-green, from whence he removed to Hackney, and to other places in the neighbourhood of London. After acquiring a moderate fortune, he retired, and lived privately till the time of his death, which happened in 1743. We are indebted to him for the best Latin and English Dictionary extant: he published it in quarto, 1736; and in 1752, the fourth edition, under the care of Doctor Ward, of Graham College, and the Rev. William Young, was enlarged to two volumes folio.

AIRANI (*Encycl.*). This sect are otherwise called *Airanike*; and are said to have taken their name from one *Airas*, who distinguished himself at the head of this party, in the reigns of Valentinian and Gratian.

AIRAY (Henry), provost of Queen's College in Oxford, was born in Westmoreland, in the year 1560, educated in grammatical learning by the care of Bernard Gilpin, usually called the Northern Apostle, and by him sent to St. Edmund's Hall, in Oxford, in the year 1579. Mr. Airay soon removed from St. Edmund's Hall to Queen's College, where he became a solicitor. In 1583 he took his bachelor's degree, and in 1586 he commenced master of arts and fellow. About this time he went into orders, and became a constant and zealous preacher in the university, particularly in the church of St. Peter in the East, adjoining to Queen's College. In 1594 he took the degree of bachelor in divinity, and four years after was chosen provost of his college. In 1600 he proceeded in divinity, and six years after was chosen vice-chancellor. He wrote the following pieces, which were published after his death. 1. Lectures upon the whole Epistle of St. Paul to the Philippians. London, 1618, 4to. 2. The just and necessary Apology touching his Suit in Law, for the Rectory of Charlton on Otmore, in Oxfordshire. London, 1621, 8vo. 3. A Treatise against bowing at the Name of Jesus. Airay was a zealous Calvinist, and a great supporter of those of his party; who concur in giving him the character of a person of great holiness, integrity, learning, gravity, and indefatigable pains in the discharge of his ministerial function. He died in Queen's College the 10th of October, 1616, aged 57.

AIRAY (Christopher), vicar of Milford in Hampshire, was born at Clifton in Westmoreland, and admitted a student in Queen's College, in Oxford, in Michaelmas term, 1621; where, having passed through the servile offices, and taken the degree of master of arts, he was elected a fellow. Soon after, agreeably to the statutes of that house, he went into holy orders, and, in 1642, took the degree of bachelor of divinity. He wrote a Collection of the Rules of Logic, for the use of the students in the university.

AIRE, in geography, a sea-port town in Scotland, situated in N. lat. 55. 30. and W. long. 4. 40. at the mouth of a river of the same name, which discharges itself into the frith of Clyde. Aire is the chief town of the county, and very ancient. About a mile north from the town, there is a lazar-house, commonly called *the King's chapel*, which King Robert de Bruce let apart for the maintenance of lepers.

AIRESHIRE, a county of Scotland, the capital of which is the town of Aire. It lies eastward of the frith of Clyde.

AISNE, a department of France, including the late provinces of Soissonnois and Vermandois. It takes its name from a river, which runs by Soissons, and falls into the Oise, near Compiègne.

AIUS LOCUTIUS, the name of a deity to whom the Romans erected an altar.—The words are Latin, and signify "a speaking voice."—The following accident gave occasion to the Romans erecting an altar to the Aius Locutius. One M. Ceditius, a plebeian, acquainted the tribunes, that, in walking the streets by night, he had heard a voice over the temple of Vesta, giving the Romans notice that the Gauls were coming against them. This intimation was however neglected; but after the truth was confirmed by the event, Camillus acknowledged this voice to be a new deity, and erected an altar to it under the name of the *Aius Locutius*.

AIX (*Encycl.*), is now the metropolitan see of the department of the mouth of the Rhone. It is a well-built city; and most like Paris of any place in the kingdom, as well for the largeness of the buildings, as in respect of the politeness of the inhabitants. It is embellished with abundance of fine fountains, and several beautiful squares. The Preacher's square is on the side of a hill; it is about 160 yards in length, and is surrounded with trees, and houses, built with stone, three stories high. The town-hall is at one end of the city, and is dis-

tributed into several fine apartments: the two lowest are taken up by the board of accounts, and by the seneschal; that above was formerly designed for the sessions of parliament. The hotel of the city is a handsome building, but hid by the houses of the narrow street in which it is placed. The cathedral church is a Gothic structure. The church of the fathers of the Oratory is a handsome building; and not far from thence is the chapel of the Blue Penitents, which is full of paintings. The convent of Preachers is very fine; in their church was a silver statue of the Virgin Mary almost as big as the life, which, no doubt, the revolutionists have disposed of in another manner. There are other churches and buildings which, during the monarchy, contained a great number of rarities. The baths without the city have good buildings, raised at a vast expence, for the accommodation of those that drink the waters. E. Long. 5. 32. N. lat. 43. 32.

AKENSIDE (Dr. Mark), a celebrated physician and poet, born at Newsoffe upon Tyne in 1721; where, and at the universities of Edinburgh and Leyden, he was educated. He was afterward admitted by mandamus to the degree of doctor in physic at Cambridge; and was appointed one of the queen's physicians, upon the establishment of her household. He was possessed of a fine luxuriant fancy; which, though he wrote many pieces, particularly odes, is principally displayed in that admired poem, *The Pleasures of Imagination*; which, however, he did not live to finish according to his plan. He died of a putrid fever in 1770.

AKIBA, a famous rabbin, flourished a little after the destruction of Jerusalem by Titus. He kept the flocks of a rich citizen of Jerusalem till the 40th year of his age, and then applied himself to study in the academies for 24 years; and was afterwards one of the greatest masters in Israel, he having 24,000 scholars. He declared for the impostor Barcochebas, whom he owned for the Messiah; and not only anointed him king, but took upon himself the office of his master of the horse. The troops which the Emperor Hadrian sent against the Jews, who, under the conduct of this false Messiah, had committed horrid massacres, exterminated this faction. Akiba was taken, and put to death with great cruelty. He lived 120 years; and was buried with his wife in a cave upon a mountain not far from Tiberias, and his 24,000 scholars were buried round about him upon the same mountain. It is imagined he invented a supposititious work under the name of the patriarch Abraham.

ALADULIA (*Encyc.*), is situated in that part of Turkey called Natolia, between the mountains of Antitaurus, which separate it from Asia on the north, and from Carmania on the west. It has the Mediterranean sea on the south; and the Euphrates, or Frat, on the east, which divides it from Diarbeker. It comprehends the Lesser Armenia of the ancients, and the east part of Cilicia. Formerly it had kings of its own; but the head of the last king was cut off by Selim I. emperor of the Turks, who had conquered the country. It is now divided into two parts: the north, comprehended between Taurus, Antitaurus, and the Euphrates, is a beglerbeglic, which bears the name of Marash, the capital town; and the south, seated between mount Taurus and the Mediterranean, is united to the beglerbeglic of Aleppo. The country is rough, rugged, and mountainous; yet there are good pastures, and plenty of horses and camels. The people are hardy and thievish. The capital is Malatigha.

ALAGOA, a town in the isle of St. Michael, one of the Azores.

ALAIN (Chartier), secretary to Charles VII. king of France, born in the year 1386. He was the author of several works in prose and verse; but his most famous performance was his *Chronicle of King Charles VII.* Bernard de Girard,

in his preface to the History of France, styles him "an excellent historian, who has given an account of all the affairs, particulars, ceremonies, speeches, answers, and circumstances, at which he was present himself, or had information of." Giles Coroxet tells us, that Margaret, daughter to the King of Scotland, and wife to the dauphin, passing once through a hall where Alain lay asleep, he stopped and kissed him before all the company who attended: some of them telling her, that it was strange he should kiss a man who had so few charms in his person, she replied, "I did not kiss the man, but the mouth from whence proceed so many excellent sayings, so many wise discourses, and so many elegant expressions." Mr. Fontenelle, among his *Dialogues of the Dead*, has one upon this incident, between the Princess Margaret and Plato. Mr. Pasquier compares Alain to Seneca, on account of the great number of beautiful sentences interperfed throughout his writings.

ALAIS, a town of France, is situated in the department of Gard, and late province of Languedoc, on the river Gardon, at the foot of the Cevennes. The Jesuits had a college in this place; and a fort was built here in 1689.

ALALCOMENIUS, in Grecian antiquity, the Boeotian name of the month, called, by the Athenians, *Metacterion*.

ALAMANNI (Lewis), was born at Florence, of a noble family, on the 28th of October, 1495. He was obliged to fly his country for a conspiracy against Julius de Medici, who was soon after chosen pope under the name of Clement VII. During this voluntary banishment, he went into France; where Francis I. from a love to his genius and merit, became his patron. This prince employed him in several important affairs, and honoured him with the collar of the order of St. Michael. About the year 1540, he was admitted a member of the *Inflammati*, an academy newly erected at Padua, chiefly by Daniel Barbaro and Ugolin Martelli. After the death of Francis, Henry duke of Orleans, who succeeded him in 1537, shewed no less favour to Alamanni; and in the year 1551 sent him as his ambassador to Genoa: this was his last journey to Italy; and being returned to France, he died at Amboise on the 16th of April, 1556, being in the 61st year of his age. He left many beautiful poems, and other valuable performances, in the Italian language. We have also some notes of his upon Homer's *Iliad* and *Odyssey*; those upon the *Iliad* were printed in the Cambridge edition of Homer in 1689, and Joshua Barnes has also inserted them in his fine edition of Homer, in 1711.

ALAMOS (Balthazar), a Spanish writer, born at Medina del Campo in Castile. After having studied the law at Salamanca, he entered into the service of Anthony Perez, secretary of state under Philip II. He was in high esteem and confidence with his master, upon which account he was imprisoned after the disgrace of this minister; he was kept in confinement eleven years, when Philip III. coming to the throne, set him at liberty, according to the orders given by his father in his will. Alamos continued in a private capacity, till the Duke of Olivarez, the favourite of Philip IV. called him to public employments. He was appointed advocate-general in the court of criminal causes, and in the council of war. He was afterwards chosen counsellor of the council of the Indies, and then of the council of the king's patrimony, and a knight of the order of St. James. He was a man of wit as well as judgment, but his pen was superior to his tongue. He died in the eighty-eighth year of his age. His Spanish translation of Tacitus, and the aphorisms which he added in the margin, gained him great reputation: the aphorisms, however, have been censured by some authors, particularly by Mr. Amelot, who says, "that they are quite different from what one would expect; that instead of being more concise and sententious than the text, the words of the text are always more so than the aphorism."

This work was published at Madrid in 1614, and was to have been followed, as mentioned in the king's privilege, with a Commentary, which, however, has never yet appeared. The author composed the whole during his imprisonment. He left several other works, but they were never printed.

ALAN (Cardinal William), was born at Ross in Lancashire, in the year 1532. He went to Oxford at the age of fifteen, and in 1550 was elected fellow of Oriel College. In 1556, being then only twenty-four years old, he was chosen principal of St. Mary's Hall, and one of the proctors of the university. In 1558 he was made canon of York; but, upon Queen Elizabeth's accession to the throne, he left England, and settled at Louvain in an English college, of which he became the chief support. In 1565 he visited his native country; but, on account of his extreme activity in the propagation of the Roman-catholic religion, he was obliged to fly the kingdom in 1568. He went first to Mechlin, and then to Douay, where he was made doctor of divinity. Soon after he was appointed canon of Cambrai, and then canon of Rheims. He was created cardinal on the 28th of July, 1587, by the title of *St. Martin in Montibus*; and obtained from the King of Spain a rich abbey in the kingdom of Naples, and afterwards the bishopric of Mechlin. It is supposed to have been by the advice and instigation of this priest, that Philip II. attempted to invade England. He died on the 20th of October, 1594, aged sixty-three; and was buried in the English college at Rome. He was a man of considerable learning, and an elegant writer. He wrote many books in defence of the Romish religion. The most remarkable are, 1. *A Defence of the Twelve Martyrs in one Year*. Tho. Alford was hanged for bringing, and publishing, this and other of Alan's works, into England, in the year 1584. 2. *A Declaration of the Sentence of Sixtus V. &c.* A work intended to explain the Pope's bull for the excommunication of Queen Elizabeth, and to exhort the people of England to take up arms in favour of the Spaniards. Many thousand copies of this book, printed at Antwerp, were put on board the Armada; but the enterprise failing, they were afterwards destroyed. 3. *Of the Worship due to Saints and their Relics*, 1583. This treatise was answered by Lord Burleigh, and is esteemed the most elegant of the cardinal's writings.

ALAN (of Lynn), a famous divine in the 15th century, was born at Lynn, in the county of Norfolk, and educated in the university of Cambridge; where he applied himself diligently to the study of philosophy and divinity, and, having taken the degree of doctor, became an eminent preacher. Bale, who gives Alan an advantageous character, yet blames him for using allegorical and moral expositions of scripture. But he is particularly famous for the great pains he took in making indexes to most of the books he read. Alan flourished about the year 1420, and wrote several pieces, particularly, 1. *Of the different Senses of Scripture*. 2. *The Morality of the Scriptures*. 3. *Remarkable Discourses*. 4. *A Method of interpreting Scripture*. 5. *Lectures on Divinity*. 6. *Explications of Aristotle*. At length he became a Carmelite, in the town of his nativity, and was buried in the convent of his order.

ALAND, Sir John Fortescue, LL. D. R. S. S. baron of the Exchequer, puisne judge of both benches to King George the First, and a peer of England in the subsequent reign; was born 7th March, 1670; second son to Edmund Fortescue, of London, esq.

This judge was descended from Sir John Fortescue, lord chief-justice, and lord high-chancellor of England, under King Henry the Sixth. Sir John Fortescue Aland added his latter name of Aland in compliment to his lady, who was the eldest daughter to Henry Aland, esq. of Waterford in Ireland.

Sir John Fortescue Aland, when at Oxford, greatly improved his natural endowments, and deservedly had the reputation of being a general soldier; and as he was intended for the profession of the law, upon leaving the university, he became a member of the Inner Temple, where he was chosen reader in the year 1716, as appears by a subscription to his arms ("azure, a bend engrailed argent, cottices or;" crest "a plain shield argent;" supporters "two greyhounds argent, collar and lined gules;" motto "*Fortē scutum salus ducum*"); they are in the parliament chamber of that society, and in Guillim's Heraldry; in allusion to the connection between the family name "Fortescue," and the first two words of the motto "*Fortē scutum*." Sir Walter Raleigh hath styled our judge's ancestor, the *bulwark* of the law. He was called to the bar about the happy æra of the glorious Revolution; in which situation he shone with meridian lustre.

In the year 1714, our barrister was appointed solicitor-general to his Royal Highness the Prince of Wales, afterwards King George the Second, and in 1716 was constituted solicitor-general to the king, in the room of Nicholas Lechmere, resigned; which arduous and important office he executed so much to the satisfaction of his majesty, that he was soon promoted to be one of the barons of the Exchequer; and on 15th May, 1718, was constituted one of the justices of the court of King's Bench, in the place of Sir John Pratt. After the accession of his late majesty King George the Second, all the judges had new patents, except Mr. Justice Fortescue Aland, whose commission was superseized; and the reason generally assigned was, his opinion on the following grand question, viz. "Whether the education and care of his majesty's (King George the First) grand-children, in England, and of Prince Frederic (late father to King George the Third), eldest son of his Royal Highness the Prince of Wales (late grand-father to King George the Third), when his majesty should think fit to cause him to come into England, and the ordering the places of abode, and appointing their governors, and governesses, and other instructors, and attendants, and servants, and the care and approbation of their marriages, when grown up, belonged of right to his majesty, as king of the realm or not?"

Ten judges, among whom was Sir John Fortescue Aland, were of opinion that their education and the approbation of their marriages did belong to his majesty. But we very much doubt the authenticity of the said general assertion of the cause for removing Sir John Fortescue Aland, because a king of the disposition of George the Second would, on the contrary, reverse a judge of such Roman fortitude, and blessed with all the cardinal virtues of his office, courage, integrity, and abilities; and who gave so convincing a proof of his being possessed of every qualification requisite for forming the complete character of a judge. But be our arguments well founded or not, and whether his late majesty did act from the unjust motive above suggested, he soon satisfied mankind and the judge, that all resentment had subsided, and that he was resolved to pay to our judge the tribute due to his merit; for, upon the death of Spencer Cowper (which happened the very next year after Sir John Fortescue Aland's removal), his majesty was pleased to constitute him one of the justices of his court of Common Pleas, viz. 27th January, 1728, Hilary Term, 2 George II.; and what is rather a singular circumstance, he succeeded Spencer Cowper, who succeeded our judge, on being superseized in manner and for the cause above mentioned.

Sir John Fortescue Aland continued on the bench of the court of Common Pleas, from Michaelmas vacation, 2 George II. 1728, until Trinity Term, 19 and 20, A. D. 1746, when he resigned the same, having sat in the superior courts of Westminster for the long period of thirty years, and eighteen of them in the court alluded to. In honour to the judicial inte-

grity and abilities of Sir John, his majesty was pleased to create him a peer of Ireland, by the style and title of John Lord Fortescue Aland, baron Fortescue of Credan, in the kingdom of Ireland, by privy seal, dated at Kennington, 26th June, 1746, 19 George II. and by patent dated at Dublin, 15th August, same year.

Sir John left behind him the following juridical writings: 1. The Difference between an Absolute and Limited Monarchy, as it more particularly regards the English Constitution. 2. Reports of select Cases in all the Courts of Westminster Hall, *tempore* William the Third and Queen Anne; also the Opinion of all the Judges of England, relating to the greatest Prerogatives of a Queen Consort.

ALANORARIUS, in our old customs, was a keeper of spaniels, setting-dogs, &c. for the use of sportsmen. The word is derived from *alan*, a gothic term for a greyhound.

ALAUQUECA, a stone brought from the East Indies in small glossy fragments, said to stop hemorrhages by external application.

ALARAF (*Encycl.*), gives the denomination to the seventh chapter of the Alcoran, wherein mention is made of this wall. Mahomet seems to have copied his *al araf*, either from the great Gulf of separation mentioned in the New Testament, or from the Jewish writers, who also speak of a thin wall dividing heaven from hell. Mahometan writers differ extremely as to the persons who are to be found on *al araf*. Some take it for a sort of limbus for the patriarchs, prophets, &c. others place here such whose good and evil works so exactly balance each other, that they deserve neither reward nor punishment. Others imagine this intermediate space to be possessed by those who, going to war without their parents' leave, and suffering martyrdom there, are excluded paradise for their disobedience, yet escape hell because they are martyrs.

ALASCANI (*Encycl.*), a sect of Antilutherans, are said to have taken the name from one Joannes a Lascio, a Polish baron, superintendent of the church of that country, in England. See the next article.

ALASCO (John), a Polish nobleman of the 16th century, who, imbibing the reformed opinions, was expelled his country, and became preacher to a Protestant congregation at Embden; but foreseeing persecution there, came to England about the year 1551, while the reformation was carrying on under Edward the Sixth. The publication of the Interim driving the Protestants to such places as afforded them toleration, 380 were naturalized here, and obtained a charter of incorporation, by which they were erected into an ecclesiastical establishment, independent on the church of England. The Augustine friars' church was granted them, with the revenues, for the maintenance of Alasco as superintendent, with four assistant ministers, who were to be approved by the king; and this congregation lived undisturbed until the accession of Queen Mary, when they were all sent away. They were kindly received, and permitted to settle at Embden; and Alasco at last, after an absence of twenty years, by the favour of Sigismund returned to his own country, where he died in 1560. Alasco was much esteemed by Erasmus, and the historians of his time speak freely in his praise: we have of his writing *De Cæna Domini liber; Epistola continens summam Controversiæ de Cæna Domini*, &c. He had some particular tenets; and his followers are called *Alascani* in church history. See the preceding article.

ALATED ANIMALS, such as are furnished with wings.

ALATED Leaves, in botany, such as are composed of several pinnated ones. See PINNATED.

ALATERNOIDES, in botany, a synonyme of a species of the myrica. See MYRICA.

ALATRI, a town in the Campagna of Rome, on a hill, with

a bishop's see; 40 miles S.E. of Rome. Long. 13. 8. E. Lat. 41. 30. N.

ALATYR, a town of Russia, in Asia, on the river Suru, in the government of Kasan, and 40 miles E. of Kasan.

ALBA, a town of Italy, in Montserrat, with a bishop's see. It was ceded in 1631 to the Duke of Savoy, and is seated on the river Tanaro, 20 miles S.E. of Turin. Long. 8. 5. E. Lat. 44. 46. N.

ALBA (anc. geog.), a town of the Marsi in Italy, situated on the north side of the Lacus Fucinus, still retaining its name. The inhabitants were called *Albani*, and *Albanenses*.

ALBA HELVIORUM, or *Albaugusta*, in ancient geography (Pliny, Ptolemy); afterwards called *Vicarianus*, now *Viviers*, in the fourth-east of Languedoc, on the Rhone. In the lower age the inhabitants were called *Albanenses*, and their city, *Civitas Albensum*, in the Notitia Galliarum. E. long. 4. 45. Lat. 44. 50.

ALBA JULIA (anc. geog.), now *Weissenburg* a town of Transylvania, on the river Marisus, or Merisch, to the west of Hermanstadt, supposed to be called *Alba Julia*, after Julia Domna, the mother of Caracalla. There are, however, several inscriptions found at or near Weissenburg, which bear *COL. APUL.* that is *Colonia Apulensis*, without the least mention of *Alba Julia*, though inscribed after Caracalla's time. Add, that Ulpian, reciting the colonies of Dacia, calls this colony *Apulensis*, and neither *Alba* nor *Julia*. Whence there is a suspicion, that *Alba Julia* is a corruption of *Apulum*. It was also called *Apulum Augustum*. E. long. 25. 0. Lat. 46. 46.

ALBA LONGA (anc. geog.), a colony from Lavinium, in Latium, established by Alcanius, the son of Æneas, at the foot of the Mons Albanus: called *Alba*, from a white sow found by Æneas, which farrowed 30 white pigs on that spot; which circumstance was interpreted to portend the building of a city there in 30 years after (Propertius). The epithet *Longa* was added on account of its length. It was the royal residence, till the building of Rome, as was foretold by Anchises (Virgil); was destroyed by Tullus Hostilius, all but the fane or temple; and the inhabitants were transplanted to Rome (Strabo).

ALBA POMPEIA (anc. geog.), on the river Ceba, now *Ceva*, in Liguria, the birth-place of the Emperor Pertinax; a colony either established at first by Pompey, or re-established by him after having been before settled by Scipio. The inhabitants were called *Albanenses Pompeiani*. At this day the town is simply called *Alba*, without any epithet.

ALBANA (anc. geog.), a sea-port town of Albania, on the Caspian sea, between the rivers Casius and Albanus, now called *Bachu*, or *Bachy*, giving name to the Caspian sea, viz. *Mar de Bachu*. E. long. 49. 0. Lat. 40. 0.

ALBAHURIM, *figura sexdecim laterum*, a figure of great importance according to astrological physicians, who built their prognostics on it.

ALBANIA (*Encycl.*), a province of Turkey in Europe, is bounded by Livadia on the south, by Thessaly and Macedonia on the east, and on the north by Bosnia and Dalmatia. The people are strong, large, courageous, and good horsemen; but are said to be of a thievish disposition: the grand-seignior procures excellent soldiers from hence, particularly cavalry, known by the name of *Arnauts*. There are several large towns in this province; and the inhabitants are almost all Christians of the Greek church, and descended from the ancient Scythians. Formerly it was part of the kingdom of Macedonia. Their chief manufacture is carpets. The principal places are Durazzo, Velona, Antivari, Scutari, Croya, Alessio, Dibra, Dolcigno, and Albanapoli.

ALBANIA (*Encycl.*), a country of Asia, is bounded on the west by Iberia; on the east by the Caspian sea, on the north by mount Caucasus, on the south by Armenia and the river Cyrus, now Kur; which, springing from the *Mogebian* moun-

tains that separate Colchis from Armenia, and watering the country of *Mokan*, receives the Aragus and Araxes, and falls into the Caspian sea within a small distance from the southern borders of this country.—The whole country formerly called *Albania*, now goes under the names of *Shirvan* and *East Georgia*, and is extremely fruitful and pleasant. The ancient historians take notice of the Albanian men being tall, strong bodied, and, generally speaking, of a very graceful appearance; far excelling all other nations in comeliness, as well as stature. Modern travellers take no notice of the appearance of the men; but extol the beauty of the women, which seems to be unnoticed by the ancients. The Albanians were anciently an independent and pretty powerful people; but we find no mention made of their king, till the reign of Alexander the Great, to whom the king of Albania is said to have presented a dog of an extraordinary fierceness and size.—It does not appear that the Albanians were ever conquered by the Romans, even when their power was at its greatest height; though, when they ventured to engage in war with that powerful empire, they were always defeated, as might naturally be expected.

ALBANO (Francesco), a celebrated history and landscape painter, born at Bologna in 1578, who studied first in the school of Dennis Calvert at the same time with Guido, but placed himself afterward under the direction of the Caracci, and completed his studies at Rome. For the most part he painted in a small size, and chose his subjects from poetic or fabulous history: he was fond of introducing cupids, in a variety of actions and attitudes. It has been objected to him, that he was apt to preserve too great a similitude in his figures, and in the air of his heads; which arose from his painting after his wife and children as models. The style of his landscape is very agreeable, as his scenes and objects were studied from nature. In the king of Sardinia's palace at Turin, are the Four Elements painted by him, which are of extraordinary beauty, and well preserved. He died in 1660. He had a brother Giovanni Battista Albano, who was his disciple, and became an admirable painter in his style: he died in 1668.

ALBAN (St.), is said to have been the first person who suffered martyrdom for Christianity in Britain; he is therefore usually styled the protomartyr of this island. He was born at Verulam, and flourished towards the end of the third century. In his youth he took a journey to Rome, in company with Amphibalus a monk of Caerleon, and served seven years as a soldier under the emperor Dioclesian. At his return home, he settled in Verulam; and, through the example and instructions of Amphibalus, renounced the errors of paganism, in which he had been educated, and became a convert to the Christian religion. It is generally agreed, that Alban suffered martyrdom during the great persecution under the reign of Dioclesian; but authors differ as to the year when it happened: Bede and others fix it in 286; some refer it to the year 296; but Usserius reckons it amongst the events of 303. The story and circumstances relating to his martyrdom, according to Bede, are as follows. Being yet a pagan (or at least it not being known that he was a Christian), he entertained Amphibalus in his house. The Roman governor being informed thereof, sent a party of soldiers to apprehend Amphibalus; but Alban, putting on the habit of his guest, presented himself in his stead, and was carried before that magistrate. The governor having asked him of what family he was? Alban replied, "To what purpose do you enquire of my family? if you would know my religion, I am a Christian." Then being asked his name, he answered, "My name is Alban; and I worship the only true and living God, who created all things." The magistrate replied, if you

would enjoy the happiness of eternal life, delay not to sacrifice to the great gods." Alban answered, "The sacrifices you offer are made to devils; neither can they help the needy, or grant the petitions of their votaries." His behaviour so enraged the governor, that he ordered him immediately to be beheaded. In his way to execution, he was stopped by a river, over which was a bridge so thronged with spectators that it was impossible to cross it; the faint, as we are told, lifted up his eyes to heaven, and the stream was miraculously divided, and afforded a passage for himself and a thousand more persons. Bede does not indeed give us the name of this river; but, notwithstanding this omission, the miracle, we suppose, will not be the less believed. This wonderful event converted the executioner upon the spot, who threw away his drawn sword, and falling at St. Alban's feet, desired he might have the honour to die with him. This sudden conversion of the headman occasioning a delay in the execution, till another person could be got to perform the office, St. Alban walked up to a neighbouring hill, where he prayed for water to quench his thirst, and a fountain of water sprung up under his feet: here he was beheaded, on the 23d of June. The executioner is said to have been a signal example of divine vengeance; for as soon as he gave the fatal stroke, his eyes dropt out of his head. We may see the opinion of Mr. Milton in regard to this narrative, in his history of England: his words are these, speaking of St. Alban, "The story of whose martyrdom, soiled and worse martyred with the fabling zeal of some idle fancies, more fond of miracles than apprehensive of the truth, deserves no longer digression. Between 4 or 500 years after St. Alban's death, Offa king of the Mercians built a very large and stately monastery to his memory; and the town of St. Alban's in Hertfordshire takes its name from our protomartyr.

ALBANS, *St. (Encycl.)*, a market town of Hertfordshire, is seated near the ruins of an ancient Roman city, by Tacitus called *Verulam*; and by the Saxons *Watlingcester*, because it is seated on the road called *Watling-street*. Nothing now remains of Verulam, but the ruins of old walls; in the fields adjacent to which they continue to find Roman coins, as they formerly found tessellated pavements. In memory of St. Alban, Offa king of the Mercians, anno 795, erected an abbey, calling it *St. Alban's*; and near it the town of the same name was afterwards built. The church of the abbey is remaining to this day: time and the weather have made it look like stone on the outside; but if you break a bit off, the redness of the brick immediately appears. When the monasteries were dissolved, the townsmen paid £. 400 to prevent its being levelled with the ground, and have since converted it into a parish-church, which, for its largeness, beauty, and antiquity, claims a particular regard. It had a very noble font of solid brass, in which the children of the kings of Scotland were used to be baptized; and was brought from Edinburgh, by Sir Philip Lea, when that city was in flames; but in the times of the late civil wars, it was taken away. Not many years since, a tomb was discovered in this church, said to be that of Humphrey duke of Gloucester: when the leaden coffin was opened, the body was pretty entire, being preserved in a sort of pickle. There was a stately cross in the middle of the town, as there were in many other places where queen Eleanor's body rested when it was brought out of the north for interment at Westminster; but it has been demolished, as some say, by the inhabitants.

ALBANUS MONS (anc. geog.), now called *Mont Albano*, 16 miles from Rome, near where Alba Longa stood.

ALBANUS MONS (anc. geog.), to the north of Istria, called *Albius* by Strabo; the extremity of the Alps, which, together with the mountains to the east, joining it, called

Montes Bëbi, separate the farther Liburnia and Dalmatia from Pannonia.

ALBEMARLE, or **AUMARLE** (*Encycl.*), a town of France, in the department of the Lower Seine, and late province of Normandy. From hence the noble family of Keppel takes the title of *Earl*. Before the revolution, the ferges of this town were in high esteem. It is seated on the declivity of a hill, on the confines of Picardy.

ALBERONI (Julius), the son of a poor gardener, in the suburbs of Placentia, born in 1664; who, by his great abilities and good fortune, rose from this low original, to the employment of first minister of state at the court of Spain, and to the dignity of Cardinal. He roused that kingdom out of the lethargy it had sunk into for a century past; awakened the attention and raised the astonishment of all Europe, by his projects; one of which was to fet the Pretender on the throne of Great Britain. He was at length deprived of his employment, and banished to Rome: he died in 1752, at the great age of 89. His *Testament Politique*, collected from his memoirs and letters, was published at Lausanne in 1753.

ALBERTI (Leone Battista), was descended from a noble family in Florence; and was perfectly acquainted with painting, sculpture, and architecture. He wrote of all three in Latin; but his studies did not permit him to leave any thing considerable behind him in painting. He was employed by Pope Nicholas V. in his buildings, which he executed in a beautiful manner; and his work on architecture, which consists of ten books, is greatly esteemed. He also wrote some treatises of morality, and a piece on arithmetic. He died in 1485.

ALBERTUS (Magnus), a Dominican friar, and afterwards archbishop of Ratibon, was one of the most learned men and most famous doctors of the 13th century. He was by the ignorant charged with being a magician, and making a machine resembling a man, which they foolishly imagined explained all the difficulties he proposed to it. He died at Cologne, November 15, 1280. His works were printed at Lyons, in 1651, in 21 volumes folio.

ALBI, or **ALBY** (*Encycl.*), an ancient town of France, lately the capital of the territory of the Albigeois in Languedoc, and an archiepiscopal see. It is now the episcopal see of the department of Tarn, and contains 10,000 inhabitants. In point of architecture and decorations, the principal church is one of the most curious in France: it is celebrated for an organ, which, to the merit of construction and perspective, unites a tone and a *vox humana* in the highest perfection. The inhabitants were called Albigenes; they were the first that disputed the authority of the pope, and they were condemned by a council held here in 1176. The environs of Alby are charming: the magnificent walk, called *La Lice*, is a terrace, commanding a great mall, which is so deep, that it serves the town for fosses. The adjacent territory produces all kinds of grain, excellent wines, flax, hemp, saffron, aniseed, coriander, and woad. The fine pastures afford wool of a good quality, which is manufactured into knit stockings for the soldiers, ratteens of all colours, shalloons, coarse woollens, &c. The wax candles of Alby are equal in whiteness to those of Mans.

ALBIGENSES (*Encycl.*). This sect had their name, it is supposed, either by reason there were great numbers of them in the diocese of Albi, or because they were condemned by a council held in that city. In effect, it does not appear that they were known by this name, before the holding of this council. Other names given to them are *Henricians*, *Abelardists*, *Bulgarians*, &c. some on account of the qualities they assumed; others on that of the country from whence it is pretended they were derived: and others on account of per-

fons of note who adopted their cause, as Peter de Brias, Art nold de Bresse, Abelard, Henry, &c. Berengarius, if not Wickliff himself, is by some ranked in the number. The *Albigenses* are frequently confounded with the *Waldenses*; from whom, however, they differ in many respects, both as being prior to them in point of time, as having their origin in a different country, and as being charged with divers heresies, particularly Manichæism, from which the *Waldenses* are exempt. But several Protestant writers have vindicated them from that imputation. Dr. Allix shews, that a great number of *Manichees* did spread over the western countries from Bulgaria; and settled in Italy, Languedoc, and other places, where there were also *Albigenses*; by which means being both under the imputation of *heresy*, they came, either by ignorance or malice, to be confounded, and called by the same common name, though in reality entirely different.

Other errors imputed to them by their opponents, the monks of those days, were, That they admitted two Christs; one evil, who appeared on earth; the other good, who has not yet appeared: They denied the resurrection of the body; and maintained human souls to be demons imprisoned in our bodies, by way of punishment for their sins: That they condemned all the sacraments of the church; rejected baptism as useless; held the eucharist in abhorrence; excluded the use of confessions and penance; maintained marriage unlawful; laughed at purgatory, prayers for the dead, images, crucifixes, &c.—There were likewise said to be two classes of them, the Perfect and the Believers. The perfect boasted of their living in continence, of eating neither flesh, eggs, nor cheese. The believers lived like other men, and were even loose in their morals; but they were persuaded they should be saved by the faith of the perfect, and that none were damned who received imposition of hands from them. But from these charges also they are generally acquitted by Protestants; who consider them as the pious inventions of the Romish church, whose members deem it meritorious by any means to blacken heretics.

However this be, the Albigenes grew so formidable, that the Catholics agreed upon a holy league or crusade against them. They were at first supported by Raymond count of Toulouse. Pope Innocent III. desirous to put a stop to their progress, sent a legate into their country; which failing, he stirred up Philip Augustus king of France, and the other princes and great men of the kingdom, to make war upon them. Upon this the Count of Toulouse, who had sided with them, made his submission to the Pope, and went over to the Catholics: but soon after, finding himself plundered by the crusaders, he declared war against them, and was joined by the King of Arragon. His army was defeated at the siege of Muret, where he himself was killed, and the defeat followed by the surrender of the city of Toulouse, and the conquest of the greatest part of Languedoc and Provence. His son Raymond succeeded him; who agreed with the king and the pope to set up the inquisition in his estates, and to extirpate the Albigenes. In an assembly held at Milan, the Archbishop of Toulouse drew up articles; agreeable to which the count made a most ample declaration against them, which he published at Toulouse in 1253. From this time the Albigenes dwindled by little and little, till the times of the reformation; when such of them as were left fell in with the *Vauds*, and became conformable to the doctrine of Zuinglius and the discipline of Geneva.

The curious reader who desires to know more concerning the history of the *Albigenses*, may consult *Prætol*. Elench. Hær.

ALBIGENSES (*Encycl.*), as synonymous with *Waldenses*. This word is applied by Camerarius, Thuanus, and several other

writers. The reason seems to be, that both parties agreed in their opposition to the papal innovations and incroachments, though in divers other respects said to be different enough. The bishop of Meaux labours hard to support a distinction between the two sects, alleging that the *Albigenses* were heretics and Manichees; whereas the *Waldenses* were only schismatics, not heretics; being found as to articles of faith, and only separating from the church of Rome on account of ceremonies and discipline. Dr. Allix endeavours to set aside the distinction; and shews that both of them held the same opinions; and were equally condemned and held for heretics; and this not for points of faith, but for declaiming against the papal tyranny and idolatry, and holding the pope to be the Antichrist; which last, according to M. de Meaux, constitutes nothing less than Manicheism. In this sense the Lollards and Wickliffites in England were not only Albigenses, but Manichees.

ALBINTEMELIUM, **ALBINTIMILIUM** (Tacitus); or at full length, **ALBIUM INTEMELIUM** (Pliny, Strabo); now *Vintimiglia*, situated on the south-west of the territory of Genoa, near the borders of the county of Nice, with a port on the Mediterranean, at the mouth of the rivulet Rotta, almost about half way between Monaco and S. Remo. E. Long. 7. 40. Lat. 42. 17.

ALBIOECE, or **ALBEECE** (Pliny, Strabo); otherwise called *Reu Apollinares*, from their superstitious worship of Apollo; also *Civitas Reienjum*; now *Riez*, in Provence, about 18 leagues to the north-east of Toulon, on the north side of the rivulet Verdon; was originally a Roman colony (Inscription). It is sometimes written *Regium*. The people were called *Albici* (Cæsar). E. Long. 1. 0. Lat. 43. 20.

ALBINOVANUS, a Latin poet, whose Ovid furnished the *Divine*. There is now nothing of his extant, except an elegy on Drusus, and another on the death of Mæcenat.

ALBRICIUS, born at London, was a great philosopher, a learned and able physician, and well versed in all the branches of polite literature. He lived in the 11th century, and wrote several works in Latin, particularly, 1. *Of the Origin of the Gods*. 2. *The Virtues of the Ancients*. 3. *The Nature of Poison*, &c.

ALBUMAZAR, a learned Arabian astronomer in the tenth century, who wrote a treatise, *Of the Revolution of the Years*.

ALBUQUERQUE (Alphonso), a native of Portugal. Little is known of this great commander before he was appointed by his king, Emanuel, to the command of a squadron destined for India, where, by his exploits, he raised the arms of his country to the highest pitch of glory.

Emanuel, A. D. 1503, dispatched six ships to India, under the command of Albuquerque, and the same year three more under his cousin, Francis Albuquerque. The arrival of the Portuguese so alarmed the garrison that then had possession of Cochín, that they precipitately left it. Alphonso Albuquerque then sailed to Conlon to load three ships, which he completed without opposition, made an alliance with the people, and returned to Cochín. On his return he found the Zamorin ready to enter into a treaty of peace with him, which was concluded.

In 1508 Alphonso was appointed to succeed to the government of India, and dispatched with five ships; he sailed in company with Cugna, another Portuguese officer. Having plundered and taken some towns on the coast of Arabia, they sailed to Zocatora, and made themselves masters of the fort there. After which Cugna returned to Portugal, and Albuquerque began to act alone.

He immediately formed the design of attacking Ormuz

island, situated at the mouth of the Persian Gulph, and subject to a king of its own, who had extended his dominions over several cities in Arabia. With a small army of 470 men, he proceeded along the Arabian coast, took many towns, and proceeded to the island itself. He found several ships fitted for war in the harbour; these it was determined to burn. However, he first offered peace to the king, who entered into a treaty, with a view to gain time until a reinforcement arrived. The expected force came, and an engagement ensued, in which the Portuguese were victorious. Albuquerque then pressed the city; and the king finding no resource, solicited peace, on condition of becoming tributary to the king of Portugal. This was agreed to. Albuquerque went on shore, had an interview with the king, and knowing the perfidy of the Arabians, began to build a fortress. While this was carrying on some deputies arrived from the king of Persia, to demand tribute of the king of Ormuz. The latter consulted Albuquerque, who with great spirit told the deputies that his master paid no tribute, but arms. Albuquerque was, however, forced to desist by the perfidy of his officers, and to repair on board his fleet. He then renewed the war; but receiving a letter from the governor (Almeed) blaming his conduct, he proceeded for India: when, after some hesitation, Almeed resigned the government to him, and sailed to Europe.

Being now invested with the supreme command, he prepared a fleet, and sailed against Calicut, where, in a desperate and imprudent attack, he was dangerously wounded and forced to retreat.

Albuquerque being recovered, went to sea with twenty-three ships, two thousand Portuguese, and several Indian auxiliaries, designed for Ormuz; but, by the persuasion of Timoa, a piratical prince, changed his intention, and proceeded to attack Goa. The forts near it on the continent were taken and destroyed; and learning that the city was in the greatest consternation, he sent deputies to offer the people his protection, and the enjoyment of their religion. The citizens accepted the conditions, and Albuquerque entered Goa the following day, being the 16th of February, 1510. This city has long been the head of the Portuguese dominions in India. Here Albuquerque fixed his winter quarters, and behaved himself in such a manner as to merit the esteem of every one. But, while he was thus employed, some of the chief Portuguese began to murmur against him. However, by seizing and imprisoning the leaders, he quieted the disturbance. The enemy being informed of the dissensions of the Portuguese, made an attack upon the island, and landing men, laid siege to the city, pressing it hard. The situation of Albuquerque became now truly distressing, an enemy vastly superior without, discontent among his officers within, and his troops greatly diminished. These circumstances determined him to embark on board his ships, and evacuate the city, which he effected after a fierce combat, having first set fire to the magazines.

He then fled to a place called Rapander to winter; but the enemy soon obliged him to remove, and take shelter between the continent and the island of Divar, where he was informed his enemies were all preparing to make an attack upon him. In this extremity, being also very scarce of provisions, he determined to make a desperate effort on a strong castle, called Pangin. Accordingly, having stationed a force to prevent succours being sent to it, he proceeded under cover of the night, and succeeded in surprising both the fort and camp of the enemy, both which were taken without much resistance.

Such an unexpected turn of good fortune determined him

not only to object to offers of peace, but also to make an attack on Goa. In this he succeeded, having in the attack killed 3000 of the enemy.

Such success induced him to aim at greater enterprizes. Having collected his forces, he sailed from Goa to the island of Sumatra, and in every voyage made many captures; then having concluded a treaty with the princes of this island, he proceeded to the city of Malacca, and made himself master of it. Having settled affairs there, he returned to Goa, laid siege to the city of Benatar, and having been unsuccessful, consented to a peace with the Zamorin. He then built a fort at Calicut, and sailed to Aden, in hopes of making himself master of it, but was disappointed, and obliged to return. Soon after he fell sick and died, having first had the mortification to hear of his being recalled by the king.

To this great man the Portuguese owe the foundation of the immense power they once possessed in India; and, had they pursued the maxims he laid down, might possibly have enjoyed to this day. He was a man of great humanity, dreaded for his bravery, and beloved for his benevolent disposition. His death was most sincerely felt by all the people of Goa, where he was buried with great funeral honours.

ALCA (*Encycl.*), or AUK, in ornithology, a genus of the order of anseres. To our article in Vol. I. we have omitted to annex the delineations, so essential in subjects of natural history, which we now supply. In Pl. 12. of this volume will be found representations of the first, second, and seventh species of this bird.

ALCEUS, a famous ancient lyric poet, was born at Mitylene, in the island of Lesbos. He flourished in the 44th Olympiad, at the same time with Sappho, who was likewise of Mitylene. In the time of Alceus, Mitylene suffered under the oppression of Pittacus. He headed a strong party for the deliverance of his country; but in this proved unsuccessful, and was taken prisoner by Pittacus, who gave him his liberty, although he had been treated by him in a most abusive manner.

Alceus was much addicted to the detestable Greek vice, the love of boys. The name of his favourite was Lycus, of whom Horace speaks; and who is probably the boy whom Cicero notes for having a mole upon his finger, which, in the poet's eye, was a beauty.

The poetical abilities of Alceus are undisputed; and though his writings were chiefly in the lyric strain, yet his muse was capable of treating the sublimest subjects with a suitable dignity.

ALCEUS, an Athenian tragic poet, and, as some think, the first composer of tragedies. He renounced his native country Mitylene, and passed for an Athenian. He left ten pieces, one of which was *Paiphaë*, that which he produced when he disputed with Aristophanes, in the fourth year of the 97th Olympiad.

There is another ALCEUS mentioned in Plutarch, perhaps the same whom Porphyrius mentions as a composer of satirical fables and epigrams, and who wrote a poem concerning the plagiarism of Euphorus the historian. He lived in the 145th Olympiad.

We are told likewise of one ALCEUS, a Messenian, who lived in the reign of Vespasian and Titus. We know not which of these it was who suffered for his lewdness a very singular kind of death, which gave occasion to the following epitaph:

Ἀλκαῖος τὰ φος ἐπὶ τοῦ, &c.

This is Alceus's tomb, who died by a radish,
The daughter of the earth, and punisher of adulterers.

This punishment inflicted on adulterers, was, thrusting one of the largest radishes up the anus of the adulterer: or, for want of radishes, they made use of a fish with a very large head, which Juvenal alludes to:

Quosdam machos et mugilis intrat.

The mullet enters some behind.

Hence we may understand the menace of Catullus,

Ah! tum te miserum, malique fati,

Quem attractis pedibus, patente porta,

Percurrent raphanice mugilesqve. EPIC. XV.

Ah! wretched thou, and born to luckless fate,

Who art discover'd by the unshut gate!

If once, alas! the jealous husband come,

The radish, or the sea-fish, is thy doom.

ALCAIC ODE (*Encycl.*). The following strophe is of this species, which Horace calls *minuas Alcai camenæ*.

Non possidentem multa vocaveris

Recte beatum: rectius occupat

Nomen beati, qui deorum

Muneribus sapienter uti, &c.

ALCAMER, an ancient and handsome town of the United Provinces, in North Holland. In the environs, they make the best butter and cheese in Holland, and have the finest tulips. It is 17 miles N. by W. of Amsterdam. Long. 4.43. E. Lat. 52.40. N.

ALCAMO, a town of Sicily, in the valley of Mazaro, at the foot of Mount Bonifati. Long. 13. 52. E. Lat. 38. 2. N.

ALCEDO (*Encycl.*), in ornithology. There are seven species of the Alcedo, most worthy of notice, viz.

1. The *hyssida*, or common kingfisher (see Pl. 12.), haunts the shores of Europe and Asia. It is not much larger than a swallow; its shape is clumsy; the bill disproportionately long; it is two inches from the base to the tip; the upper chap black, and the lower yellow. But the colours of this bird atone for its inelegant form: the crown of the head and the coverts of the wings are of a deep blackish green, spotted with bright azure; the back and tail are of the most resplendent azure; the whole under-side of the body is orange-coloured; a broad mark of the same passes from the bill beyond the eyes; beyond that is a large white spot: the tail is short, and consists of twelve feathers of a rich deep blue; the feet are of a reddish yellow, and the three joints of the out-most toe adhere to the middle toe, while the inner toe adheres only by one.

From the diminutive size, the slender short legs, and the beautiful colours of this bird, no person would be led to suppose it one of the most rapacious little animals that skims the deep. Yet it is for ever on the wing, and feeds on fish; which it takes in surprising quantities, when we consider its size and figure. It takes its prey after the manner of the osprey, balancing itself at a certain distance above the water for a considerable space, then darting into the deep, and seizing the fish with inevitable certainty. While it remains suspended in the air, in a bright day, the plumage exhibits a beautiful variety of the most dazzling and brilliant colours. This striking attitude did not escape the notice of the ancients; for Ibycus, as quoted by Athenæus, styles these birds *αλκυονες, τανδριπτεροι*, the halcyons with expanded wings. It makes its nest in holes in the sides of the cliffs, which it scoops to the depth of three feet; and lays from five to nine eggs, of a most beautiful semi-transparent white: the nest is very

setid, by reason of the remains of the fish brought to feed the young. The female begins to lay early in the season; and excludes her first brood about the beginning of April. The male, whose fidelity exceeds even that of the turtle, brings her large provisions of fish while she is thus employed; and she, contrary to most other birds, is found plump and fat at that season. The male, that used to twitter before this, now enters the nest as quietly and as privately as possible. The young ones are hatched at the expiration of twenty days; but are seen to differ as well in their size as in their beauty.

This species is the *αλιευαυρος*, or mute halcyon of Aristotle, which he describes with more precision than is usual with that great philosopher: after his description of the bird, follows that of its nest, than which the most inventive of the ancients have delivered nothing that appears at first sight more fabulous and extravagant. He relates, that it resembled those concretions that are formed by the sea-water; that it resembled the long-necked gourd; that it was hollow within; that the entrance was very narrow, so that, should it over-set, the water could not enter; that it resisted any violence from iron, but could be broke with a blow from the hand; and that it was composed of the bones of the *Balaen*, or sea-needle. The nest had medical virtues ascribed to it; and from the bird was called *Halcyonum*. In a fabulous age, every odd substance that was hung ashore received that name; a species of tubular coral, a sponge, a zoophite, and a miscellaneous concrete, having by the ancients been dignified with that title from their imaginary origin. Yet much of this seems to be founded on truth. The form of the nest is justly described; and the materials which Aristotle says it was composed of, are not entirely of his own invention. Whoever has seen the nest of the kingfisher, will observe it strewn with the bones and scales of fish; the fragments of the food of the owner and its young.—On the foundation laid by the philosopher, succeeding writers formed other tales extremely absurd; and the poets, indulging the powers of imagination, dressed the story in all the robes of romance. This nest was a floating one:

Incubat *halcyone* pendentibus æquore nidis;

OVID. Met. lib. xi.

It was therefore necessary to place it in a tranquil sea, and to supply the bird with charms to allay the fury of a turbulent element during the time of its incubation; for it had, at that season, power over the seas and the winds.

Ἄλκυονες σερπεννὶ τὰ κυματα, τῇ τὴ θαλάσσει,
Τοι τὸ νῆος, τοὶ τ' ὑπὸ, αἱ ἐρχομαι φινία κινῆ
Ἀλκυονες, ἡλακκας Νηρηίδας τὰι τὴ μαλιστα
Ορηδῶν ἱερὰδες.

THEOCRIT. Idyl. vii. l. 57.

May *Halcyons* smooth the waves, and calm the seas,
And the rough fourth-east sink into a breeze;
Halcyons, of all the birds that haunt the main,
Most lov'd and honour'd by the *Nereid* train. FAWKES.

These birds were equally favourites with *Thetis* as with the *Nereids*;

Dilectæ *Thetidi* *Halcyones*. VILCO. Georg. I. 399.

as if to their influence these deities owed a repose in the midst of the storms of winter, and by their means were secured from those winds that disturb their submarine retreats, and agitated even the plants at the bottom of the ocean.

Such are the accounts given by the Roman and Sicilian poets. Aristotle and Pliny tell us, that this bird is most common in the seas of Sicily: that it sat only a few days, and those in the depth of winter; and during that period the mariner might sail in full security; for which reason they were styled *Halcyon days*.

VOL. X.

Perque dies placidos hiberno tempore septem
Incubat *Halcyone* pendentibus æquore nidis :
Tum via tuta maris : ventos custodit, et arcet
Æolus egressu.

OVID. Met. lib. XI.

Alcyone, compressed,
Seven days sits brooding on her watery nest,
A wintry queen; her fire at length is kind,
Calms every storm, and hushes every wind. DRYDEN.

In after-times, these words expressed any season of prosperity: these were the *Halcyon days* of the poets; the brief tranquillity, the *septem placidis dies*, of human life.

The poets also made it a bird of song. Virgil seems to place it in the same rank with the linnet;

Littoraque *Halcyonem* resonant, et *Acanthida* dumi.

GEORG. III. 338.

And *Silius* *Italicus* celebrates its music, and its floating nest:

Cum sonat *Halcyone* cantu, nidisque natantes.

Immotæ gestat sopitis fluctibus undæ. Lib. XIV. 275.

But these writers seem to have transferred to our species, the harmony that belongs to the vocal *alcedo*, one of the loveliest birds of the ancients.

As the ancients have had their fables concerning this bird, so have the modern vulgar. It is an opinion generally received among them, that the flesh of the kingfisher will not corrupt, and that it will even banish all vermin. This has no better foundation than that which is said of its always pointing, when hung up dead, with its breast to the north. The only truth which can be affirmed of this bird when killed is, that its flesh is utterly unfit to be eaten; while its beautiful plumage preserves its lustre longer than that of any other bird we know.

The other species are, 2. The *erasthaca*, with a short tail, a blue back, a yellow bill, a purple head and rump, and the throat and opposite part of the neck white. It is a native of Bengal. 3. The *alcyon* with a short black tail, white belly, and ferruginous breast. It is a native of America. Its cry, its solitary abode about rivers, and its manner of feeding, are much the same as of those in Britain. It preys not only on fish, but likewise on lizards. 4. The todus, with a short green tail, a blood-coloured throat, and a white belly. It is a native of America; and is the green sparrow, or green humming-bird, of Edwards. 5. The *myrmensis*, with a short green tail, ferruginous wings, and a green back. It is a native of Africa, and Asia. 6. The *rudis*, with a short brown tail variegated with white. It is a native of Persia and Egypt. 7. The *dea*, with two very long feathers in the tail, a blackish blue body, and greenish wings. It is a native of Surinam. All these likewise dive in the water, and catch fish with their long beaks.

ALCIAT (Andrew), a great lawyer, who flourished in the 16th century, born at Milan. He mixed much of polite learning in the explication of the laws, and happily drove out the barbarity of language which till then had reigned in the lectures and writings of lawyers; for which Thuanus highly praises him. He published a great many law-books, and some notes upon Tacitus. His Emblems have been much admired, and translated into French, Italian, and Spanish; and several learned men have written commentaries on them.

ALCIBIADES (*Encyc.*), an Athenian general. It was the fate of this great man to live at a time when his country was a scene of confusion. The Greeks, grown insolent from their conquests in Persia, turned their arms against each other, and struggled together under the conduct of the two most opulent states, Athens and Lacedæmon. Alcibiades, in the midst of an expedition he had planned against the enemy of

his country, was recalled home to answer some charge of a private nature; but fearing the violence of his enemies, instead of going to Athens, he offered his services at Sparta, where they were readily accepted. By his advice the Lacedæmonians made a league with Persia, which gave a very favourable turn to their affairs. But his credit in the republic raising jealousies against him, he privately reconciled himself to his country, and took again the command of an Athenian army. Here victory, waiting as it were at his command, attended all his motions. The loss of seven battles obliged the Spartans to sue for peace. He enjoyed his triumphs, however, only a short time at Athens. One unsuccessful event made him again obnoxious to the malice of his citizens; and he found it expedient to retire from Athens. In his absence the Spartans again took the lead, and at the fatal battle of Ægos entirely subdued the Athenian power. Alcibiades, though an exile, endeavoured to restore the power of his country; of which the Spartans having intelligence, procured him to be assassinated. He was a man of admirable accomplishments, but indifferently principled; of great parts; and of an amazing verifiability of genius.

ALCINOUS, king of the Phæaciæns, in the island now called *Corfu*, was son of Naufithous, and grandson of Neptune and Peribea. It is by his gardens this king has chiefly immortalized his memory. He received Ulysses with much civility, when a storm had cast him on his coast. The people here loved pleasure and good cheer, yet were skilful seamen; and Alcinoüs was a good prince.

ALCMAN, a lyric poet, who flourished in the 27th Olympiad. He was born at Sparta; and composed several poems, of which only some fragments are remaining, quoted by Athenæus and some other ancient writers. He was very amorous; accounted the father of gallant poetry; and is said to have been the first that introduced the custom of singing love-songs in company. He is reported to have been one of the greatest eaters of his age; upon which Mr. Bayle remarks, "that such a quality would have been extremely inconvenient, if poetry had been at that time upon such a footing as it has been often since, not able to procure the poet bread. He died of a strange disease; for he was eaten up with lice."

ALCMENA, the daughter of Electryö king of Mycenæ, and wife of Amphitryon. Jupiter putting on the shape of her husband while he was abroad in the wars, begot Hercules upon her: he made that night as long as three ordinary ones.

ALCOA ARBOR, the name of a tree in St. Helena, said to emulate ebony.

ALCOCK (John), doctor of laws, and bishop of Ely in the reign of King Henry VII. born at Beverly in Yorkshire, and educated at Cambridge. He was first made dean of Westminster, and afterwards appointed master of the rolls. In 1471, he was consecrated bishop of Rochester; in 1476, he was translated to the see of Worcester; and in 1486, to that of Ely, in the room of Dr. John Morton, preferred to the see of Canterbury. He was a prelate of great learning and piety; and so highly esteemed by King Henry, that he appointed him lord president of Wales, and afterwards lord chancellor of England. Alcock founded a school at Kingston-upon-Hull, and built the spacious hall belonging to the episcopal palace at Ely. He was also the founder of Jesus' College in Cambridge, for a master, six fellows, and as many scholars. This house was formerly a nunnery, dedicated to St. Radigund; and, as Godwin tells us, the building being greatly decayed, and the revenues reduced almost to nothing,

the nuns had all forsaken it, except two; whereupon Bishop Alcock procured a grant from the crown, and converted it into a college. But Cambden and others tell us, that the nuns of that house were so notorious in their incontinence, that King Henry VII. and Pope Julius II. consented to its dissolution: Bale accordingly calls this nunnery *spiritualium meretricum cenobium*, "a community of spiritual harlots." Bishop Alcock wrote several pieces, amongst which are the following: 1. *Mont Perfectionis*. 2. *In Pfalmis Penitentiales*. 3. *Homilie Fulgares*. 4. *Meditationes Pivæ*. He died October 11, 1500; and was buried in the chapel he had built at Kingston-upon-Hull.

ALCONCHOE, a castle of Spain, on the frontiers of Éstramadura, seated on the river Alcaraque, that falls into the Guadiana, 20 miles S. by W. of Badajoz. Long. 6. 58. W. Lat. 38. 12. N.

ALCOUTIM, a town of Portugal, in the province of Algarva. It is seated on the river Guadiana, and contains about 1000 inhabitants. Long. 7. 20. W. Lat. 37. 20. N.

ALCUDIA, a town in Majorca, consisting of about 1000 houses, between two large harbours. Long. 3. 0. E. Lat. 39. 50. N.

ALCUINUS (Flaccus), an ecclesiastic of the eighth century. Where he was born, is a matter of dispute; but, according to the most probable opinion, it was in Yorkshire. It is pretty certain, however, that he was educated first under Bede, and afterwards by Egbert archbishop of York, by whom he was made keeper of the library of that city (A). He thence rose to be deacon of the church, and afterwards became abbot of Canterbury. In the year 793 he went over to France, upon the invitation of Charlemagne, by whom he was greatly cared for, and amply provided for. He was not only honoured with his friendship and confidence, but became his instructor in rhetoric, logic, mathematics, and divinity. He attended him to the council of Francfort; and, at his return, was presented with the abbey of Ferrara, St. Jodocus, and St. Lupus. He retired at last to the abbey of St. Martin at Tours, where he spent the latter part of his life, and died in the year 804. Doubtless, he was one of the best scholars and wisest men of his time. Francé was chiefly indebted to him for her improvements in literature. The universities of Paris, Tours, Falden, Soissons, and many others, owe to him their origin and increase; and to him was owing the institution of learned academies, at least the first one we read of was set on foot by the emperor at his instigation. His works were collected and published by Andrew du Chesne in one volume folio, Paris, 1617. They consist of, 1. Tracts upon scripture. 2. Tracts upon doctrine, discipline, and morality. 3. Historical treatises, letters, and poems. Since this edition, there has been published an incredible number of tracts, poems, &c. ascribed to this author, most of which, in all probability were not his.

ALCYONIUM STAGNUM (anc. geog.), a lake in the territory of Corinth, whose depth was unfathomable, and in vain attempted to be discovered by Nero: through this lake Bacchus is said to have descended to hell, to bring back Semele; (Pausanias).

ALCYONIUS (Peter), a learned Italian, who flourished in the 16th century. He was well versed in the Greek and Latin tongues, and wrote some pieces of eloquence which met with great approbation. He was corrector of the press a considerable time for Aldus Manutius, and is entitled to a share in the praises given to the editions of that learned printer. He published a treatise concerning banishment,

(A) William of Malmshury calls this library *omnium liberalium artium armarium*. It was destroyed by fire in the reign of King Stephen, with great part of the city of York,

which contained so many fine passages intermixed with others quite the reverse, that it was thought he had tacked to somewhat of his own, several fragments of a treatise of *Cicero de gloria*; and that afterwards, in order to save himself from being detected in this theft, he burnt the manuscript of Cicero, the only one extant. Paulus Manutius, in his commentary upon these words of Cicero, "Librum tibi celeriter mittam de gloria—I will speedily send you my treatise on glory," has the following passage relating to this affair: "He means (says he) his two books On Glory, which were handed down to the age of our fathers; for Bernard Justinian, in the index of his books, mentions *Cicero de Gloria*. This treatise however, when Bernard had left his whole library to a nunnery, could not be found, though sought after with great care: nobody doubted but Peter Alcyonius, who, being physician to the nunnery, was entrusted with the library, had basely stole it. And truly, in his treatise Of Banishment, some things are found interperfed here and there, which seem not to favour of Alcyonius, but of some higher author." The two orations he made after the taking of Rome, wherein he represented very strongly the injustice of Charles V. and the barbarity of his soldiers, were excellent pieces. There is also an oration ascribed to him, on the knights who died at the siege of Rhodes.

ALDEA, a town of Portugal, in Estramadura, 10 miles S. E. of Lisbon. Long. 8. 55. W. Lat. 38. 36. N.

ALDERBURY, a village in Wiltshire, on a healthy hill, in a good sporting country, and near the Avon. It carries on a manufacture of fustians, and received considerable damage by a fire in Sept. 1777, when 200 houses were destroyed. It is two miles from Salisbury.

ALDHelm, or ADELm (St.), an English divine, was bishop of Shireburn in the time of the Saxon heptarchy. William of Malmesbury says, that he was the son of Kenred, or Kenter, brother of Ina king of the West Saxons. He was born at Caer Bladon, now Malmesbury, in Wiltshire. He had part of his education abroad in France and Italy, and part at home under Maildulfus an Irish Scot, who had built a little monastery where Malmesbury now stands. Upon the death of Maildulfus, Aldhelm, by the help of Eleutherius bishop of Winchester, built a stately monastery there, and was himself the first abbot thereof. When Hedda bishop of the West Saxons died, the kingdom was divided into two dioceses, viz. Winchester and Shireburn, and King Ina promoted Aldhelm to the latter, comprehending Dorsetshire, Wiltshire, Devonshire, and Cornwall: he was consecrated at Rome by Pope Sergius I. and Godwin tells us that he had the courage to reprove his holiness for having a baftard. Aldhelm, by the directions of a diocesan synod, wrote a book against the mistake of the Britons concerning the celebration of Easter, which brought over many of them to the catholic usage in that point. He likewise wrote a piece, partly in prose and partly in hexameter verse, in praise of virginity, dedicated to Ethelburga abbess of Barking, and published amongst Bede's *Opuscula*, besides several other treatises, which are mentioned by Bale and William of Malmesbury. The monkish authors, according to custom, have ascribed several miracles to Aldhelm; and they tell us, that, in order to put his virtue to trial, he used frequently to lay all night with a young woman, and yet without violating his chastity. He is said to have been the first Englishman who ever wrote in Latin, and, as he himself tells us in one of his treatises on metre, the first who introduced poetry into England. Aldhelm lived in great esteem till his death, which happened May the 25th, 709.

ALDHUN, the first bishop of Durham, succeeded Elsig in the bishopric of Lindisfarne or Holy Island, in the year 990. He was of a noble family, but, according to Simeon of

Durham, more ennobled by his virtues and religious deportment. He sat about six years in the see of Lindisfarne, during which time that island was greatly exposed to the incursions of the Danish pirates. This made him think of removing from thence; though Simeon of Durham says he was put upon it by an admonition from heaven. However, taking with him the body of St. Cuthbert, which had been buried there about 113 years, and accompanied by all the monks and the rest of the people, he went away from Holy Island; and, after wandering about some time, at last he settled with his followers at Dunelm, now called Durham; where he gave life both to the city and cathedral church. He had a daughter named Ecgrid, whom he gave in marriage to Ufthred, son of Waltheof, earl of Northumberland, and with her six towns belonging to the episcopal see, upon condition that he should never divorce her. But that young lord afterwards repudiating her, Aldhun received back the church lands he had given with her. This prelate educated King Ethelred's two sons, Alfred and Edward; and, when their father was driven from his throne by Swane king of Denmark, he conducted them, together with Queen Emma, into Normandy, to Duke Richard, the queen's brother. This was in the year 1017, a little before Bishop Aldhun's death. For the next year, the English having received a terrible overthrow in a battle with the Scots, the good bishop was so affected with the news, that he died a few days after, having enjoyed the prelacy twenty-nine years.

ALDPORT, an ancient name for Manchester.

ALDRICH (Robert), bishop of Carlisle, was born at Burnham in Buckinghamshire about the year 1493, and educated at Eaton-school; from whence, in 1507, he was elected scholar of King's College, Cambridge, where he took his degrees in arts, and was afterwards proctor of the university. In 1525 he was appointed master of Eaton-school, then became fellow of that college, and finally provost. In 1529 he went to Oxford, where, being first incorporated bachelor of divinity, in the following year he proceeded doctor in that faculty: in 1531 he was made arch-deacon of Colchester; in 1534, canon of Windsor; and the same year, registry of the order of the garter. He was consecrated bishop of Carlisle in the year 1537, and died at Horncastle in Lincolnshire in 1556. He wrote, 1. *Epistola ad Gul. Hormanum*, in Latin verse; printed in Horman's *Antibossicon*, Lond. 1521, of which book Pitts erroneously makes Aldrich the author. 2. *Epigrammata varia*. 3. *Latin verses, and another epistle to Horman*, prefixed to the *Vulgaria puerorum* of that author, Lond. 1519, 4to. 4. *Answers to certain queries concerning the abuses of the mass*; also about receiving the sacrament.

ALDRICH (Dr. Henry), an eminent English divine and philosopher, born at London in 1647, was educated at Westminster school under the famous Dr. Busby, and admitted of Christ-church College, Oxford. He had a great share in the controversy with the Papists in the reign of James II. and bishop Burnet ranks him among those who examined all the points of popery with a solidity of judgment, clearness of argument, depth of learning, and vivacity of writing, far beyond any who had before that time written in our language. He rendered himself so conspicuous, that at the revolution, when Massey the popish dean of Christ-church fled, his deanery was conferred on him. In this station he behaved in an exemplary manner, and that fabric owes much of its beauty to his ingenuity: it was Aldrich who designed the beautiful square called *Peckwater-Quadrangle*, which is esteemed an excellent piece of architecture. In imitation of his predecessor Dr. Fell, he published, yearly, a piece of some ancient Greek author, as a present to the students of his house: he

published *A System of Logic*, with some other pieces; and the revising Clarendon's History of the Rebellion, was intrusted to him and Bishop Spratt. He died about the year 1711.

ALDROVANDUS (Ulysses), professor of philosophy and physic at Bologna, the place of his nativity, was a most curious enquirer into natural history, and travelled into the most distant countries on purpose to inform himself of their natural productions. Minerals, metals, plants, and animals, were the objects of his curious researches; but he applied himself chiefly to birds, and was at great expence in having figures of them drawn from the life. Aubert le Mire says, that he gave a certain painter, famous in that art, a yearly salary of two hundred crowns, for thirty years and upwards; and that he employed at his own expence Lorenzo Benuini and Cornelius Swintus, as well as the famous engraver Christopher Coriolanus. These expences ruined his fortune, and at length reduced him to the utmost necessity; and it is said that he died blind in an hospital at Bologna, at a great age, in 1635.

Mr. Bayle observes, that antiquity does not furnish us with an instance of a design so extensive and so laborious as that of Aldrovandus, with regard to natural history; that Pliny indeed has treated of more subjects, but only touches them lightly, whereas Aldrovandus has collected all he could meet with. His compilation, or what at least was compiled upon his plan, consists of several volumes in folio, some of which were printed after his death. He himself published his Ornithology, or History of Birds, in three folio volumes, in 1599; and his seven books Of Insects, which make another volume of the same size.—The volume Of Serpents, three Of Quadrupeds, one Of Fishes, that Of exsanguineous Animals, the History of Monsters, with the Supplement to that Of Animals, the treatise Of Metals, and the Dendrology or History of Trees, were published at several times after his death, by the care of different persons.

ALDUABIS (anc. geog.), a river of Celtic Gaul, which rising from mount Jura, separating the Sequani from the Helvetii, and running through the county of Burgundy, or the Franche Comté, environs almost on every side the city of Besançon; and running by Dole, falls into the Saône near Chalons. In Cæsar it is called *Alduadubis*; in Ptolemy, *Dubis*; now le *Doux*.

ALEANDER (Jerome), cardinal and archbishop of Brindisi, was born in 1480; and distinguished himself at the beginning of the reformation, by the opposition he made to Luther; for being sent into Germany as the pope's nuncio in 1519, he acted, as occasion served, in the character both of ambassador and doctor; and declaimed three hours together against Luther's doctrine before the diet of Worms, but could not prevent that celebrated reformer from being heard in that diet. He published several works, and died at Rome in 1542.

ALEANDER (Jerome), a learned man of the seventeenth century, born in the principality of Friuli, of the same family with the preceding. When he went to Rome, he was employed as secretary under Cardinal Octavianus Bandini, and discharged this office with great honour for almost twenty years. He afterwards, by the persuasion of Urban VIII. who had a great esteem for him, became secretary to Cardinal Barberini, whom he accompanied to Rome when he went there in the character of legate *a latere*; and in whose service he died in 1631. He was one of the first members of the academy of Humorists, wrote a learned treatise in Italian on the device of the society, and displayed his genius on many different subjects. Barberini gave him a magnificent funeral at the academy of Humorists; the academists carried his corpse to the grave; and Gaspar Simeonibus, one of the members, made his funeral oration.

ALECTOROMANTIA (*Encycl.*). This is otherwise call-

ed *Alethromancy*; of which there appear to have been different species. But that most spoken of by authors was in the following manner: A circle being described on the ground, and divided into twenty-four equal portions, in each of these spaces was written one of the letters of the alphabet, and on each of the letters was laid a grain of wheat; after which, a cock being turned loose in the circle, particular notice was taken of the grains picked up by the cock, because the letters under them, being formed into a word, made the answer desired. It was thus, according to Zonaras, that Libanius and Jamblicus sought who should succeed the Emperor Valens; and the cock eating the grains answering to the spaces ΘΣΟΑ, several whose names began with those letters, as Theodotus, Theodiscus, Theodulus, &c. were put to death; which did not hinder, but promote, Theodosius to the succession. But the story, however current, is but ill supported: it has been called in question by some, and refuted by others, from the silence of Marcellinus, Socrates, and other historians of that time.

ALEGAMBE (Philip), a celebrated Jesuit, born at Brussels in 1592, distinguished himself by publishing a Bibliothéque of the writers of his order, and died at Rome in 1652.

ALEIUS CAMPUS, in ancient geography (Homer, Strabo, Pliny); a plain in Cilicia, on this side the river Pyramus, near the mountain Chimera, famous for Bellerophon's wandering and perishing there, after being thrown off Pegasus; which is the reason of the appellation.

ALEMANIA, or ALLEMANIA (anc. geog.), a name of Germany, but not known before the time of the Antonines, and then used only for a part. After the Marcomanni and their allies had removed from the Rhine; a rabble, or collection of people from all parts of Gaul, as the term *Alemanni* denotes, prompted either by levity or poverty, occupied the Agri, called *Decumates* by Tacitus, because they held them on a title; now supposed to be the duchy of *Wurtemberg*. Such appear to be the small beginnings of Alemania, which was in after-times greatly enlarged: but still it was considered as a distinct part; for Caracalla, who conquered the Alemanni, assumed the surname both of *Alemannicus* and *Germanicus*.

ALENIO (Julius), a Jesuit, born at Brescia in the republic of Venice. He travelled into the eastern countries; and arrived at Maca in 1610, where he taught mathematics. From thence he went to the empire of China, where he continued to propagate the Christian religion for thirty-six years. He was the first who planted the faith in the province of Xanfi, and he built several churches in the province of Fokien. He died in August 1649, leaving behind him several works in the Chinese language.

ALENZON, or ALENÇON (*Encycl.*), a town of France, is situated in the department of Orne, and late province of Normandy, with the title of a duchy. It is surrounded with good walls, and flanked with towers. The castle was formerly a place of great consequence, and has held out long sieges. It has but one parish-church, which has a bold and noble front. Among the nunneries, that of St. Clair is most remarkable. It is seated on the river Sarthe, in a vast open plain, which produces all sorts of corn and fruit. Near it there are quarries of stone fit for building, wherein are found a sort like Bristol stones. The linen made at Alençon is very good, and sells at Paris. It is 20 miles north of Mans, 63 south-by-west of Rouen, and 88 south-west of Paris. Long. o. 10. N. lat. 48. 25.

AALERIA, ALALIA, or ALARIA (anc. geog.), a town of Corsica, situated near the middle of the east side of the island, on an eminence, near the mouth of the river Rotanus mentioned by Ptolemy; built by the Phœacians (Diodorus Siculus). Afterwards Sylla led a colony thither. It is now in ruins, and called *Aleria Distrutta*.

ALES (Alexander), a celebrated divine of the confession of Augsburgh, born at Edinburgh the 23d of April, 1500. He soon made a considerable progress in school-divinity, and entered the lists very early against Luther, this being then the great controversy in fashion, and the grand field wherein all authors, young and old, used to display their abilities. Soon after, he had a share in the dispute which Patrick Hamilton maintained against the ecclesiastics, in favour of the new faith he had imbibed at Marpurg: he endeavoured to bring him back to the Catholic purgish; but this he could not effect, and even began himself to doubt about his own religion, being much affected by the discourse of this gentleman, and still more by the constancy he shewed at the stake, where David Beton, archbishop of St. Andrew's, caused him to be burnt. Beginning thus to waver, he was himself persecuted with so much violence, that he was obliged to retire into Germany, where he became at length a perfect convert to the Protestant religion. The change of religion which happened in England after the marriage of Henry VIII. with Anna Bullen, induced Ales to go to London, in 1535. He was highly esteemed by Cramer archbishop of Canterbury, Latimer, and Thomas Cromwel, who were at that time in high favour with the king. Upon the fall of these favourites, he was obliged to return to Germany; where the elector of Brandenburg appointed him professor of divinity at Francfort upon the Oder, in 1540. But leaving this place upon some disgust, he returned to Leipzig, where he was chosen professor of divinity, and died in March 1565. He wrote a Commentary on St. John, on the Epistles to Timothy, and on the Psalms, &c.

ALESA, ALESA, or HALESA (anc. geog.), a town of Sicily, on the Taſcan sea, built, according to Diodorus Siculus, by Archonides of Herbita, in the second year of the ninety-fourth Olympiad, or four hundred and three years before Christ; situated on an eminence about a mile from the sea: now in ruins. It enjoyed immunity from taxes under the Romans (Diodorus, Cicero). The inhabitants were called *Halasini* (Cicero, Pliny); also *Alesini*, and *Alesini*.

ALESIA (anc. geog.), called *Alexia* by Livy and others; a town of the Mandubii, a people of Celtic Gaul; situated, according to Cæsar, on a very high hill, whose foot was washed on two sides by two rivers. The town was of such antiquity, that Diodorus Siculus relates it was built by Hercules. It is supposed to be the city of *Alise*, in the duchy of Burgundy, not far from Dijon.

ALESSANO, a town of Otranto, in the kingdom of Naples, with a bishop's see, 15 miles S. W. of the town of Otranto. Long. 18. 25. E. Lat. 40. 10. N.

ALESSIA, a town of Turkey in Europe, in Albania; it is a bishop's see, near the mouth of the Drino. Long. 20. 6. E. Lat. 42. 8. N.

ALESSIO, a town of Turkey, in Dalmatia. It is a bishop's see, and seated on a mountain, 25 miles from Spalatro.

ALETUM, or ALETA (anc. geog.), a town of Celtic Gaul, now extinct. From its ruins arose St. Malo, in Britany, at the distance of a mile. Its ruins are called *Gaib Aleth* in the British.

ALEXANDER AB ALEXANDRO, a Neapolitan lawyer, of great learning, who flourished toward the end of the 15th and beginning of the 16th century. He followed the profession of the law first at Naples, afterwards at Rome: but he devoted all the time he could spare to the study of polite literature; and at length he entirely left the bar, that he might lead a more easy and agreeable life with the muses. The particulars of his life are to be gathered from his work entitled *Genitium Dierum*. We are there informed, that he lodged at Rome,

in a house that was haunted; and he relates many surprising particulars about the ghost: he says also, that, when he was very young, he went to the lectures of Philephus, who explained at Rome the Tusculan questions of Cicero; he was there also when Nicholas Perot and Domitius Calderinus read their lectures upon Martial. The particular time when he died is not known; but he was buried in the monastery of the Olivets. Tiraquea wrote a learned commentary upon his work, which was printed at Lyons in 1587, and reprinted at Leyden in 1673, with the notes of Dennis Godfrey, Christopher Colerus, and Nicholas Marcerus.

ALEXANDER SEVERUS, emperor of Rome, succeeded Heliogabalus about A.D. 222, when but 16 years of age. His mother's name was Mammaea, and by her advice he in a great measure regulated his conduct. He applied himself to the reformation of abuses, the state having been greatly disordered by the vicious conduct of his predecessor; he was a most strict lover of justice, an encourager of learning and learned men, and favourable to the Christians. He made a successful expedition against the Persians; but endeavouring to reform his troops, who had grown very licentious under the late bad government, they murdered him, at the instigation of Maximinus, in the 29th year of his age, together with his mother, A.D. 235.

ALEXANDER VI. (Pope), had four bastards when he was cardinal, for one of whom he had so great affection that he stuck at nothing to raise him. Desiring to poison some cardinals, he was poisoned himself, A.D. 1503. See *BORGIA*.

ALEXANDER VII. (Pope), whose real name was Fabio Chigi, was born at Sienna in 1599. His family finding him a hopeful youth, sent him early to Rome, where he soon engaged in a friendship with the Marquis Pallavicini, who recommended him so effectually to Pope Urban VIII. that he procured him the post of Inquisitor at Malta. He was sent vice-legate to Ferrara, and afterward nuncio into Germany: there he had an opportunity of displaying his intriguing genius; for he was mediator at Munster, in the long conference held to conclude a peace with Spain. Cardinal Mazarin had some resentment against Chigi, who was soon after made a cardinal and secretary of state by Innocent X. but his resentment was sacrificed to political views. In 1655, when a pope was to be chosen, Cardinal Sacchetti, Mazarin's great friend, finding it was impossible for him to be raised into St. Peter's chair because of the powerful opposition made by the Spanish faction, desired Cardinal Mazarin to consent to Chigi's exaltation. His request was granted, and he was elected pope by the votes of all the 64 cardinals who were in the conclave: an unanimity of which there are but few instances in the election of popes. He shewed uncommon humility at his election, and at first forbade all his relations to come to Rome without his leave; but he soon became more favourable to his nephews, and loaded them with favours. It is asserted that he had once a mind to turn Protestant. The news-papers in Holland bestowed great encomiums upon him; and acquainted the world, that he did not approve of the cruel persecutions of the Waldenses in Piedmont. There is a volume of his poems extant. He loved the *Belles-Lettres*, and the conversation of learned men. He was extremely fond of stately buildings; the grand plan of the college *Della Sapienza*, which he finished, and adorned with a fine library, remains a proof of his taste in architecture. He died in 1667.

ALEXANDER (William), earl of Stirling, an eminent Scots statesman and poet in the reigns of James I. and Charles I. who, after travelling with the duke of Argyll as his tutor or companion, wrote a poetical complaint of his unsuccessful love

of some beauty, under the title of *Aurora*. He then removed to the court of James VI. where he applied to the more solid parts of poetry, forming himself upon the plan of the Greek and Roman tragedians. In 1607 he published some dramatic performances, entitled *The Monarchie Tragedies*, dedicated to King James; who was so well pleased with them, as to call him his philosophical poet. After this, he is said to have written *A Supplement* to complete the third part of Sir Philip Sidney's *Arcadia*; and in 1613 he produced a poem called *Doomsday, or the great Day of Judgment*. He was made gentleman-usher to Prince Charles, and master of the requests; was knighted; and obtained a grant of Nova Scotia, where he projected the settlement of a colony, but afterward sold it to the French. In 1626 he was made secretary of state for Scotland; was created first viscount, and then earl, of Stirling; and died in 1640.

ALEXANDER (St.), whom St. Irenæus reckons the fifth bishop of Rome, succeeded St. Evaristus in the year 109, and died in the year 119. There is no account of his life; and the epistles which are attributed to him are supposititious.

ALEXANDER II. king of Scotland, succeeded his father William in 1213, at 16 years of age. He made an expedition into England, to oppose the tyranny of King John; who returned the visit, and was offered battle by Alexander, but refused it. He took the city of Carlisle from Henry III. which was afterwards exchanged for Berwick. Alexander died in 1249, in the 51st year of his age, and 35th of his reign; and left for his successor, his son.

ALEXANDER III. who was crowned king of Scotland in 1249. The Cummings, lords of Scotland, took arms against him; and taking him prisoner, confined him at Striveling; but he was afterwards released by his subjects. He married the daughter of Henry III. king of England; and was at length killed by a fall from his horse, on the 10th of April, 1290, after having reigned forty-two, or according to others thirty-seven, years.

ALEXANDREA (anc. geog.), a mountain of Myfia, on the sea-coast, forming a part of mount Ida, where Paris gave judgment on the three goddesses.

ALEXANDRETTA (Encycl.), is the port of Aleppo, from which it is distant twenty-eight or thirty leagues. It is now little else but a heap of ruined houses, chiefly inhabited by Greeks, who keep tippling-houses for sailors. The air is very unwholesome; and therefore the better sort of inhabitants, during the hot weather, live at a village called *Bayland*, on a mountain about ten miles off, where there is wholesome water and excellent fruit. What surprises strangers most, when they arrive at this place, are the pigeons which carry letters to Aleppo, which they reach in about three hours: these pigeons are of a singular kind, and are very much celebrated throughout the East.

ALEXANDRIA, (anc. geog.), a city of Arachosia, called also *Alexandropolis*, on the river Arachotus (Stephanus, Isidorus Characenus).—Another *Alexandria* in Gedrosia, built by Leonatus, by order of Alexander (Pliny).—A third *Alexandria* in Aria, situated at the lake Arias (Ptolemy); but, according to Pliny, built by Alexander on the river Aris.—A fourth in the Bactriana (Pliny).—A fifth *Alexandria*, an inland town of Carmania (Pliny, Ptolemy, Ammian).—A sixth *Alexandria*, or *Alexandropolis*, in the Sogdiana (Isidorus Characenus).—A seventh in India, at the confluence of the Acesines and Indus (Arrian).—An eighth, called also *Alexandretta*, near the Sinus Ificus, on the confines of Syria and Cilicia, now *Scanderoon*, the port-town to Aleppo.—A ninth *Alexandria* of Margiana, which being demolished by the barbarians, was rebuilt by Antiochus the son of Seleucus, and called *Antiochia* of Syria (Pliny); watered by the river Margus, which is divided into

several channels, for the purposes of watering the country, which was called *Zotale*. The city was seventy stadia in circuit, according to Pliny; who adds, that, after the defeat of Crassus, the captives were conveyed to this place by Orodes, the king of the Parthians.—A tenth, of the Oxianna, built on the Oxus by Alexander, on the confines of Bactria (Pliny).—An eleventh, built by Alexander at the foot of mount Paropamisus, which was called *Caucasus* (Pliny, Arrian).—A twelfth *Alexandria* in Troas, called also *Troas* and *Antigonía* (Pliny).—A thirteenth, on the laxartes, the boundary of Alexander's victories towards Scythia, and the last that he built on that side.

ALEYN (Charles), an English poet in the reign of Charles I. In 1631 he published two poems on the famous victories of Creci and Poitiers. He succeeded his father as clerk of the ordinance, and was commissary-general of the artillery to the king at the battle of Edgehill. The next piece he wrote was a poem in honour of Henry VII. and the victory that gained him the crown of England. In 1639, the year before he died, he translated the history of Eutalius and Lucretia, from the Latin epistles of Aeneas Sylvius.

ALFACKS, the name of certain islands near the mouth of the Ebro, in the principality of Catalonia, in Spain.

ALFATERNA (anc. geog.), the last town of Campania, beyond Vesuvius (Diodorus); the fame with *Nuceria*, which see. The inhabitants *Alfaterni* (Pliny).

ALFEIZERAO, a small town of Estramadura, in Portugal, on the sea-side. Long. 9. 10. W. Lat. 39. 30. N.

ALFELD, a town of Germany, in the bishopric of Hildesheim, fifteen miles S. S. W. of Hildesheim. Long. 10. 4. E. Lat. 51. 58. N.

ALFIDENA, an ancient town of the kingdom of Naples, and in Abruzzo Ceteriore. Long. 14. 20. E. Lat. 41. 48. N.

ALFRED (Encycl.). This prince, we are told, was twelve years of age before a master could be procured in the western kingdom to teach him the alphabet; such was the state of learning when Alfred began to reign. He had felt the misery of ignorance; and determined even to rival his contemporary Charlemagne in the encouragement of literature. He is supposed to have appointed persons to read lectures at Oxford, and is thence considered as the founder of that university. By other proper establishments, and by a general encouragement to men of abilities, he did every thing in his power to diffuse knowledge throughout his dominions. Nor was this end promoted more by his countenance and encouragement, than by his own example and his writings. For notwithstanding the lateness of his initiation, he had acquired extraordinary erudition; and, had he not been illustrious as a king, he would have been famous as an author. His works are, 1. *Breviarium quoddam collectum ex Legibus Trojanorum*, lib. I. A Breviary collected out of the Laws of the Trojans, Greeks, Britons, Saxons, and Danes; in one book. Leland saw this book in the Saxon tongue, at Christ-church in Hampshire. 2. *Viji-Saxonum Leges*, lib. I. The Laws of the West-Saxons, in one book. Pitts tells us, that it is in Bennet College library, at Cambridge. 3. *Instituta quorundam*, lib. I. Certain Institutes, in one book. This is mentioned by Pitts, and seems to be the second capitulation with Guthrum. 4. *Contra Judices iniquos*, lib. I. An Inveictive against Unjust Judges, in one book. 5. *Acta Magistratum suorum*, lib. I. Acts of his Magistrates, in one book. This is supposed to be the book of judgments mentioned by Horne; and was, in all probability, a kind of reports, intended for the use of succeeding ages. 6. *Begum Fortune varie*, lib. I. The various Fortunes of Kings, in one book. 7. *Dicta Sapientum*, lib. I. The Sayings of Wise Men, in one book. 8. *Parabole et Sales*, lib. I. Parables and pleasant Sayings, in one book. 9. Col-

Isidore Chronicorum. Collections of Chronicles. 10. *Epistole ad Wulfstann Episcopum*, lib. I. Epistles to Bishop Wulfstann, in one book. 11. *Manuale Meditationum.* A Manual of Meditations.—Besides these original works, he translated many authors from the Latin, &c. into the Saxon language, viz. 1. Bede's History of England, 2. Paulinus Orosius's History of the Pagans, 3. St. Gregory's Pastoral, &c. The first of these, with his prefaces to the others, together with his laws, were printed at Cambridge, 1644. His laws are likewise inserted in Spelman's Concils. 4. *Boetius de Consolatione*, lib. V. Boetius's Consolations of Philosophy, in five books. Dr. Plott tells us, King Alfred translated it at Woodstock, as he found in a MS. in the Cotton Library. 5. *Ætoliæ Fabulæ.* Ætoli's Fables: which he is said to have translated from the Greek into Latin and Saxon. 6. *Psalterium Davidicum*, lib. I. David's Psalter, in one book. This was the last work the king attempted, death surprising him before he had finished it; it was however completed by another hand, and published at London in 1640, in quarto, by Sir John Spelman. Several others are mentioned by Mahnsbury; and the old History of Ely asserts, that he translated the Old and New Testaments.

The life of this great king was first written by Asferius Menevius; and first published by Archbishop Parker, in the old Saxon character, at the end of his edition of Hastingham's history, printed in 1674, fol.

ALLAHABAD, a city of Oude, in Hindoostan Proper, seated at the point of the confluence of the two great rivers, the Ganges and Jumna. It was founded by the emperor Acbar, who intended it as a place of arms. It belongs to the Nabob of Oude; but its fortifications will hardly resist the battering of a field piece. It is 470 miles north-west of Calcutta: Long. 82. o. E. Lat. 25. 45. N.

ALLATIUS (Leo), keeper of the Vatican library, a native of Scio, and a celebrated writer of the 17th century. He was of great service to the gentlemen of Port Royal in the controversy they had with M. Claude touching the belief of the Greeks with regard to the eucharist. No Latin was ever more devoted to the see of Rome, nor more inveterate against the Greek schismatics, than Allatius. He never engaged in matrimony, nor was he ever in orders; and Pope Alexander VII. having asked him one day, why he did not enter into orders, he answered, "Because I would be free to marry." The Pope rejoined, "If so, why do you not marry?" "Because," replied Allatius, "I would be at liberty to take orders." Thus, as Mr. Bayle observes, he passed his whole life, wavering betwixt a parish and a wife; sorry, perhaps, at his death, for having chosen neither of them; when, if he had fixed upon one, he might have repented his choice for thirty or forty years.—If we believe John Patricius, Allatius had a very extraordinary pen, with which, and no other, he wrote Greek for forty years; and we need not be surprised, that when he lost it, he was so grieved, that he could scarce forbear crying. He published several manuscripts, several translations of Greek authors, and several pieces of his own composing. In his compositions he is thought to shew more erudition than judgment: he used also to make frequent digressions from one subject to another. He died at Rome in 1669, aged eighty-three.

ALLEGANY, or APPALACHIAN MOUNTAINS, the general name of a long range of mountains in North America, between the Atlantic, the Mississippi, and the Lakes. They extend north-easterly and south-westerly, nearly parallel with the sea-coast, about 900 miles in length, and from 60 to 200 in breadth. The different ridges which compose this immense range have different names in the different states. Advancing from the Atlantic, the first ridge in Pennsylvania, Virginia, and North Carolina, is the Blue Ridge, or South Mountain,

from 130 to 200 miles from the sea, and about 4000 feet high from its base. Between this and the North Mountain, spreads a large fertile vale. Next lies the Allegany, which is the principal ridge, and has been descriptively called the *back-bone* of the United States. Beyond this is the long ridge called the Laurel Mountains; in a spur of which, in lat 36°, is a spring of water, fifty feet deep, very cold, and as blue as indigo. From these several ridges proceed innumerable nameless branches or spurs. The Kittatiny, or Blue Mountains, run through the northern parts of New Jersey and Pennsylvania. The general name for these mountains seems not yet to have been determined. Mr. Evans, an American geographer, calls them the Endless Mountains: others have called them the Appalachian, from a tribe of Indians, who live on a river proceeding from the ridge, called the Appalachikola. But the most common, and, no doubt, the most proper name, is the Allegany Mountains, so called from the principal ridge. These mountains are not confusedly scattered and broken, rising here and there into high peaks over-topping each other, but stretch along in uniform ridges, scarcely half a mile high. They spread as we proceed south, and some of them terminate in high perpendicular bluffs. Others gradually subside into a level country, giving rise to the rivers which run southerly into the gulf of Mexico. In the back parts of Pennsylvania, scarcely one acre in ten in this range is capable of culture; but this is not the case in all parts; for numerous tracts of fine arable and pasture land intervene between the ridges, having generally a rich black soil. Indeed, some of the mountains will admit of cultivation almost to their tops.

ALLCHURCH, a village of Warwickshire, once seven miles in circumference. The Roman Ickneld-street passes through it. This village was formerly a borough, and had a market, and several streets, the names of which are now lost. The bishop of Worcester had formerly a palace here; and the church, several parts of which are of Saxon architecture, contains many antique monuments. It is five miles from Bromsgrove, in the road to Leicester.

ALLEGRAZZA, a small island of Africa, and one of the Canaries, lying to the north of Graciosa, to the north-west of Rocca, and to the east of St. Clase. There are several castles that defend the harbour.

ALLEIN (Joseph), the son of Tobias Allein, was born in the Devises in Wiltshire, in 1633, and educated at Oxford. In 1655 he became assistant to Mr. Newton, in Taunton-Magdalen in Somersetshire; but was deprived for non-conformity. He died in 1668, aged thirty-five. He was a man of great learning, and greater charity; preserving, though a nonconformist and a severe sufferer on that account, great respect for the church, and loyalty to his sovereign. He wrote several books of piety, which are highly esteemed; but his *Alarm to unconverted Sinners* is more famous than the rest. There have been many editions of this little pious work, the sale of which has been very great; of the edition 1672, there were 20,000 sold; of that 1675, with this title, *A Sure Guide to Heaven*, 50,000. There was also a large impression of it with its first title, in 1720.

ALLEN (Thomas), a famous mathematician of the 16th century, born at Uttoxeter in Staffordshire, the 21st of December, 1542. He was admitted scholar of Trinity College, Oxford, the 4th of June, 1561; and in 1567 took his degree of master of arts. In 1570 he quitted his college and fellowship, and retired to Gloucester-hall; where he studied very closely, and became famous for his knowledge in antiquity, philosophy, and mathematics. Having received an invitation from Henry earl of Northumberland, a great friend and patron of the mathematicians, he spent some time at the earl's house, where he became acquainted with those celebrated ma-

thematicians Thomas Harriot, John Dee, Walter Warner, and Nathaniel Torporley. Robert earl of Leicester had a particular esteem for Mr. Allen, and would have conferred a bishopric upon him, but his love of solitude and retirement made him decline the offer. His great skill in the mathematics, made the ignorant and vulgar look upon him as a magician or conjurer: the author of a book entitled *Leicester's Commonwealth*, has accordingly accused him with using the art of figuring, to procure the Earl of Leicester's unlawful designs, and endeavouring by the black art to bring about a match between him and Queen Elizabeth. But without pretending to point out the absurdity of the charge, it is certain that the earl placed such confidence in Allen, that nothing material in the state was transacted without his knowledge; and the earl had constant information, by letter, from Mr. Allen, of what passed in the university. Mr. Allen was very curious and indefatigable in collecting scattered manuscripts relating to history, antiquity, astronomy, philosophy, and mathematics: these collections have been quoted by several learned authors, &c. and mentioned to have been in the Bibliotheca Alleniana. He published in Latin the second and third books of Claudius Ptolemy of Pelsium, *Concerning the Judgment of the Stars*, or, as it is commonly called, of the *Quadruplicate Construction*, with an exposition. He wrote also notes on many of Lilly's books, and some on John Bale's work *De Scriptoribus Maj. Britannie*. Having lived to a great age, he died at Gloucester-hall, on the 30th of September, 1632.

ALLEN, a small river of Flintshire in North Wales, which sinks under ground, near Mold, and is lost for a short space.

ALLERIA, a decayed town in Corsica, a bishop's see, and the place where King Theodore first landed in 1736. Long. 8. 50. E. Lat. 42. 5. N.

ALLESTRY (Richard), D.D. an eminent divine, born at Uppington in Shropshire, in March 1610, was educated in the grammar school at Coventry, and afterwards at Christ-church in Oxford. His parts, which were extraordinary, were improved by a no less extraordinary industry. He took up arms for King Charles I. and was sometimes seen with his musket in one hand and his book in the other. He was very active in the service of King Charles II. before his restoration, and was employed by the royalists in transacting business with that prince during his exile; but was at last seized at Dover by a party of soldiers, and committed prisoner to Lambeth-house, where he was confined six or eight weeks: but soon after the restoration he was made canon of Christ-church, created doctor of divinity, and appointed chaplain in ordinary to the king, and regius professor of divinity. In 1665 he was appointed provost of Eton College, where he raised the school, which he found in a low condition, to an uncommon pitch of reputation. The west side of the outward quadrangle of that college was built from the ground at his expence. The excellent Dr. Hammond, who was his intimate friend, left him his valuable library, which he himself afterwards bequeathed to his successors in the divinity-chair. He was eminent for his piety, benevolence, and integrity; for the sincerity of his friendship, and his disinterested temper. He wrote several books; and a collection of his sermons were printed after his decease, by Dr. Fell, bishop of Oxford. He died August 28, 1680.

ALLEY (William), bishop of Exeter in the reign of Queen Elizabeth, was born at Great Wycomb in Buckinghamshire. From Eton school, in the year 1528, he removed to King's College, Cambridge, where he took the degree of bachelor of arts. He also studied some time at Oxford; afterwards he married, was presented to a living, and became a zealous reformer. Upon Queen Mary's accession, he left his cure, and

retired into the north of England; where he maintained his wife and himself by teaching a school, and practising physic. Queen Elizabeth ascending the throne, he went to London, where he acquired great reputation by reading the divinity-lecture at St. Paul's, and in July, 1560 was consecrated bishop of Exeter. He was created doctor of divinity at Oxford in November 1561. He died on the 15th of April, 1570; and was buried at Exeter, in the cathedral. He wrote, 1. *The poor Man's Library*, 2 vols. fol. London, 1571. These volumes contain twelve lectures on the first epistle of St. Peter, read at St. Paul's. 2. *A Hebrew Grammar*. Whether it was ever published; is uncertain. He translated the Pentateuch in the version of the Bible which was undertaken by Queen Elizabeth's command.

ALLIA (*Enycl.*), was famous for the great slaughter of the Romans by the Gauls, under Brennus: hence *Allienis dies*, an unlucky day (Virgil, Ovid, Lucan). Our ancestors, says Cicero, deemed the day of the fight of *Allia*, more fatal than that of taking the city.

ALLIER, a department of France (lately the province of Bourbonnois), is called from a river which flows by Moulins, and falls into the Loire above Orleans.

ALLOBROGES, (Inscriptions, Livy, Velleius, Florus); from *Allobrox* (Horace): a people of Gallia Narbonensis, situated between the rivers Iara and Rhodanus, and the Lacus Lemannus; commended by Cicero for their fidelity, discommended by Horace on account of their fondness for novelty.

ALMARIC, HERESY of, a tenet broached in France by one Almaric, in the year 1209. It consisted in affirming, that every Christian was actually a member of Christ; and that without this faith no one could be saved. His followers went farther, and affirmed, that the power of the father lasted only during the continuance of the Mosaic law; that the coming of Christ introduced a new law; that at the end of this began the reign of the Holy Ghost; and that now confession and the sacraments were at an end, and that every one is to be saved by the internal operations of the Holy Spirit alone, without any external act of religion.

ALMENDVALAIO, a town of Estramadura in Spain, near the borders of Portugal. Long. 5. 6. W. Lat. 38. 36. N.

ALMIGGIM-WOOD (Scripture), is thought to be that of the Indian pine-tree; which being light and white, was greatly esteemed for making musical instruments.

ALMONRY (*Enycl.*). In this article, vol. I. p. 124, correct an error, affecting the sense; by substituting the words "were distributed," in place of "are given."

ALOE (*Enycl.*), in botany. Of this genus of plants, some botanical writers enumerate ten, but others extend the number to twenty-three, species. One of them, named in our first volume, the *margaritifera*, or pearl aloe, deserves more particular mention. This very beautiful plant is smaller than most of the aloe kind. The leaves are short, very thick, sharp pointed, and turning down, with a large thick end, appear there triangular. The colour of the leaves is a fine green, striped in an elegant manner with white, and frequently tipped with red at the point. The flower-stalk, which rises in the midst of the leaves, is round, smooth, of a purple colour, and generally about eight inches high. When the plant has been properly cultivated, the flowers are striped with green and white; and sometimes they are entirely white. This aloe is singular in not having the bitter resinous juice with which the leaves of most others abound; when a leaf of this species is cut, what runs from it is watery, colourless, and perfectly insipid. See a figure of it in Pl. 13.

ALPHEUS (*Enycl.*). This river has a common spring with the Eurotas, at the foot of mount Parthenion, near the

village Afea (Strabo). The Alpheus and Eurotes mix and run together for twenty stadia; after which, they enter a subterraneous passage at Mantinea; then again emerge, the Eurotas in Laconica, and the Alpheus in the territory of Megalopolis (Pausanias). The poets fable strange things of this river; particularly, that, out of love to the nymph *Arethusa*, it runs under the sea to Sicily, and bursts out at the fountain of that name in Syracuse (Virgil). Its waters were reckoned good in the leprosy, which is called *Δαρυς*, by the Greeks; and hence the name *Alpheus*.—Pausanias adds, that the Eleans had a law, which condemned any woman to death that should either appear at the Olympic games, or even cross this river during that solemnity: and the Eleans add, that the only woman who transgressed it, had disguised herself in the habit of a master or keeper of these games, and conducted her son thither; but when she saw him come off victorious, her joy made her forget her disguise, so that her sex was discovered. She was pardoned, but from that time a law was made that the keepers should appear there naked.

ALPHONSUS X. king of Leon and Castile, furnished the Wife, was author of the astronomical tables called *Alphonfine*. Reading of Quintus Curtius gave him such delight, that it recovered him out of a dangerous illness. He read the Bible fourteen times, with several comments on it. He is said to have found fault with the structure of the mundane system, and has been charged with impiety on that score; but unjustly, for he only found fault with the involved system of some astronomers. He was dethroned by his son Sancho; and died of grief, A.D. 1284.

ALPINI (Prospero), (*Encycl.*), wrote the following works in Latin: 1. Of the phycic of the Egyptians, in four books. Printed at Venice, 1592, in 4to. 2. A treatise concerning the plants of Egypt. Printed at Venice, 1592, in 4to. 3. A dialogue concerning balsams. Printed at Venice, 1592, in 4to. 4. Seven books concerning the method of forming a judgment of the life or death of patients. Printed at Venice, 1691, in 4to. 5. Thirteen books concerning methodical Phycic. Padua, 1611, folio; Leyden, 1719, in 4to. 6. A Disputation held in the school at Padua, concerning the Raphonticum. Padua, 1612, and 1629, 4to. 7. Of exotic plants, in two books. Venice, 1699, in 4to. He left several other works, which have never been printed; particularly, 8. The fifth book concerning the phycic of the Egyptians. 9. Five books concerning the natural history of things observed in Egypt, adorned with a variety of draughts of plants, fishes, and animals.

ALFREDUS, ALURED, or ALFREDUS (*Encycl.*). It is generally believed that this historian was educated at Cambridge, and that he afterwards became one of the canons and treasurer of St. John's at Beverley. And we learn in a note of Bishop Tanner's, that, for the sake of improvement, he travelled through France and Italy; and that at Rome he became domestic chaplain to Cardinal Othoboni. He died in the year 1128, or 1129; leaving behind him the following works: 1. *The Annals of Alured of Beverley*. Oxford, 1726. Published by Mr. Hearne, from a manuscript belonging to Thomas Rawlinson, esq. It contains an abridgment of our history from Brutus to Henry I. written in good Latin, and with great accuracy. 2. *Libertates ecclesie S. Johannis de Beverlac*, &c. a manuscript in the Cotton library. It is a collection of records relative to the church at Beverley, translated by our author from the Saxon language. The *Biographia Britannica* evidently proves these to be all that were written by Aluredus.

ALSIUM (*Encycl.*), a city of ancient Etruria. We are told by Dionysius Halicarnassensis, that Alsium was built by the aborigines, long before the Tyrrhenians invaded Italy. In Vol. X.

this case it must have been founded not long after the dispersion in the days of Peleg. Its founder is said to have been one *Alafus*, *Alfus*, or *Alfa*; whom some conjecture to have been Alifiah, or Elifha, the son of Javan, mentioned in Scripture.

ALSTEDIUS (John Henry), a German Protestant divine, and one of the most indefatigable writers of the 17th century. He was some time professor of philosophy and divinity at Herborn in the county of Nassau: from thence he went into Transylvania, to be professor at Alba Julia; where he continued till his death, which happened in 1638, being then fifty years of age. His *Encyclopædia* has been much esteemed even by the Roman-catholics; it was printed at Lyons, and sold very well throughout all France. His *Thesaurus Chronologicus* is by some esteemed one of his best works, and has gone through several editions. He also wrote *Triumphus Biblicus*, to shew that the principles of all arts and sciences are to be found in the Scriptures; but he gained very few to his opinion. He was a Milenarian; and published, in 1627, a treatise *De mille annis*, in which he asserted that the reign of the saints on earth was to begin in 1694.

ALTAR (*Encycl.*). Before temples were in use, altars were erected sometimes in groves, sometimes in the highways, and sometimes on the tops of mountains; and it was a custom to engrave upon them the name, ensign, or character, of the deity to whom they were consecrated.

In the great temples of ancient Rome, there were ordinarily three altars: the first was placed in the sanctuary, at the foot of the statue of the divinity, upon which incense was burnt and libations offered; the second was before the gate of the temple, and upon it they sacrificed the victims; and the third was a portable altar, upon which were placed the offering and the sacred vessels.

Besides these uses of altars, the ancients swore upon them, and swore by them, in making alliances, confirming treaties of peace, and other solemn occasions. Altars also served as places of refuge to all those who fled to them, whatever crime they had committed.

Among the Jews, altars in the patriarchal times were very rude. The altar which Jacob set up at Beth-el was nothing but a stone, which served him instead of a bolster; that of Gideon, a stone before his house: and the first which God commanded Moses to erect was probably of earth, or unpolished stones, without any iron; for if any use was made of that metal, the altar was declared impure.

The principal altars of the Jews were, The altar of incense; that of burnt-offering; and the altar, or table, for the shew-bread.

The altar of incense was a small table of shittim-wood, covered with plates of gold, of one cubit in length, another in width, and two in height. At the four corners, were four kinds of horns, and all round a little border or crown over it. This was the altar hidden by Jeremiah before the captivity; and upon it the officiating priest offered, every morning and evening, incense of a particular composition. See Pl. 13.

The altar of burnt-offerings was made of Shittim-wood, and carried upon the shoulders of the priests by staves of the same wood overlaid with brass. In the time of Moses, this altar was five cubits square, and three high; but in Solomon's temple it was much larger, being twenty cubits square, and ten in height. It was covered with brass; and at each corner was a horn or spire, wrought out of the same wood with the altar to which the sacrifices were tied. Within the hollow was a grate of brass, on which the fire was made; through it fell the ashes, and were received in a pan below. At the four corners of the grate were four rings and four chains, which

kept it up at the horns. This altar was placed in the open air, that the smoke of the burnt-offerings might not fully the inside of the tabernacle. See the Plate.

The altar, or table for the *five-bread*, was likewise of flint-wood, covered with plates of gold, having a little border round it, adorned with sculpture. It was two cubits long, one wide, and one and an half in height. Upon this table, which stood in the holy of holies, were put, every sabbath-day, twelve loaves, with salt and incense.

The Jewish altars, after their return from the captivity, and the building of the second temple, were in some respects different from those described above. That of burnt-offerings was a large pile, built of unhewn stone, thirty-two cubits square at the bottom, and twenty-four square at the top. The ascent was by a gentle rising, thirty-two cubits in length, and sixteen in breadth.

ALTESSON, a town of Piedmont, between the rivers Dore and Stura, two miles E. of Louvenire. Long. 7. 20. E. Lat. 44. 36. N.

ALTEZBY, a town and castle of Germany, in the Lower Palatinate, capital of a territory of the same name, fifteen miles S.W. of Mentz. Long. 8. 12. E. Lat. 49. 40. N.

ALTIN (*Encycl.*). This lake is called by the Russians *Telesnoi Ozero*, from the Teleffi, a Tartarian nation, who inhabit the borders of it, and who give it the name of *Altin-Kul*. By the Calmucks it is called *Altinor*. It is near ninety miles long and fifty broad, with a rocky bottom. The north part of it is sometimes frozen so hard as to be passable on foot, but the southern part it never covered with ice. The water in the Altin lake, as well as in the rivers which run through the adjacent places, only rises in the middle of summer, when the snows on the mountains are melted by the heat of the sun.

ALTING (Henry), professor of divinity at Heidelberg and Groningen, born at Emden, Feb. 17, 1583, of a family which had been long conspicuous in Friseland. His father, Meno Alting, was the first, who, with two others, preached the reformation in the territory of Groningen, about the year 1566, under the tyrannical government of the Duke of Alva; and the first that preached in the great church of Groningen, after the reduction of that town by the States General in 1594. Henry was chosen, in 1605, preceptor to the three young counts of Nassau, Solms, and Izenberg. After various difficulties, he settled at Groningen, where he continued till his death, August 25, 1644. He was a sound protestant divine, a pious Christian, an useful member of society in many respects, and one who suffered much for the truth. Most of his works were never published; those which have been, are the following: *Nota in decadem problematum J. Behm*, 1613. *Loci communes explicatio catecheseos Palatine*, 1646, in 3 vols. *Exegetici Augustinæ confes.* 1647. *Methodus theologice*, 1650. It appears from the catalogue of his works annexed to his life, that the *Medulla hist. prophane*, published by D. Pareus, was composed by Alting. The most remarkable piece among Alting's MSS. is The ecclesiastical History of the Palatinate, from the Reformation to the Administration of John Casimir.

ALTING (James), son of the former, was born at Heidelberg, September 27, 1618. He travelled into England in 1640, where he was ordained by the learned Dr. Prideaux, bishop of Worcester. He afterwards accepted of the professorship of Groningen, vacant by the death of Gomarus; but his situation was rendered very disagreeable by the continual disputes which he had with his colleague Sam. des Marets, who favoured the school-divinity. He made a pious exit, August 20, 1679, recommending the edition of his works to Meno Alting (author of *Notitia German. Infer. Antiquæ*, fol. Amst. 1697); but they were published in 5 vols. folio, with

his life, by Mr. Bekker of Amsterdam. They contain various analytical, exegetical, practical, problematical, and philosophical tracts, which shew his great industry and knowledge. Alting was a divine greatly addicted to the text of the scripture, to Cocceianism, and Rabbinism. He preached well in German, Dutch, and English.

ALTKIRCH, a town of France, in the department of the Upper Rhine and late province of Alsace, on the river Ille, forty-five miles S. S. W. of Strasbourg. Long. 7. 20. E. Lat. 47. 40. N.

ALTORF, a town of Germany, in the circle of Suabia, twenty miles N.E. of Constance, and subject to the house of Austria. Long. 9. 30. E. Lat. 47. 50. N.

ALTORP, a town of Switzerland, capital of the canton of Uri, on the lake of Lucern, near the spot where it receives the river Reufs, twenty miles S. E. of Lucern. Long. 8. 25. E. Lat. 46. 55. N.

ALVARISTS, in ecclesiastical history, a branch of the Thomists, so called from Alvarez, their leader, who ascribed the doctrine of sufficient grace, instead of the efficacious grace of the ancient Thomists. The Alvarists come near to the Jesuits, the ancient Thomists to the Jansenists.

ALVESTON, a village of Gloucestershire. On the top of a hill near the Severn, is a large round camp, called Oldbury, where several antiquities have been dug up. It is eight miles from Bristol.

ALUNTIUM, ALONTIUM (anc. geog.), a town in the north of Sicily, situated on a steep eminence, at the mouth of the Chydus (Ptolemy, Pliny, Cicero); said to be as old as the war of Troy (Dionys. Halicarn.). Now in ruins; from which arose the hamlet *St. Filadelfo*, in the Val di Demona. The inhabitants were called *Habintini* (Cicero).

AMADMAGDA, an Abyssinian plant, said to be used by the inhabitants of that country for facilitating the consolidation of fractures, and the discharge of bony splinters from wounds.

AMALEKITES, by some thought to be the descendants of Amalek the grandson of Esau; by others, with more probability, to have been a Canaanitish tribe. They were a wicked people, and therefore devoted to destruction. They lived to the east of the Lacus Asphaltites; next the Moabites to the south, and the Ammonites to the north. A branch of them dwelt to the south of Canaan.

AMALTHEA, the name of the Cumesan Sibyl, who offered to Tarquinus Superbus nine books, containing the Roman destinies, and demanded 300 pieces of gold for them. He derided her, whereupon she threw three of them into the fire; and returning, asked the same price for the other six; which being denied, she burnt three more; and returned, still demanding the same price. Upon which, Tarquin consulting the pontiffs, was advised to buy them. These books were in such esteem, that two magistrates were created to consult them upon extraordinary occasions.

AMALTHEA, in pagan mythology, the daughter of Melissus king of Crete, and the nurse of Jupiter, whom she fed with goats' milk and honey. According to others, Amalthea was a goat, which Jupiter translated into the sky, with her two kids, and gave one of her horns to the daughters of Melissus, as a reward for the pains they had taken in attending him. This horn had the peculiar property of furnishing them with whatever they wished for, and was thence called the *cornucopia*, or horn of plenty.

AMALTHÆUS (Jerome, John Baptista, and Cornelle), three celebrated Latin poets of Italy, who flourished in the 16th century. Their compositions were printed at Amsterdam in 1685. One of the prettiest pieces in that collection is an epigram on two children, whose beauty was

very extraordinary, though each of them was deprived of an eye :

‘Lumine Acon dextro, capta est Leonilla sinistro :

‘Et poterat forma vincere uterque deos.

‘Parve puer; lumen quod habes concede forori ;

‘Sic tu cæcus Amor, sic erit illa Venus.’

AMARA (Sixtinus), professor of the Hebrew tongue in the university of Franeker, a man of great learning, was born in Friedland, and had studied under Drusus. He published a criticism upon the translation of the Pentateuch ; collated the Dutch translation of the bible with the original and the most accurate translations ; and wrote a censure of the Vulgate translation of the historical books of the Old Testament, Job, the Psalms, and Canticles. It is impossible to answer the reasons whereby he shews the necessity of consulting the originals. This he recommended so earnestly, that some synods, being influenced by his reasons, decreed, that none should be admitted into the ministry but such as had a competent knowledge of the Hebrew and Greek text of the Scripture. He died in 1629.

AMAND (St.) (*Encycl.*), a city of France in the department of Cher, and late province of Bourbonnois. It was built in 1410 on the ruins of Orval.

AMAND (St.) (*Encycl.*), a town of France, in the department of the North, and in the late French Flanders. It had lately a celebrated abbey. When the combined forces of Prussia and Austria invaded France in 1792, it was taken by them, but evacuated afterward on their memorable retreat. It is seated on the river Scarpe, seven miles N. of Valenciennes.

AMANICÆ PYLÆ (Ptolemy.) ; **AMANIDES PYLÆ**, (Strabo) ; **AMANI PORTÆ** (Pliny) ; straits or defiles in mount Amanus, through which Darius entered Cilicia ; at a greater distance from the sea than the Pylæ Ciliciæ or Syriæ, through which Alexander passed.

AMARYNTHUS (anc. geog.), a hamlet of Eretrias, in the island of Eubæa, about seven stadia distant from its walls (Strabo). Here Diana was worshipped by an annual solemnity, at which those of Carytus assisted ; hence the title of the goddess was *Amarynthis*, and *Amarysia* (Livy, Pausanias).

AMATHUS (*Encycl.*), a town so called, from Amanthus the founder : or, according to others, from *Amath*, a Phœnician town sacred to Venus, with a very ancient temple of Adonis, and Venus ; and hence Venus is denominated *Amathusia* (Tacitus). According to Ovid, it was a place rich in copper-ore, and where the inhabitants became *Cerysæa* or horned.

AMATHUS (Josephus), a town in the tribe of Gad, beyond Jordan ; but whether at a greater or less distance from it, is not so easy to determine. Eusebius places it in the Lower Peræa ; Roland in Ramoth-Gilead. Gabinus, proconsul of Syria, established five juridical conventions in Judea ; two of which were on the other side Jordan ; one on Galadra, the other at Amathus (Josephus).

AMAZONS (*Encycl.*) Those of Africa were female warriors, who were obliged to continue virgins to a certain period of their military service. When that period was elapsed, they married, merely with the view of propagating the species. All the offices of state were filled by them. The men were employed in domestic affairs, and passed their whole life in the house, as women did in other countries : for these imperious females usurped from them every function that might awake their valour. As soon as the Amazons were delivered, they committed their children to the care of the men, who nourished them with milk, and other food proper for infancy. If the child was a female, they burned its breasts to prevent their growth, which would have been inconvenient in battle.

Histrians inform us, that they inhabited an island which was called Heperia, because it lay to the west of the lake Tritonis.

AMAZONS (the river of), called by the Spaniards *Maranon*, is the greatest river in the world. It received the name of *Amazons*, because the Spaniards who first passed through the country on its banks, having some smart skirmishes with the natives, and afterwards examining the slain, found the bodies of some women among them. Orellana was the first who discovered this river, about the year 1539. The Maranon, after issuing from the lake from whence it takes its rise, in about eleven degrees of south latitude, runs towards the north to Jaen de Bracamoros, for the length of six degrees, from whence it directs its course towards the east, almost parallel to the equinoctial line, as far as the north cape, where it discharges itself into the ocean directly under the equator, by a mouth 50 or 60 leagues broad. It runs from Jaen, where it begins to be navigable, thirty degrees of longitude, according to Condamine, who was sent into these parts by the French king to discover the true measure of the earth. This is equal to 1800 miles of 60 to a degree. But if the turnings and windings are reckoned, it will then be at least 2700 miles. It receives from the north and south a prodigious number of rivers, some of which run 1500 miles, and are not inferior to the Danube or Nile. The country through which this river runs, is very little known to the Europeans.

AMBARVALIA (*Encycl.*). In this ceremony the prayer preferred, the formula of which we have in *Cato de Re Rustica*, cap. cxlii. was called *carmen ambarcale*. At these feasts they sacrificed to Ceres a sow, a sheep, and a bull or heifer, whence they took the name of *juvætaurilia*. The method of celebrating them, was to lead a victim round the fields, while the peasants accompanied it, and one of their number, crowned with oak, hymned forth the praises of Ceres, in verses composed on purpose. This festival was celebrated twice a-year ; at the end of January according to some, or in April, according to others ; and for the second time, in the month of July.

AMBER (*Encycl.*). To our original article concerning this substance, we wish to add a curious account of the preparation and use of a varnish of Amber, and its application to stained wood, published by Mr. NILS NYSTROM, of Norrköping, in Sweden, in the *Annales des Arts et Manufactures*. It is well known that stained woods require to be covered with a coat of varnish of amber, or of linseed oil, in order to deepen the colour, and render it susceptible of a bright polish the composition of these varnishes is therefore an object worthy our attention. The amber-varnish, as prepared in different places, is by no means uniform in its quality, whether owing to the negligence with which the melting of the amber is conducted, or to the manner in which the linseed oil is prepared, which becomes more or less inclined to dry in proportion to the degree of boiling which it has undergone. In order to ascertain the quality of such a varnish, it will be sufficient to apply it to any substance, and leave it for twelve or twenty-four hours to dry, in an apartment where the temperature is moderate : if in this space of time it becomes dry, we may consider it fit for use.

The best method of preparing it is the following : Put a quantity of amber, pounded and sifted, into a melting pan, so as to cover the bottom, which ought to be flat, to the height of an inch at most. Place this pan upon some support, whereby it may be kept in an exactly horizontal position, over a brisk fire of charcoal, which must be kept burning with as uniform a heat as possible, till the amber is melted, and become perfectly liquid ; the amber is then to be poured upon a plate of copper or brass, in order that it may suddenly cool. When the amber has cooled, it is to be broken into small pieces : and if

its fracture exhibits a very deep shining brown colour, not more than one half as bright as it was before its fusion, the amber will be fit for use.

A long course of experience has shewn that this circumstance cannot be too much attended to. In fact, if the amber has not been sufficiently melted, or if the fusion has been imperfect, it will not dissolve in the varnish; if, on the contrary, the operation has been performed with a heat too violent, and too long continued, it will be burnt, and quite unfit for use.

When amber is placed over too weak a fire, it does not melt, but forms a sort of deep brown incrustation, which may likewise be employed as a varnish, provided that it has not been too much evaporated. When it has lost about one half of its weight, it will be in the state most fit for use; if it has not been reduced to this weight, it must be put again into the melting pan, to bring it to the state required.

During the progress of the melting, it ought to be carefully scummed of all its impurities, from which, however, we may obtain a varnish of inferior quality.

For making varnish, it is not necessary to take the pure and transparent part of the amber; as our purpose may be answered by the small yellow fragments of inferior quality, which may be purchased at half the price of the amber in lumps. The earthy particles contained in it separate themselves from the hot varnish, if we suffer them to subside before pouring off the liquid.

A flat-bottomed melting pan is preferable to one with a round bottom. The surface being more extensive, the fusion and evaporation proceed with greater rapidity. In round-bottomed melting pans, the amber lying very deep at the middle, is burnt in those places where it lies the shallowest, before the fusion and evaporation are completed.

Mr. Nils Nyström gives the following method of preparing the *Varnish of Linseed Oil*.

"Take a pound of litharge, well pulverized and sifted, four ounces of white vitriol, and a pint of linseed oil. Put the whole into a melting pan, of such dimensions that they do not fill more than half; mix these substances well together, and make them boil till the whole of the moisture has evaporated. This point of evaporation may be known by a pellicle, which forms itself upon the surface of the liquid. It is then to be taken from the fire, and poured clear off, taking care to keep back the litharge and the thick part which deposits itself at the bottom. During the boiling we ought to stir the liquid from time to time, in order to aid the precipitation of the litharge; but it ought not to be stirred constantly, for fear that the finer particles of the litharge might mix with the oil, and render the varnish too thick."

The following directions are given for the preparation of the *Amber Varnish*.

"Take one part of amber, torrefied or melted, according to the process above described, three parts of varnish of linseed oil, and four parts of oil of turpentine. The amber and the linseed-oil varnish ought to be mixed together in a pan, so as to fill only about one-third of its capacity. Place the mixture over a slow fire till the amber be dissolved, which may be known by its frothing up. One ought to have a vessel at hand, for receiving what may run over in case of accident, in order to avoid any waste of the amber. We might also use for this purpose a pan, made after the plan of the boiler invented, in the year 1799, by Mr. Smith, of Philadelphia, for the purpose of preventing the running over of boiling liquids, and which is provided with a double rim, to which are fixed sponges, moistened with water, the contact of which refrigerates the liquid that rises up to them. When the amber is dissolved, the pan is taken off the fire; and when the mixture has cooled, we add to it the essence of turpentine, stirring it constantly

while it we are pouring it out. We then leave the whole to stand quiet for some time, in order that the gross and undissolved particles may subside to the bottom; after which the varnish is poured clear off, strained through linen or fine cloth, and put into bottles."

In boiling the varnish, we ought to take care neither to let it overflow nor take fire; if we neglect the precautions that have just been pointed out, and the accident should unfortunately take place, we should not attempt to extinguish the flames with water; for were we to do that, the varnish would be forcibly thrown out of the vessel, and would burn the imprudent operator; nay, might even set fire to the building itself in which the operation was performed. The safest method is, to extinguish the fire by means of a lid of wood or iron, which ought always to be kept in readiness for fear of accidents.

The proposed object was to obtain a dye, which might perfectly imitate mahogany, and which would keep for as great a length of time as possible. These varnishes, as well as the dyes which the writer describes, have been tried upon various species of wood; of these the maple, the birch, and the white beech, when tinged with a solution of iron, had the greatest resemblance to mahogany. The appearance of the other woods was greatly varied according to the differences of their natural colours and veins, their different degrees of porosity, and the facility with which they imbibed the colouring substance.

AMBERT (*Encycl.*), a small town of France, in the department of Puy de Dome, and late province of Auvergne. It was once remarkable for its paper manufactory and cambrics.

AMBITION (*ambitio*), is generally used in a bad sense, for an immoderate or illegal pursuit of power. In the strict meaning, however, of the word, it signifies the same with the *ambitio* of the Romans. See AMBITUS, in vol. I.

AMBLETEUSE (*Encycl.*), a French sea-port town in the department of the Straits of Calais, and late province of Picardy.

AMBROSE (St.), bishop of Milan, one of the most eminent fathers of the fourth century, born in Gaul in the year 333, according to Dr. Cave, or in 340, as Mr. Du Pin affirms. His father was at this time *praefectus praetorio* in Gaul; and resided at Arles, the capital of Gallia Narbonensis. The birth of Ambrose is said to have been followed with a remarkable preface of his future eloquence; for we are told, that a swarm of bees came and settled upon his mouth as he lay in his cradle. He soon made himself master of the several parts of secular learning; and pleaded causes before Probus with so much eloquence, that he was appointed his assessor, and soon after governor of the provinces of Liguria and Aemilia. He settled at Milan; where, in the year 374, upon the death of Auxentius bishop of that city, there being a great contest between the Catholics and Arians concerning the choice of a new bishop, Ambrose thought it his duty, as governor, to go to the church, in order to compose the tumult. He accordingly addressed himself to the people in a gentle pathetic speech, exhorting them to proceed to their choice, in a calm and friendly manner: while he was speaking to them, the whole assembly cried out with one voice, "Let Ambrose be bishop!" Such a sudden and unexpected incident surprised him extremely; so that he retired immediately, and used every method to divert them from their resolution of choosing him: but at last he was obliged to comply; and was baptised (being but a catechumen before), and ordained bishop, towards the latter end of the year 374, or beginning of 375. About the year 377, the barbarous nations making an incursion into the Roman empire, he fled to Illyricum, and after-

wards to Rome. In the year 384 he was sent to the tyrant Maximus, who had usurped the empire, and prevailed upon him not to pass over into Italy. The heathens being encouraged by these intestine commotions in the empire, attempted to restore their religion, and employed Q. Aurelius Symmachus, prefect of Rome, a man of great eloquence, to plead their cause. This gave rise to the famous contest between St. Ambrose and him, about repairing the altar of Victory. But Symmachus having lost his cause, was expelled the city, and commanded not to approach within one hundred miles of it. The petition which he presented to the emperor Valentinian the younger, is still extant; we find in it the strongest figures of rhetoric and the greatest force of eloquence. St. Ambrose wrote a confutation of this petition; but he has been thought guilty of many paralogisms: and yet he protests, "that he endeavoured only after the solidity of reasoning, leaving Symmachus all the glory of eloquence and politeness; it being (says he) the peculiar privilege of the pagan philosophers to amuse the mind with colours as false as their idols; and to say great things, not being capable of saying true ones." Ambrose met with a good deal of opposition from the Arians, against whom he acted with great spirit and intrepidity. Justina, the empress and mother of Valentinian, who was an Arian, resolving to restore Arianism at Milan, began with demanding of St. Ambrose one of the churches, which was called the Portian church: but he refused it; and the people surrounding the palace in a body, he was obliged to leave him in possession of his church, and even desire him to pacify the people.

Ambrose was a second time left to the tyrant Maximus, for Valentinian found no person so proper to negotiate with him. He spoke to him with great courage and boldness, but could obtain nothing; for Maximus soon after marched into Italy, and made himself master of the western empire: so that Valentinian was obliged to retire, with his mother Justina and his sister Galla, to Thessalonica in Illyricum, in order to desire Theodosius's assistance; who defeated Maximus, and restored Valentinian to the empire.

While Theodosius continued in Italy, after the defeat of Maximus, an insurrection happened at Thessalonica, in which several of the magistrates were stoned, and their bodies dragged along the streets. Theodosius being informed of this, rashly commanded a certain number of the inhabitants to be put to death promiscuously; by which means the city was filled with the blood of many innocent persons, and amongst the rest several strangers who were but just come there: no regard was had to any distinction of persons, no form of trial was observed; but they were cut down like corn in the harvest, as Theodoret expresses it, to the number of 7000. At this time an assembly of bishops was held at Milan, who all expressed an abhorrence of such cruelty in the emperor. Ambrose wrote a letter to him, in which he represented the enormity of his crime, and exhorted him to make satisfaction by a sincere submission and repentance. Some time after, Theodosius coming to Milan, went to receive the sacrament at the great church; where Ambrose meeting him at the door, denied him entrance, and represented his guilt in the most forcible and pathetic terms. The emperor was struck with his words, and with great uneasiness of mind returned to his palace; but about a year after, Ambrose being convinced of the sincerity of his repentance, admitted him into the church.

In 392, Valentinian the emperor being assassinated by the contrivance of Argobastes, and Eugenius usurping the empire, Ambrose was obliged to leave Milan; but he returned the year following, when Eugenius was defeated. He died at Milan the 4th of April, 397; being 57 years of age, according to Mr. Du Pin, and some other writers; but Dr. Cave and

Olearius say that he was 64 years old at his death. He was buried at the great church at Milan. He wrote several works, the most considerable of which is that *De Officiis*. He is concise and sententious in his manner of writing, and full of turns of wit; his terms are well chosen, and his expressions noble; he diversifies his subject by an admirable copiousness of thought and language; he is very ingenious in giving an easy and natural turn to every thing which he treats of, and is not without strength and pathos when there is occasion for it. This is part of the character which Du Pin gives him as a writer; but Erasmus observes that he has many quaint and affected sentences, and frequently very obscure ones; and it is certain that his writings are intermixed with many strange and peculiar opinions. Paulinus wrote his life, and dedicated it to St. Augustin: this life is prefixed to St. Ambrose's works; the best edition of which is reckoned to be that published by the Benedictine monks, in two volumes folio, at Paris, in 1636, and 1690.

AMERDORE (Isaac), an eminent presbyterian minister, was educated at Brazen-nose College, Oxford, where he took the degree of bachelor of arts, and became minister of Preston, and afterwards of Garstang in Lancashire, where he was in 1662 ejected for non-conformity. It was usual with him to retire every year for a month into a little hut in a wood; where he thinned all society, and devoted himself to religious contemplation. Dr. Calamy observes, that he had a very strong impulse on his mind of the approach of death, and took a formal leave of his friends at his house, a little before his departure; and the last night of his life he sent his discourse concerning *angels* to the press. The next day he shut himself up in his parlour; and to the great surprise and regret of all who saw him, he was found just expiring. He died in 1663-4, in the 72d year of his age. He wrote several other books; as the *Prima, Media, & Ultima*, or the First, Middle, and Last Things; War with devils; Looking upon Jesus; &c.

AMBRY. This article in Vol. I. requires to be corrected in the following instances. For "*are deposited*," read *were deposited*;" after "*were laid up*," add "*for distribution*."

AMEDABAD, a considerable city, the capital of Guzerat, in Hindoostan Proper. It is one of the best fortified places in India, and made a good defence when taken by General Goddard, in 1780, from the Poonah Maharrats, to whom it was restored in 1783. Travellers have dwelt much on the beauty and convenient situation of the city, which is in a level country, on the banks of a small navigable river that falls into the gulf of Cambay. It is 321 miles N. of Bombay. Long. 72. 37-E. Lat. 22. 68. N.

AMEDNAGUR, a city of Hindoostan, in the Deccan; once the capital of the Subah of the same name, which is now better known by that of Dowlatabad. This city was the residence of the emperor Aurungzebe, during his conquest of the Deccan and the Carnatic. It is 181 miles, by Poonah, from Bombay. Long. 75. 0. E. Lat. 33. N.

AMES (William), D. D. a learned independent divine, famous for his controversial writings, was born in 1576, and educated at Christ's college, in Cambridge. In the reign of King James I. he left the university, and soon after the king's death, on account of his being unwilling to conform to the rules of the church; and retired to the Hague, where he had not been long before he was invited to accept of the divinity-chair in the university of Franeker, in Friesland, which he filled, with admirable abilities, for above twelve years, during which his fame was so great, that many came from remote nations to be educated under him. He from thence removed to Rotterdam for a change of air which his health demanded; and here he continued during the remainder of his life. His controversial writings, which compose the greatest part of his works, are

chiefly against Bellarmine and the Arminians. He also wrote, 1. A fresh Suit against the Ceremonies. 2. *Lectiões in Psalmos Davidis*. 3. *Medulla Theologicæ*; and several pieces relative to the sciences. He died of an asthma, at Rotterdam, in Nov. 1633.

AMESTRATA (*Encycl.*), a town of Sicily (Cicero) ; *Ame-stratos* (Stephanus) ; *Anafra* (Silius Italicus) ; *Mutisfratos* (Polybius) ; now *Mikretta*, in the Val di Demona, on the river *Halefus* ; a very strong fort of the Carthaginians, besieged in vain by the Romans for seven months with considerable loss ; at length, after another siege, taken and raised (Diodor. Siculus). The appellation is Phœnician, according to Bochart, *Math-Astrata*, and *Am-Astrata*, the city and people of the goddess *Astarte*. The inhabitants are called by Cicero *Ame-stratini*, and *Mutisfratini* by Pliny.

AMHURST (Nicholas), an English poet and political writer, was born at Marden in Kent, and entered of St. John's College, Oxford ; from whence he was expelled for irregularity of conduct and libertine principles. Retaining great resentment against the university on this account, he abused its learning and discipline, and some of the most respectable characters in it ; in a poem published in 1724, *Oculus Britannicæ*, and in a book entitled *Terræ Filius*. He published, A Miscellany of poems, sacred and profane ; and, The Convocation, a poem in five cantos, which was a satire on the Bishop of Bangor's antagonists. But he is best known for the share he had in the political paper called *The Craftsman* ; though, after having been the drudge of his party for near twenty years, he was as much forgot in the famous compromise of 1742, as if he had never been born ; and, when he died in that year of a broken heart, was indebted to the charity of his bookseller for a grave.

AMIANTHUS (*Encycl.*). This substance is also called *Asbestos*, or *Linum Vivum* ; but M. Daubenton distinguishes them thus. In filaments soft and flexible, he calls them *Amiantus* ; and in filaments hard and not flexible, he calls them *Asbestos*. The stones called mountain cork and mountain leather seem to be of the same nature. The ancient Romans made cloths of this stone, which were used for the purpose of wrapping up dead bodies, and were not acted upon by the fire. It is certain that the *Amiantus*, of which there are different kinds, though very refractory, will vitrify by the heat of a violent chemical furnace, or in the focus of a good burning glass, without any additional matter. But it resists the heat of a funeral pile ; nor do the ashes of the wood serve for a dissolvent to it. At present we know that *Amiantus* is a stone or mineral, consisting of threads or filaments, which may be separated from each other, and by art spun and wove into cloth. The *Amiantus*, rare and only found in the East when Pliny wrote, is now got in many parts of Europe. It is commonly found on the sides or at the foot of hills, composed of vitrifiable parts. In the Pyrenæes they make garters, purses, belts, and other small works, of it ; though coarse, they are soft and silky. It is of different colours, white, grey, greenish, and reddish. Its filaments have almost the lustre of silk ; some of the more 14 inches long, and so small that M. Daubenton found some whose diameters were the 2000th part of a line. Naturalists differ about the nature of this stone. It has been ascribed in whole or part to calcareous earth, to gypsum, or to clay. Some make it a sort of iron decomposed by fire ; or a mixture of iron and quartz. They have advanced that it is of a vegetable nature. It has been also considered as a decomposition of stœatite, or of those stones called magnesian. But M. le Conte de Buffon has positively declared it to be a stœatite, or decomposition of mica and talc. Talc is a decomposition of mica, and as the former is softer and more attenuated than the latter, we may conclude that more talc enters into the com-

position of the *Amiantus*, than into that of the *Asbestos*. They are both composed of filaments, either longitudinal, as the *Amiantus*, or oblique and converging, as in the *Asbestos*.

AMID, a town of Turkey in Asia, 40 miles from Amasi, and 60 from Tocat. Long. 36. 40. E. Lat. 40. 30. N.

AMIDA (anc. geog.), a principal city of Mesopotamia (Liber Notitiæ) ; *Ammea* (Ptolemy) ; situated on a high mountain, on the borders of Assyria, on the Tigris, where it receives the Nymphus.—It was taken from the Romans, in the time of the Emperor Constant, by Sapor king of Persia. The siege is said to have cost him 30,000 men ; however, he reduced it to such ruin, that the emperor afterwards wept over it. According to Ammianus Marcellinus, the city was raised ; the chief officers were crucified ; and the rest, with the soldiers and inhabitants, either put to the sword, or carried into captivity, except our historian himself, and two or three more, who, in the dead of the night, escaped through a postern unperceived by the enemy. The inhabitants of Nisibis, however, being obliged to leave their own city by Jovian's treaty with the Persians, soon restored Amida to its former strength ; but it was again taken by Cavades in 501, but was restored to the Romans in 503. On the declension of the Roman power, it fell again into the hands of the Persians ; but was taken from them by the Saracens in 899. It is now in the possession of the Turks. Here are above 20,000 Christians, who are better treated by the Turks than in other places. A great trade is carried on in this city, of red Turkey leather, and cotton cloth of the same colour. The Arabian name of Amida, is *Diarbeker*, and the Turkish one *Kara-Améd*. E. Long. 39. 0. N. Lat. 36. 58.

AMISUS (*Encycl.*), the chief city of Pontus. It was at first a free city, like the other Greek cities in Asia ; but afterwards subdued by Pharnaces king of Pontus, who made it his metropolis. It was taken by Lucullus in the Mithridatic wars, who restored it to its ancient liberty. Close by Amisus stood another city, called *Eupatoria*, from Mithridates Eupator its founder. This city was likewise taken by Lucullus, who levelled it with the ground ; but it was afterwards rebuilt by Pompey, who united it with Amisus, giving them the name of *Pompejopolis*. It was taken during the war between Cæsar and Pompey, by Pharnaces king of Pontus, who put most of its inhabitants to the sword ; but Cæsar, having conquered Pharnaces, made it again a free city.

AMMERCOT, a fort in Hindoostan Proper, a very extensive sandy desert between the Indus, the territories of Agimere and Moultan, and the Pudder. This place is celebrated as the retreat of the emperor Humafoon, during the troubles ; and here was born his son, the illustrious Acbar. It is 190 miles N. by E. of Tatta.

AMMIANUS (Marcellinus), an historian, born at Antioch. He wrote in Latin an interesting history, of which there are now only 18 books extant. Though a Pagan, he speaks with candour and moderation of the Christian religion, and even praises it : his hero is the emperor Julian. He died about the year 390. The best edition of his history is that of *Gronovius*, in 1693.

AMMIRATO (Scipio), an eminent Italian historian, born at Lecce in Naples in 1531. After travelling over great part of Italy, without settling to his satisfaction, he was engaged by the great duke of Tuscany to write *The History of Florence* ; for which he was presented to a canonry in the cathedral there. He wrote other works while in this station ; and died in 1600.

AMMON, the father of the Ammonites, was the son of Lot by his youngest daughter. Gen. xix. 38.

AMMON (Andreas), an excellent Latin poet, born at Lucera in Italy, was sent by Pope Leo X. to England, in the characters of protonotary of the Apostolic See, and collector-ge-

neral of this kingdom. Being a man of singular genius and learning, he soon became acquainted with the principal literati of those times; particularly with Erasmus, Colet, Grocino, and others, for the sake of whose company he resided some time at Oxford. Ammon was Latin secretary to Henry VIII. but at what time he was appointed does not appear. In 1512 he was made canon and prebendary of the collegiate chapel of St. Stephen, in the palace of Westminster. He was likewise prebendary of Wells; and, in 1514, was presented to the rectory of Dychial in that diocese. About the same time, by the king's special recommendation, he was also made prebendary of Salisbury. He died in the year 1517, and was buried in St. Stephen's chapel in the palace of Westminster. He was esteemed an elegant Latin writer, and an admirable poet. The epistles of Erasmus to Ammon abound with encomiums on his genius and learning.—His works are, 1. *Epistole ad Erasmus*, lib. i. 2. *Scoticus confictus historia*, lib. i. 3. *Bucolica vel eclogæ*, lib. i. Basil, 1546, 8vo. 4. *De rebus nihil*, lib. i. 5. *Panegyricus quidam*, lib. i. 6. *Variis generis epigrammata*, lib. i. 7. *Pœmata diversa*, lib. i.

AMMONITES (anc. geog.), a country of Arabia Petraea, occupied by the children of Ammon, whence the appellation. Its limits, partly to the west, and partly to the north, were the river Jabbok, whose course is no-where determined; though Josephus says, that it runs between Rabath-Ammon, or Philadelphia, and Gerasa, and falls into the Jordan.

AMMONIUS, surnamed SAGEAS, was born in Alexandria, and flourished about the beginning of the third century. He was one of the most celebrated philosophers of his age. He took great pains in reconciling the differences between the Platonists and Peripatetics, in which he gained great reputation. Plotinus and Origen were both his disciples. He died about the year 230.

AMONTONS (William), an ingenious experimental philosopher, was born at Paris in 1663. While he was at the grammar-school, he, by sickness, contracted a deafness that almost excluded him conversation: in this situation he applied himself to mechanics and geometry; and, it is said, refused to try any remedy for his disorder, either because he deemed it incurable, or because it increased his attention. He studied the nature of barometers and thermometers with great care; and wrote *Observations and Experiments concerning a new Hour-glass, and concerning Barometers, Thermometers, and Hygroscopes*; which, with some pieces in the *Journal des Savans*, are all his literary works. When the Royal Academy was new regulated in 1699, he was admitted a member; and read his *New Theory of Friction*, in which he happily cleared up an important object in mechanics. He died in 1705.

AMORGOS, or AMUREUS (anc. geog.), now *Morgo*, not far from Naxos to the east, one of the European Sporades; the country of Simonides, the Iambic poet (Strabo). To this island criminals were banished (Tacitus). It was famous for a fine flax called *Emorgis*.

AMORGUS, an island of the Archipelago, fertile in wine, oil, and corn. It is well cultivated, and the inhabitants are affable, and generally of the Greek church. The best parts belong to a monastery. The greatest inconvenience which the inhabitants of this island experience is the want of fuel. It is 30 miles in circumference, and 67 N. of Candia. Long. 26. 15. E. Lat. 36. 20. N.

AMORIUM (*Encycl.*), a town of Phrygia Major, was taken from the Romans by the Saracens in 668; but soon after retaken by the Romans.—A war breaking out again between these two nations in 837, the Roman Emperor Theophilus destroyed Sozopetra the birth-place of the Khalif Al Motasem, notwithstanding his earnest intreaties to him to spare it. This so enraged the Khalif, that he ordered every

one to engrave upon his shield the word *Amorium*, the birth-place of Theophilus, which he resolved at all events to destroy. Accordingly he laid siege to the place, but met with a vigorous resistance. At length, after a siege of 55 days, it was betrayed by one of the inhabitants who had abjured the Christian religion. The Khalif, exasperated at the loss he had sustained during the siege, put most of the men to the sword, carried the women and children into captivity, and levelled the city with the ground. His forces being distressed for want of water on their return home, the Christian prisoners rose upon some of them, and murdered them; upon which the Khalif put 6000 of the prisoners to death.—According to the eastern historians, 30,000 of the inhabitants of Amorium were slain, and as many carried into captivity.

AMORRHITIS (anc. geog.), the country of the Amorites, situated, according to Josephus, between three rivers, like an island; the Arnon on the south, the Jabbok on the north, and the Jordan on the west. The *Amorites*, or *Amorrhæi*, took their name from *Amor*, or *Emor*, the son of Canaan; they dwelt in the mountains of Judah to the south, and in some parts mixed with the Hethæi; also about Sichem: but a great part of them crossed the Jordan, and in a hostile manner occupied a considerable part of the country of the Moabites and Ammonites; which afterwards fell to the Israelites, on the defeat of Sihon their king.

AMOS, the third of the twelve lesser prophets, was a herdsman of the city of Tekoa. He prophesied under Uzzias and Jeroboam II. and foretold the captivity and re-establishment of the ten tribes. He was put to death by Amazias, priest of Bethel, about 785 years before Christ.—He ought not to be confounded with Amos, the father of Isaiah.

AMOUR, a river of Asia, which rises in Siberia, runs east through Chinese Tartary, and falls into the bay of Corea.

AMPELUSIA, a promontory of Mauritania Tingitana, called *Cottes* by the natives, which is of the same signification (Mela); with a town of the same name (Pliny); not far from the river Lixus, near the straits of Gibraltar: now *Cape Spartel*. W. long. 6. 30. Lat. 36. 0.

AMPHILOCHIA, the territory of the city of Argos in Acarnania; *Amphilochium* (Thucydides); called *Amphilochi*, from the people, in the lower age (Stephanus). A town also of Spain, in Galicia, built by Teucer, and denominated from Amphilochus, one of his companions (Strabo); now *Orense*. W. long. 8. 20. Lat. 42. 36.

AMPHILOCHIUS, bishop of Iconium, in the fourth century, was the friend of St. Gregory Nazianzen and St. Basil. He assisted at the first general council of Constantinople in 381; presided at the council of Side, and was a strenuous opposer of the Arians. He died in 394; and his works were published in Greek and Latin, at Paris, 1644; by Francis Combefis.

AMPHILOCHUS, son of Amphiaræus and Eriphyle, was a celebrated diviner. He had an altar erected to him at Athens, and an oracle at Mallus in Cilicia, which city was founded by him and Mopsus. The answers of this oracle were given by dreams; the party enquiring used to pass a night in the temple, and that night's dream was the answer. Dion Cassius mentions a picture done by order of Sextus Condianus, representing the answer he received of the oracle, in the reign of the Emperor Commodus.

AMPHISSA, the capital of the Locri Oxolia, one hundred and twenty stadia, or 15 miles, to the west of Delphi (Pausanias). So called, because surrounded on all hands by mountains (Stephanus). Hence *Amphissæi*, the inhabitants; who plundered the temple at Delphi (Demosthenes).—Also a town of Magna Græcia, at the mouth of the Sagra, on the coast of the Farther Calabria, situated between Locri and Caulonia, now called *Rocella*. *Amphissius* the epithet (Ovid).

AMPLEPUIS, a town of France, in the department of Rhone and Loire. It is celebrated for its wines, and is 16 miles east of Roanne.

AMURAT, or **AMURATH**, I. the fourth emperor of the Turks, and one of the greatest princes of the Ottoman empire, succeeded Solyman in 1360. He took from the Greeks Gallipoli, Thrace, and Adrianople, which last he chose for the place of his residence. He defeated the Prince of Bulgaria, conquered Missina, chastised his rebellious bashaws, and is said to have gained 36 battles. This prince, in order to form a body of devoted troops that might serve as the immediate guards of his person and dignity, appointed his officers to seize annually, as the imperial property, the fifth part of the Christian youth taken in war. These, after being instructed in the Mahometan religion, inured to obedience by severe discipline, and trained to warlike exercises, were formed into a body distinguished by the name of *Janissaries*, or *New Soldiers*. Every sentiment which enthusiasm can inspire, every mark of distinction that the favour of the prince could confer, were employed in order to animate this body with martial ardour, and with a conscientiousness of its own pre-eminence. The Janissaries soon became the chief strength and pride of the Ottoman armies, and were distinguished above all the troops whose duty it was to attend on the person of the sultan.—At length the death of Lazarus, despot of Servia, who had endeavoured in vain to stop the progress of Amurath's arms, touched Milo, one of his servants, in so sensible a manner, that, in revenge, he stabbed the sultan in the midst of his troops, and killed him upon the spot, A. D. 1399, after he had reigned 33 years.

AMURAT II. the 10th emperor of the Turks, was the eldest son of Mahomet I. and succeeded his father in 1421. He besieged Constantinople and Belgrade without success; but he took Theoflania from the Venetians, and compelled the Prince of Bosnia and John Castriot prince of Albany to pay him tribute. He obliged the latter to send his three sons as hostages; among whom was George, celebrated in history by the name of *Scanderbeg*. John Hunniades defeated Amurat's troops, and obliged him to make peace with the Christian princes, in 1442. These princes afterwards breaking the peace, Amurat defeated them in the famous battle of Varna, November 10, 1444, which proved so fatal to the Christians, and in which Ladislaus king of Hungary was killed. He afterwards defeated Hunniades, and killed above 20,000 of his men; but George Castriot, more known by the name of *Scanderbeg*, being re-established in the estates of his father, defeated the Turks several times, and obliged Amurat to raise the siege of Croia, the capital of Albany. Amurat died, chagrined with his ill success, and infirm with age, February 11, 1451, at Adrianople. It is observed to this prince's honour, that he always kept his treaties with the greatest fidelity.

AMWELL, a village near Ware in Hertfordshire, famous for giving rise to the New River, which supplies London with water. One part is called Amwell-Magna, and the other Amwell-Parva, at which is the head of the river.

AMYCLÆ (*Encycl.*). This city of Laconia was afterwards famed for sending a considerable colony of its own inhabitants into Upper Calabria, who built there a city which they called by the same name. This last city was situated between Cajea and Terracina, and gave its name to the neighbouring sea. According to Pliny and Solinus, the territory of Amyclæ was so infested with vipers and other serpents, that the inhabitants were obliged to abandon their dwellings, and settle elsewhere.—Among the ancient poets, the Amyclæ, or inhabitants of this city, obtained the epithet of *taciti* or *silent*. The reason of this was, either because it was built by the Lacedæmonians, who, as they followed the doctrine of Pythagoras, were always inculcating the precept of silence, and thence call-

ed *taciti*; or because of a law which obtained in this place, forbidding any one, under severe penalties, to mention the approach of an enemy. Before this law was made, the city was daily alarmed by false reports, as the enemy had been already at the gates. From terrors of this kind, the above-mentioned law indeed delivered them; but in the end it proved the ruin of the city: for the Dorians appearing unexpectedly under the walls, no one ventured to transgress the law; so that the city was easily taken. They reduced it to an inconceivable hamlet; in which, however, were seen some of the remains of its ancient grandeur. One of the finest buildings that escaped the common ruin, was the temple and statue of Alexandra, whom the inhabitants pretended to be the same with Cassandra the daughter of Priam.

AMYRAULT (Moses), an eminent French Protestant divine, born at Bourguil in Touraine in 1596. He studied at Saumur, where he was chosen professor of theology; and his learned works gained him the esteem of Catholics as well as Protestants, particularly of Cardinal Richelieu, who consulted him on a plan of re-uniting their churches, which, however, as may well be supposed, came to nothing. He published a piece in which he attempted to explain the mystery of predestination and grace, which occasioned a controversy between him and some other divines. He also wrote *An Apology for the Protestants*; *A Paraphrase on the New Testament*; and several other books. This eminent divine died in 1664.

ANABAPTISTON, the same with **ABAPTISTON**. **ANABAPTISTS** (*Encycl.*). This Protestant sect sprung up in Germany immediately after the Reformation. It was founded in the year 1521, by Nicholas Storck, Mark Stubner, and Thomas Muncer; who had been followers of Luther, but abandoned him on pretence that his doctrine was imperfect. Storck being a man of no learning, boasted of inspirations; Stubner, who had wit and some learning, applied himself to find out suitable explanations of the word of God; and Muncer, who was bold and zealous, played the enthusiast in the most extravagant manner.

The most remarkable of their religious tenets related to the sacrament of baptism; which, as they contended, ought to be administered only to persons grown up to years of understanding, and should be performed not by sprinkling them with water, but by dipping them in it: for this reason they condemned the baptism of infants; and re-baptizing all whom they admitted into their society, the sect came to be distinguished by the name of *Anabaptists*. To this peculiar notion concerning baptism, which has the appearance of being founded on the practice of the church in the apostolic age, and contains nothing inconsistent with the peace and order of human society, they added other principles of a most enthusiastic as well as dangerous nature. They maintained, that among Christians, who had the precepts of the gospel to direct, and the spirit of God to guide them, the office of magistracy was not only unnecessary, but an unlawful encroachment on their spiritual liberty; that the distinctions occasioned by birth, or rank, or wealth, being contrary to the spirit of the gospel, which considers all men as equal, should be entirely abolished; that all Christians, throwing their possessions into one common stock, should live together in that state of equality which becomes members of the same family; that as neither the laws of nature, nor the precepts of the New Testament, had placed any restraints upon men with regard to the number of wives which they might marry, they should use that liberty which God himself had granted to the patriarchs.

By these doctrines they soon drew over vast numbers to their side; inasmuch that Muncer ventured openly to exhort the people to resist the magistrates, and constrain princes to divest themselves of their authority. Accordingly the peasants of

Germany, to whom the idea of unlimited independence was peculiarly flattering, rose in many places, and committed a thousand acts of violence. But they were defeated by the troops of the empire, with great slaughter; and Muncer, who had deluded them, was taken, and beheaded in the year 1525.

But though the insurrection excited by that fanatic was soon suppressed, several of his followers lurked in different places, and endeavoured privately to propagate his opinions.

In those provinces of Upper Germany which had already been so cruelly waited by their enthusiastic rage, the magistrates watched their motions with such severe attention, that many of them found it necessary to retire into other countries; some were punished, others driven into exile, and their errors were entirely rooted out. But in the Netherlands and Westphalia, where the pernicious tendency of their opinions was more unknown, and guarded against with less care, they got admittance into several towns, and spread the infection of their principles.

In particular, two Anabaptist prophets, John Matthias, a baker of Haerlem, and John Boccold, or Beukels, a journeyman taylor of Leyden, possessed with the rage of making profelytes, fixed their residence at Munster, an imperial city in Westphalia, of the first rank, under the sovereignty of its bishop, but governed by its own senate and consuls. As neither of these fanatics wanted the talents necessary for such an undertaking, great resolution, the appearance of sanctity, bold pretensions to inspiration, and a confident and plausible manner of discoursing, they soon gained many converts. Among these were Rothman, who had first preached the Protestant doctrine in Munster, and Cnipperdoling, a citizen of good birth and considerable eminence. Emboldened by the countenance of such disciples, they openly taught their opinions; and not satisfied with that liberty, they made several attempts, though without success, to seize the town, in order to get their tenets established by public authority. At last, having secretly called in their associates from the neighbouring country, they suddenly took possession of the arsenal and senate-house in the night-time; and running through the streets with drawn swords, and horrible howlings, cried out alternately, "Repent, and be baptized," and "Depart, ye ungodly." The senators, the canons, the nobility, together with the more sober citizens, whether Papists or Protestants, terrified at their threats and outcries, fled in confusion; and left the city under the dominion of a frantic multitude, consisting chiefly of strangers. Nothing now remaining to overawe or control them, they set about modelling the government according to their own wild ideas; and though at first they shewed so much reverence for the ancient constitution, as to elect senators of their own sect, and to appoint Cnipperdoling and another profelyte consuls, this was nothing more than form; for all their proceedings were directed by Matthias, who in the style and with the authority of a prophet uttered his commands, which it was instant death to disobey. Having begun with encouraging the multitude to pillage the churches, and deface their ornaments; he enjoined them to destroy all books, except the bible, as useless or impious; he appointed the estates of such as fled to be confiscated, and sold to the inhabitants of the adjacent country; he ordered every man to bring forth his gold, silver, and precious effects, and to lay them at his feet: the wealth amassed by these means he deposited in a public treasury, and named deacons to dispense it for the common use of all. The members of his commonwealth being thus brought to a perfect equality, he commanded all of them to eat at tables prepared in public, and even prescribed the dishes which were to be served up each day. Having finished his plan of reformation, his next care was to provide for the defence of the city; and he took measures for that purpose with a prudence which fa-

voured nothing of fanaticism. He collected vast magazines of every kind; he repaired and extended the fortifications, obliging every person to work in his turn; he formed such as were capable of bearing arms into regular bodies, and endeavoured to add the vigour of discipline to the impetuosity of enthusiasm. He sent emissaries to the Anabaptists in the Low-countries, inviting them to assemble at Munster, which he dignified with the name of *Mount Zion*, that from thence they might set out to reduce all the nations of the earth under their dominion. He himself was unwearied in attending to every thing necessary for the security or increase of the sect; animating his disciples by his own example to refuse no labour, as well as to repine at no hardship; and their enthusiastic passions being kept from subsiding by a perpetual succession of exhortations, revelations, and prophecies, they seemed ready to undertake or to suffer any thing in maintenance of their opinions.

Meanwhile, the Bishop of Munster having assembled a considerable army, advanced to besiege the town. On his approach, Matthias sallied out at the head of some chosen troops; attacked one quarter of his camp; forced it; and, after great slaughter, returned to the city, loaded with glory and spoil. Intoxicated with this success, he appeared next day brandishing a spear; and declared that, in imitation of Gideon, he would go forth with a handful of men and smite the host of the ungodly. Thirty persons, whom he named, followed him without hesitation in this wild enterprise, and rushing on the enemy with a frantic courage were cut off to a man. The death of their prophet occasioned at first great consternation among his disciples; but Boccold, by the same gifts and pretensions which had gained Matthias credit, soon revived their spirits and hopes to such a degree, that he succeeded him in the same absolute direction of all their affairs. As he did not possess that enterprising courage which distinguished his predecessor, he satisfied himself with carrying on a defensive war, and, without attempting to annoy the enemy by sallies, he waited for the succours he expected from the Low-countries, the arrival of which was often foretold and promised by their prophets. But though less daring in action than Matthias, he was a wilder enthusiast, and of more unbounded ambition. Soon after the death of his predecessor, having by obscure visions and prophecies prepared the multitude for some extraordinary event, he stripped himself naked, and, marching through the streets, proclaimed with a loud voice, "That the kingdom of Zion was at hand; that whatever was highest on earth should be brought low, and whatever was lowest should be exalted." In order to fulfil this, he commanded the churches, as the most lofty buildings in the city, to be levelled with the ground; he degraded the senators chosen by Matthias; and depriving Cnipperdoling of the consularship, the highest office in the commonwealth, he appointed him to execute the lowest and most infamous, that of common hangman; to which strange transition the other agreed, not only without murmuring, but with the utmost joy; and such was the despotism and rigour of Boccold's administration, that he was called almost every day to perform some duty or other of his wretched function. In place of the deposed senators, he named twelve judges, according to the number of tribes in Israel, to preside in all affairs; retaining to himself the same authority which Moses anciently possessed as legislator of that people.

Not satisfied, however, with power or titles which were not supreme, a prophet, whom he had gained and tutored, having called the multitude together, declared it to be the will of God, that John Boccold should be King of Zion, and sit on the throne of David. John kneeling down, accepted of the heavenly call, which he solemnly protested had been revealed likewise

to himself; and was immediately acknowledged as a monarch by the deluded multitude. From that moment he assumed all the state and pomp of royalty. He wore a crown of gold, and the richest and most sumptuous garments. A bible was carried on his one hand, a naked sword on the other. A great body of guards accompanied him when he appeared in public. He coined money stamped with his own image, and appointed the great officers of his household and kingdom, among whom Cnipperdoling was nominated governor of the city, as a reward for his former submission.

Having now attained the height of power, Boccold began to discover passions, which he had hitherto restrained, or indulged only in secret. As the excesses of enthusiasm have been observed in every age to lead to sensual gratifications, the same constitution that is susceptible of the former being remarkably prone to the latter, he instructed the prophets and teachers to harangue the people for several days concerning the lawfulness and even necessity of taking more wives than one, which they asserted to be one of the privileges granted by God to the saints. When their ears were once accustomed to this licentious doctrine, and their passions inflamed with the prospect of such unbounded indulgence, he himself set them an example of using what he called their Christian liberty, by marrying at once three wives, among which the widow of Matthias, a woman of singular beauty, was one. As he was allured by beauty, or the love of variety, he gradually added to the number of his wives, until they amounted to fourteen, though the widow of Matthias was the only one dignified with the title of *queen*, or who shared with him the splendor and ornaments of royalty. After the example of their prophet, the multitude gave themselves up to the most licentious and uncontrolled gratification of their desires. No man remained satisfied with a single wife. Not to use their Christian liberty was deemed a crime. Persons were appointed to search the houses for young women grown up to maturity, whom they instantly compelled to marry. Together with polygamy, freedom of divorce, its inseparable attendant, was introduced, and became a new source of corruption. Every excess was committed of which the passions of men are capable, when restrained neither by the authority of laws nor the sense of decency; and by a monstrous and almost incredible conjunction, voluptuousness was engrafted on religion, and dissolute riot accompanied the austerities of fanatical devotion.

Meanwhile, the German princes were highly offended at the insult offered to their dignity by Boccold's presumptuous usurpation of royal honours; and the profligate manners of his followers, which were a reproach to the Christian name, filled men of all professions with horror. Luther, who had testified against this fanatical spirit on its first appearance, now deeply lamented its progress; and, exposing the delusion with great strength of argument, as well as acrimony of style, called loudly on all the states of Germany to put a stop to a frenzy no less pernicious to society than fatal to religion. The emperor, occupied with other cares and projects, had no leisure to attend to such a distant object. But the princes of the empire, assembled by the King of the Romans, voted a supply of men and money to the Bishop of Munster, who, being unable to keep a sufficient army on foot, had converted the siege of the town into a blockade. The forces raised in consequence of this resolution were put under the command of an officer of experience; who, approaching the town towards the end of spring, in the year 1535, pressed it more closely than formerly; but found the fortifications so strong, and so diligently guarded, that he durst not attempt an assault. It was now above fifteen months since the Anabaptists had established their dominion in Munster; they had during that time undergone prodigious fatigue in working on the fortifications, and performing mili-

tary duty. Notwithstanding the prudent attention of their king to provide for their subsistence, and his frugal and regular economy in their public meals, they began to feel the approach of famine. Several small bodies of their brethren, who were advancing to their assistance from the Low-countries, had been intercepted, and cut to pieces; and while all Germany was ready to combine against them, they had no prospect of success. But such was the ascendancy which Boccold had acquired over the multitude, and so powerful the fascination of enthusiasm, that their hopes were as sanguine as ever; and they hearkened with implicit credulity to the visions and predictions of their prophets, which assured them, that the Almighty would speedily interpose, in order to deliver the city. The faith, however, of some few, shaken by the violence and length of their sufferings, began to fail; but being suspected of an inclination to surrender to the enemy, they were punished with immediate death, as guilty of impiety in distrusting the power of God. One of the king's wives having uttered certain words that implied some doubt concerning his divine mission, he instantly called the whole number together; and commanding the blasphemer, as he called her, to kneel down, cut off her head with his own hands; and so far were the rest from expressing any horror at this cruel deed, that they joined him in dancing with a frantic joy around the bleeding body of their companion.

By this time, the besieged endured the utmost rigour of famine; but they chose rather to suffer hardships, the recital of which is shocking to humanity, than to listen to the terms of capitulation offered them by the bishop. At last, a deserter, whom they had taken into their service, being either less intoxicated with the fumes of enthusiasm, or unable any longer to bear such distress, made his escape to the enemy. He informed their general of a weak part in the fortifications which he had observed; and assuring him that the besieged, exhausted with hunger and fatigue, kept watch there with little care, he offered to lead a party thither in the night. The proposal was accepted, and a chosen body of troops appointed for the service; who, scaling the walls unperceived, seized one of the gates, and admitted the rest of the army. The Anabaptists, though surprised, defended themselves in the market-place with valour, heightened by despair; but, being overpowered by numbers, and surrounded on every hand, most of them were slain, and the remainder taken prisoners. Among the last were the king and Cnipperdoling. The king, loaded with chains, was carried from city to city as a spectacle to gratify the curiosity of the people, and was exposed to all their insults. His spirit, however, was not broken or humbled by this sad reverse of his condition; and he adhered with unshaken firmness to the distinguishing tenets of his sect. After this, he was brought back to Munster, the scene of his royalty and crimes, and put to death with the most exquisite and lingering tortures, all which he bore with astonishing fortitude. This extraordinary man, who had been able to acquire such amazing dominion over the minds of his followers, and to excite commotions so dangerous to society, was only 26 years of age.

Together with its monarch, the kingdom of the Anabaptists came to an end. Their principles having taken deep root in the Low-countries, the party still subsists there, under the name of *Mennonites*; but by a very singular revolution, this sect, so mutinous and sanguinary at its first origin, hath become altogether innocent and pacific. Holding it unlawful to wage war, or to accept of civil offices, they devote themselves entirely to the duties of private citizens, and by their industry and charity endeavour to make reparation to human society for the violence committed by their founders. A small number of this sect, which originally settled in England, have of late years greatly increased. But, apparently, peculiar te-

nets concerning baptism, are without any dangerous mixture of enthusiasm, and they have shewn themselves the supporters of good government in many instances.

Within these 20 years, the Anabaptists have formed a congregation in Edinburgh, which is the first appearance they ever made in Scotland. They pray for the king and all inferior magistrates; and subject themselves, in civil matters, to every ordinance of man, for the Lord's sake. They consider the kingdom of Christ to be spiritual, and not of this world; and are strictly upon the congregational or independent plan, admitting of no jurisdiction or authority, in matters of religion, but that of the Great Lawgiver. Their church officers are bishops, or elders, and deacons, and these they generally choose from among themselves. They make the reading of the scriptures a part of their public service, and eat the Lord's supper every Sabbath-day. Their disciples, before they are admitted into communion, are first baptized in the Water of Leith, which they do at all seasons of the year, and, on these occasions, they are generally attended by a great number of spectators.

ANACATHARSIS, in medicine, signifies a salivation, or discharge of humours by spitting.

ANACATHARTICS, properly signify such medicines as promote the discharge of saliva.

ANACOPIR, the capital of the nation of the Abkhas, in Asia, on the river Makai, which falls below it into the Black Sea.

ANADIR, a considerable river of Siberia, that falls into the Eastern Ocean.

ANAGNIA, a town of Latium, capital of the Hernici (Livy, Pliny, Virgil); which, after a faint resistance, submitting to the Romans, was admitted to the freedom of the city, yet without the right of suffrage (Livy). It was afterwards a colony of Drusus Cæsar, and walled round, and its territory assigned to the veterans (Frontinus). Here Antony married Cleopatra, and divorced Octavia. Now *Anagni*, 36 miles to the east of Rome. Long. 13. 45. Lat. 42. 48.

ANANIAS, a Sadducee, high-priest of the Jews, who put to death St. James the brother of our Lord, and was deposed by Agrippa.

ANAPHE (anc. geog.), an island spontaneously emerging out of the Cretan sea, near Thera (Pliny, Strabo). Now called *Nanfio*. Its name is from the sudden appearance of the new moon to the Argonauts in a storm (Apollonius). *Anaphæus*, an epithet of Apollo, who was worshipped there. *Anaphæi*, the people.

ANASTASIS, a term among ancient physicians, for a rising up to go to stool. It also signified the passage of any humour, when expelled from one part, and obliged to remove to another.

ANASTASIUS, surnamed BIBLIOTHECARIUS, a Roman abbot, library-keeper of the Vatican, and one of the most learned men of the ninth century, assisted in 869 at the fourth general council, the acts and canons of which he translated from the Greek into Latin. He also composed the lives of several popes, and other works; the best edition of which is that of the Vatican.

ANATHEMA, besides the other senses in which the term is used, likewise denotes Christian offerings, otherwise called donations. See DONATIONS.

ANATOTM, one of the islands called the New Hebrides, in the South Pacific Ocean. Long. 170. 9. E. Lat. 20. 10. S.

ANAXARCHUS, a philosopher of Abdera, highly esteemed by Alexander the Great. His end was peculiarly tragical: having the misfortune to fall into the hands of the enemy, they pounded him alive in a mortar.

ANAXIMANDER, a famous Greek philosopher, born at

Miletus in the 42d Olympiad, in the time of Polycrates tyrant of Samos. He was the first who publicly taught philosophy, and wrote upon philosophical subjects. He carried his researches into nature very far for the time in which he lived. It is said, that he discovered the obliquity of the Zodiac; was the first who published a geographical table, invented the gnomon, and set up the first fun-dial in an open place at Lacedæmon. He taught, that infinity of things was the principal and universal element; that this infinite always preferred its unity, but that its parts underwent changes; that all things came from it; and that all were about to return into it. According to all appearance, he meant by this obscure and indeterminate principle the chaos of the other philosophers. He asserted, that there are an infinity of worlds; that the stars are composed of air and fire, which are carried in their spheres, and that these spheres are gods; and that the earth is placed in the midst of the universe, as in a common centre. He added, that infinite worlds were the product of infinity, and that corruption proceeded from separation.

ANAXIMENES, born at Miletus, an eminent Greek philosopher, friend, scholar, and successor of Anaximander. He diffused some degree of light upon the obscurity of his master's system. He made the first principle of things to consist in the air, which he considered as immense or infinite, and to which he ascribed a perpetual motion. He asserted, that all things which proceeded from it, were definite and circumscribed; and that this air, therefore, was God; since the divine power resided in it and agitated it. Coldness and moisture, heat and motion, rendered it visible, and dressed it in different forms, according to the different degrees of its condensation. All the elements thus proceed from heat and cold. The earth was, in his opinion, one continued flat surface.

ANAXIMENES, the son of Aristocles of Lampfacus, an orator, the disciple of Diogenes the Cynic, and of Zolus the railer against Homer. He was preceptor to Alexander of Macedon, and followed him to the wars. Alexander being incensed against the people of Landiacus, they sent this philosopher to intercede for them. Alexander knowing the cause of his coming, swore that he would do the very reverse of what he desired of him. Anaximenes begged of him to destroy Lampfacus. Alexander, unwilling to break his oath, and not able to elude this stratagem, pardoned Lampfacus much against his will.

ANAZARBUS (Pliny); ANAZARBA (Stephanus); a town of Cilicia, on the river Pyramus, the birth place of Dioleorides, and of the poet Oppian. It was sometimes called *Cæsarea*, in honour either of Augustus or of Tiberius. The inhabitants are called *Anazarbeni* (Pliny): and on coins *Anazarbeis*, after the Greek idiom. It was destroyed by a dreadful earthquake in the year 525, along with several other important cities: but they were all repaired at a vast expence by the emperor Justin; who was so much affected with their misfortune, that, putting off the diadem and purple; he appeared for several days in sackcloth.

ANCILLON (David), a minister of the reformed church at Metz, where he was born the 17th of March, 1617. He studied from the ninth or tenth year of his age in the Jesuits' College, where he gave such proofs of his genius, that the heads of the society tried every means to draw him over to their religion and party; but he continued firm against their attacks. He went to Geneva in 1623; and studied divinity under Spanheim, Diodati, and Tronchin, who conceived a very great esteem for him. He left Geneva in April 1641, and offered himself to the synod of Charenton in order to take upon him the office of a minister: his abilities were greatly admired by the examiners; and the whole assembly were to

highly pleased with him; that they gave him the church of Meaux, the most considerable then unprovided for. Here he acquired a vast reputation for his learning, eloquence, and virtue, and was even highly respected by those of the Roman-catholic communion. He returned to his own country in the year 1653, where he remained till the revocation of the edict of Nantes in 1685. He retired to Francfort after this fatal blow; and having preached in the French church at Hanau, the whole congregation were so edified by it, that they immediately called together the heads of the families, in order to propose that he might be invited to accept of being minister there. The proposition was agreed to; and he began the exercise of his ministry in that church about the end of the year 1685. His preaching made to great a noise at Hanau, that the professors of divinity, and the German and Dutch ministers, attended his sermons frequently: the count of Hanau himself, who had never before been seen in the French church, came thither to hear Mr. Ancillon: they came from the neighbouring parts, and even from Francfort; people who understood nothing of French flocked together with great eagerness, and said they loved to see him speak. This occasioned a great jealousy in the two other ministers; which tended to make his situation uneasy. He therefore went to Berlin; where he met with a kind reception from his highness the elector, and was made minister of the city. Here he had the pleasure of seeing his eldest son made judge and director of the French in the same city, and his other son rewarded with a pension, and entertained at the university of Francfort upon the Oder. He had likewise the satisfaction of seeing his brother made judge of all the French in the states of Brandenburg; and Mr. Cayart his son-in-law, engineer to his electoral highness. He enjoyed these agreeable circumstances, and several others, till his death, which happened at Berlin the 3d of September, 1692, when he was seventy-five years of age.—Mr. Ancillon having got a considerable fortune by marriage, was enabled thereby to gratify his passion for books; his library was accordingly very curious and large, and he increased it every day with all that appeared new and important in the republic of letters, so that at last it was one of the noblest collections in the hands of any private person in the kingdom. He published a book, in quarto, in which the whole dispute concerning Traditions is fully examined: he also wrote an apology for Luther, Zuinglius, Calvin, and Beza, and several other pieces.

ANCOBER, a territory on the gold coast of Guinea, having a river of the same name flowing through it, the banks of which are adorned with fine lofty trees, affording a very agreeable shade. On the western bank is a populous village.

ANCOURT (Florent-Cartan d'), an eminent French actor and dramatic writer, born at Fontainebleau, October 1661. He studied in the Jesuits' College at Paris, under Father De la Rue; who, discovering in him a remarkable vivacity and capacity for learning, was extremely desirous of engaging him in their order; but Ancourt's aversion to a religious life rendered all his efforts ineffectual. After he had gone through a course of philosophy, he applied himself to the civil law, and was admitted advocate at seventeen years of age. But falling in love with an actress, he was induced to go upon the stage, and he married her. As he had all the qualifications necessary for the theatre, he soon greatly distinguished himself; and not being satisfied with the applause only of an actor, he began to write pieces for the stage; many of which had such prodigious success, that most of the players grew rich from the profits of them. His merit in this way procured him a very favourable reception at court; and Lewis XIV. shewed him many marks of his favour. His sprightly conversation and

polite behaviour made his company agreeable to all the men of figure both at court and in the city, and the most considerable persons were extremely pleased to have him at their houses. Having taken a journey to Dunkirk, to see his eldest daughter who lived there, he took the opportunity of paying his compliments to the Elector of Bavaria, who was then at Brussels: this prince received him with the utmost civility; and having detained him a considerable time, dismissed him with a present of a diamond valued at 1000 pistoles: he likewise rewarded him in a very generous manner, when, upon his coming to Paris, Ancourt composed an entertainment for his diversion. Ancourt began at length to grow weary of the theatre, which he quitted in Lent 1718, and retired to his estate of Courcelles le Roy, in Berry, where he applied himself wholly to devotion, and composed a translation of David's Psalms in verse, and a sacred tragedy, which were never printed. He died the 6th of December, 1726, being sixty-five years of age.—The plays which he wrote are fifty-two in all; most of which were printed separately at the time when they were first represented: they were afterwards collected into five volumes, then into seven, and at last into nine. This last edition is the most complete.

ANCUS MARTIUS, the fourth king of the Romans, succeeded Tullius Hostilius, 639 years before Christ. He defeated the Latins, subdued the Fidenates, conquered the Sabines, Volsci, and Veientes, enlarged Rome by joining to it mount Janicula, and made the harbour of Ostia. He died about 615 years before the Christian æra.

ANDAYE, a fortified town of France, in the department of the Lower Pyrenæes. It is very famous for its brandy, and is situated at the mouth of the river Bidaissa, opposite Fontarabá in Spain, eighteen miles from Bayonne. Long. 1. 45. W. Lat. 43. 25. N.

ANDECAVI (Tacitus); ANDEGAVI (Pliny); ANDES (Cæsar); ANDI (Lucan); a people of Gallia Celtica, having the Turones to the east, the Namnetes to the west, the Pistones to the south, and the Auleri Cænomani to the north: now *Angou*.

ANDEGAVI, or ANDEGAVUS, a town of Gallia Celtica (Pliny, Ptolemy); now *Angiers*. Called *Andecavi* (Tacitus). W. Long. 30. Lat. 47. 30.

ANDEOL (St.), a town of France, in the Vivarez, five miles S. of St. Viviers, whose bishop formerly resided there. E. Long. 2. 50. N. Lat. 44. 24.

ANDERAB (*Encycl.*), a city of the province of Balkh. It is very rich and populous, and a place of no great strength. The neighbouring mountains yield excellent quarries of lapis lazuli, in which the Balkhians drive a great trade with Persia and India.—This city is situated at the foot of the mountains dividing the dominion of the Great Mogul and Persia from Great Bukharia. As there is no other way of crossing these mountains but by the road through this city, all travellers with goods must pay 4 per cent. On this account the Khan of Balkh maintains a good number of soldiers in the place.

ANDERSON (Sir Edmund), a younger son of an ancient Scotch family settled in Lincolnshire. He was some time a student of Lincoln College, Oxford; and removed from thence to the Inner Temple, where he applied himself diligently to the study of the law, and became a barrister. In the ninth of Queen Elizabeth, he was both lent and summer reader, and in the sixteenth double reader. He was appointed her majesty's serjeant at law in the nineteenth of her reign; and some time after, one of the justices of assize. In 1582 he was made lord chief-justice of the Common Pleas, and in the year following was knighted. He held this office to the end of his life, died in the year 1605, and was buried at Eyworth in Bedfordshire.

He was an able, but punctilious lawyer; a scourge to the Puritans; and a strenuous supporter of the established church. His works are, 1. Reports of many principal cases argued and adjudged in the time of Queen Elizabeth, in the common bench. Lond. 1644, folio. 2. Resolutions and judgments on the cases and matters agitated in all the courts of Westminster, in the latter end of the reign of Queen Elizabeth. Published by John Goldborough, esq. Lond. 1653, 4to. Besides these, there is a manuscript copy of his Readings still in being.

ANDES (*Encycl.*), a great chain of mountains in South America. To what has already been said of these we wish to add the following account.

The Spaniards call them the *Cordillera de los Andes*; they form two ridges, the lowermost of which is overpread with woods and groves, and the uppermost covered with everlasting snow. Those who have been at the top, affirm, that the sky is always serene and bright; the air cold and piercing; and yet so thin, that they were scarce able to breathe, and the respiration was much quicker than ordinary; and this is attended with reaching and vomiting; which, however, has been considered by some as merely accidental. When they looked downwards, the country was hid by the clouds that hovered on the mountains' sides. The mountains just mentioned, which have been frequently ascended, are much inferior in height to many others in this enormous chain. The following is the account given of the mountain called *Pichincha*, by the mathematicians sent by the kings of France and Spain to make observations in relation to the figure of the earth.

Soon after our artists arrived at Quito, they determined to continue the series of the triangles for measuring an arch of the meridian to the S. of that city: the company accordingly divided themselves into two bodies, consisting of French and Spaniards, and each retired to the part assigned them. Don George Juan and M. Godin, who were at the head of one party, went to the mountain of Pambamarca; while M. Bouguer, De la Condamine, and Don Ulloa, together with their assistants, climbed up to the highest summit of Pichincha. Both parties suffered extremely, as well from the severity of the cold, as from the impetuosity of the winds, which on these heights blow with incessant violence; difficulties the more painful, as they had been little used to such sensations. Thus in the torrid zone, nearly under the equinoctial, where it is natural to suppose they had most to fear from the heat, their greatest pain was caused by the excessiveness of the cold.

Their first scheme for shelter and lodging in these uncomfortable regions, was to pitch a field-tent for each company; but on Pichincha this could not be done from the narrowness of the summit: they were therefore obliged to be contented with a hut so small that they could hardly all creep into it. Nor will this appear strange, if the reader considers the bad disposition and smallness of the place, it being one of the loftiest crags of a rocky mountain, 100 fathoms above the highest part of the desert of Pichincha. Such was the situation of their mansion, which, like all the other adjacent parts, soon became covered with ice and snow. The ascent up this stupendous rock, from the base, or the place where the mules could come, to their habitation, was so craggy as only to be climbed on foot; and to perform it cost them four hours continual labour and pain, from the violent efforts of the body, and the subtilty of the air; the latter being such as to render respiration difficult.

The strange manner of living to which our artists were reduced during the time they were employed in a geometrical mensuration of some degrees of the meridian, may not perhaps prove unentertaining to the reader; and therefore the following account is given as a specimen of it. The desert of

Pichincha, both with regard to the operations performed there, and its inconveniences, differing very little from others, an idea may be very easily formed of the fatigues, hardships, and dangers, to which they were continually exposed during the time they were prosecuting the enterprize, with the conduct of which they had been honoured. The principal difference between the several deserts consisted in their greater or lesser distance from places where they could procure provisions; and in the inclemency of the weather, which was proportionate to the height of the mountains, and the season of the year.

They generally kept within their hut. Indeed they were obliged to do this, both on account of the intenseness of the cold, the violence of the wind, and their being continually involved in so thick a fog, that an object at six or eight paces was hardly discernible. When the fog cleared up, the clouds by their gravity moved nearer to the surface of the earth, and on all sides surrounded the mountains to a vast distance, representing the sea, with their rock like an island in the centre of it. When this happened, they heard the horrid noises of the tempests, which then discharged themselves on Quito and the neighbouring country. They saw the lightnings issue from the clouds, and heard the thunders roll far beneath them: and whilst the lower parts were involved in tempests of thunder and rain, they enjoyed a delightful serenity; the wind was abated, the sky clear, and the enlivening rays of the sun moderated the severity of the cold. But their circumstances were very different when the clouds rose: their thickens rendered respiration difficult; the snow and hail fell continually; and the wind returned with all its violence; so that it was impossible entirely to overcome the fears of being, together with their hut, blown down the precipice, on whose edge it was built, or of being buried under it by the daily accumulations of ice and snow.

The wind was often so violent in these regions, that its velocity dazzled the sight, whilst their fears were increased from the dreadful concussions of the precipice, caused by the fall of enormous fragments of rocks. These cruises were the more alarming, as no other noises are heard in these deserts; and during the night, their rest, which they so greatly wanted, was frequently disturbed by such sudden sounds. When the weather was any thing fair with them, and the clouds gathered about some of the other mountains which had a connection with their observations, so that they could not make all the use they desired of this interval of good weather, they left their hut to exercise themselves. Sometimes they descended to some small distance; and at others, amused themselves with rolling large fragments of rocks down the precipice; and these frequently required the joint strength of them all, though they often saw the same effected by the mere force of the wind. But they always took care in their excursions not to go so far out, but that on the least appearance of the clouds gathering about their cottage, which often happened very suddenly, they could regain their shelter. The door of their hut was fastened with thongs of leather, and on the inside not the smallest crevice was left unstopped; beside which, it was very compactly covered with straw: but, notwithstanding all their care, the wind penetrated through. The days were often little better than the nights; and all the light they enjoyed was that of a lamp or two, which they kept continually burning.

Though their hut was small, and crowded with inhabitants, beside the heat of the lamps; yet the intenseness of the cold was such, that every one of them was obliged to have a chafing-dish of coals. These precautions would have rendered the rigour of the climate supportable, had not the imminent danger of perishing by being blown down the precipice roused

them, every time it snowed, to encounter the severity of the outward air, and fall out with shovels to free the roof of their hut from the masses of snow which were gathering on it. Nor would it, without this precaution, have been able to support the weight. They were not indeed without servants and Indians; but these were so numbed with the cold, that it was with great difficulty they could get them out of a small tent, where they kept a continual fire. So that all our artificers could obtain from them was to take their turns in this labour; and even then they went very unwillingly about it, and consequently performed it slowly.

It may easily be conceived what this company suffered from the aperties of such a climate. Their feet were swelled; and so tender, that they could not even bear the heat; and walking was attended with extreme pain. Their hands were covered with chilblains; their lips swelled and chapped; so that every motion in speaking, or the like, drew blood; consequently they were obliged to strict taciturnity, and little disposed to laugh, as, by causing an extension of the lips, it produced such afflures as were very painful for two or three days after.

Their common food in this inhospitable region was a little rice boiled with some flesh or fowl, procured from Quito; and, instead of fluid water, their pot was filled with ice; they had the same resource with regard to what they drank; and while they were eating, every one was obliged to keep his plate over a chafing-dish of coals, to prevent his provisions from freezing. The same was done with regard to the water. At first they imagined the drinking strong liquors would diffuse a heat through the whole body, and consequently render it less sensible of the painful sharpness of the cold; but, to their surprise, they felt no manner of strength in such liquors, nor were they any greater preservative against the cold than the common water.

At the same time they found it impossible to keep the Indians together. On their first feeling of the climate, their thoughts were immediately turned on deserting their masters. The first instance they had of this kind was so unexpected, that, had not one, of a better disposition than the rest, staid and acquainted them of their design, it might have proved of very bad consequence. The affair was this: There being on the top of the rock no room for pitching a tent for the Indians, they used every evening to retire to a cave at the foot of the mountain; where, beside a natural diminution of the cold, they could keep a continual fire; and, consequently, enjoyed more comfortable quarters than their masters. Before they withdrew at night, they fastened, on the outside, the door of the hut, which was so low that it was impossible to go in or out without stooping; and as every night the hail and snow which had fallen formed a wall against the door, it was the business of one or two of the Indians to come early and remove this obstruction. For though the negro servants were lodged in a little tent, their hands and feet were so covered with chilblains, that they would rather have suffered themselves to have been killed than move. The Indians therefore came constantly up to dispatch this work betwixt nine or ten in the morning: but they had not been there above four or five days, when they were not a little alarmed to see ten, eleven, and twelve o'clock come, without any news of their labourers; when they were relieved by the honest servant mentioned above, who had withstood the seduction of his countrymen, and informed his masters of the desertion of the four others. As soon as the snow was cleared away from the door, they dispatched the Indian to the corregidor of Quito, who with equal dispatch sent other Indians, threatening to chastise them severely if they were wanting in their duty.

But the fear of punishment was not sufficient to induce them to support the rigour of this situation; for within two days they deserted. The corregidor therefore, to prevent any other inconvenience, sent four Indians under the care of an alcaide, and gave orders for their being relieved every fourth day.

Twenty-three tedious days our artists spent on this rock, *viz.* to the 6th of September, and even without any possibility of finishing their observations of the angles: for, when it was fair and clear weather with them, the others, on whose summits the signals which formed the triangles for measuring the degrees of the meridian, were hid in the clouds; and when those were clear, Pichincha was involved in clouds. It was therefore necessary to erect their signals in a lower situation, and in a more favourable region. This however did not produce any change in their habitation till the beginning of December; when, having finished the observations which particularly concerned Pichincha, they proceeded to others; but with no abatement either of inconveniences, cold, or fatigue; for the places where they made their observations being necessarily on the highest parts of the deserts, the only respite in which they enjoyed some little ease, was during the short interval of passing from one to the other.

In all their stations subsequent to that on Pichincha, during their fatiguing mensuration of the degrees of the meridian, each company lodged in a field-tent, which, though small, they found less inconvenient than the hut on Pichincha; though at the same time they had more trouble, being oftener obliged to clear it from the snow, as the weight of it would otherwise have demolished the tent. At first, indeed, they pitched it in the most sheltered places; but on taking a resolution that the tents themselves should serve for signals, to prevent the inconvenience of having others of wood, they removed them to a more exposed situation, where the impetuosity of the winds sometimes tore up the piquets, and blew them down.

Though this mountain is famous for its great height, it is considerably lower than the mountain of Cotopaxi: but it is impossible to conceive the coldness of the summit of the last-mentioned mountain, from that felt on this; since it must exceed every idea that can be formed by the human mind, though they are both seated in the midst of the torrid zone. In all this range of mountains, there is said to be a constant inferior boundary, beyond which the snow never melts: this boundary, in the midst of the torrid zone, is said by some to be 2434 fathoms above the level of the sea; by others, only 2400 feet. The snow indeed falls much lower, but then it is subject to be melted the very same day. It is affirmed, that there are in the Andes sixteen volcanoes or burning mountains, which throw out fire and smoke with a terrible noise. The height of Chimborazo, said to be the highest peak of the Andes, has been determined by geometrical calculations to be 20,282 feet. But the great differences between the calculators of the height of mountains in other parts of the world, must very much diminish the credit of such calculations. Instances of this we have already given under the article *ÆTNA*. No less remarkable are the differences concerning the height of the peak of Teneriffe; which, according to the calculations of Varenus, is three miles and three quarters, or 19,800 feet; according to those of Dr. Heberden, it is only 15,396 feet; and according to those of M. Feuille, is no more than 13,128 feet. From these specimens, we can scarce avoid concluding, that all the methods hitherto invented for calculating the exact height of mountains are insufficient.

As all or most rivers have their source in mountains, it is no wonder a great number run down the sides of the Andes,

Some hurry along with a prodigious rapidity; whilst others form beautiful cascades, or run through holes in rocks, which look like bridges of a stupendous height. There is a public road through the mountains, 1000 miles in length, part of which runs from Quito to Cusco.

ANDETRIUM; ANDRETIUM (Strabo); ANDECRUM, or ADDECRUM (Ptolemy); an inland town of Dalmatia. The genuine name is *Andetrium* (Inscription). It is described as situated near Salone, on a naturally strong and inaccessible rock, surrounded with deep valleys, with rapid torrents; from which it appears to be the citadel now called *Cliffa*. E. Long. 17. 46. Lat. 43. 20.

ANDOMADUNUM; ANDOMATUNUM (Ptolemy); and ANTEMATUNUM (Antonine); CIVITAS LINGONUM (Tacitus); a city of Gallia Belgica; now *Langre*; in Chanpagne, situated on an eminence (which seems to justify the termination *dunum*), on the borders of Burgundy, at the springs of the Marne. Tacitus calls an inhabitant *Lingon*. E. Long. 5. 22. N. lat. 48. o.

ANDRARUM, a town of Sweden, in Gothland, three miles S. of Christianstad: here is the greatest alum-work in the kingdom.

ANDREAS (John), a celebrated canonist in the 14th century, was born at Mugello, near Florence; and was professor of canon law at Padua, Pisa, and afterwards at Bologna. It is said that he macerated his body with fasting; and lay upon the bare ground every night for twenty years together, covered only with the skin of a bear. Andreas had a beautiful daughter, named *Novella*, whom he loved extremely; and he is said to have instructed her to well in all parts of learning, that when he was engaged in any affair which hindered him from reading lectures to his scholars, he sent his daughter in his room; and left her beauty should prevent the attention of the hearers, she had a little curtain drawn before her. To perpetuate the memory of this daughter, he entitled his Commentary upon the Decretals of Gregory IX. the *Novellæ*. He married her to John Calderinus, a learned canonist. The first work of Andreas was his Gloss upon the sixth Book of the Decretals, which he wrote when he was very young. He wrote also Glosses upon the Clementines; and a Commentary in *regulas Sexti*, which he entitled *Mercuriales*, because he either engaged in it on Wednesdays (*diebus Mercurii*), or because he inserted his Wednesdays' disputes in it. He enlarged the Speculum of Durant, in the year 1347. This is all which Mr. Bayle mentions of his writings, though he produced many more. Andreas died of the plague at Bologna, in 1348, after he had been a professor forty-five years; and was buried in the church of the Dominicans. Many eulogiums have been bestowed upon him. He has been called *archiductor decretorum*: In his epitaph, *Rabbi doctorum; lux, censor, normaque morum*; "Rabbi of the doctors, the light, censor, and rule of manners." And it is said, that Pope Boniface called him *lumen mundi*, "the light of the world."

ANDREAS (John), was born a Mahometan, at Xativa in the kingdom of Valencia, and succeeded his father in the dignity of alfaqui of that city. He was enlightened with the knowledge of the Christian religion by being present at a sermon in the great church of Valencia on the day of Assumption of the blessed Virgin, in the year 1487. Upon this he desired to be baptized; and, in memory of the calling of St. John and St. Andrew, he received the name John Andreas. "Having received holy orders (says he), and, from an alfaqui and a slave of Lucifer, become a priest and minister of Christ; I began, like St. Paul, to preach and publish the contrary of what I had erroneously believed and asserted; and, with the assistance of Almighty God, I converted at first a

great many souls of the Moors, who were in danger of hell, and under the dominion of Lucifer, and conducted them into the way of salvation. After this, I was sent for by the most catholic prince, King Ferdinand, and Queen Isabella, in order to preach in Granada to the Moors of that kingdom, which their majesties had conquered: by God's blessing on my preaching, an infinite number of Moors were brought to abjure Mahomet, and to turn to Christ. A little after this, I was made a canon by their grace; and sent for again by the most Christian Queen Isabella to Arragon, that I might be employed in the conversion of the Moors of those kingdoms, who still persisted in their errors, to the great contempt and dishonour of our crucified Saviour, and the prodigious loss and danger of all Christian princes. But this excellent and pious design of her majesty was rendered ineffectual by her death." At the desire of Martin Garcia, bishop of Barcelona, he undertook to translate from the Arabic, into the language of Arragon, the whole law of the Moors; and after having finished this undertaking, he composed his famous work of *The Confusion of the Sect of Mahomed*: it contains twelve chapters, wherein he has collected the fabulous stories, impostures, forgeries, brutalities, follies, obscenities, absurdities, impossibilities, lies, and contradictions, which Mahomet, in order to deceive the simple people, has dispersed in the writings of that sect, and especially in the Alkoran, which, as he says, was revealed to him in one night by an angel, in the city of Meke; though in another place he contradicts himself, and affirms that he was twenty years in composing it. Andreas tells us, he wrote this work, that not only the learned amongst Christians, but even the common people might know the different belief and doctrine of the Moors; and on the one hand might laugh and ridicule such insolent and brutal notions, and on the other might lament their blindness and dangerous condition. This book, which was published at first in Spanish, has been translated into several languages; and all those who write against the Mahometans quote it very much.

ANDREINI (Isabella), a native of Padua, was an excellent poetess, and one of the best comedians in Italy, towards the beginning of the 17th century. The Intenti of Pavia thought they did their society an honour by admitting her a member of it; and she, in acknowledgement of this honour, never forgot to mention amongst her titles that of *Academica Infanta*: her titles were these, "Isabella Andreini, comica gelosa, academica infanta, detta l'accesa." She was also a woman of extraordinary beauty; which, added to a fine voice, made her charm both the eyes and ears of the audience. She died of a miscarriage at Lyons, the 10th of June, 1604, in the 42d year of her age. Her death being a matter of general concern and lamentation, there were many Latin and Italian elegies printed to her memory: several of these pieces were placed before her poems in the edition of Milan, in 1605. Besides her sonnets, madrigals, songs, and eclogues, there is a pastoral of hers entitled *Myrtilla*, and letters, printed at Venice in 1610. She sung extremely well, played admirably on several instruments, understood the French and Spanish languages, and was not unacquainted with philosophy.

ANDRELINUS (Publius Faustus), born at Forli in Italy. He was a long time professor of poetry and philosophy in the university of Paris. Lewis XII. of France made him his poet laureat; and Erasmus tells us he was likewise poet to the queen. His pen was not wholly employed in making verses; for he wrote also moral and proverbial letters in prose, which were printed several times. His poems, which are chiefly in Latin, are inserted in vol. I. of the *Deliciae Poetarum Italarum*. Mr. De la Monnoy tells us, "that Andrelinus, when he was but twenty-two years old, received the crown of laurel."

rel: that his love verses, divided into four books, entitled *Livia*, from the name of his mistress, were esteemed so fine by the Roman Academy, that they adjudged the prize of the Latin elegy to the author." He died in 1518. This author's manner of life was not very exemplary; yet he was so fortunate, says Erasmus, that though he took the liberty of rallying the divines, he was never brought into trouble about it.

ANDREW (St.), the apostle, born at Bethsaida in Galilee, brother to Simon Peter; he was a zealous preacher of the gospel in several countries; and sealed it with his blood at Patrae, a city of Achaia, suffering martyrdom with great heroism, A.D. 69.

ANDREW (St.), a town of Germany, in the duchy of Carinthia, with a bishop's see; seated on the river Levant, ninety-five miles S. by W. of Vienna. Long. 15. 10. E. Lat. 46. 52. N.

ANDREWS (Lancelot), bishop of Winchester, was born at London, in 1555, and educated at Cambridge. After several preferments, he was made bishop, first of Chichester, then of Ely, and, in 1618, was raised to the see of Winchester. This very learned prelate, who was distinguished by his piety, charity, and integrity, may be justly ranked with the best preachers and completest scholars of his age; he appeared to much greater advantage in the pulpit than he does now in his works, which abound with Latin quotations and trivial witticisms. His sermons, though full of puns, were suited to the taste of the times in which he lived, and were consequently greatly admired. He was a man of polite manners and lively conversation; and could quote Greek and Latin authors, or even pun, with King James. This great prelate was in no less reputation and esteem with King Charles I, than he had been with his predecessors. He died at Winchester-house in Southwark, September 27, 1626, in the twenty-first year of his age; and was buried in the parish-church of St. Saviour's, where his executors erected to him a very fair monument of marble and alabaster, on which is an elegant inscription, in Latin, written by one of his chaplains. Mr. Milton also, at seventeen years of age, wrote a beautiful elegy on his death, in the same language. Bishop Andrews had, 1. A share in the translation of the Pentateuch, and the historical books from Joshua to the first book of Chronicles exclusively. He also wrote, 2. *Tortura Torti*, in answer to a work of Cardinal Bellarmine, in which that cardinal assumes the name of Matthew Tortus. 3. A Manual of Private Devotions; and, 4. A Manual of Directions for the Visitation of the Sick; besides the Sermons and Tracts, in English and Latin, published after his death.

ANDROGEUS, in fabulous history, the son of Minos king of Crete, was murdered by the Athenian youth and those of Megara, who envied his being always victor at the Attic games. Minos, having taken Athens and Megara, obliged the inhabitants to send him an annual tribute of seven young men and as many virgins, to be devoured by the Minotaur; but Theseus delivered them from that tribute.

ANDROMACHUS'S TREACLE, in PHARMACY, an article but lately expunged from the College Pharmacopoeia, as containing above fifty ingredients, some of them opposite in their qualities. The leading articles, however, being *opium* and *spices*, it proved, in many complaints, particularly of the aged, a very useful medicine, and was therefore retained in the Dispensatory long after its composition was a subject of ridicule among the profession.

ANDRONICUS I. emperor of the East, caused Alexis II. who had been put under his care, to be strangled; and then took possession of the throne of Constantinople, in 1183; but the people, becoming exasperated at his cruelties, proclaimed

Isaac Angelus emperor, and put Andronicus in irons: they then thrust out his eyes; and, having led him through the city in an ignominious manner, hanged him.

ANDRONICUS of Cyrrhus, built, at Athens, an octagon tower, with figures carved on each side, representing the eight principal winds. A brais triton at the summit, with a rod in its hand, turned round by the wind, pointed to the quarter from whence it blew. From this model is derived the custom of placing weather-cocks on steeples.

ANEAU (Bartholomew), a native of Bourges in France, a man of eminent learning in the 16th century, educated under Melchior Volmar. He was professor at Lyons, where he propagated the doctrines of the reformation secretly for a long time: but on the festival of the Holy Sacrament, 1565, as the procession was passing on towards the college, there was a large stone thrown from one of the windows upon the host and priest who carried it. The people, enraged at this, broke into the college, and assassinated Mr. Aneau, whom they imagined to have been the occasion, and the college itself was shut up next day by order of the city.

ANEGADA, one of the Caribbee Islands in America. W. long. 63. 5. N. lat. 18. 6. It is only remarkable for its humming birds, and beautifully coloured crabs of a delicate taste.

ANGERBURG, a handsome town in the kingdom of Prussia, defended by a strong castle, and seated on a lake of the same name.

ANGINA PECTORIS, in medicine, a disease extremely dangerous in its nature, and, by Dr. Heberden's account, not very rare. It seizes those who are subject to it, when they are walking, and particularly when they walk soon after eating, with a most disagreeable and painful sensation in the breast, which seems to threaten immediate destruction: but the moment they stand still, all the uneasiness vanishes. In all other respects, the patients, at the beginning of this disorder, are well, and have no shortness of breath; from which the common angina is totally different. After it has continued some months, the fits will not cease instantaneously on standing still; and it will come on not only when the patients are walking, but when they are lying down, and oblige them to rise up out of their beds every night, for many months together. In one or two very inveterate cases, it has been brought on by the motion of a horse, or carriage, and even by swallowing, coughing, going to stool, speaking, or by any disturbance of mind. The persons affected were all men, almost all of whom were above fifty years of age, and most of them with short necks, and inclining to be fat. Something like it, however, was observed in one woman, who was paralytic; and one of two young men complained of it in a very slight degree. Other practitioners have observed it in very young persons.

When a fit of this sort comes on by walking, its duration is very short, as it goes off almost immediately upon stopping. If it comes on in the night, it will last an hour or two. Dr. Heberden met with one in whom it once continued for several days: during all which time the patient seemed to be in imminent danger of death. Most of those attacked with the disease died suddenly: though this rule was not without exception; and Dr. Heberden observed one who sunk under a lingering illness of a different nature.

The *os sterni* is usually pointed to as the seat of this malady; but it seems as if it was under the lower part of that bone, and at other times under the middle or upper part, but always inclining more to the left side; and in many cases there is joined with it a pain about the middle of the left arm, which appears to be seated in the biceps muscle.

The appearance of Dr. Heberden's paper in the Medical

Transactions very soon raised the attention of the faculty, and produced other observations from physicians of eminence; namely, Dr. Fothergill; Dr. Wall, of Worcester; Dr. Haygarth, of Chester; and Dr. Percival, of Manchester. It also induced an unknown sufferer under the disease to write to Dr. Heberden a very sensible letter, describing his feelings in the most natural manner: which, unfortunately, in three weeks after the date of this anonymous epistle, terminated in a sudden death, as the writer himself had apprehended.

The youngest subject that Dr. Fothergill ever saw afflicted with this disorder was about thirty years of age; and this person was cured. The method that succeeded with him was a course of pills, composed of the mass of gum pill, soap, and native cinnabar; with a light chalybeate bitter: this was continued for some months; after which he went to Bath several successive seasons, and acquired his usual health: he was ordered to be very sparing in his diet; to keep the bowels open; and to use moderate exercise on horseback, but not to take long or fatiguing walks.

The only symptom in this patient that is mentioned, was a stricture across the chest, which came on if he was walking up hill, or a little faster than ordinary, or if he was riding a very brisk trot; for moderate exercise of any kind did not affect him; and this uneasy sensation always obliged him to stop, as he felt himself threatened with immediate death if he had been obliged to go forward.

It is the sharp constrictive pain across the chest, that (according to Dr. Fothergill's observation) particularly marks this singular disease; and which is apt to supervene upon a certain degree of muscular motion, or whatever agitates the nervous system.

In such cases as fell under the inspection of Dr. Fothergill, he very seldom met with one that was not attended with an irregular and intermitting pulse; not only during the exacerbations, but often when the patient was free from pain and at rest: but Dr. Heberden observes, that the pulse is, at least sometimes, not disturbed; and mentions his having once had an opportunity of being convinced of this circumstance, by feeling the pulse during the paroxysm.

But no doubt these varieties, as well as many other little circumstances, will occur in this disease as they do in every other, on account of the diversity of the human frame; and if those which in general are found to predominate and give the distinguishing character be present, they will always authorize us in giving the name to the disease: thus when we find the constrictive pain across the chest, accompanied with a sense of strangling or suffocation; and still more if this pain should strike across the breast into one or both arms; we should not hesitate to pronounce the case an *angina pectoris*.

As to the nature of this disease, it appears to be purely *spasmodic*; and this opinion will readily present itself to any one who considers the sudden manner of its coming on and going off; the long intervals of perfect ease; the relief afforded by wine, and spirituous cordials; the influence which passionate affections of the mind have over it; the ease which comes from varying the posture of the head and shoulders, or from remaining quite motionless; the number of years for which it will continue, and other otherwise disordering health; its bearing to well the motion of a horse or carriage, which circumstance often distinguishes spasmodic pains from those which arise from ulcers; and lastly its coming on for the most part after a full meal, and in certain patients at night, just after the first sleep, at which time the incubus, convulsive asthma, and other ills, justly attributed to the disordered functions of the nerves, are peculiarly apt to return, or to be aggravated.

From all these circumstances taken together, there can be

little doubt that this affection is of a spasmodic nature: but though it should be admitted, that the whole distress in these cases arises from spasm, it may not be so easy to ascertain the particular muscles which are thus affected.

The violent sense of strangling or choking, which shews the circulation through the lungs to be interrupted during the height of the paroxysm; and the peculiar constrictive pain under the sternum, always inclining (according to Dr. Heberden's observation) to the left side; together with that most distressing and alarming sensation, which, if it were to increase or continue, threatens an immediate extinction of life, might authorize us to conclude, that the heart itself is the muscle affected: the only objection to this idea, and, if it had been constantly observed, it would be insurmountable, is, that the pulse is not always interrupted during the paroxysms. The appearances in two of the dissections, favour the opinion that the spasm affects the heart; as in one subject the left ventricle (and, though it be not mentioned, we may presume the right one also) was found as empty of blood as if it had been washed; and in another, the substance of the heart appeared whitish, not unlike a ligament; as it should seem, in both cases, from the force of the spasm squeezing the blood out from the vessels and cavities.

If this hypothesis be allowed, we must conclude that the spasm can only take place in an inferior degree, as long as the patient continues to survive the paroxysm; since an affection of this sort, and in this part, of any considerable duration or violence, must inevitably prove fatal: and accordingly, as far as could be traced, the persons who have been known to labour under this disease have in general died suddenly.

The dissections also shew, that whatever may be the true state of the spasm, it is not necessary for the bringing of it on, that the heart, or its immediate appendages, should be in a morbid state; for in three out of the six that have as yet been made public, these parts were found in a sound state.

On opening the body of the poor gentleman who wrote the letter to Dr. Heberden, "upon the most careful examination, no manifest cause of his death could be discovered: the heart, in particular, with its vessels and valves, were all found in a natural condition."

In the case communicated by Dr. Percival to the publishers of the Edinburgh Medical Commentaries, "the heart and aorta defendens were found in a sound state." And in Dr. Haygarth's patient, "on opening the thorax, the lungs, pericardium, and heart, appeared perfectly found." Not to mention Dr. Fothergill's patient (R. M.), in whose body the only morbid appearance about the heart was a small white spot near the apex. So that the cause, whatever its nature might have been, was at too great a distance, or of too subtle a nature, to come under the inspection of the anatomist. But there was a circumstance in two of the subjects that is worthy of remembrance; and which shews that the crasis of the blood, while they were living, must have been greatly injured, namely, its not coagulating, but remaining of a cream-like consistence, without any separation into serum and crassamentum.

From all that we have seen hitherto published, it does not appear that any considerable advances have been made towards the actual cure of this anomalous spasm.

The very judicious and attentive Dr. Heberden (to whom the public are highly indebted for first making the disorder known) confesses, that bleeding, vomits, and other evacuations, have not appeared to do any good: wine and cordials, taken at bed-time, will sometimes prevent or weaken the fits; but nothing does this so effectually as opiates: in

short, the medicines usually called *nervous* or *cordial*, such as relieve and quiet convulsive motions, and invigorate the languishing principle of life, are what he recommends.

Dr. Wall mentions one patient, out of the twelve or thirteen that he had seen, who applied to him early in the disease, and was relieved considerably by the use of antimonial medicines joined with the fetid gums: he was still living at the time the doctor wrote his paper (November, 1772), and going about with tolerable ease. Two were carried off by other disorders; all the rest died suddenly.

Dr. Fothergill's directions are chiefly calculated with the view to prevent the disorder from gaining ground, and to alleviate present distress. Accordingly he enjoins such a kind of diet as may be most likely to prevent irritability: in particular, not to eat voraciously: to be particularly abstemious in respect to every thing heating; spices, spirits, wines, and all fermented liquors: to guard most scrupulously against passion, or any vehement emotions; and to make use of all the usual means of establishing and preserving general health: to mitigate excesses of irritability by anodynes; or pains, if they quicken the circulation: to disperse flatulencies when they distend the stomach, by moderate doses of carminatives; amongst which, perhaps, simple peppermint-water may be reckoned one of the safest. But since obesity is justly considered as a principal predisposing cause, he insists strongly on the necessity of preventing an increase of fat, by a vegetable diet, and using every other practicable method of augmenting the thinner secretions.

These were the only means that occurred to the English physicians of opposing this formidable disease: but Dr. Smyth, of Ireland, has, we are told, discovered that it may certainly be cured by issues, of which Dr. Macbride gives some striking instances. When these are tried in any case, they should be placed inter scapulas, and kept open by horribans, so as to produce a copious discharge.

ANGLUS (Thomas), an English priest, well known for the singularity of his opinions, and several little traits which he wrote, in the 17th century. He went by several names. Mr. Baillet says his true name was *White*; but that he used to disguise it under that of *Candidus*, *Albius*, *Bianchi*, and *Rickworth*; but he was most known in France by the name of *Thomas Anglus*. Des Cartes generally called him Mr. *Vitus*. He passed some time in most countries of Europe; but his longest stay was at Rome and Paris. When he was in England, he lived a considerable time in the family of Sir Kenelm Digby; and seems to have had a great esteem for the opinions of this gentleman, as may be seen in his writings, particularly in the Preface to his Latin work concerning the Institutions of the Peripatetic Philosophy, according to the hypothesis of Sir Kenelm. He was a great advocate for the peripatetic Philosophy. He attempted even to make the principles of Aristotle subservient to the explaining the most impenetrable mysteries of religion; and with this view, he engaged in the discussion of predestination, free-will, and grace. Mr. Baillet says, "What he wrote upon this subject resembles the ancient oracles for obscurity." In such obscure points as we have mentioned, he was much embarrassed; and, by giving too great scope to his own thoughts, he pleased neither the Molinists nor Janenists. He is allowed, however, to have been a man of an extensive and penetrating genius. On the 10th of June, 1658, the congregation of the Index Expurgatorius at Rome condemned some treatises of Thomas Anglus. The doctors of Douay censured also twenty-two propositions extracted from his Sacred Institutions. He published his *Supplicatio populi utraque iustitie*, in opposition to their censure; where-in he complains that they had given him a vague undetermined censure, without taxing any particular proposition. He

died some time after the restoration of Charles II. but in what year is uncertain.

ANGRIVARI (Tacitus), a people of Germany, situated between the Weser and the Ems, and eastward reaching beyond the Weser, as far as the Cherufci, on which side they raised a rampart (Tacitus); to the south, having the Tubantes on the Ems, and on the Weser where it bends to the forest Bacemias; to the west, the Ems and the confines of the Bructeri; and to the north, the territory of the Angrivarii lay between the Chamavi and Ansibarii. Ptolemy places them between the Cauchi and Suevi or Catti. Supposed now to contain a part of the county of Schaumburg, the half of the bishopric or principality of Minden; to the south, the greatest part of the bishopric of Osnaburg, the north part of the county of Teclenburg, and a part of the county of Ravensberg. A trace of the name of the people still remains in the appellation *Engern*; a small town in the county of Ravensberg.

ANGROGNA, a town of Piedmont, belonging to the king of Sardinia. E. long. 7. 2. N. lat. 48. 42.

ANGUILLA (*Encycl.*), one of the Caribbee islands, has its name from its snake-like form; and is about ten leagues in length, and three in breadth. It was first discovered by the English in 1650, when it was filled with alligators and other noxious animals; but they, finding the soil fruitful, and proper for raising tobacco and corn, settled a colony on it, and imported live cattle, which have since multiplied exceedingly. But the colony not being settled under any public encouragement, each planter laboured for himself, and the island became a prey to every rapacious invader, which disheartened the inhabitants so much, that all industry was lost among them. Their chief suffering was from a party of wild Irish, who landed here after the revolution, and treated them worse than any of the French pirates who had attacked them before. The people of Barbadoes, and other English Caribbees, knowing the value of the soil, several of them removed to Anguilla, where they remained for many years, and even carried on a profitable trade, though without any government either civil or ecclesiastical. In 1745, their militia, though not exceeding 100 men, defended a breast-work against 1000 French who came to attack them; and at last obliged them to retire with the loss of 150 men, besides carrying off some of their arms and colours as trophies of their victory. Since that time the inhabitants have subsisted mostly by farming; though they still plant sugar, and the island is said to be capable of great improvements.

ANGUILLABA, a town of Italy, in the patrimony of St. Peter, fifteen miles N.W. of Rome.

ANGUIS, or SNAKE (*Encycl.*), in zoology. Of this genus, belonging to the order of amphibia serpentes, several species are described in our original article. As, however, delineations of these animals are more satisfactory than mere verbal description, we have given in Pl. 12. a representation of the seventh and fifteenth species, viz. the anguis *meleagris*, and anguis *scutellata*.

ANGUSSHIRE, a county of Scotland (sometimes called FORFAR, from the name of the county-town), bounded on the N. by Aberdeenshire, on the N. E. by Kincardineshire, on the E. by the German Ocean, on the S. by the frith of Tay, and on the W. by Perthshire. Its length and breadth are nearly equal, about thirty-five miles. It has many lakes and hills, but is fruitful in corn and pastures. The principal rivers are the North and South Esk.

ANHINGA, in ornithology, a species of the pelicanus; consists of four known varieties, two peculiar to America, one to Senegal, and the fourth to the region about the Cape of Good Hope. This last is thus described by Le Vaillant in his New Travels into the Interior Parts of Africa.

Aberration

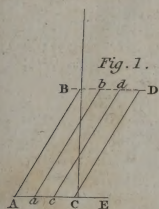


Fig. 2.

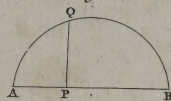
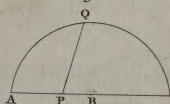


Fig. 3.



Absciss

Fig. 4.

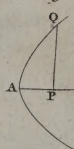
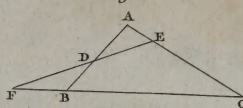


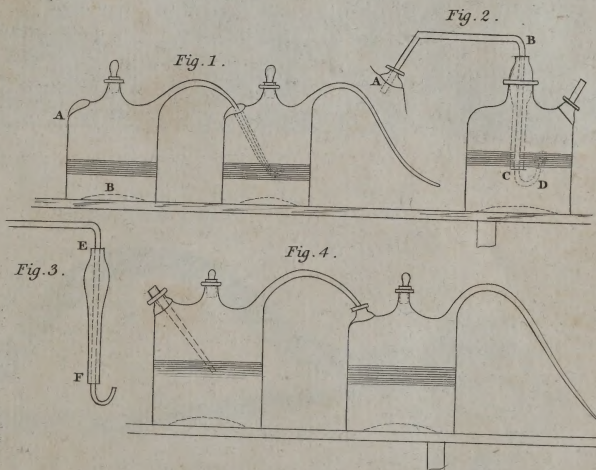
Fig. 5.



Male Anhinga



Girard's Improvement on Wolf's Chemical Apparatus



Apertures

Fig. 2.

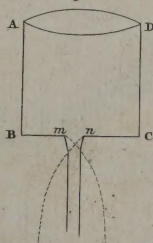


Fig. 1.

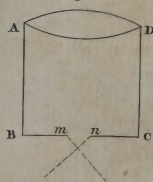
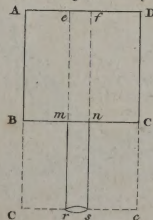


Fig. 3.

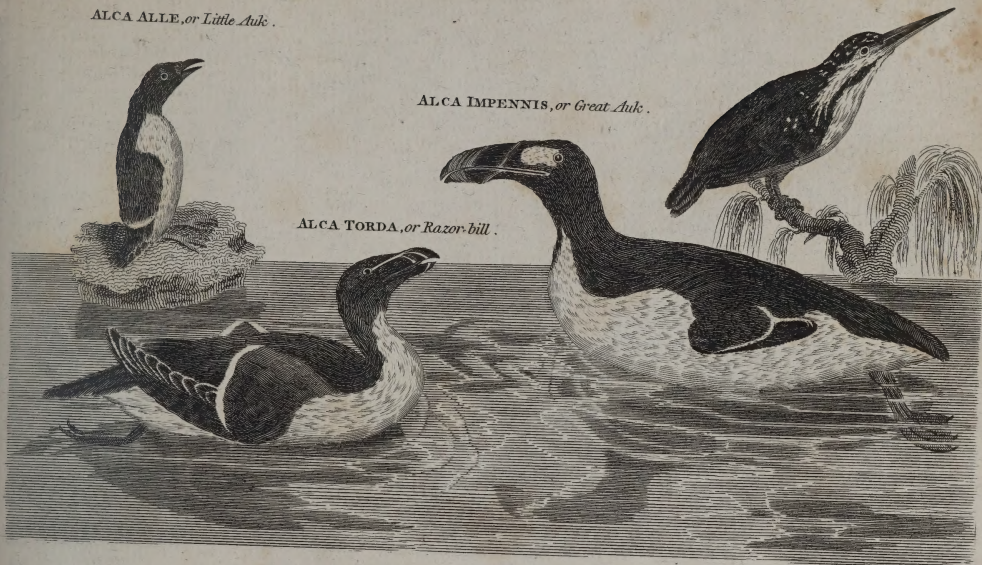


ALCEDO ISPIDA, or King Fisher.

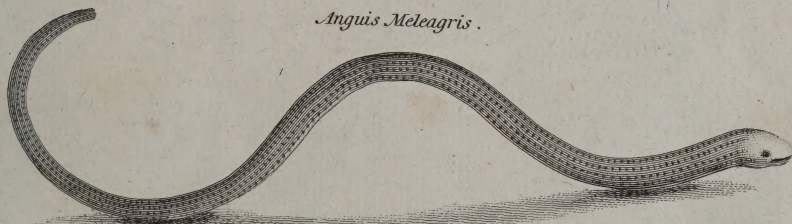
ALCA ALLE, or Little Auk.

ALCA IMPENNIS, or Great Auk.

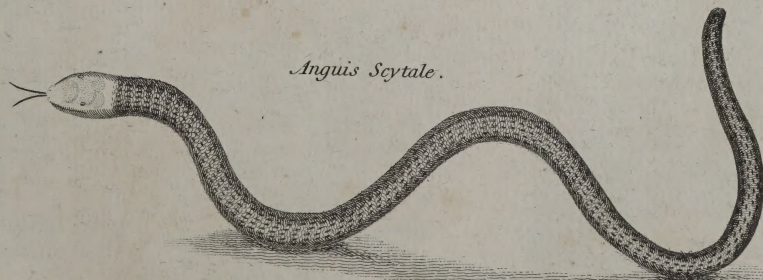
ALCA TORDA, or Razor-bill.



Anguis Meleagris.



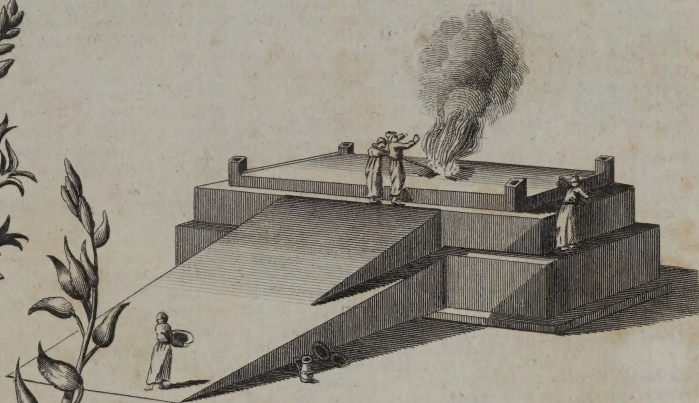
Anguis Scytale.



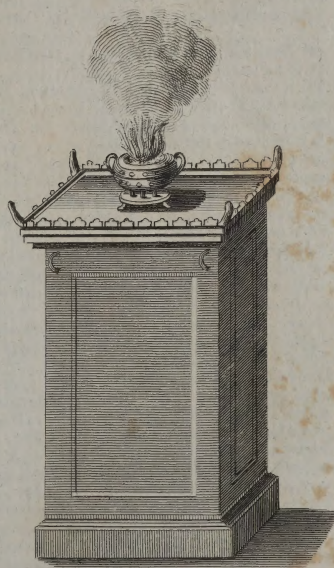
MARGARITIFERA, or Pearl Aloe



Altar of Burnt Offering



Altar of Incense



"The denomination of *Slange-Hals-Voogel*, given to it by the Hottentots, characterises the anhinga in a very simple and accurate manner. Buffon, who was struck with the conformation peculiar to birds of this kind, has delineated them by a similar expression. 'The anhinga (says he) exhibits a repulse grafted on the body of a bird.' See Pl. 11. Indeed there is no person who, upon seeing the head and neck only of an anhinga, while the rest of the body is hid among the foliage of the tree on which it is perched, would not take it for one of those serpents accustomed to climb and reside in trees; and the mistake is so much the easier, as all its tortuous motions singularly favour the illusion. In whatever situation the anhinga may be seen, whether perched on a tree, swimming in the water, or flying in the air, the most apparent and remarkable part of its body is sure to be its long and slender neck, which is continually agitated by an oscillatory motion, unless in its flight, when it becomes immovable and extended, and forms with its tail a perfectly straight and horizontal line.

"The true place which nature seems to have assigned to the anhingas, in the numerous class of the palmipedes, is exactly between the cormorant and the grebe. They partake indeed equally of both these genera of birds, having the straight slender bill and the long neck of the latter; while they approach the former by the conformity of their feet, the four toes of which are joined by a single membrane. They partake also of the cormorant by their flight; having like it the wings larger and fitter for the purpose than those of the grebe, which are short and weak. The tail of the anhinga is extremely long; a characteristic very singular and remarkable in a water fowl, and which ought, it would seem, to render them totally distinct from diving birds, which in general have little or no tail. By this trait they approach still nearer to the cormorants; for though the tails of the latter are shorter, the quills of both have a great resemblance to each other, since their quills are equally strong, elastic, and proper to form a rudder when these fowls swim through the water in pursuit of fish, which constitute their principal nourishment. When the anhinga seizes a fish, he swallows it entire if it be small enough, and if too large he carries it off to a rock or the stump of a tree, and fixing it under one of his feet, tears it to pieces with his bill.

"Though water is the favourite element of this bird, it builds its nest and rears its young on rocks and trees; but it takes great care to place them in such a manner, that it can precipitate them into a river as soon as they are able to swim, or the safety of the little family may require it."

The male anhinga differs from the female, which is smaller, in having the whole under part of the body, from the breast to the root of the tail, of a beautiful black, while the latter has the same parts of a yellowish white colour. It has also, on each side of its neck, a white stripe, which extends from the eye to the middle of its length, and intersects a reddish ground. A very singular characteristic, common to all the anhingas, is that of having the feathers of the tail deeply striated, and as it were ribbed. It is a very facagious bird, especially when surprised swimming; for its head is the only part which it exposes above the water; and if the sportsman once misls that part, the anhinga plunges out of sight entirely, and never more shews itself but at very great distances, and then no longer at a time than is absolutely necessary for breathing.

ANIAN, the name of a strait formerly supposed to lie between the north-east of Asia, and the north-west of America; but now found to exist only in imagination.

ANIMADVERSION, in matters of literature, is used to

signify sometimes correction, sometimes remarks upon a book, &c. and sometimes a serious consideration upon any point.

ANIMALCULE (*Encycl.*). The references to Pl. 15. should have been to Pl. 16.

ANIO (Cicero, Horace, Priscian); ANIEN (Statius); now *il Tevere*: a river of Italy, which falls into the Tiber, three miles to the north of Rome, not far from Antemnae. It rises in a mountain near Treba (Pliny); and, running through the country of the *Aequili*, or *Aequi*, it afterwards separated the Latins from the Sabines; but nearer its mouth, or confluence, it had the Sabines on each side. It forms three beautiful lakes in its course (Pliny). In the territories of Tibur it falls from a great height, and there forms a very rapid cataract; hence the epithet *praeceps*, and hence the stream caused by its fall (Horace). *Anienus* is the epithet formed from it (Virgil, Propertius): *Anienus* is also the god of the river (Propertius, Statius).

ANNAMOCCA, an island in the South Sea, discovered by Taffman in 1643, and visited by Captain Cook in 1774 and 1777. It is well cultivated in many places, consisting of plantations of yams and plantains. Many of them are extensive, and inclosed with neat fences of reed. The bread-fruit and cocoa-nut trees are interpersed with little order, but chiefly near the habitations of the natives; and the other parts of the island, especially toward the sea, are covered with trees and bushes of a luxuriant growth. The inhabitants are a friendly people, but much addicted to stealing the property of European visitors. This is one of the Friendly Islands, situated about 187 E. long. and 20 S. lat.

ANNAN, a river in Scotland, which rising in the Moffat Hills, and flowing in a southerly direction, through Annandale, empties itself into Solway Frith.

ANNANDALE, a district of Dumfriesshire in Scotland, so called from the river Annan. The mountains in the northern part of this district, sometimes named Moffat Hills, are the highest in the south of Scotland. From these descend the Tweed, the Clyde, and the Annan.

ANNAND (William), dean of Edinburgh in Scotland, the son of William Annand, minister of Air, the head burgh royal of the shire of Air, in the diocese of Glasgow, was born at Air in 1633. In 1651 he was admitted a scholar in University College in Oxford; and though he was put under the care of a presbyterian tutor, yet he took all occasions to be present at the sermons preached by the loyal divines in and near Oxford. In 1656, being then bachelor of arts, he received holy orders from the hands of Dr. Thomas Fulwar, bishop of Ardfert, or Kerry, in Ireland, and was appointed preacher at Weston, on the Green, near Bicester, in Oxfordshire, where he met with great encouragement from Sir Francis Norris, lord of that manor. After he had taken his degree of master of arts, he was presented to the vicarage of Leighton-Buzzard in Bedfordshire, where he distinguished himself by his edifying manner of preaching, till 1662, when he went into Scotland, in quality of chaplain to John earl of Middleton, the king's high-commissioner to the church of that kingdom. In the latter end of the year 1663, he was instituted to the Tolbooth church, at Edinburgh, and from thence was removed some years after to the Trone church of that city, which is likewise a prebend. In April 1676, he was nominated by the king to the deanery of Edinburgh; and in 1685 he commenced doctor of divinity in the university of St. Andrews. He died the 13th of June, 1689. Dr. Annan wrote several pieces, particularly the following, viz. 1. The Doctrine of the Catholic Church. 2. Solutions of many proper and profitable Questions. 3. A short Discourse tending to prove the Legality, Decency, and Expediency, of set Forms of Prayer. 4. The

Lord's Prayer explained. 5. The Mystery of Godliness. 6. Glory to the Father, &c. 7. A twofold Subject explained and opened.

ANNESLEY (Arthur), earl of Anglesey, and lord privy seal in the reign of King Charles II. was the son of Sir Francis Annesley, bart. lord Mount Norris, and viscount Valentia, in Ireland; and was born at Dublin on the 10th of July, 1614. He was for some time at the university of Oxford, and afterwards studied the law at Lincoln's Inn. He had a considerable share in the public transactions of the last century; for in the beginning of the civil war he sat in the parliament held at Oxford, but afterwards became reconciled to the opposite party, and was sent commissioner to Ulster, to oppose the designs of the rebel Owen Roe O'Neal. He engaged in several other affairs with great success. He was president of the council of state after the death of Oliver, and was principally concerned in bringing about the Restoration, soon after which, King Charles II. raised him to the dignity of a baron, by the title of lord Annesley, of Newport Pagnall, Bucks; and a short time after, he was made earl of Anglesey. During that reign he was employed in some very important affairs, was made treasurer of the navy, and afterwards lord privy-seal. In October 1680, his lordship was charged by one Dangerfield, in an information delivered upon oath, at the bar of the House of Commons, with endeavouring to stifle evidence in relation to the Popish plot, and to promote the belief of a Presbyterian one. The uneasiness he received from this attack did not prevent his speaking his opinion freely of those matters in the House of Lords, particularly in regard to the Popish plot. About the same time he answered the Lord Castlereagh's Memoirs, in which that nobleman endeavoured to paint the Irish rebellion in the lightest colours; and a sharp dispute was raised, which ended in the seals being taken from him. He was a person of great abilities, had uncommon learning, and was well acquainted with the constitution and laws of England. He wrote, besides his Animadversions on Castlereagh's Memoirs, 1. The Privileges of the House of Lords and Commons stated. 2. A Discourse on the House of Lords. 3. Memoirs. 4. The History of the Troubles in Ireland, from the Rebellion in 1641, till the Restoration. 5. Truth unveiled, in behalf of the Church of England;—and some other works. He died in April 1686, in the 73d year of his age; and was succeeded by his son James.

ANNIHILATION (*Envel.*). The Persian bramins hold, that, after a certain period of time, consisting of 71 joogs, God not only annihilates the whole universe, but every thing else, angels, souls, spirits, and all, by which he returns to the same state he was in before the creation; but that, having breathed a while, he goes to work again, and a new creation arises, to subsist 71 joogs more, and then to be annihilated in its turn. Thus they hold there have been almost an infinite number of worlds: but how many joogs are elapsed since the last creation, they cannot certainly tell; only in an almanac written in the Sanscrit language in 1670, the whole is said to be then 3,892,771 years old from the last creation.

The Siamese heaven is exactly the hell of some Socinians, and other Christian writers; who, shocked with the horrible prospect of eternal torments, have taken refuge in the system of annihilation. This system seems countenanced by scripture; for that the words *death*, *destruction*, and *perishing*, whereby the punishment of the wicked is most frequently expressed in scripture, do most properly import annihilation and an utter end of being. To this Tillotson answers, that these words, as well as those corresponding to them in other languages, are often used, both in scripture and in other writings, to signify a state of great misery and suffering, without the

utter extinction of the miserable. Thus God is often said in scripture to bring *destruction* on a nation, when he sends judgments upon them, but without exterminating or making an end of them. So in other languages, it is frequent, by *perishing*, to express a person's being made miserable; as in that known passage in Tiberius's letter to the Roman senate: *Ita me dii, deaque omnes, pœius perdant, quam hodie perire me sentio.* As to the word *death*, a state of misery which is as bad or worse than death may properly enough be called by that name; and thus the punishment of wicked men after the day of judgment is in the book of Revelations frequently called the *second death*.

Some Christian writers allow a long time of the most terrible torments of sinners; and after that, suppose that there shall be an utter end of their being. Of this opinion Irenæus appears to have been; who, according to M. du Pin, taught that the souls, at least of the wicked, would not subsist eternally; but that, after having undergone their torments for a certain period, they would at last cease to be at all. But Tillemont, Petit, Didier, and others, endeavour to defend Irenæus from this imputation, as being too favourable to the wicked.

It has been much disputed among divines, whether, at the consummation of all things, this *earth* is to be annihilated, or only purified, and fitted for the habitation of some new order of beings. Gerard in his Common Places, and Hakewill in his Apology, contend earnestly for a total abolition or annihilation. Ray, Calmet, and others, think the system of renovation or restitution, more probable, and more consonant to scripture, reason, and antiquity. The fathers who have treated on the question are divided; some holding that the universe shall not be annihilated, but only its external face changed; others asserting, that the substance of it shall be destroyed.

How widely have the sentiments of mankind differed as to the possibility and impossibility of annihilation! According to some, nothing so difficult; it requires the infinite power of the Creator to effect it: some go further, and seem to put it out of the power of God himself. According to others, nothing so easy: Existence is a state of violence; all things are continually endeavouring to return to their primitive nothing; it requires no power at all; it will do itself; nay, what is more, it requires an infinite power to prevent it.

Many authors consider preservation as a continual reproduction of a thing, which, subsisting no longer of itself, would every moment return into nothing. Gassendi on the contrary asserts, that the world may indeed be annihilated by the same power which first created it, but that to continue it there is no occasion for any power of preservation.

Some divines, of which number the learned Bishop King seems to be, hold annihilation for the greatest of all evils, worse than even the utmost torments of hell-flames: while others, with some of the eastern philosophers, acknowledge annihilation for the ultimate pitch of happiness human nature is capable of; that sovereign good, that absolute beatitude, so long vainly fought for by the philosophers, is found here. No wonder it has been so long concealed; for who would have thought of looking for the *summum bonum*, where others have placed the sum of misery?

The said prelate proposes it as a question, Whether suffering eternal torments be a greater evil than not existing? He thinks it highly probable, that the damned will be such fools, that, feeling their own misery in the most exquisite degree, they will rather applaud their own conduct, and choose to be, and to be what they are, rather than not to be at all; fond of their condition, however wretched, like people enraged, they will persist in their former sentiments without opening their eyes

to their folly, and persevere by way of indignation and revenge. Mr. Bayle refutes him on this head; but might, one would think, have saved himself the trouble.

The Talapoins hold it the supreme degree of happiness to have the soul totally annihilated, and freed from the burden and slavery of transigrations. They speak of three Talapoins, who, after a great number of transigrations, became gods; and when arrived at this state, procured this further reward of highest perfecting man can arrive at, *neuepan*, or annihilation; which at length is granted to those who are perfectly pure and good, after their souls have wandered many thousand years through various bodies.

ANO-CAPRI, the largest town in the island of Capri, belonging to the kingdom of Naples.

ANOLYMPIADES (*Encycl.*). The Eleans claimed the sole right of managing the Olympic games, in which they sometimes met with competitors. The hundred and fourth Olympiad was celebrated by order of the Arcadians, by whom the Eleans were at that time reduced very low: this, as well as those managed by the inhabitants of Pisa, they called *anolympiades*; that is, "unlawful Olympiads;" and left them out of their annals, wherein the names of their victors and other occurrences were registered.

ANOSSE (*Encycl.*). This province is watered by many rivers, most of which run into the *Franchere*, *Ramevotte*, or *Immour*, the spring of which is in a mountain called *Manghage*, and discharges itself into the sea in Lat. 25. 18. S. The mouth of this river is often stopped, and the course to the sea interrupted, unless kept open by the overflowings of great rains and high tides. The water runs half one league above the mouth, particularly in a free communication with the sea. A lake, called *Ambou*, is formed at the mouth, half a league wide, with depth sufficient for any ship if the mouth of the river was kept open. Next in bigness to the *Franchere* is the *Manghafia*, which springs from a mountain called *Silica*, and empties itself into the sea, where large ships may ride at anchor. Crocodiles breed in these and all the other rivers of the island.

Between the two rivers above mentioned lies Cape St. Romain, half a mile distant from the mouth of the *Franchere*, and which runs from the north-west six or seven leagues into the sea. When the Cape is passed, the coast forms a great bay, in the shape of a cross, which extends to the mouth of a river called *Djan Panouge*, or *Pitoruk*. In the middle of this bay the land runs out, and almost forms a peninsula called *Tholangare*. Fort Dauphin lies to the north of this peninsula, and Port Dauphin over against it. This province has several other peninsulas and small islands belonging to it. The country is beautiful; abounds in fruit-trees; is fertile in pastures for cattle; and, if carefully cultivated, would produce all the necessities of life. It is surrounded by high mountains, which are covered with woods and shrubs; but, about four miles distant from Fort Dauphin, the adjacent hills are quite destitute of verdure. The French often dug in this neighbourhood, expecting to meet with mines of gold and silver, particularly in one mountain where several springs flow near each other, and empty themselves into a neighbouring river. In this river they found several stones and heaps intermixed with yellow clay, with a great quantity of black and white spangles shining like silver, which they carefully pounded and washed, but without effect. About sixty yards above these springs the grass and every sort of vegetable appears half dried and yellow, from a metalline sulphur which gives that aspect; but the top of the mountain is covered with a fresh and beautiful verdure. It is said that the Portuguese found gold at the foot of the mountain on the north-side, but that the place they

had dug was filled up by the chiefs of the country after the Portuguese had been driven out.

The province of Anossi is inhabited by three different sorts of whites, and four sorts of negroes. The whites are distinguished by the names of *Rolandrians*, *Anacandrians*, and *Ondaschi*. The whites are distinguished from the negroes by the general name of *Zafaramini*, or *Rahimini*; and the Rolandrians are distinguished above the other whites. When they proceed to an election of a sovereign, whom they call *Ompandrian*, or *Dian Bahouache*, he is chosen from the Rolandrian race. Next to him the others hold the rank of princes, and are honoured as such by all the rest of the subjects. The Anacandrians are descendants of the chiefs, but who have degenerated, and are accounted the bastards of princes, or those who are descended from a Rolandrian and any inferior white or black woman. These are likewise called by the name of *Ontempafimacca*, or people from the sandy parts of Mecca, from whence, they say, came the Rolandrians. Both the Rolandrians and Anacandrians wear long hair, which hangs down in curls; and enjoy the privilege of killing beasts. The Ondaschi, or lowest class of whites, are descended from the bastards of the Anacandrians. These are all stiffermen, and are allowed to kill no land animals except chickens.

The four classes of negroes are named *Voadziri*, *Lohavohits*, *Ontsoa*, and *Ondeees*. The Voadziri, the most powerful and the richest, are masters of several villages, and descended from the original lords of the country. They enjoy the privilege of killing beasts, when at a distance from the whites, and no Rolandrian or Anacandrian in the village. The Lohavohits are descendants from the Voadziri, and also lords; but with this difference, that the one commands a whole district, and the jurisdiction of the others extends only to their own village and family. They are also permitted to kill those beasts they intend to eat, when at a distance from the whites. The Ontsoa are next to the Lohavohits, and are their near relations. The Ondeees are the lowest of all, being originally slaves by father and mother. The Voadziri, Lohavohits, and Ontsoa, enjoy the privilege of submitting themselves, on the death of their lord or king, to any chief they please. In return for such homage the new lord makes them a present, in consequence of which he becomes heir to all their possessions. Hence the lower classes both of whites and blacks, when death approaches, are under the greatest concern and anguish of mind, well knowing that their lords will not fail to deprive their children of every thing they possess. Ondeees have not the same liberty with the others; but, in times of famine, the chiefs are obliged to supply them with necessities; which if they fail to do, they have the liberty of submitting themselves to new masters. The inhabitants of this province have no temples, and very little appearance of religion; only they keep up a custom of immolating beasts upon particular occasions, as in sickness, planting yams or rice, on assemblies, &c. They offer the first-born beast to the devil and to God, naming the devil first, in this manner, *Duanbilis Aminhanhabare*, or "Lord Devil and God."—There are several towns on the river *Franchere*; and near this river the Portuguese had a fort built upon a steep rock, and several buildings below, with inclosures, which furnished all sorts of necessaries for their subsistence; but they were all massacred by the natives.

This province seems originally to have been inhabited by negroes. The whites or Zafaramini settled in it about 200 years ago, and conquered the negroes. But they themselves were conquered by the French, though under the government of a king whom they honoured as a god. In 1642, Captain Rivault obtained a permission to establish a colony in this part of the island; and accordingly took possession of it

in the name of the king of France, in the month of September, that same year. The French landed 200 men well armed and provided with store of ammunition and other necessaries for building a fort, which they immediately set about; but no sooner did the natives observe their intention, than they used their utmost art to prevent their design from taking effect. This created a war, in which the French were victors; and, the natives becoming in time much better reconciled to them, they intermarried, and lived up and down in several towns at some distance from one another, not above five or six in a place. This tranquillity lasted for some years; but at last the natives, growing jealous, resolved to free themselves from a foreign yoke, and accordingly formed a conspiracy to cut off all the French in one day; which they soon after effected, not leaving a single person alive. In 1644, the above-mentioned Fort Dauphin was erected, in lat. 25. 6. S. Many buildings were erected, behind the fort, adjoining to the governor's house, with great inclosures that produced every sort of fruit and kitchen herb. In 1656 this fort was accidentally destroyed by fire; but was soon after repaired, and still continues, notwithstanding the catastrophe above mentioned, and its garrison carries on frequent wars with the natives.

ANSELM, archbishop of Canterbury, in the reigns of William Rufus and Henry I. He was born in the year 1033, at Aost, a town in Savoy at the foot of the Alps. He became a monk in the abbey of Bec in Normandy; of which he was afterwards chosen prior, and then abbot. In the year 1092, he was invited over to England by Hugh earl of Chester; and in the year following was prevailed on, as we are told, with great difficulty, to accept the archbishopric of Canterbury. He enjoyed celebrity on the clergy; for which he was banished by King Rufus, but recalled by Henry at his coming to the crown. He refused to consecrate such bishops as were invested by the king, according to Pope Urban's decree; flatly denying it to be the king's prerogative: for this he was ousted again; till, the pope and king agreeing, he was recalled in 1107. In short, from the day of his consecration to that of his death, he was continually employed in fighting the prerogative of the church against that of the crown; and for that purpose spent much of his time in travelling backwards and forwards between England and Rome, for the advice and direction of his holiness. At the council of Bari, in the kingdom of Naples, the pope being puzzled by the arguments of the Greeks against the Holy Ghost's proceeding from the Father, he called upon Anselm, who was present, and he discussed their objections with great applause. Priests call him a resolute saint; to other people he appears to have been an obstinate and insolent priest. He wrought many miracles, if we believe the author of his life, both before and after his death, which happened at Canterbury, in the 76th year of his age, anno 1109. He was canonised in the reign of Henry VII. Anselm, though we may disregard him as a saint, deserves to be remembered as one of the principal revivers of literature, after three centuries of profound ignorance.

His works have been printed in different years, and at different places, viz. Nuremb. 1491. Paris, 1544 and 1549. Venice, 1549. Cologne, 1573 and 1612. Lyons, 1630. But the best is that of Father Gerberon, printed at Paris, 1675. It is divided into three parts; the first contains dogmatical tracts; and is entitled *Monologia*; the second contains practical and devotional tracts; the third part consists of letters in four books.

ANSIBARIL, or ANSIVARI (Encycl.). All we know of the history of this ancient people is, that in the reign of the Emperor Nero they were driven from their possessions by the Chauci. Being then in a forlorn condition, they took posses-

sion of some uninhabited lands, which had been used as pasture for the horses of the Roman soldiers. They were led by one Boiocolus, a man of great valour, and of known fidelity to the Romans. He remonstrated to the Romans, who objected to their taking possession of these lands, That the territory in dispute was large; and requested, that it might be allowed to an unhappy people, driven from their own habitations: that, at the same time, wide tracts might be retained for the horses and cattle of the soldiers to graze in: that it was inconsistent with humanity to famish men in order to feed beasts &c.; and at last, lifting up his eyes to heaven, he asked the celestial luminaries how they could behold a desolate soil, and if they would not more justly let loose the sea to swallow up usurpers, who had engrossed the whole earth? To this the Roman commander, Avitus, replied, the weakest must submit to the strongest; and that since the gods, to whom they had appealed, had left the sovereign judgment to the Romans, they were resolved to suffer no other judges than themselves. To Boiocolus himself, however, he privately offered lands as a reward for his long attachment to the Romans: but this offer the brave German rejected, as a price for betraying his people; adding, "A place to live in we may want, but a place to die in we cannot." The Ansibarilii now invited the neighbouring nations to join them against the Romans; but they, dreading the power of that nation, refused to give them any assistance: upon which they applied to the neighbouring nations, begging leave to settle in their territories; but being every-where driven out as enemies and intruders, these unhappy people were reduced to wander up and down till every one of them perished.

ANSIKO (Encycl.), a kingdom of Africa. The king of Ansiko, or the great Macoco, commands thirteen kingdoms, and is esteemed the most powerful monarch in Africa. The inhabitants of Angola have a tradition, that this is the proper country of the Giagas, who came originally from Sierra Leona, and over-ran like a torrent the whole coast as far as Benguela; that, being weakened by numerous battles, and unable to force the desiles in order to return to Sierra Leona, they arrived on the borders of Monomotapa, where being defeated, they were forced to remain in the provinces of Ansiko. Be this as it will, the Ansikans yielded not in the least to the Giagas in fierceness and barbarity. They are so accustomed to the eating of human flesh, that it is asserted they have markets where it is publicly sold, and that there are no other graves for the dead than the bellies of the living. They try the courage of their prisoners of war by shooting at them as at marks, directing their arrows above or around their heads; and whoever discovers the least sign of fear, is immediately devoured without remedy. Those who appear intrepid and resolute, have their noses and ears bored, and two fore-teeth of the upper jaw drawn. They are then improved in barbarity, by accustoming them to the most horrid cruelties.

The Ansikans are neat, well-proportioned, and strong, wandering about from place to place, without either sowing or reaping. They are dreaded for their extreme brutality, and never traded with by the Europeans. Their language is barbarous, and difficult to be learned, even by the inhabitants of Congo. The most distinguished among them wear red and black caps of Portuguese velvet; the lower ranks go naked from the waist upwards; and, to preserve their health, anoint their bodies with a composition of pounded white sandal-wood, and palm-oil. Their arms are battle-axes, and small but very strong bows adorned with serpents skins. Their strings are made of supple and tender shoots of trees, that will not break, and their arrows of hard and light wood. These people, who kill birds flying, shoot with such surprising swiftness, that they can discharge 28 arrows from the bow before the first falls to the

ground. With equal dexterity they manage their battle-axes; one end of which is sharpened and cuts like a wedge, and the other flattened like a mallet, with an handle set between, about half the length of the iron, rounded at the end like an apple, and covered with the skin of a serpent.—The current money in this country is the zimbs or shell, which is fished for, and passes among several African nations.—They worship the sun as their chief deity; whom they represent by the figure of a man, and the moon by that of a woman. They have also an infinite number of inferior deities, each individual having a particular idol whom he addresses on certain occasions.

ANSPACH (the marquise of), is a small territory of Franconia in Germany, bounded on the north by the bishoprics of Wurtburg and Bamberg, which last likewise lies to the west; the earldoms of Holach and Oetting, with the bishopric of Aichtet, lie on the south; and the palatinate of Bavaria and the territory of Nuremberg on the east. The country is fruitful, and interperfed with woods, which renders it agreeable for hunting. Besides the city of Anspach, which is the capital, the chief towns are Kreglin, Swabach, Kreilheim, Rot, and Waffer-Truding.

ANSTIS (John), an able herald, was born at St. Neot's in Cornwall, Sept. 28, 1669, being son of John Anstis, of that place, by Mary, daughter and coheir of George Smith. He was admitted at Exeter College, Oxford, 1685, and three years after at the Middle Temple; represented the borough of St. Germans, 1702, 1703, 1704, in parliament, where he distinguished himself against the bill for occasional conformity, for which he got ranked in the list of the tackers, printed about that time. He was appointed deputy-general of the auditors of the imprest, 1703, which office he never executed; one of the principal commissioners of prizes, 2 Anne; Garter king of arms, 13 Anne; in which place he died, March 4, 1743-4, and was buried the 2d following, in a vault in the parish church of Dulo in Cornwall. He published, in 1706, "A Letter concerning the Honour of Earl Marshal," 8vo. in 1720, "The Form of the Installation of the Garter," 8vo. in 1724, "The Register of the most noble Order of the Garter, usually called the Black Book, with a Specimen of the Lives of the Knights," 2 vols. folio; and, in 1715, "Observations introductory to an historical Essay on the Knighthood of the Bath," 4to. intended as an introduction to the history of that order, for which the society of antiquaries had begun to collect materials. His "Aspilogia, a Discourse on Seals in England," with beautiful draughts, almost fit for publication, of which Mr. Drake read an abstract to the society in 1735-6; and two folio volumes of drawings of sepulchral monuments, stone circles, crosses, and caftles, in the three kingdoms; were purchased, with a MS. "History of Launceston," and many other curious papers (particularly a good collection of epitaphs and other inscriptions in England, and many in Wales, all fac-similes), at the sale of Mr. Anstis's library of MSS. 1768, by Thomas Aftle, esq. F.R. and A.SS. Besides these, he left in MS. two large folio volumes on the office, &c. of Garter King at Arms, and on Heralds in general; memoirs of the Talbot, Carew, Granville, and Courtney families; the Antiquities of Cornwall; "Collections relating to the Parish of Colliton in Devonshire," containing matters relative to the tithes of that church (of which his son, George Anstis, was vicar), in a dispute before the court of Exchequer in 1740, deposited in Dr. Ducarel's library; and also large collections relative to All Soul's College, Oxford, by whom they were bought. Sixty-four pages of his Latin answer to "The Case of Founders' Kinsmen," were printed in 4to. with many coats of arms. His "Curia Militaris, or a Treatise on the Court of Chivalry, in three books," was printed in 1702, 8vo. His eldest son, John Anstis, esq. who had been educated as a gentleman-commoner at Corpus Christi College, Oxford,

was, at the revival of the order of the Bath in 1725, joined to his father in the office of Garter; and had the additional office of genealogist and register of the Bath. At the opening of Dr. Radcliffe's library, 1749, he was, with several other members of that university created LL.D. He died a bachelor, Dec. 5, 1754.

ANTEDILUVIANS (*Encycl.*). The only thing we know as to the religious rites of the Antediluvians is, that they offered sacrifices, and that very early, both of the fruits of the earth, and of animals; but whether the blood and flesh of the animals, or only their milk and wool, were offered, is a disputed point.—Some have endeavoured to prove, that all the patriarchs from Adam had stated places, and annual and weekly times, set apart for divine worship, and also a separate maintenance for the priest: all which particulars may be true, though they cannot be made out from scripture. But what is more extraordinary, they pretend to tell us the very day of the week on which the antediluvian sabbath was kept; and that it was the same with the Christian sabbath, or Sunday.

Of the arts and sciences of these people we have not much more to say. They seem rather to have spent their time in luxury and wantonness, to which the abundant fertility of the first earth invited them, than in discoveries or improvements, which probably they stood much less in need of than their successors. The art of working metals was found out by the last generation of Cain's line; and music, which they might be supposed to practise for their pleasure, was not brought to any perfection, if invented, before the same generation. Some authors have supposed astronomy to have been cultivated by the antediluvians, though this is probably owing to a mistake of Josephus: but it is to be presumed, the progress they made therein, or in any other science, was not extraordinary; it being even very doubtful whether letters were so much as known before the flood; whatever is pretended by some men, who have conceived so high an opinion of Adam's knowledge, that they suppose it to have been almost universal: nor can any thing be inferred from the books attributed to that patriarch, or to Seth, and Enoch, which are forgeries too gross to deserve any consideration.

As to their politics and civil constitutions, we have not so much as any circumstances whereon to build conjectures. It is probable, the patriarchal form of government, which certainly was the first, was set aside when tyranny and oppression began to take place, and much sooner among the race of Cain than of Seth. It seems also, that their communities were but few, and confided of vastly larger numbers of people than any formed since the flood: or rather, it is a question, whether, after the union of the two great families of Seth and Cain, there were any distinction of civil societies, or diversity of regular governments, at all. It is more likely, that all mankind then made but one great nation, though living in a kind of anarchy, divided into several disorderly associations; which, as it was almost the natural consequence of their having, in all probability, but one common language, so it was a circumstance which greatly attributed to that general corruption, which otherwise perhaps could not have so universally overpread the antediluvian world. And for this reason chiefly, as it seems, so soon as the posterity of Noah were sufficiently increased, a plurality of tongues was miraculously introduced, in order to divide them into distinct societies, and thereby prevent any such total depravation for the future.

As an illustration of the remarks contained in our original article, we here introduce a table, made upon the principles there stated by Mr. Whiston. It shews at least what number of people might have been in the antediluvian world.

Number of mankind.	Year of the world.	Year of dating.	Series.
4	2	2	1
8	6	4	2
16	12	8	3
32	20	10	4
64	30	12	5
128	42	14	6
256	56	16	7
512	72	18	8
1024	90	20	9
2048	110	22	10
4096	132	24	11
8192	156	26	12
16384	182	28	13
32768	210	30	14
65536	240	32	15
131072	272	34	16
262144	306	36	17
524288	342	38	18
1048576	380	40	19
2097152	420	42	20
4194304	462	44	21
8388608	506	46	22
16777216	552	48	23
33554432	600	50	24
67108864	650	52	25
134217728	702	54	26
268435456	756	56	27
536870912	812	58	28
1073741824	870	60	29
2147483648	930	62	30
4294967296	992	64	31
8589934592	1056	66	32
17179869184	1122	68	33
34359738368	1190	70	34
68719476736	1260	72	35
137438953472	1332	74	36
274877906944	1406	76	37
549755813888	1482		38

As to any history of the transactions before the flood, besides the general account already given, we are left entirely in the dark by the sacred historian. The Jews and eastern nations, however, have made ample amends for the silence of Moses, by the abundance of fables they have invented. The only part of their traditions which can be connected in any thing like history is what follows.

After the death of Adam, Seth with his family separated themselves from the profligate race of Cain, and chose for their habitation the mountain where Adam was buried, the Cainites remaining below in the plain where Abel was killed; and, according to our historians, this mountain was so high, that the inhabitants could hear the angels singing the praises of God, and even join them in that service. Here they lived in great purity and sanctity of manners. Their constant employment was praising God, from which they had few or no avocations; for their only food was the fruits of the trees which grew on the mountain, so that they had no occasion to undergo any servile labours, nor the trouble of sowing and gathering in their harvest. They were utter strangers to envy, injustice, or deceit. Their only oath was, "By the blood of Abel;" and they every day went up to the top of the mountain to worship God,

and to visit the body of Adam, as a mean of procuring the Divine blessing. Here, by contemplation of the heavenly bodies, they laid the foundations of the science of astronomy; and, lest their invention should be forgotten, or lost before they were publicly known, understanding, from a prediction of Adam's, that there would be a general destruction of all things, once by fire, and once by water, they built two pillars, one of brick, and the other of stone, that if the brick one happened to be overthrown by the flood, or otherwise destroyed, that of stone might remain. This last, Josephus says, was to be seen in his time in the land of Siriad (thought to be in Upper Egypt).

The descendants of Seth continued in the practice of virtue till the fortieth year of Jared, when an hundred of them, hearing the noise of the music, and the riotous mirth of the Cainites, agreed to go down to them from the holy mountain. On their arrival in the plain, they were immediately captivated by the beauty of the women, who were naked, and defiled themselves with them; and this is what is meant by the intermarriage of the sons of God with the daughters of men, mentioned by Moses. The example of these apostate sons of Seth was soon followed by others; and from time to time, great numbers continued to descend from the mountain, who, in like manner, took wives from the abandoned race of Cain. From these marriages sprung the giants (who, however, according to Moses, existed before); and, these were as remarkable for their impiety as for their strength of body, tyrannizing in a cruel manner, and polluting the earth with wickedness of every kind. This defection became at last too universal, that none were left in the holy mountain, except Noah, his wife, three sons, and their wives.

Berosus, a Chaldaean historian, who flourished in the time of Alexander the Great, enumerates ten kings who reigned in Chaldea before the flood: of whom the first, called *Alorus*, is supposed to be Adam, and Xisuthrus, the last, to be Noah. —This *Alorus* declared that he held his kingdom by divine right, and that God himself had appointed him to be the pastor of the people. According to our historian, in the first year of the world, there appeared out of the Red Sea, at a place near the confines of Babylonia, a certain irrational animal called *Oannes*. He had his whole body like that of a fish; but beneath his fish's head grew another of a different sort (probably a human one). He had also feet like a man, which proceeded from his fish's tail, and a human voice; the picture of him being preserved ever after. This animal conversed with mankind in the day-time, without eating any thing: he delivered to them the knowledge of letters, sciences, and various arts: he taught them to dwell together in cities, to erect temples, to introduce laws, and instructed them in geometry: he likewise shewed them how to gather seeds and fruits, and imparted to them whatever was necessary and convenient for a civilized life: but after this time there was nothing excellent invented. When the sun set, *Oannes* retired into the sea, and continued there all night. He not only delivered his instructions by word of mouth, but, as our author assures us, wrote of the origin of things, and of political economy. This, or a similar animal, is also mentioned by other authors.

Of *Alaporus*, the second king, nothing remarkable is related. His successor, *Amelon*, or *Amillarus*, was of a city called *Pantabibla*. In his time another animal resembling the former appeared, 260 years after the beginning of this monarchy. *Amelon* was succeeded by *Metalarus*, and he by *Daonus*, all of whom were of the same city. In his time, four animals, of a double form, half man and half fish, made their appearance. Their names were *Eucodrus*, *Eutegamus*, *Eneubulus*, and *Anemetus*. Under the next prince, who was

likewise of Pantabibla, appeared another animal of the same kind, whose name was *Odacon*. All these explained more particularly what had been concisely delivered by Oannes.

In the reign of the tenth king, Xifuthrus, happened the great deluge, of which our author gives the following account: Cronus, or Saturn, appeared to Xifuthrus in a dream, and warned him, that on the fifteenth of the month Dæsius mankind would be destroyed by a flood; and therefore commanded him to write down the original, intermediate state, and end of all things, and bury the writings under ground in Sippara, the city of the sun; that he should also build a ship, and go into it with his relations and dearest friends, having first furnished it with provisions, and taken into it fowls and four-footed beasts; and that, when he had provided every thing, and was asked whether he was failing, he should answer, *To the gods, to pray for the happiness of mankind*. Xifuthrus did not disobey, built a vessel, whose length was five furlongs, and breadth two furlongs. He put on board all he was directed, and went into it with his wife, children, and friends. The flood being come, and soon ceasing, Xifuthrus let out certain birds, which finding no food, nor place to rest upon, returned again to the ship. Xifuthrus, after some days, let out the birds again; but they came back again to the ship, having their feet daubed with mud: but when they were let out a third time, they came no more to the ship, whereby Xifuthrus understood that the earth appeared again; and thereupon he made an opening between the planks of the ship, and seeing that it rested on a certain mountain, he came out with his wife, and his daughter, and his pilot; and having worshipped the earth, and raised an altar, and sacrificed to the gods, he and those who went out with him disappeared. They who were left behind in the ship, finding Xifuthrus, and the persons that accompanied him, did not return, went out themselves to seek him, calling him aloud by his name: but Xifuthrus was no more seen by them; only a voice came out of the air, which enjoined them, as their duty was, to be religious; and informed them, that, on account of his own piety, he was gone to dwell with the gods; and that his wife, and daughter, and pilot, were partakers of the same honour. It also directed them to return to Babylon, and that, as the fates had ordained, they should take the writings from Sippara, and communicate them to mankind; and told them, that the place where they were was the country of Armenia. When they heard this, they offered sacrifice to the gods, and unanimously went to Babylon; and when they came thither, they dug up the writings at Sippara, built many cities, raised temples, and rebuilt Babylon again.

The Egyptians, who would give place to no nation in point of antiquity, have also a series of kings, who, as is pretended, reigned in Egypt before the flood; and, to be even with the Chaldeans, began their account the same year that theirs does according to Berofus.

There was an ancient chronicle extant among the Egyptians, not many centuries ago, which contained 30 dynasties of princes who ruled in that country, by a series of 113 generations, through an immense space of 36,525 years, during which Egypt was successively governed by three different races; of whom the first were the Auritæ, the second the Mistræ, and the third the Egyptians.

But this extravagant number of years, Manetho (to whose remains we must chiefly have recourse for the ancient Egyptian history) has not adopted; however, in other respects he is supposed to have been led into errors in chronology by this old chronicle, which yet seems to have been a composition since Manetho's time.

The account given by Berofus is manifestly taken from the writings of Moses; but we have another account of the first ages of mankind, in which no mention is made of the flood at all. This is contained in some fragments of a Phœnician author called *Sanchoniatho*, who is by some said to have been contemporary with Gideon, by others to have lived in the days of King David; while some boldly assert there never was such a person, and that the whole is a fiction of Peilo Biblius, in opposition to the books Josephus wrote against Apion. To gratify the reader's curiosity, however, we have subjoined an account of the first ten generations mentioned by him, which are supposed by the compilers of the universal history to correspond to the generations mentioned by Moses before the flood.

Sanchoniatho having delivered his cosmogony, or generation of the other parts of the world, begins his history of mankind with the production of the first pair of mortals, whom Philo, his translator, calls *Protogonus* and *Eon*, the latter of whom found out the food which was gathered from trees.

Their issue were called *Genus* and *Genca*, and dwelt in Phœnicia; but when the great drought came, they stretched forth their hands to heaven towards the sun; for him they thought the only God and Lord of heaven, calling him *Beßjamen*, which in Phœnician is, *Lord of heaven*; and in Greek, *Zeus*.

Afterwards from *Genus*, the son of *Protogonus* and *Eon*, other mortal issue was begotten, whose names were *Phos*, *Pur*, and *Phlox*; that is, *Light*, *Fire*, and *Flame*. These found out the way of generating fire, by the rubbing of pieces of wood against each other, and taught men the use thereof. These begot sons of vast bulk and height, whose names were given to the mountains on which they seized: so from them were named mount *Cassius*, and *Libanus*, *Anti-libanus*, and *Brathys*.

Of these last were begotten *Memrumus*, and *Hypsuranius*, but they were so named by their mothers, the women of those times, who without shame lay with any man they could light upon. *Hypsuranius* inhabited Tyre, and he invented the making of huts of reeds and rushes, and the papyrus. He also fell into enmity with his brother *Ufous*, who first invented a covering for his body out of the skins of the wild beasts which he could catch. And when violent tempests of winds and rains came, the boughs in Tyre, being rubbed against each other, took fire, and burnt the wood there. And *Ufous*, having taken a tree, and broken off its boughs, first was so bold as to venture upon it into the sea. He also consecrated two rude stones, or pillars, to fire and wind, and he worshipped them, and poured out to them the blood of such wild beasts as had been caught in hunting. But when these were dead, those that remained consecrated to them stumps of wood and pillars, worshipping them, and kept anniversary feasts upon them.

Many years after this generation, came *Agrens* and *Halicus*, the inventors of the arts of hunting and fishing, from whom huntmen and fishermen are named.

Of these were begotten two brothers, the inventors of iron and of the forging thereof: one of these, called *Chryfor*, the same with *Hephestus*, or *Vulcan*, exercised himself in words and charms and divinations; found out the hook, bait, and fishing line, and boats slightly built, and was the first of all men that sailed. Wherefore he also was worshipped after his death for a god; and they called him *Zeus Michius*, or *Jupiter the engineer*; and some say, his brothers invented the way of making walls of brick.

Afterwards from this generation came two brothers; one of

whom was called *Technites*, or the artist; the other *Geinus Autochthon* [the home-born man of the earth]. These found out to mingle stubble, or small twigs, with the brick earth, and to dry them in the sun, and so made tiling.

By these were begotten others; of which one was called *Agrus* [field]; and the other *Agroueris*, or *Agrotas* [husbandman], who had a statue much worshipped, and a temple carried about by one or more yoke of oxen, in Phœnicia, and among those of Byblus he is eminently called the *greatest of the gods*. These found out how to make courts about men's houses, and fences, and caves or cellars. Husbandmen, and such as use dogs in hunting, derive from these; and they are also called *Aleta* and *Titans*.

Of these were begotten *Amynus* and *Magus*, who shewed men to constitute villages and flocks.

In these men's age there was one *Eliu*, which imports in Greek *Hypsilus* [the most high], and his wife was named *Beruth*, who dwelt about Byblus: and by him was begotten one *Epigeus*, or *Autochthon*, whom they afterwards called *Uranus* [heaven]; so that from him that element which is over us, by reason of its excellent beauty, is called *heaven*: and he had a sister of the same parents, called *Ge* [the earth]; and, by reason of her beauty, the earth had her name given to it.

Hypsilus, the father of these, dying in fight with wild beasts, was consecrated, and his children offered sacrifices and libations to him.—But *Uranus* taking the kingdom of his father, married his sister *Ge*, and had by her four sons; *Ilus*, who is called *Cronus* [or Saturn]; *Betylus*; *Dagon*, who is *Siton* or the god of corn; and *Atlas*: but by other wives *Uranus* had much issue.

ANTES, in architecture, are small pilasters placed at the corners of buildings.

ANTHESTERIA (*Encycl.*). This feast, celebrated by the Athenians in honour of *Bacchus*, lasted three days, the 11th, 12th, and 13th of the month; each of which had a name suited to the proper office of the day. The first day of the feast was called *πρωια*, i. e. opening of the vessels; because on this day they tapped the vessels, and tasted the wine. The second day they called *χρος*, *congrui*, the name of a measure containing the weight of ten pounds; on this they drank the wine prepared the day before. The third day they called *καλεις*, *kettles*; on this day they boiled all sorts of pulse in kettles; which however they were not allowed to taste, as being offered to *Mercury*.

ANTHONY, or *ANTONY* (Dr. Francis), a very learned physician and chemist in the latter end of the sixteenth and beginning of the seventeenth centuries. His father was an eminent goldsmith in the city of London, and had an employment of considerable value in the jewel office under the reign of Queen Elizabeth. This son of his was born April 16, 1550; and having been carefully instructed in the first rudiments of learning while at home, was, about the year 1569, sent to the university of Cambridge, where he studied with great diligence and success, and some time in the year 1574 took the degree of master of arts. It appears from his own writings, that he applied himself, for many years that he studied in that university, to the theory and practice of chemistry, with sedulous industry, and made no small progress. When he left Cambridge and came up to London, he began to publish to the world the effects of his chemical studies, and in the year 1598 sent abroad his first treatise, concerning the excellency of a nostrum drawn from gold, which he called *aurum potable*, and which led to much literary controversy; but not having taken the necessary precautions of addressing himself to the College of Physicians, for their licence, he fell under their displeasure, and in the year 1600 had various

struggles with them, and was imprisoned for non-payment of the fines imposed on him. Dr. Goodal tells us, that this learned society thought him weak and ignorant in physic, yet it seems there were other learned bodies of another opinion; since after all these censures, and being tossed about from prison to prison, he became doctor of physic in our own universities. What chiefly contributed to maintain his reputation, and thereby reflected credit on his medicine, was his unblemished character in private life. He died on the 26th of May, 1623, in the 74th year of his age. Dr. Anthony was twice married, and by his last wife, whose name was Elizabeth, he had two sons, John and Charles, both physicians. The former sold his father's *aurum potable*, and lived by it very handsomely; the latter settled in the town of Bedford, where he attained the character of a learned, honest, and industrious man in his profession.

ANTHONY (St.), was born in Egypt in 251, and inherited a large fortune, which he distributed among his neighbours and the poor, retired into solitude, founded a religious order, built many monasteries, and died anno 356. Many ridiculous stories are told of his conflicts with the devil, and of his miracles: there are seven epistles extant, attributed to him.

ANTICS, in architecture (probably a corruption of *Antiques*), figures of men and animals placed as ornaments to buildings.

ANTI-CHRIST (*Encycl.*). Father Malvenda, a Jesuit, published a large work entitled *Antichristo*, in which this subject is amply discussed. It consists of thirteen books. In the first, he relates all the opinions of the fathers with regard to Antichrist. In the second he speaks of the times when he shall appear; and shews, that all the fathers who supposed Antichrist to be near at hand, judged the world was near its period. In the third, he discourses of his origin and nation; and shews that he is to be a Jew, of the tribe of Dan: this he founds on the authority of the fathers; on the passage in Genesis xlix. 17. *Dan shall be a serpent by the way, &c.*; on that of Jeremy viii. 16. where it is said, *The armies of Dan shall devour the earth*; and on Rev. vii. where St. John, enumerating all the tribes of Israel, makes no mention of that of Dan. In the fourth and fifth books, he treats of the signs of Antichrist. In the sixth, of his reign and wars. In the seventh, of his vices. In the eighth, of his doctrine and miracles. In the ninth, of his persecutions: and in the rest, of the coming of Enoch and Elias, the conversion of the Jews, the reign of Jesus Christ, and the death of Antichrist, after he has reigned three years and an half. See also *Lowman on the Revelation*.

ANTICIRRHA (Strabo); *ANTICYRA* (Pausanias, Stephanus, Livy); a town in Phocis, on the Corinthian bay, opposite to Cirrha, lying to the west, on the same bay. Another *Anticirra*, or *Anticyra*, on the Sinus Maliacus, and near mount Oeta, where grew the best hellebore (Strabo, Stephanus); but which Pausanias ascribes to the *Anticyra* of Phocis: Hence the adage, *Naviget Anticyram* (Horace), used of a person of an unfound mind. The gentilitius name is *Anticyrenus* (Pausanias).

ANTICUS, a term used by the old anatomists, importing, that the part with which it is joined stands before some others: Thus, we meet with *ferratus anticus*, *peroneus anticus*.

ANTIGONUS (*Encycl.*), one of Alexander's commanders, conquered Eumenes, and expelled Seleucus out of Syria; who flying to Ptolemy Lagus in Egypt, a bloody war commenced betwixt him, Cassander, and Antigonus, wherein, by the help of his son Demetrius, Antigonus prevailed, and built the city Antigonis, anno Romæ 448. Afterward Cassander, Seleucus, and Lyfimachus, uniting against him, routed him,

in league with King Pyrrhus, and slew him near Epirus, 301 years before Christ.

ANTIGONUS, king of the Jews, was the son of Aristobolus. He entered into an alliance with the king of the Parthians, and besieged Jerusalem. He cut off his uncle Hircanus's ears, to incapacitate him for the high-priesthood; and put Josephus, Herod's brother, to death. At length, Herod took him and sent him to M. Anthony; who, to gratify Herod, cut off his head, and thereby extinguished the Asmoneans, who had reigned 126 years. This happened 36 years before Christ.

ANTIHECTICUM POTERI, the name of a medicine formerly much celebrated, but now laid aside.

ANTIMETER, or REFLECTING SECTOR, an instrument invented by Mr. Garrard, calculated for measuring small angles with greater accuracy than by the sextant or other instruments commonly used.

The frame of it is similar to that of Hadley's quadrant, having two radii, a limb, and braces; but with this difference, that the further radius is produced upwards of four inches beyond the centre of motion of the index; and the great speculum, or what is called the index-glass in Hadley's quadrant, being placed there is called the *upper centre*. In this instrument there is no provision for the back observation. The horizon-glass is like that in Hadley's quadrant; there are two sight-vanes, to suit two different situations of the large speculum or object-glass: these vanes are adapted to receive a small telescope. On the centre of the index, where the index-glass of Hadley's quadrant is fixed, is a brass or bell-metal femicircle, two inches in diameter, and one-eighth of an inch thick: this femicircle is screwed fast to the index, in such a manner that the axis of the index is a tangent to it. On the upper centre are two circular brass plates, which revolve concentrically, either together or separately. The under plate has a lever, or part perpendicular to the plane of the instrument, projecting downwards, a little beyond the lower centre: this lever is acted upon by the femicircular plate at the lower centre, to which it is always kept close by a spring on the other side. In the upper of the above-mentioned circular plates are two circular perforations or slits, through one of which a screw takes into the head of the instrument, and through the other a screw takes into the lower moveable plate. The large speculum is fastened to the upper plate; and by the above-mentioned screws the position of this glass may be altered. A circular plate is fixed to the lower centre by three pillars: in its centre is a nut to admit a screw, by which the plate carrying the large speculum may be fastened here occasionally.

The scale on the limb is divided into 45 equal parts or degrees, and not into half-degrees as is the case in Hadley's quadrant, by reason of the double reflection. These divisions are numbered in a retrograde order; zero being at the extremity of the further radius. Although the limb contains 45 degrees, yet the greatest angle which can be measured, the large speculum remaining fixed to the circular plate, is $10^{\circ} 18' 21'' .8$; the distance between the two centres being four inches, and the radius of the femicircle one inch. Agreeably to these dimensions, the inventor has given a table exhibiting the value of each primary division on the limb; he hath also given a more ample table, adapted to a distance between the centres of three times the radius of the femicircle, which he says, hath been found the most convenient in practice. If an angle greater than $10^{\circ} 18'$ is wanted, it may be measured by the method of *anticipation*, as the inventor calls it, which is as follows: Let the screw which fastens the two circular plates on the upper centre be made fast, and loosen the screw

which fastens the upper circular plate to the instrument: now adjust the glasses by the usual method: bring forward the index to any given division on the limb, and make it fast; also fasten the screw which was before loose, and loosen the other screw; then bring the index to zero, and proceed as before.

From the inventor we have the following directions for adjusting and using the antimeter.

"The first thing to be attended to is, to set the horizon-glass perpendicular to the plane of the instrument, which is performed as follows: Hold the instrument with its plane perpendicular to the horizon, and look over backwards into the glass and beyond it. If the limb of the instrument appears in a right line with its reflection, the glass is upright; but if it does not appear so, loosen or tighten the little screw on the foot of the glass until it be adjusted; then with the instrument, as in taking an altitude, look through the sight-vane or telescope at some distant object, with the index fixed in any intended situation; the two screws at the upper centre being loose, turn the glass about till the same object appears nearly in the same part of the horizon-glass: next hold it in a horizontal position, and adjust the object-glass or large speculum with the screws which are behind and before, on the foot of it, till the object and its reflection are seen in the same horizontal line. Lastly, with the instrument upright, turn the tangent-screw belonging to the horizon-glass at the back of the instrument, until there be a perfect coincidence of the object and its reflection that way, and the adjustments are complete."

ANTINOUS, the favourite of Adrian, was born at Bithynus in Bithynia. His beauty engaged the heart of Adrian in such a manner, that there never was a more boundless and extravagant passion than that of this emperor toward this youth. After his death, the emperor ordered divine honours to be paid him.

ANTIO, a promontory of Italy, in St. Peter's Patrimony, near which is a harbour, lately made. It takes its name from the ancient city of Antium, the ruins of which extend over a large track of land.

ANTIÖCA, or ANTIOCH, an island in the Mediterranean, near Sardinia, taken from his Sardinian majesty, by the French, in February 1193, but evacuated soon after.

ANTIOCH (*Encyel.*). This city stood on the river Orontes, about twenty miles from the place where it empties itself into the Mediterranean; being equally distant from Constantinople and Alexandria in Egypt, that is, about 700 miles from each. Seleucus Nicator called it *Antioch*, from his father's name, according to some; or from that of his son, according to others. He built sixteen other cities bearing the same name; of which one, situated in Pisidia, is probably that where the name of *Christians* was first given to the followers of Jesus Christ. But that situated on the Orontes, by far eclipsed, not only all the others of this name, but all the cities built by Seleucus. Antigonus, not long before, had founded a city in that neighbourhood, which from his own name he had called *Antigonia*, and designed it for the capital of his empire; but it was razed to the ground by Seleucus, who employed the materials in building his metropolis, and also transplanted the inhabitants thither.

The city of Antioch was afterwards known by the name of *Tetrapolis*, being divided as it were into four cities, each of them being surrounded with its proper wall, besides a common one which inclosed them all. The first of these cities was built by Seleucus Nicator, as already mentioned; the second by those who flocked thither on its being made the capital of the Syro-Macedonian empire; the third by Seleucus Callinicus; and the fourth by Antiochus Epiphanes.—About four

or five miles distant, stood a place called *Daphne*, which was nevertheless reckoned a suburb of Antioch. Here Seleucus planted a grove, and in the middle of it built a temple which he consecrated to Apollo and Diana, making the whole an asylum. To this place the inhabitants of Antioch resorted for their pleasures and diversions; whereby it became at last so infamous, that, "to live after the manner of *Daphne*," was used as a proverb to express the most voluptuous and dissolute way of living. Here Lucius Verus, the colleague of M. Aurelius, chose to take up his residence, instead of marching against the Parthians; while his general Cassius forbade by proclamation any of his soldiers to enter or even go near the place. In short, so remarkable was *Daphne* of old, that the metropolis itself was distinguished by it, and called *Antioch near Daphne*.

Though Antioch continued to be, as Pliny calls it, the queen of the East, for near 600 years; yet scarce any city mentioned in history hath undergone such calamities, both from the attacks of its enemies, and its being naturally subjected to earthquakes.—The first disaster, mentioned in history, which befel the Antiochians, happened about 145 years before Christ: Being at that time very much disaffected to the person and government of Demetrius their king, they were continually raising tumults and seditions; inasmuch that he found himself at last obliged to solicit assistance from the Jews; and was furnished by Jonathan, one of the Maccabees, with 3000 men; by which reinforcement believing himself sufficiently strong to reduce the mutineers by force, he ordered them immediately to deliver up their arms. This unexpected order caused a great uproar in the city. The inhabitants ran to arms, and invested the king's palace, to the number of 120,000, with a design to put him to death. All the Jews hastened to his relief, fell upon the rebels, killed 100,000 of them, and set fire to the city. On the destruction of the Syrian empire by the Romans, Antioch submitted to them as well as the other cities of that kingdom, and continued for a long time under their dominion. About the year 115, in the reign of the emperor Trajan, it was almost entirely ruined by one of the most dreadful earthquakes mentioned in history. Trajan himself happened to be there at that time, being returned from an expedition against the Parthians; so that the city was then full of troops, and strangers come from all quarters either out of curiosity or upon business and embassies: the calamity was by this means felt almost in every province of the Roman empire. The earthquake was preceded by violent claps of thunder, unusual winds, and a dreadful noise under ground. The shock was so terrible, that great numbers of houses were overturned, and others tossed to and fro like a ship at sea. Those who happened to be in their houses were for the most part buried under their ruins: those who were walking in the streets, or in the squares, were, by the violence of the shock, dashed against each other, and most of them either killed or dangerously wounded.—This earthquake continued, with small intermission, for many days and nights; so that vast numbers perished. The most violent shock, according to the Acts of St. Ignatius, was on a Sunday, December 23. By this Trajan was much hurt, but escaped through a window. Dio Cassius pretends, that he was taken out of the window by one who exceeded the human size in tallness. The same historian adds, that mount Liban, which stood at a small distance from the city, bowed with its head and threatened to fall down upon it; that other mountains fell; that new rivers appeared; and others, that had flowed before, forsook their course and vanished. When the earthquake ceased, a woman was heard crying under the ruins; which being immediately removed, she was found, with a living child in her arms. Search was

made for others; but none was found alive, except one child, which continued sucking its dead mother.

No doubt, Trajan, who was an eye-witness of this terrible calamity, would contribute largely towards the re-establishment of Antioch in its ancient splendor. Its good fortune, however, did not continue long; for in 155, it was almost entirely burnt by accidental fire; when it was again restored by Antoninus Pius. In 176 or 177, the inhabitants having sided with Cassius, the above-mentioned Roman general, who had revolted from M. Aurelius, that emperor published a severe edict against them, deprived them of all their privileges, suppressed their public assemblies, and took from them the shows and spectacles to which they were greatly addicted; but his anger being soon appeased, he restored them to their former condition, and even condescended to visit their city. In 194, having sided with Niger against Severus, the latter deprived them of all their privileges, and subjected Antioch as a mere village to Laodicea; but, however, pardoned them the next year, at the entreaties of his eldest son, then a child.

When the power of the Roman empire began to decline, Antioch became the bone of contention between them and the eastern nations; and, accordingly, on the breaking-out of a Persian war, it was almost always sure to suffer. In 242 it was taken and plundered by Sapor; and, though he was defeated by Gordian, it underwent the same misfortune in the time of Valerian, about eighteen years after; and after the defeat and captivity of Valerian, being taken by the Persian monarch a third time, he not only plundered it, but levelled all the public buildings with the ground. The Persians, however, being soon driven out, this unfortunate city continued free from any remarkable calamity till about the time of the division of the Roman empire by Constantine in 331. It was then afflicted with so grievous a famine, that a bushel of wheat was sold for 400 pieces of silver. During this grievous distress, Constantine sent to the bishop 30,000 bushels of corn; besides an incredible quantity of all kinds of provisions, to be distributed among the ecclesiastics, widows, orphans, &c. In the year 347, Constantine II. caused a harbour to be made at Seleucia, for the convenience of Antioch. This was effected at an immense expence, the mouth of the Orontes, where the port was made, being full of sands and rocks. When the emperor Julian set out on his expedition against the Persians, he made a long stay at Antioch; during which time, many of the Roman provinces were afflicted with a famine, but which raged more violently at Antioch than in other places. The ecclesiastic writers of those times say, that this famine followed Julian from place to place; and as he continued longer at Antioch than any other city, it raged more violently there than any-where else. To remedy this evil, Julian fixed the prices of corn, by which means the famine was greatly increased, the merchants conveying their corn privately to other places, so that the metropolis was reduced to a most deplorable situation. In 381, in the reign of Theodosius the Great, Antioch was again visited by a famine, accompanied by a grievous plague. The latter soon ceased; but the famine still continuing, the bishop, Libanius, applied to Icarus, count of the East, requesting him by some means or other to relieve the poor, who had fled from all parts to the metropolis, and were daily perishing in great numbers; but to this Icarus gave no other answer, than that they were abhorred and justly punished by the gods. This inhuman answer raised great disturbances; which, however, were terminated without bloodshed. In 387, Theodosius finding his exchequer quite drained, and being obliged to be at an extraordinary expence in celebrating the fifth year of the reign of his son Arcadius, and the tenth of his own, an extraordinary tax was laid upon

all the people in the empire. Most of the cities submitted willingly to this: but the people of Antioch, complaining of it as an unreasonable oppression, crowded to the house of Flavianus their bishop, as soon as the edict was published, to implore his protection. Being unable to find him, they returned to the forum; and would have torn the governor in pieces, had not the officers who attended him kept back with great difficulty the enraged multitude, till he made his escape. Upon this, they broke some of the emperor's statues, and dragged others through the city, uttering the most injurious and abusive expressions against him and his whole family. They were, however, dispersed by a body of archers, who, by wounding only two of the rabble, struck terror into all the rest. The governor proceeded against the offenders with the utmost cruelty; exposing some to wild beasts in the theatre, and burning others alive. He did not spare even the children, who had insulted the emperor's statues; and caused several persons to be executed, who had been only spectators of the disorder. In the mean time a report was spread, that a body of troops was at hand, with orders to plunder the city, and put all to the sword, without distinction of sex or age; upon which the citizens abandoned their dwellings in the utmost terror and confusion, retiring to the neighbouring mountains with their wives and families. As the report proved groundless, some of them returned; but the greater part, dreading the cruelty of the governor, and the displeasure of the emperor, continued in their retreats. To those who returned, St. Chrysostom preached some Homilies, which have reached our times, and are greatly admired; and which are said by St. Chrysostom himself, as well as some contemporary writers, to have had a considerable effect in reforming the lives of this licentious and dissolute people. On hearing the news of this tumult, Theodosius was so much enraged, that he commanded the city to be destroyed, and its inhabitants to be put to the sword without distinction; but this order was revoked before it could be put into execution, and he contented himself with a punishment similar to that inflicted by Severus above mentioned. He appointed judges to punish the offenders; who proceeded with such severity, and condemned such numbers, that the city was thrown into the utmost consternation. On this occasion, St. Chrysostom and the hermits, who were very numerous in the neighbourhood, exerted all their eloquence in behalf of the unhappy people, and obtained a respite for those who had been condemned. They next proceeded to draw up a memorial to the emperor in favour of the citizens in general; and being joined by Flavianus, at last obtained a general pardon, and had the city restored to all its former privileges.

In the year 458 Antioch was almost entirely ruined by an earthquake, which happened on the 14th of September; scarce a single house being left standing in the most beautiful quarter of the city. The like misfortune it experienced in 525, during the reign of the Emperor Justin; and fifteen years after, being taken by Cosroes king of Persia, that insulting and haughty monarch gave it up to his soldiers, who put all they met to the sword. The king himself seized on all the gold and silver vessels belonging to the great church; and caused all the valuable statues, pictures, &c. to be taken down and conveyed to Persia, while his soldiers carried off every thing else. The city being thus completely plundered, Cosroes ordered his men to set fire to it; which was accordingly done so effectually, that none of the buildings even without the walls escaped. Such of the inhabitants as escaped slaughter were carried into Persia, and sold as slaves.

Notwithstanding so many and so great calamities, the city of Antioch soon recovered its wonted splendor; but in a short time underwent its usual fate, being almost entirely destroyed

by an earthquake in 587, by which 30,000 persons lost their lives. In 634 it fell into the hands of the Saracens, who kept possession of it till the year 853, when it was surprised by one Burtzas, and again annexed to the Roman empire. The Romans continued masters of it for some time, till the civil dissensions in the empire gave the Turks an opportunity of seizing upon it as well as the whole kingdom of Syria. From them it was again taken by the Crusaders in 1098. In 1262 it was taken by Bibaris sultan of Egypt, who put a final period to its glory. It is now only a small and contemptible village, known by the name of *Antakia*; and the name of the river Orontes is changed for that of *Assi*. The walls of each quarter, as well as those which surrounded the whole, are still remaining; but as the houses are entirely destroyed, these quarters look like so many inclosed fields. Its former grandeur, however, appears in the many magnificent ruins that still remain.

ANTIOCHUS THE GREAT, king of Syria, succeeded his brother Seleucus Ceraunus, 223 years before Christ. He was defeated in a bloody battle, by Ptolemy Philopater, near Raphia, 217 years before Christ. Some time after, he took Sardes; attacked the Medes and Parthians; conquered Judea, Phœnicia, and Cœlo Syria; and formed the design of reducing Smyrna, Lampacus, and other cities of Asiatic Greece: These cities implored the assistance of the Romans; who sent ambassadors to oblige him to restore to Ptolemy Philadelphus the countries he had taken from him, and to suffer the free cities of Greece to enjoy the blessings of peace. Antiochus being enraged, at the solicitation of Hannibal declared war against the Romans; but was defeated by Acilius Glabrio, and lost a great battle against Scipio Asiaticus, near Magnesia: in short, the Romans granted him a peace on very disgraceful conditions. At last, finding his exchequer low, and going to recruit it with the plunder of the temple of Belus, he was killed by the rabble, who came to save the sacred treasure, about 187 years before Christ; and was succeeded by Seleucus Philopater.

ANTIOCHUS EPIPHANES, or the *Illustrious*, usurped the throne of Syria from his nephew Demetrius, 175 years before Christ, and attempted to take Egypt from his nephew Ptolemy Philometer; but was repulsed. He deposed Onias, the high-priest of the Jews; and besieged and took Jerusalem, 170 years before Christ, when he prophaned the temple of God, offered sacrifices in it to Jupiter Olympius, carried away the sacred vessels, and committed the most horrid acts of cruelty. At his return to Antioch, 167 years before Christ, he put to death the seven brothers, the Maccabees, with old Eleazar. However, Matthias and Judas Maccabeus defeated his armies; and he himself was routed by the Elymeans, and obliged to return to Babylon, where he was seized with a dreadful disease, and died in the greatest inward agonies, 164 years before the Christian æra. He was succeeded by his son—

ANTIOCHUS EUPATOR, king of Syria, 164 years before Christ. By the advice of Lyfias his son-in-law, he entered Judea, with an army of 80,000 foot, and eighty elephants; but was defeated by Judas Maccabeus. He was killed by Demetrius his cousin-german, 162 years before the Christian æra.

ANTIOPE (*Encycl.*), in fabulous history. Another Antiope was queen of the Amazons; and, with the assistance of the Scythians, invaded the Athenians; but was vanquished by Theseus.

ANTIPAROS (*Encycl.*). This island, according to Heracles Ponticus as quoted by Stephanus, was first peopled by a Phœnician colony from Sidon.—According to Mr. Tournefort's account, it is about sixteen miles in circumference; produces a little wine and cotton, with as much corn as is ne-

cessary for the maintenance of sixty or seventy families, who live together in a village at the end of the island, and are mostly Maltese and French corsairs.

This island is remarkable for a subterraneous cavern or grotto, accounted one of the greatest natural curiosities in the world. It was discovered in the last century by one Magni an Italian traveller. The following account of it appears in the old British magazine, in a letter signed *Charles Saunders*, dated Feb. 24th, 1746-7. He says, "Its entrance lies in the side of a rock, about two miles from the sea-shore; and is a spacious and very large arch, formed of rough and craggy rocks, overhung with brambles and a great many climbing plants, that give it a gloominess which is very awful and agreeable. Our surgeon, myself, and four passengers, attended by six guides with lighted torches, entered this cavern about eight o'clock in the morning, in the middle of August last. We had not gone twenty yards in this cavity, when we lost all sight of day-light: but our guides going before us with lights, we entered into a low narrow kind of alley, surrounded every way with stone all glittering like diamonds by the light of our torches; the whole being covered and lined throughout with small crystals, which gave a thousand various colours by their different reflections. This alley grows lower and narrower as one goes on, till at length one can scarce get along it. At the end of this passage, we were each of us presented with a rope to tie about our middles; which when we had done, our guides led us to the brink of a most horrible precipice. The descent into this was quite steep, and the place all dark and gloomy.

We could see nothing, in short, but some of our guides with torches in a miserable dark place, at a vast distance below us. The dreadful depth of this place, and the horror of the descent through a miserable darkness into it, made me look back to the lane of diamonds, if I may so call it, through which we had just passed; and I could not but think I was leaving heaven to descend into the infernal regions. The hope of something fine at my journey's end, tempted me, however, to let myself down. After about two minutes dangling in this posture, not without much pain as well as terror, I found myself safe, however, at the bottom; and our friends all soon followed the example. When we had congratulated here with one another on our safe descent; I was inquiring where the grotto, as they called it, was. Our guides, shaking their heads, told us, we had a great way to that yet; and led us forward about thirty yards under a roof of ragged rocks, in a scene of terrible darkness, and at a vast depth from the surface of the earth, to the brink of another precipice much deeper and more terrible than the former. Two of the guides went down here with their torches first; and by their light we could see, that this passage was not so perpendicular indeed as the other, but lay in a very steep slant, with a very slippery rock for the bottom; vast pieces of rough rugged rocks jutting out in many places on the right hand, in the descent, and forcing the guides sometimes to climb over, sometimes to creep under them, and sometimes go round them; and on the left, a thousand dark caverns, like so many monstrous wells, ready, if a foot should slip, to swallow them up for ever. We stood on the edge to see these people with their lights descend before us; and were amazed and terrified to see them continue descending till they seemed at a monstrous and most frightful depth. When they were at the bottom, however, they halloed to us: and we, trembling and quaking, began to descend after them. We had not gone thirty feet down, when we came to a place where the rock was perfectly perpendicular; and a vast cavern seemed to open its mouth to swallow us up on one side, while a wall of rugged rock threatened to tear us to pieces on the other. I was quite disheartened at this terrible prospect, and declared I would go back: but still our

guides assured us there was no danger; and the rest of the company resolving to see the bottom now they were come so far, I would not leave them: so on we went to a corner where there was placed an old slippery and rotten ladder, which hung down close to the rock; and down this, one after another, we at length all descended. When we had got to the bottom of this we found ourselves at the entrance of another passage, which was terrible enough indeed; but in this there was not wanting something of beauty. This was a wide and gradual descent; at the entrance of which one of our guides feasted himself on his breech, and began to slide down, telling us we must do the same. We could discover, by the light of his torch, that this passage was one of the noblest vaults in the world. It is about nine feet high, seven wide, and has for its bottom a fine green glossy marble. The walls and arch of the roof of this, being as smooth and even in most places as if wrought by art, and made of a fine glittering red and white granite, supported here and there with columns of a deep blood-red shining porphyry, made, with the reflection of the lights, an appearance not to be conceived. This passage is at least forty yards long; and of so steep a descent, that one has enough to do, when seated on one's breech, not to descend too quickly. Our guides that remained with us, could here keep on each side of us: and what with the prodigious grandeur and beauty of the place, our easy travelling through it, and the diversion of our now and then running over one another whether we would or not; this was much the pleasantest part of our journey. When we had entered this passage, I imagined we should at the bottom join the two guides we had first sent down; but alas! when we were got there, we found ourselves only at the mouth of another precipice, down which we descended by a second ladder not much better than the former. I could have admired this place alone, would my terror have suffered me; but the dread of falling, kept all my thoughts employed during my descent. I could not but observe, however, as my companions were coming down after me, that the wall, if I may so call it, which the ladder hung by, was one mass of blood-red marble, covered with white sprigs of rock crystal as long as my finger, and making, with the glow of the purple from behind, one continued immense sheet of amethysts. From the foot of this ladder we slid on our bellies through another shallow vault of polished green and white marble, about twenty feet; and at the bottom of this joined our guides. Here we all got together once again; and drank some rum, to give us courage before we proceeded any farther. After this short refreshment, we proceeded by a strait, but somewhat slanting passage, of a rough, hard, and somewhat coarse stone, full of a thousand strange figures of snakes rolled round, and looking as if alive; but in reality as cold and hard as the rest of the stone, and nothing but some of the stone itself in that shape. We walked pretty easily along this descent for near 200 yards; where we saw two pillars seemingly made to support the roof from falling in: but in reality it was no such thing; for they were very brittle, and made of a fine glittering yellow marble. When we had passed these about twenty yards, we found ourselves at the brink of another very terrible precipice: but this our guides assured was the last; and there being a very good ladder to get down by, we readily ventured. At the bottom of this steep wall, as I may call it, we found ourselves for some way upon plain even ground; but, after about forty yards walking, were presented by our guides with ropes again; which we fastened about our middles, though not to be swung down by, but only for fear of accidents, as there are lakes and deep waters all the way from hence on the left hand. With this caution, however, we entered the last alley; and horrible work it was indeed to get through it. All was perfectly

Horrid and dismal here. The sides and roof of the passage were all of black stone; and the rocks in our way were in some places so steep, that we were forced to lie along on our backs, and slide down; and so rough, that they cut our clothes, and bruised us miserably in passing. Over our heads, there were nothing but ragged black rocks, some of them looking as if they were every moment ready to fall in upon us: and, on our left hands, the light of our guides' torches shewed us continually the surface of dirty and miserable looking lakes of water. If I had heartily repented of my expedition often before, here I assure you I was all in a cold sweat, and fairly gave myself over for lost; heartily cursing all the travellers that had written of this place, that they had described it so as to tempt people to see it, and never told us of the horrors that lay in the way. In the midst of all these reflections, and in the most dismal part of all the cavern, on a sudden we had lost four of our six guides. What was my terror on this event! The place was a thousand times darker and more terrible for want of their torches; and I expected no other, but every moment to follow them into some of these lakes, into which I doubted not but they were fallen. The remaining two guides said all they could, indeed, to cheer us up; and told us we should see the other four again soon, and that we were near the end of our journey. I don't know what effect this might have upon the rest of my companions; but I assure you I believed no part of the speech but the last, which I expected every moment to find fulfilled in some pond or precipice. Our passage was by this time become very narrow, and we were obliged to crawl on all-fours over rugged rocks; when in an instant, and in the midst of these melancholy apprehensions, I heard a little hissing noise, and saw myself in utter, and not to be described, darkness. Our guides called indeed cheerfully to us, and told us that they had accidentally dropped their torches into a puddle of water, but we should soon come to the rest of them, and they would light them again; and told us there was no danger, and we had nothing to do but to crawl forward. I cannot say but I was amazed at the courage of these people; who were in a place where, I thought, none of them had already perished, and from whence we could none of us ever escape; and determined to lie down and die where I was. Words cannot describe the horror, or the extreme darkness, of the place. One of our guides, however, perceiving that I did not advance, came up to me, and clapping his hand firmly over my eyes, dragged me a few paces forward. While I was in this strange condition, expecting every moment death in a thousand shapes, and trembling to think what the guide meant by this rough proceeding, he lifted me at once over a great stone, set me down on my feet, and took his hand from before my eyes. What words can describe at that instant my astonishment and transport! Instead of darkness and despair, all was splendor and magnificence before me; our guides all appeared about us; the place was illuminated by fifty torches, and the guides all welcomed me into the grotto of Antiparos. The four that were first missing, I now found, had only given us the slip, to get the torches lighted up before we came; and the other two had put out their lights on purpose, to make us enter out of utter darkness into this pavilion of splendor and glory. I am now come to the proper business of this letter; which was, to describe this grotto. But I must confess to you that words cannot do it. The amazing beauties of the place, the eye that sees them only can conceive. The best accounts I can give you, however, pray accept of.

The people told us, the depth of this place was 485 yards. The grotto, in which we then were, is a cavern of 120 yards wide, and 113 long, and seems about sixty yards high in most

places. These measures differ something from the accounts travellers in general give us; but you may depend upon them as exact, for I took them with my own hand. Imagine then with yourself, an immense arch like this, almost all over lined with fine and bright crystallized white marble, and illuminated with fifty-six torches; and you will then have some faint idea of the place I had the pleasure to spend three hours in. This, however, is but a faint description of its beauties. The roof, which is a fine vaulted arch, is hung all over with icicles of white shining marble, some of them ten feet long, and as thick as one's middle at the root: and among these there hang 1000 festoons of leaves and flowers of the same substance; but so very glittering, that there is no bearing to look up at them. The sides of the arch are planted with seeming trees of the same white marble, rising in rows one above another, and often inclosing the points of the icicles. From these trees there also hang festoons, tied as it were from one to another in vast quantities; and in some places among them there seem rivers of marble winding through them in a thousand meanders. All these things are only made, in a long course of years, from the dropping of water, but really look like trees and brooks turned to marble. The floor we trod upon was rough and uneven, with crystals of all colours growing irregularly out of it, red, blue, green, and some of a pale yellow. These were all shaped like pieces of salt-petre; but so hard, that they cut our shoes: among these, here and there, are placed icicles of the same shining white marble with those above, and seeming to have fallen down from the roof and fixed there; only the thick end of these is to the floor. To all these our guides had tied torches, two or three to a pillar, and kept continually beating them to make them burn bright. You may guess what a glare of splendor and beauty must be the effect of this illumination, among such rocks and columns of marble. All round the lower part of the sides of the arch are a thousand white masses of marble, in the shape of oak-trees. Mr. Tournefort compares them to cauliflower, but I should as soon compare them to toad-stools. In short, they are large enough to inclose, in many places, a piece of ground big enough for a bed-chamber. One of these chambers has a fair white curtain, whiter than satin, of the same marble, stretched all over the front of it. In this we all cut our names, and the date of the year, as a great many people have done before us. In a course of years afterwards, the stone blisters out like this white marble over the letters. Mr. Tournefort thinks the rock grows like oaks or apple-trees for this reason; but I remember I saw some of the finest cockle and muscle shells in the rock thereabout that ever I saw in my life. I wonder whether he thinks they grow there too. Besides, if this rock grows so fast, the cavern ought to be all grown up this time; and yet, according to his measures and mine, it seems on the other hand to be grown larger since. Indeed, all that I can gather from his account of this glorious place is, that he had drank a bottle or two too much before he went down into it."

ANTIPATER, the disciple of Aristotle, and one of Alexander the Great's generals, was a man of great abilities, and a lover of the sciences; but was accused of poisoning Alexander. He subdued the revolted Thracians, relieved Megalopolis, and overthrew the Spartans there. He died 321 years before the Christian æra.

ANTIPATER, an Idumean of illustrious birth, and possessed of great riches and abilities, taking advantage of the confusion into which the two brothers Hyrcanus and Aristobulus plunged Judea by their contest for the office of high-priest, took such measures as to gain Hyrcanus that office, and under his government to obtain the absolute direction of all affairs;

while his great abilities and application to business made him so considerable, that he was honoured as much as if he had been invested with the royal authority in form: but he was at last poisoned by a Jew, named Malachus, forty-three years before the Christian era. He left among his other children, the famous Herod king of the Jews.

ANTIPATER (Cælius), a Roman historian, who wrote a history of the Punic war, much valued by Cicero. The emperor Adrian preferred him to Sallust.

ANTIPATER of Sydon, a Stoic philosopher, and likewise a poet, commended by Cicero and Seneca: he flourished about the 17th Olympiad. We have several of his epigrams in the *Anthologia*.

ANTIPATHY (*Encycl.*), in physiology, is, properly speaking, a natural horror and detestation, an insuperable hatred, an involuntary aversion, which a sensitive being feels for some other object, whatever it is, though the person who feels this abhorrence is entirely ignorant of its cause, and can by no means account for it. Such is the invincible aversion of particular persons against cats, mice, spiders, &c.; a prepossession which is sometimes so violent, as to make them faint at the sight of these animals. Of the most common and natural antipathies the ancient naturalists, the schoolmen, and the vulgar, form so many legends; and relate them as certain facts.

To explore the matter without prejudice, we shall find it necessary to abstract from the subjects of this disquisition, 1. All such antipathies as are not ascertained; as that which is supposed to be felt by hens at the sound of an harp whose strings are made of a fox's bowels, between the salamander and tortoise, and between the weasel and the toad. Nothing is less confirmed, or rather nothing is more false, than these facts, with which vulgar credulity and astonishment are amused and actuated: and though some of these antipathies should be ascertained, this would be no proof that the animals which feel them are not acquainted with their causes, according to their mode and proportion of knowledge; in which case, it will be no longer the antipathy which we have defined.

2. We must abstract those antipathies which can be extinguished or resumed at pleasure; these fictitious aversions, which certain persons feel, or pretend to feel, with affected airs, that they may appear more precise and finical, or singularly and prodigiously elegant; that they may seem to have qualities so exquisitely fine, as require to be treated with peculiar delicacy. One who bestows any attention on the subject, would be astonished to find how many of these chimerical aversions there are, which are pretended, and passed upon the world by those who affect them as natural and unconquerable.

3. When we abstract those aversions the causes of which are known and evident; we shall be surprised, after our deduction of these pretended antipathies from the general sum, how small, how inconsiderable, is the quantity of those which are conformable to our definition. Will any one pretend to call by the name of *antipathy*, those real, innate, and incontestable aversions which prevail between sheep and wolves? Their cause is obvious: the wolf devours the sheep, and subsists upon his victims; and every animal naturally flies with terror from pain or destruction: sheep ought therefore to regard wolves with horror, which for their nutrition tear and mangle the unresisting prey. From principles similar to this, arises that aversion which numbers of people feel against serpents; against small animals, such as reptiles in general, and the greatest number of insects. During the credulous and susceptible period of infancy, pains have been taken to impress on our minds the frightful idea that they are venom-

ous; that their bite is mortal; that their sting is dangerous, productive of tormenting inflammations or tumours, and sometimes fatal: they have been represented to us as ugly and forbidding; as being, for that reason, pernicious to those who touch them; as poisoning those who have the misfortune to swallow them. These horrible prepossessions are industriously inculcated from our infancy; they are sometimes attended and supported by dismal tales, which are greedily imbibed, and indelibly engraven on our memories. It has been taught us both by precept and example, when others at their approach have assumed in our view the appearance of detestation and even of terror, that we should fly from them, that we should not touch them. Is it then wonderful (if our false impressions as to this subject have been corrected neither by future reflections nor experiments) that we should entertain, during our whole lives, an aversion from these objects, even when we have forgot the admonitions, the conversations, and examples, which have taught us to believe and apprehend them as noxious beings? and in proportion to the sensibility of our frame, in proportion as our nerves are irritable, our emotions at the sight of what we fear will be more violent, especially if they anticipate our expectation, and seize us unprepared, though our ideas of what we have to fear from them are the most confused and indistinct imaginable. To explain these facts, is it necessary to fly to the exploded subterfuge of occult qualities inherent in bodies, to latent relations productive of antipathies, of which no person could ever form an idea?

It is often sufficient to influence a person who had formerly no aversion for an object, if he lives with some other associate who gives himself up to such capricious panics; the habit is insensibly contracted to be agitated with disagreeable emotions at the presence of an object which had been formerly beheld with indifference and cold blood. I was acquainted (says the author of the article *Antipathy* in the French *Encyclopédie*) with a person of a very sound understanding, whom thunder and lightning by no means terrified; nay, to whom the spectacle appeared magnificent and the sound majestic; yet to a mind thus seemingly fortified against the infectious terror, no more was necessary than spending the summer with a friend in whom the appearance of lightning excited the strongest emotions, and whom the remotest clap of thunder affected with extravagant paroxysms, to become timid in excess at the approach of thunder, nor could he ever afterwards surmount the fear which it inspired.—The frightful stories of dogs and cats, which have killed their masters, or which have given them mortal wounds, are more than sufficient to inspire a timorous person with aversion against these animals; and if the olfactory nerves of such a person be delicate, he will immediately discover the smell of them in a chamber: disturbed by the apprehension which these effluvia excite in his mind, he gives himself up to the most violent uneasiness, which is tranquillized when he is assured that the animal is no longer in the room. If by chance, in the search which is made to calm the uneasiness of this timorous person, one of these creatures should at last be discovered, every one presently exclaims, *A miracle!* and admits the reality of *antipathies* into his creed; whilst all this is nothing but the effect of a childish fear, founded on certain confused and exaggerated ideas of the hazard which one may run with these animals. The antipathy which some people entertain against eels, though they are eaten by others with pleasure, arises from nothing but the fear of serpents, to which these fishes are in some degree similar. There are likewise other antipathies which do not originate in the imagination, but arise from some natural incongruity; such as we often remark in children, for particular kinds of victuals,

with which their taste is not offended, but which their stomachs cannot digest, and which are therefore disgorged as soon as swallowed.

To what then are those antipathies, of which we have heard so much, reducible? Either to legendary tales; or to aversions against objects which we believe dangerous; or to a childish terror of imaginary perils; or to a dislike, of which the cause is disguised; or to a ridiculous affectation of delicacy; or to an infirmity of the stomach; in a word, to a real or pretended reluctance for things which are either invested, or supposed to be invested, with qualities hurtful to us. Too much care cannot be taken in preventing, or regulating, the antipathies of children; in familiarizing them with objects of every kind; in discovering to them, without emotion, such as are dangerous; in teaching them the means of defence and security, or the methods of escaping their noxious influence; and, when the rational powers are matured by age, in reflecting on the nature of those objects which we fear, in ascertaining what has been told concerning their qualities, or in vigorously operating upon our own dispositions to overcome those vain repugnances which we may feel. See SYMPATHY, which is the opposite of *Antipathy*.

ANTIPATHY, in ethics, hatred, aversion, repugnance. *Hatred* is entertained against persons; *aversion*, and *antipathy*, indiscriminately against persons or things; and *repugnance*, against actions alone. *Hatred* is more voluntary than *aversion*, *antipathy*, or *repugnance*. These last have greater affinity with the animal constitution. The causes of ANTIPATHY are less known than those of *aversion*. *Repugnance* is less permanent than either the one or the other.—We hate a vicious character, we feel *aversion* to its exertions: we are affected with ANTIPATHY for certain persons at first sight; there are some affairs which we transact with *repugnance*.—*Hatred* calumniates; *aversion* keeps us at a distance from certain persons; ANTIPATHY makes us detect them; *repugnance* hinders us from imitating them.

ANTIPHLOGISTIC, in chemistry, a term heretofore employed to denote such a state of any body or substance as stood opposed to, or contraindicated the existence of phlogiston in it. See PHLOGISTON. This term is rejected by the new chemists, and bids fair to be exploded with the doctrine which gave it birth. It is often used in medicine merely to denote such a course of remedies as tend to counteract inflammation and heat in the system, or even in a part of the body. Thus we read of *antiphlogistic ointments* which were used in trials by fire, &c. See *Du Cange, gloss.* tom. iii. col. 397. *Henry's Britain*, vol. iii. p. 437.

ANTIRRHUM, a promontory at the mouth of the Corinthian bay, where it is scarce a mile broad, and where it separates the Ætolians from the Peloponnesus; so called from its opposite situation to Rhium in Peloponnesus (Pliny): both are now called the *Dardanelles of Lepanto*.

ANTISTHENES, a Greek philosopher, and founder of the Cynics. He was born at Athens, and passed the former part of his life as a soldier. Having afterwards been an attendant at the lectures of Socrates, he was principally charmed with those exhortations of that great philosopher, which persuaded to frugality, to temperance, and to moderation: these Antisthenes was resolved to practise by carrying every precept to its utmost extent. Permitting therefore his beard to grow, he went about the streets in a thread-bare coat, scarcely to be distinguished from a common beggar. He prided himself upon the most rigid virtue, and thought himself obliged to attack the vicious wherever he found them. This gave him some reputation in the city; but it may be supposed, that, in a place so very luxurious as Athens, he had more enemies

than disciples. His philosophy consisted rather in action than speculation: it was therefore his constant maxim, That to be virtuous was to be happy, and that all virtue consisted in action; that the wife man should live for himself, contented in all situations, and happy alone in the consciousness of his own virtue. He acknowledged nothing to be good but what was honourable; and asserted, that virtue might be acquired by practice. Laertius tells us there were 10 tomes of his works; and he has given us many of his apophthegms.

ANTIUM (Livy), *Antia*, Dionysius Halicarnassæus; a city of the Volsci (Livy); situated on the Tuscan sea, yet without a harbour, because they had a neighbouring hamlet, called *Ceno*, with a harbour (Strabo). The Romans gained their first reputation in naval affairs against the Antiates; part of whose ships they conveyed into the arsenal of Rome, and part they burnt, and with their beaks, or rostra, adorned the pulpit erected in the Forum, thence called *Rostra* (Livy, Florus). Several colonies were successively sent thither (Livy, Tacitus). The epithet is *Antianus*, *Antienfis*, *Antiatinus*, and *Antias-atis*; the people *Antiates*. Here stood a famous temple of Fortune (Horace). Addison says, there were two Fortune worshipped at Antium.—The birth-place of Caligula and Nero (Sueton): but, according to Pliny, the Ambiatinus Vicus was the birth-place of Caligula. It is now extinct, but the name still remains in the *Capo d'Anzo*.

ANTONIA (St.), a town of France, in Rouergue, in the diocese of Rhodéz, whose fortifications are demolished. It is seated on the river Aveiron. E. long. o. 55. N. lat. 44. 10.

ANTONIANO (Silvio), a man of great learning, who raised himself from a low condition by his merit, was born at Rome in the year 1540. When he was but ten years old, he could make verses upon any subject proposed to him; and these so excellent, though pronounced extempore, that even a man of genius could not compose the like without a good deal of time and pains. The duke of Ferrara coming to Rome, to congratulate Marcellus II. upon his being raised to the pontificate, was so charmed with the genius of Antoniano, that he carried him to Ferrara, where he provided able masters to instruct him in all the sciences. From thence he was sent for by Pius IV. who made him professor of the belles-lettres in the college at Rome. Antoniano filled this place with so much reputation, that, on the day when he began to explain the oration *pro Marco Marcello*, he had a vast crowd of auditors, and among these no less than twenty-five cardinals. He was afterwards chosen rector of the college; and after the death of Pius IV. being seized with a spirit of devotion, he joined himself to Philip Neri, and accepted the office of secretary to the sacred college, offered him by Pius V. which he executed for twenty-five years with the reputation of an honest and able man. He refused a bishopric which Gregory XIV. would have given him; but he accepted the office of secretary to the briefs, offered him by Clement VIII. who made him his chamberlain, and afterwards a cardinal. Antoniano killed himself by too great fatigue: for he spent whole nights in writing letters; which brought on a sickness, whereof he died, in the sixty-third year of his age. He wrote with such ease and fluency, that he never almost made any blot or erasure; and it is said of him, that he preserved himself from sexual indulgences during his whole life.

ANTONIDES, VANDER GOES (Joha), an eminent Dutch poet, born at Goes, in Zealand, the 3d of April, 1647. His parents were Anabaptists, people of good character, but of low circumstances. They went to live at Amsterdam when Antonides was about four years old; and, in the ninth year

of his age, he began his studies, under the direction of Hadrian Junius and James Cocceius. Antonides took great pleasure in reading the Latin poets, and carefully compared them with Grotius, Heinsius, &c. By this means he acquired a taste for poetry, and enriched his mind with noble ideas. He first attempted to translate some pieces of Ovid, Horace, and other ancients; and, having formed his taste on these excellent models, he at length undertook one of the most difficult tasks in poetry, to write a tragedy: this was entitled *Brazil*, or *The Invasion of China*. Antonides, however, was so modest, as not to permit it to be published. Vondel, who was then engaged in a dramatic piece, which was taken allo from some event that happened in China, read Antonides's tragedy; and was so well pleased with it, that he declared, if the author would not print it, he would take some passages out of it, and make use of them in his own tragedy. He accordingly did so; and it was reckoned much to the honour of Antonides, to have written what might be adopted by so great a poet, as Vondel was acknowledged to be by all good judges. Upon the conclusion of the peace between Great Britain and Holland, in the year 1697, Antonides wrote a piece, entitled *Bellona a chaind*, i. e. "Bellona chained:" a very elegant poem, consisting of several hundred verses. He next wrote an ingenious heroic poem, which he entitled *The river Y* (the river on which Amsterdam is built).

Antonides's parents had bred him up an apothecary; but his remarkable genius for poetry soon gained him the esteem and friendship of several persons of distinction: and particularly of Mr. Buifero, one of the lords of the admiralty at Amsterdam, and a great lover of poetry, who sent him at his expense to pursue his studies at Leyden, where he remained till he took his degree of doctor of physic, and then his patron gave him a place in the admiralty. In 1678, Antonides married Susanna Bermans, a minister's daughter, who had also a talent for poetry. His marriage was celebrated by several eminent poets, particularly by the famous Peter Franciscus, professor of eloquence, who composed some Latin verses on the occasion. After marriage, he did not much indulge his poetic genius: and within a few years he fell into a consumption, of which he died on the 18th September, 1684, being then but thirty-seven years and a few months old. He is esteemed the most eminent Dutch poet, after Vondel. His works have been printed several times, having been collected by his father Anthony Tanfz. The last edition was printed by Nicholas Ten Hoom, at Amsterdam, in the year 1714, in quarto, under the direction of David Van Hoogstraeten, one of the masters of the Latin school of that city, who added to it also the life of the poet.

ANTONINUS's Wall (*Encycl.*). The first barrier erected by the Romans was the chain of forts made by Agricola from the frith of Forth to that of Clyde, in the year 81, to protect his conquests from the inroads of the Caledonians. The second was the vallum, or dyke, flung up by Adrian in the year 121. It terminated on the western side of the kingdom, at *Axelodunum*, or *Brugh*, on the Solway sands; and was supposed to have reached no further than *Pons Ælii*, or *Newcastle*, on the eastern. But from an inscription lately discovered, it appears to have extended as far as the wall of Severus. This rampart of Adrian's was situated much further south than Agricola's chain; the country to the north having been either, according to some authors, recovered by the native Britons after the departure of Agricola; or, according to others, voluntarily slighted by Adrian. However, this work of Adrian's did not long continue to be the extreme boundary of the Roman territories to the north in Britain. For Antoninus Pius, the adopted son and immediate successor of Adrian,

having, by his lieutenant Lollius Urbicus, recovered the country once conquered by Agricola, commanded another rampart to be erected between the friths of Forth and Clyde, in the tract where Agricola had formerly built his chain of forts. The great number of inscriptions which have been found in or near the ruins of this wall, or rampart, to the honour of Antoninus Pius, leave us no room to doubt its having been built by his direction and command. If the fragment of a Roman pillar with an inscription, now in the college library of Edinburgh, belonged to this work, as it is generally supposed to have done, it fixes the date of its execution to the third consulship of Antoninus, which was A. D. 140, only twenty years after that of Adrian, of which this seems to have been an imitation. This wall or rampart, as some imagine, reached from Caer-ridden on the frith of Forth, to Old Kirkpatrick on the Clyde; or, as others think, from Kinniel on the east, to Dunglass on the west. These different suppositions hardly make a mile of difference in the length of this work, which, from several actual mensurations, appears to have been thirty-seven English or forty Roman miles. Capitolinus, in his life of Antoninus Pius, directly affirms, that the wall which that emperor built in Britain was of turf. This in the main is unquestionably true; though it is evident (from the vestiges of it still remaining, which not very many years ago were dug up and examined for near a mile together) that the foundation was of stone. Mr. Camden also tells us, from the papers of one Mr. Anthony Pont, that the principal rampart was faced with square stone, to prevent the earth from falling into the ditch. The chief parts of this work were as follows: 1. A broad and deep ditch, whose dimensions cannot now be discovered with certainty and exactness, though Mr. Pont says it was twelve feet wide. 2. The principal wall or rampart was about twelve feet thick at the foundation, but its original height cannot now be determined. This wall was situated on the south brink of the ditch. 3. A military way on the south side of the principal wall, well paved, and raised a little above the level of the ground. This work, as well as that of Adrian, was defended by garrisons placed in forts and stations along the line of it. The number of these forts or stations, whose vestiges were visible in Mr. Pont's time, were eighteen, situated at about the distance of two miles from each other. In the intervals between the forts, there were turrets or watch-towers. But the number of these, and their distance from each other, cannot now be discovered.

It is not a little surprising, that though it is now more than 1600 years since this work was finished, and more than 1300 since it was slighted, we can yet discover, from authentic monuments, which are still remaining, by what particular bodies of Roman troops almost every part of it was executed. This discovery is made from inscriptions upon stones, which were originally built into the face of the wall, and have been found in or near its ruins, and are carefully preserved. The number of stones with inscriptions of this kind now extant, is eleven: of which six may be seen at one view in the college of Glasgow, one in the college of Aberdeen, one in the college of Edinburgh, one in the collection of Baron Clerk, one at Cochnoch-house, and one at Calder-house. From these inscriptions it appears in general, that this great work was executed by the second legion, the vexillations of the sixth legion and of the twentieth legion, and one cohort of auxiliaries. If these corps were all complete, they would make in all a body of 7800 men. Some of these inscriptions have suffered greatly by the injuries of time and other accidents; so that we cannot discover from them with absolute certainty, how many paces of this work were executed by each of these bodies of troops. The sum of the certain and probable information contained in

these inscriptions, as it is collected by the learned and illustrious Mr. Horfley, stands thus:

	Paces.
The second legion built	11,603
The vexillation of the sixth legion	7,411
The vexillation of the twentieth legion	7,801
All certain	26,815
The vexillation of the twentieth legion, the monument certain, and the number probable	3,411
The same vexillation, on a plain monument, no number visible, supposed	3,500
The sixth legion, a monument, but no number, supposed	3,000
Cohort prima Cugernorum	3,000
Total	39,726

or 39 miles 726 paces, nearly the whole length of the wall. It would have been both useful and agreeable to have known how long time these troops were employed in the execution of this great work. But of this we have no information. Neither do we know what particular bodies of troops were in garrison in the several forts and stations along the line of this wall, because these garrisons were withdrawn before the *Notitia Imperii* was written.

ANTONIO (Nicholas), knight of the order of St. James, and canon of Seville, did great honour to the Spanish nation by his Bibliothèque of their writers. He was born at Seville, in 1617, being the son of a gentleman whom King Philip IV. made president of the admiralty established in that city in 1626. After having gone through a course of philosophy and divinity in his own country, he went to study law at Salamanca, where he closely attended the lectures of Francisco Romo del Manzano, afterwards counsellor to the king, and preceptor to Charles II. Upon his return to Seville, after he had finished his law-studies at Salamanca, he shut himself up in the royal monastery of Benedictines, where he employed himself several years in writing his *Bibliotheca Hispanica*, having the use of the books of Bennet de la Sana, abbot of that monastery, and dean of the faculty of divinity at Salamanca. In the year 1659 he was sent to Rome by King Philip IV. in the character of agent-general from this prince: he had also particular commissions from the inquisition of Spain, the viceroys of Naples and Sicily, and the governor of Milan, to negotiate their affairs at Rome. The Cardinal of Arragon procured him, from Pope Alexander VII. a canonry in the church of Seville, the income whereof he employed in charity and purchasing of books: he had above 30,000 volumes in his library. By this help, joined to continual labour and indefatigable application, he was at last enabled to finish his *Bibliotheca Hispanica*, in four volumes in folio, two of which he published at Rome in the year 1672. The work consists of two parts; the one containing the Spanish writers who flourished before the 15th century, and the other those since the end of that century. After the publication of these two volumes, he was recalled to Madrid by King Charles II. to take upon him the office of counsellor to the crusade; which he discharged with great integrity till his death, which happened in 1684. He left nothing at his death but his vast library, which he had brought from Rome to Madrid; and his two brothers, and nephews, being unable to publish the remaining volumes of his Bibliothèque, sent them to Cardinal d'Aguirre, who paid the charge of the impression, and committed the care thereof to Monsieur Marii, his librarian, who added notes to them, in the name of the cardinal.

ANTONIUS (Marcus) the triumvir, grandson to the

orator of that name (vide *Encyclop.*), was very handsome in his youth; for which reason he was greatly beloved by Curio a senator, who, by carrying him about in all his debaucheries, made him contract such heavy debts, that his own father forbid him his house. Curio, however, was so generous as to bail him for 250 talents. When the civil war broke out, Curio took Cæsar's party, and prevailed with Antonius to do the same; for which he was made a tribune of the people, and in that office did Cæsar great service. Cæsar, having made himself master of Rome, gave Antonius the government of Italy: at the battle of Pharsalia, Cæsar confided so much in him, that he gave him the command of the left wing of his army, whilst he himself led the right. After Cæsar was made dictator, he made Antonius general of the horse, though he had never been prætor; in which command he exerted his power with the utmost violence. He was made consul, when Cæsar enjoyed that honour for the fifth time, the last year of that usurper's life. On Cæsar's death, he harangued the populace with great art, and raised their fury against his murderers; flattering himself that he should easily get into the place which Cæsar had filled: but his haughty behaviour made him lose all the advantages his affected concern for Cæsar had gained him. His ill treatment of Octavius, and quarrel with him, produced another civil war; which ended in an accommodation between him, Octavius, and Lepidus, fatal to the peace of Rome. They agreed to share the supreme power among them; and many of the most illustrious Romans were sacrificed by proscription to cement this bloody league, which is known by the name of the *Second Triumvirate*. But the triumvirs were too ambitious, and hated one another too much, to be long united. Antonius went into Asia to raise money for his soldiers; during his absence, Fulvia his wife quarrelled with Octavius. When Antonius was in Asia, indulging himself in all manner of luxury, the famous Cleopatra inspired him with the most violent passion. Hearing of the quarrel between Fulvia and Octavius, and finding Octavius was become publicly his enemy, Antonius entered into a confederacy with Sextus Pompeius, who was still master of Sicily. He then went into Italy in order to fight Octavius; but Fulvia, who had been the author and promoter of this war, dying, Octavius and Antonius came to an agreement. One of the conditions of this new peace was, that they should together attack Pompey, though the former had lately made an alliance with him. Antonius then married Octavia, sister to Octavius, as a pledge of their renewed friendship; but returned soon after to his beloved Cleopatra, and again lived with her in Alexandria. Octavius took hold of this pretence to inveigh against him, and begin the war again. At last they engaged in a sea-fight at Actium, in which Octavius gained a complete victory; which was followed by the deaths both of Antonius and Cleopatra. The infuriated Antonius fell upon his own sword; and Cleopatra stung herself to death with an asp, as was supposed, to avoid gracing the victor's triumph at Rome.

ANXUR, a city of the Volsci (Pliny, Livy), in Latium; called *Tarracina*, by the Greeks and Latins: *novi Terracina*; situated on an eminence (Livy, Horace, Sil. Italicus). *Anxurus*, a citizen of Anxur (Livy). And the epithet, *Anxurus*, a name of Jupiter, worshipped without a beard at Anxur (Virgil). Though others read *Anxurus*, or *Axyrus*, without a razor. E. Long. 14. 5. Lat. 41. 18.

ANZERMA, a town and province of Poypayan, in South America, where there are mines of gold. The town is seated on the river Coca. Long. 75. 25. W. Lat. 4. 58. N.

AORNUS (*Encycl.*). This rock was taken by Alexander the Great, in whole time there was a report that Hercules had attempted it in vain; however, according to Arrian, this

report was without foundation. It is probable indeed, that it was raised after the place was taken, in order to magnify Alexander's exploit. While the Macedonian monarch was preparing all things necessary for the siege, an old man with his two sons, who had long lived in a cave near the summit, came and offered to shew him a private way of ascending. This being readily accepted, Ptolemy, with a considerable body of light-armed troops, was dispatched with them, with orders, in case they succeeded, to entrench themselves strongly upon the rock, in the wood to which the old man was to direct them, before they ventured to attack the Indians. Ptolemy exactly executed his orders; and gave notice by a lighted torch set upon a pole, that he had got safely up. Upon this, Alexander gave immediate orders for a body of troops to attempt the passage by which the rock was commonly ascended; but they were repulsed with great slaughter. He then sent an Indian with letters to Ptolemy, desiring him, the next time an attack was made by the common way, to fall upon the enemy behind. But in the mean time, those who defended the rock attacked Ptolemy with great vigour; but were at last repulsed, though with much difficulty: but the next day, when Alexander renewed the attack, though Ptolemy attacked the Indians in the rear, the Macedonians were repulsed on both sides. At last the king, perceiving that the strength of the Indians lay in the straitness and declivity of the way by which they were attacked, caused a great quantity of trees to be felled, and with them filled the cavities between the plain on which the Indians were encamped, and the highest of his own advanced posts. The Indians at first derided his undertaking; but at length perceiving the ardour with which the work was carried on, and having felt the effects of the missile weapons of the Macedonians, they sent deputies to propose terms of capitulation. Alexander, suspecting that their design was only to amuse him till they made their escape, withdrew his guards from the avenues. As soon as he knew the Indians were descended, he, with 700 of Ptolemy's light-armed foot, took possession of the deserted rock, and then made a signal for his forces to fall upon the flying Indians. They setting up a loud shout, so terrified the fugitives, that numbers of them fell from the rocks and precipices, and were dashed to pieces, while the greatest part of the remainder were cut off in the roads.

APALACHIAN MOUNTAINS (*Encycl.*). A great part of these mountains are covered with rocks, some of which are of a stupendous height and bulk; the soil between them is generally black and sandy, but in some places differently coloured, composed of pieces of broken rock and spar, of a glittering appearance, which seem to be indications of minerals and ores if proper search was made for them. Chestnuts and small oaks are the trees that principally grow on these mountains, with some *chinkapin* and other small shrubs. The grass is thin, mixed with vetch and small pease; and in some places there is very little vegetable appearance.

The rocks of the Apalachian mountains seem to engross one half of the surface. They are mostly of a light grey colour: some are of a coarse-grained marble like alabaster; others, of a metallic lustre: some pieces are in the form of slate, and brittle; others in lumps, and hard: and some appear with spangles, or covered over with innumerable small shining specks, like silver. These frequently appear at the roots of trees when blown down. The different spars are found most on the highest and steepest parts of the hills, where there is little grass and few trees; but the greatest part of the soil between the rocks is generally a dark sandy-coloured kind of mould, and shallow; yet fertile, and productive of good corn, which encourages the Tallipooses, a clan of the Cherokee Indians, to settle among them in latitude 34°; and

they are the only Indian nation that has a constant residence upon these mountains.

APAMEA, or **APAMIA**, a city of Bithynia, formerly called *Myrlea*, from Myrlos, general of the Colophonians: destroyed by Philip, father of Perseus; and given to his ally Prusias, who rebuilt it, and called it *Apamea*, from the name of his queen Apama (Strabo). Stephanus says, that Nicomedes Epiphanes, son of Prusias, called it after his mother; and that it had its ancient name from Myrlea, an Amazon. The Romans led a colony thither (Strabo); called *Colonea Apamena* (Pliny, Appian). The gentilitive name is *Apameus*, and *Apamenus* (Trajan in a letter to Pliny).—Another *Apamea*, called *Cibotos*, of Phrygia, at some distance from the Meander (Agathodæmon); but by a coin of Tiberius, on the Meander. The name is from Apame, mother of Antiochus Soter, the founder, and the daughter of Artabazus (Strabo). The rise, or at least the increase, of Apamea, was owing to the ruins of Celenæ. The inhabitants are called *Apamienes* (Tacitus).—A third, on the confines of Parthia and Media, furnished *Raphane* (Strabo, Pliny).—A fourth *Apamea*, a town of Mesene, an island in the Tigris (Pliny, Ammian); where a branch of the Euphrates, called the *Royal river*, falls into the Tigris (Ptolemy). A fifth in Mesopotamia, on the other side the Euphrates, opposite to Zeugma on this side, both founded by Seleucus, and joined by a bridge, from which the latter takes its name (Pliny, Isidor, Characenus).—A sixth *Apamea*, now *Afania*, also in Syria, below the confluence of the Orontes and Marfyas; a strong city, and situated in a peninsula, formed by the Orontes and a lake: it was a place of such plenty, that Seleucus, the founder of it, there maintained 500 elephants (Strabo).—*Apamea* was also the ancient name of *Pella*, in the Decapolis.

APEE, one of the New Hebrides, in the South Sea, near Mallicoli. Long. 168. 32. E. Lat. 55. 6. N.

APERTURE (*Encycl.*). When water issues from a small aperture in the bottom or side of a vessel, which is kept constantly full, it has been supposed, that the force accelerating the lowest plate of water, of indefinitely little altitude, immediately over the orifice, is the weight of the incumbent water only; and, therefore, that after the motion of the plate has once commenced, the pressure of the incumbent column will be diminished, and of consequence the force accelerating the plate, during its descent through its own altitude, will not be constant.

But, in fact, it is not the pressure of the incumbent water, which accelerates the lowest plate; for every plate of water immediately incumbent over the hole, abstracting from all lateral pressure, begins to be accelerated equally at the same moment; and therefore the incumbent column, exclusive of any lateral pressure, could produce no increase of velocity, in proportion to its increased height. The force which really accelerates the issuing plate, is the pressure of the ambient water, which surrounds the cylinder immediately over the aperture; and this lateral pressure being communicated to the upper surface of the plate, must be as much increased by the velocity of the superior descending plate, as it is diminished by that of the inferior issuing plate, so as to remain constantly of the same magnitude.

On this principle it can be easily demonstrated, that the velocity with which water spouts from an aperture in the bottom or side of a vessel, is equal to that which a heavy body would acquire in falling through the height of the fluid above the orifice.

This demonstration, however, as Mr. Atwood observes, is true only on the hypothesis that the water suffers no resistance, but issues in a cylindrical or prismatic form corresponding to the hole. But, in fact, the velocity of the water according to

theory will be diminished by the friction of the particles against the edges of the orifice, from their mutual attraction, by which the issuing particles are retarded by those which are still in the vessel, and have not acquired the velocity of those which precede them, but principally from the obliquity of their motions.

For, as Chev. Du Buat observes, when water issues from an orifice, the particles will flow from all sides, towards the orifice, with an accelerated motion, and in all directions. If the orifice be horizontal, that filament of particles which answers to the centre of the hole will descend in a vertical line, and will suffer no other resistance than that of the friction caused by the excess of its velocity above that of the collateral filaments, or by the retardation which arises from the attraction subsisting between them. The other filaments, after they have descended vertically for some time, are compelled to turn from their vertical course, and to approach the orifice in different curves; and when they arrive at it, their directions become more or less horizontal, according as they pass nearer to or farther from the edge of the orifice. The motion thereof is decomposed according to two directions, the one horizontal, which is destroyed by the equal and contrary resistance of the filaments which are diametrically opposite; the other vertical, in proportion to which the quantity of water discharged is to be estimated. Hence we see, that the vertical velocity of the filaments decreases from the centre of the orifice to its circumference; and that the total discharge is less than if all the filaments had issued vertically in the same manner with that which answers to the centre of the aperture. It also follows, that the filaments which are nearer to the centre, moving faster than those which are nearer to the edges, the vein of the fluid, after it has issued from the orifice, will form a cone whose base is the orifice; that is to say, that its diameter will diminish, at least, to a certain distance, because the exterior filaments are gradually drawn on, in consequence of their mutual attraction, by the interior filaments whose velocity is greater; whence there follows a diminution in the diameter of the vein.

This manner of accounting for the contraction of the vein seems more reasonable than that which is given by Newton; as there appears to be no adequate cause for the acceleration of the water, after it has been discharged from the orifice.

The diminution of the mean velocity of the water, caused solely by the obliquity of the motions of the issuing particles, exclusive of any other impediment, may be thus determined:

Let $m n$ (fig. 1. Pl. II.) be the diameter of the aperture in the vessel $A B D C$ filled with water: in whatever direction the water issues, its velocity in that direction will, in all cases, be the same, because the pressure of fluids is the same in all directions; thus, whether a fluid spouts perpendicularly upwards or downwards, horizontally or obliquely, the space through which it is projected, in a given time, is the same. Now to determine this direction, since the horizontal and vertical pressures are equal, the issuing particles will assume the intermediate direction, which will therefore form an angle of 45° with the plane of the orifice: its vertical velocity therefore will be less than its direct or total velocity in the proportion of the diagonal of a square to its side, or as 7 to 5 nearly; but the particles of the central filament issue with the full velocity due to the entire height of the water; therefore the velocity of the central particles will be to the mean velocity as 7 to the mean between 7 and 5, or as 7 to 6. This is the diminution, as has been said, which takes place in consequence solely of the obliquity of the motions with which the particles issue from the orifice: if the other causes of retardation be taken into the account, we may conclude, that the velocity should be diminished perhaps in the ratio of 8 or even 9 to 6; which accords very well with experiments. Thus Polenus makes the ratio

of the diameters of the contracted vein and aperture, which is the same with that of the mean and greatest velocity, to be as $5\frac{1}{2}$ to $6\frac{1}{2}$; Bernouilli 5 to 7; Chev. Du Buat 6 to 9. When the orifice is infinitely little, the cylinder of issuing water becomes a single filament, which is therefore discharged without any obliquity, and there will be no diminution of velocity, except such as arises from friction and the tenacity of the particles. If the aperture be increased so as to become equal to the base of the vessel, the column of water will then descend like a falling body, and therefore the velocity will be the same as before; but it will not acquire this velocity until the uppermost plate of water has been discharged. At the beginning of the motion, the first or lowest plate will flow out with a velocity indefinitely little; the next plate with a greater velocity; and so on, until the upper plate shall have descended to the orifice, which will then issue with the greatest velocity. But if the vessel be supposed to be kept constantly full, the velocity of the effluent water will increase so as at length to become equal to that which a heavy body would acquire in falling from an infinite height.

Since the middle filament of particles is discharged with the full velocity due to the entire altitude of the fluid above the orifice, experiments made on the distance or height to which fluids spout, will be found to agree very well with theory, but it by no means follows, that all the filaments should be discharged with the same velocity: the quantity of the fluid therefore discharged in a given time, may be less than that which would be discharged, if all the filaments were discharged with the velocity due to the entire altitude; because this quantity depends on the mean velocity of all the filaments. Hence, therefore, it cannot be inferred from these experiments, compared with those which relate to the height or distance to which the fluid spouts, that the velocity of the water in the orifice is less than that which is due to the entire altitude: and that it is accelerated immediately after it gets out of it; because the distance to which the fluid spouts depends on the central filament only; but the quantity discharged on the mean velocity of the whole.

“To bring this question to the test of experiment” (says the Rev. Dr. Matthew Young, from whose paper in the Transactions of the Royal Irish Academy we quote), if all the particles were equally accelerated at their discharge from the orifice, and immediately after they leave it, they ought all to be projected horizontally to the very same distance upon an horizontal plane; but on experiment I found, that when the fluid spouted through an orifice of .08 of an inch diameter, and was kept constantly at the same height, the greatest and least distances at which it struck the horizontal plane were nearly 15 and 12 inches; but these distances are proportional to the velocities with which they are discharged. It follows, therefore, that all the particles are not projected with the same velocity. It is to be observed, that the particles which are discharged with the greatest and least velocities are few in comparison of those which are discharged with intermediate velocities, for while the entire shower extended from 15 to 12 inches on the horizontal plane, the denser part was found to occupy only the space between $14\frac{1}{2}$ and $12\frac{1}{2}$ inches; so that the limits of the velocities of the parts of the denser shower were as 7 and 6.26; but the limits of the whole were 15 and 12, or as 7 and 5.6; and the limits by theory are as 7 and 5. But we may perceive, that when the fluid spouts horizontally, the particles which issue from the upper part of the aperture, and which therefore ought to move with the least velocity, must encounter those below them moving with a greater velocity, which will increase the distance to which they are projected on an horizontal plane. Likewise, the particles which issue from the lowest part of the orifice, and which ought to move with

als velocity, than that with which those in the axis move, in the ratio of 5 to 7, will have their velocity increased by their being at a greater depth. The limit therefore of the ratio of the distances to which the particles are projected on an horizontal plane, must be less than that which results from the theory of water-issuing through an horizontal aperture. But it is obvious that the greater depth of the lower particles, when the orifice is vertical, cannot account for the entire difference of distance to which the particles are projected; for the depth of the orifice being 8.55 inches, and the diameter of the orifice .08 of an inch, the velocities on account of the difference of depth would be only as $\sqrt{8.55}$ to $\sqrt{8.63}$, or as 14.6 to 15 nearly. Perhaps it might be said, that this difference of distance was caused, not by the different velocities, but by the different directions in which the particles are discharged; so that those which are projected in the axis of the vein, will strike the horizontal plane at a greater distance than those which are projected from the edges of the orifice with the same velocity, but in a different direction. But this cannot be the cause; for when the aperture is horizontal, the particles which issue from the opposite sides m, n , of the orifice (fig. 2.), meeting each other, destroy their convergence, and afterwards proceed in the direction of the axis of the vein, and therefore the vein will continue nearly of the same diameter; whereas, if the particles crossed each other, with the same velocity, in different directions, they would describe intersecting parabolas m, s, m, t , and the diameter of the vein would continually increase. In order to determine whether this were the case, I caused the fluid to issue through an aperture in the bottom of the vessel, and at the distance of 12 inches I found the diameter of the vein a little increased, when the velocity of the efflux was considerable; but not sensibly augmented, when the velocity was much diminished. Since the dilatation of the vein in this case depends on the velocity with which the water issues from the aperture, it is to be inferred, that it is caused by the resistance of the air, which producing a retardation of the preceding particles, those which follow impinge against them, and the thickness of the vein is increased; for the same reason as when the jet is made perpendicularly upwards, a broad head is formed in consequence of the retardation of the uppermost particles. Now, since it appears that the dilatation of the vein which arises either from the different directions of the particles, or the resistance which they undergo from the air, or both together, cannot account for the difference of distance to which the particles are projected on an horizontal plane, we must conclude that this difference is caused by the different velocities with which they escape from the orifice.

When a tube $m n r s$ (fig. 3.) is inserted into the vessel $A B C D$, it is found, that the velocity is increased nearly in the sub-duplicate ratio of the length of the pipe, when the tubes are short; and that it approaches nearer to that sub-duplicate ratio, according as the length of the pipe is increased. To account for this increase of velocity has appeared a matter of some difficulty, since the water cannot issue at $r s$ with a greater velocity than it enters at $m n$; and it does not appear how the velocity at $m n$ can be increased by inserting a tube beneath it. In order to explain the cause of this effect, we are to consider, that the whole force with which the plate $m n$ is pressed down is the weight of a column of water equal to $e m n f$, together with the weight of a column of air of the same base, reaching to the top of the atmosphere; and the whole force with which it is pressed up is the weight of an equal column of air, diminished by the weight of a column of water equal to $m n r s$; therefore the actual force with which the plate $m n$ is pressed down is the weight of a column of water equal to $e f r s$; the velocity therefore with which the plate $m n$ will issue through the orifice $m n$ will be the same as

through the orifice $r s$ in the vessel $A B C D$; that is, equal to the velocity which a heavy body would acquire in falling through the altitude $e r$; and all the plates of water in the tube $m n r s$ will descend with the same velocity; for they cannot descend faster, because otherwise there would be a vacuum left in the tube, which is prevented by the upward pressure of the atmosphere. And the velocity of the effluent water will be the same, whatever be the pressure of the atmosphere, provided the weight of a column of air of the same base with $r s$, and whose height is equal to that of the atmosphere, be either greater than or equal to the weight of the pillar of water $m n r s$. This might be proved experimentally by a vessel of water with a pipe inserted in the bottom, placed under an exhausted receiver. But as the operation of exhaustion is obstructed more by the evaporation of water than of mercury, it will be better to use mercury in these experiments. Now, if D be the defect of the gauge from the standard altitude, it will measure the pressure of the air on the surface of the mercury in the vessel: Let A be the altitude of the mercury in the vessel above the upper orifice of the pipe, and P the length of the pipe; then the whole force pressing downwards the plate of mercury which is immediately in the upper orifice of the pipe, will be $= D + A$; and the whole force pressing the same plate upwards will be $D - P$; and the difference between these forces will be the absolute force pressing the same plate of mercury downwards; while D is greater than P , this absolute force will consequently be equal to $A + P$; when $D = P$, $D - P$ vanishes, and the force pressing the plate downwards is $= D + A = P + A$; hence, therefore, no variation in the time of the efflux will be perceived, while the altitude of the mercury in the gauge is equal to or less than the difference between the length of the pipe and the standard altitude. When D is less than P , the force upwards is also nothing; and therefore, as before, the whole force pressing the plate downwards is $= D + A$; and A being given, it decreases according as D decreases; and when D vanishes, that is, when the receiver is absolutely exhausted, the force becomes equal to A , and the time of the efflux will be the same as if the pipe had not been inserted in the bottom of the vessel. To try the truth of these things by experiment, I inserted a tube 7.8 inches long in a cylindrical vessel, and closing the orifice of the pipe, I filled the vessel with mercury to the height of 6 inches; then placing the apparatus under the receiver of an air-pump, when the barometer was at 30 inches, and the gauge at 28.5, the time of the efflux was 26 seconds: when the experiment was repeated precisely in the same manner, but in the open air, the time of the efflux was only 10 seconds. Now, as the gauge stood at 28.5, the defect D was $30 - 28.5 = 1.5$, and the pressure on the plate of mercury was $= 6 + 1.5 = 7.5$; in the open air the pressure was $= 6 + 7.8 = 13.8$; therefore the ratio of the velocity of the efflux in both cases, which is the same with the reciprocal ratio of the times, was $\sqrt{7.5}$ to $\sqrt{13.8}$, or as 2.73 to 3.7; but 2.73 is to 3.7 as 10 to 26 very nearly. No difference was observed in the times of the efflux, when in the open air and exhausted receiver, unless the gauge stood higher than 22.5 inches; that is, unless the height of the mercury in the gauge was greater than the difference between the length of the pipe and the standard altitude. In another experiment, when the gauge stood at 27.9, the height of the barometer was 29.9; the defect therefore was $= 2$, and the pressure $= 8$. But $\sqrt{8} = 2.828$, and $\sqrt{13.8} = 3.7$ but $2.828 : 3.7 :: 10 : 24$, and by experiment the time of the efflux appeared to be 23 seconds. When the efflux is made in vacuo; it is obvious to observe, that the pipe is not filled during the efflux, as it is while the discharge is made in the open air.

“ Since the column of water in the pipe $m n r s$ adds to

the pressure which the plate $m n$ sustains, by diminishing the upward pressure of the air through the pipe, it appears that it produces this increase of pressure in the plate $m n$ alone, without producing any lateral pressure in the water which is on a level with $m n$; for it is manifest, that if an aperture were made in $m B$ or $n C$, the velocity of the water issuing through it would not be affected by the insertion of the pipe; and consequently that the plate $m n$, which is immediately in the orifice of the pipe, is the only one, on the same level, whose tendency downwards is increased by the insertion of the pipe. Hence, the particles of water at the edge of the aperture, having their perpendicular pressure increased by the weight of the column $m n r s$, without any increase of their lateral pressure, they will issue through the orifice $m n$ more perpendicularly; the sides also of the tube will obstruct the converging motion of the particles, and consequently, on both these accounts, the quantity of water discharged through a pipe thus inserted will exceed that discharged through a simple orifice, in a greater ratio than the sub-duplicate of the height of the water. And according as the length of the pipe increases, the ratio of the quantity of water actually discharged by experiment, to that which should be discharged according to theory, will increase; because the ratio of the perpendicular to the horizontal pressure increases, in the ratio of the sum of the depth of the vessel, and length of the pipe, to the depth of the vessel. It follows therefore, that experiments made in this manner, will approach nearer to coincidence with theory, than when made with a simple orifice; except either when the tube is so long as that the friction of the fluid against the sides of the tube shall produce a sensible effect, or when it is so short, as not to be sufficient to give the particles a vertical direction. All which agrees very well with the experiments made by the ingenious Mr. Vince, of which he has given us an account in the Phil. Trans. for the year 1795. Thus he tells us, that having inserted a tube, a quarter of an inch in length, into a cylindrical vessel 12 inches deep, he found that the velocity did not sensibly differ from that through the orifice; the cause of which he discovered to be this, that the stream did not fill the pipe, but that the fluid was contracted, as when it flowed through the simple orifice. When the pipe was half an inch long, inserted into a vessel of the same depth as before, the velocity of the water from the pipe and from the orifice, which ought by theory to have been as $\sqrt{12.5}$ to $\sqrt{12}$, or as 49 to 48, was by experiment found to be nearly in the proportion of 4 to 3. Now if the ratio of 49 to 48 be increased in the ratio of 7 to 6 (because this is the ratio of the diminution of the velocity on account of the contraction of the vein, and this contraction either nearly or entirely vanishes in a pipe), we shall have the ratio of 3.57 to 3. When the pipe was an inch long, the velocity from the pipe and from the orifice, which, according to theory, ought to have been as $\sqrt{13}$ to $\sqrt{12}$, or as 26 to 25, appeared by experiment, very nearly in the ratio of 4 to 3; now if the ratio of 26 to 25 be increased in the ratio of 7 to 6, we shall have the ratio of 3.64 to 3. When he made use of longer pipes, the velocity of the effluent water by experiment approached nearer to that which ought to have been discharged according to theory; so that in long pipes the difference between theory and experiment, he says, was not greater than what might be expected from the friction of pipes, and other causes which may be supposed to retard the velocity. When he inserted a pipe of the same diameter with the aperture, which terminated in a truncated cone fixed in the orifice (fig. 4. see the Philosophical Transactions for the year 1795), he expected, that the quantity of water discharged in a given time would have been diminished, because the water, issuing through the orifice $m n$, would have

room to form the *vena contracta* in the enlarging cone; but he found, that the same quantity of water was discharged, as if the pipe had continued throughout of the same diameter with the orifice. The reason of this is manifest from what has been said, for the pressure of the air will not suffer the truncated cone to remain partly empty, as it would be if the *vena contracta* were formed; it will therefore continue full, and consequently the water will pass through it in the same manner as if the water in the cone, surrounding the pipe $m a b n$, were congealed."

Mr. Vince likewise inserted into the bottom of the vessel a perpendicular pipe, in form of a truncated cone, the narrower part being fixed in the orifice; by which he found the efflux to be increased more than if he had inserted a cylindrical pipe of the same length, whose diameter was equal to that of the narrowest part of the conical pipe. This effect may be explained on the same principle by which we accounted for the augmentation of the diameter of a vertical vein of water, through a simple orifice, when the velocity of the efflux is considerable. For when a perpendicular pipe is inserted, the velocity of the discharge being considerably increased, the resistance from the air will be so likewise; and thus the diameter of the vein has a tendency to enlarge itself; now in the widening cone, the pipe admits of this augmentation, at the same time that it increases the velocity; but the cylindrical pipe, though it equally increases the velocity, yet it does not permit the vein to enlarge itself, and by thus confining it, the efflux is obstructed, and the quantity discharged in a given time is diminished. Accordingly, under the receiver of an air-pump, even in a moderate degree of exhaustion, there is no difference perceived between the velocities with which a fluid is discharged through a conical or cylindrical pipe.

APHACA, the name of a place in Syria, situated between the Heliopolis and Byblus, near Lebanon (Zotimus); infamous for a temple of Venus, called *Aphacitis*, near which was a lake, round which fire usually burst forth, and its waters were so heavy, that bodies floated on them. The temple was destroyed by Constantine, as being a school of incontinence (Eusebius). The name is of Syriac origin, signifying *embraces*.

APHRODISIAS, an island on the coast of Carmania (Pliny); sacred to Venus (Arrian). Another island on the coast of Cyrene, with a road for ships (Scylax); called *Laea*, or the island of Venus (Ptolemy).

APHRODISIUS, an inland city of Caria, called the *Metropolis* (Ptolemy, Stephanus); said by Suidas to have been called *Nimæ*. Another of Cilicia (Ptolemy); so called from the worship and a temple of Venus (Pliny). A third of Thrace, to the north of the isthmus of the Chersonesus; an open town, till formerly fortified by Justinian (Procopius).

APIYTIS, a town of the Chersonesus, called *Pallare*, in Macedonia (Pliny); famous for an oracle of Apollo.

APINA, or *Apina*, a town of Apulia, built by Diomedes, as was also *Trice* (Pliny). *Apina* and *Trice* is a proverbial saying for things trifling and of no value (Martial); and *Apinari* was the appellation for triflers or buffoons (Trebellius Pollio).

APION, a famous grammarian, born in Egypt, was a professor at Rome in the reign of Tiberius. He had all the arrogance of a mere pedant, and amused himself with difficult and insignificant enquiries. One of his principal works was his *Antiquities of Egypt*.

APOBATANA, the metropolis of Media, and where the kings kept their treasure (Isidorus Characenus); supposed to be the same with *Schatana*.

AOBATHRA, a place near Sestos (Strabo); the landing place where Xerxes's ships were frozen, and stuck in the ice (Eustathius).

APOCALYPSE (*Enceyl.*). This book consists of twenty-two chapters. The three first are an instruction to the bishops of the seven churches of Asia Minor. The fifteen following chapters contain the persecutions which the church was to suffer from the Jews, heretics, and Roman emperors. Next, St. John prophesies of the vengeance of God, which he will exercise against those persecutors, against the Roman empire, and the city of Rome, which, as the Protestants suppose, he describes under the name of Babylon, the great whore, seated upon seven hills. In the last place, the 19th, 20th, 21st, and 22d chapters, describe the triumph of the church over its enemies, the marriage of the Lamb, and the happiness of the church triumphant.

It is a part of this prophecy (says Sir Isaac Newton), that it should not be understood before the last age of the world; and therefore it makes for the credit of the prophecy, that it is not yet understood. The folly of interpreters has been to foretell times and things by this prophecy, as if God designed to make them prophets. By this rashness they have not only exposed themselves, but brought the prophecy also into contempt. The design of God was much otherwise: he gave this and the prophecies of the Old Testament, not to gratify men's curiosities, by enabling them to foreknow things; but that, after they were fulfilled, they might be interpreted by the events; and his own providence, not the interpreters, be then manifested thereby to the world. And there is already so much of the prophecy fulfilled, that as many as will take pains in this study, may see sufficient instances of God's providence.

APOLLINARIS (Caius Sulpicius), a very learned grammarian, born at Carthage, lived in the 2d century, under the Antonines; he is supposed to be the author of the verses which are prefixed to the comedies of Terence, and contain the arguments of them. He had for his successor in the profession of grammar Helvius Pertinax, who had been his scholar, and was at last emperor.

APOLLINARIS SIDONIUS (Caius Sollius), an eminent Christian writer and bishop in the 5th century, was born of a noble family in France. He was educated under the best masters, and made a prodigious progress in the several arts and sciences, but particularly in poetry and polite literature. After he had left the schools, he applied himself to the profession of war. He married Pappianilla, the daughter of Avitus, who was consul, and afterwards emperor, by whom he had three children. But Majorianus in the year 457 having deprived Avitus of the empire, and taken the city of Lyons, in which our author resided, Apollinaris fell into the hands of the enemy. However, the reputation of his learning softened Majorianus's resentment, so that he treated him with the utmost civility, in return for which Apollinaris composed a panegyric to his honour; which was so highly applauded, that he had a statue erected to him at Rome, and was honoured with the title of *Comit*. In the year 467 the Emperor Anthemius rewarded him for the panegyric, which he had written in honour of him, by raising him to the post of governor of Rome, and afterwards to the dignity of a patrician and senator, and erecting a statue to him. But he soon quitted these secular employments for the service of the church. The bishopric of Clermont being vacant in 472 by the death of Eparchius, Apollinaris, who was then only a layman, was chosen to succeed him without any interest or solicitations on his part, in which see he acted with the greatest integrity. Clermont being besieged by the Goths, he animated the people to the defence of that city, and would never consent to the surrender of it; so that, when it was taken about the year 480, he was obliged to retire; but he was soon restored by Evariges king of the Goths, and continued to govern the church as he had done before. He died in peace the 21st of August, 487, and

his festival is still observed in the church of Clermont, where his memory is had in great veneration. He is esteemed the most elegant writer of his age, both in prose and verse. He wrote a great many little pieces; but preferred none but those which he thought were worthy of being continued down to posterity. He collected himself the nine books which we have remaining of his letters. His chief pieces in poetry are the three panegyrics upon the emperors Avitus, Majorianus, and Anthemius. The rest of them are a collection of poems addressed to his friends upon particular subjects. His letters contain a variety of particulars relating to polite literature and profane history.

APOLLINARIUS (Claudius), a learned bishop of Hierapolis, who, about the year 170, presented to Marcus Aurelius an excellent Apology for the Christians.

APOLLINARIUS the YOUNGER, thus called to distinguish him from his father, called *Apollinaris the Elder*, was at first lecturer or reader of Logic, and afterwards bishop of that city. He was universally esteemed the greatest man of his age, both for learning and piety, and a most accurate and nervous defender of the faith against all its enemies: but notwithstanding this, on his advancing some opinions that were not approved, he was anathematized as an heretic by the second general council of Constantinople in 381.

APOLLODORUS, born at Damascus, a famous architect under Trajan and Hadrian; he had the direction of the bridge of stone which Trajan ordered to be built over the Danube in the year 104, which was esteemed the most magnificent of all the works of that emperor. Hadrian, one day as Trajan was discoursing with this architect upon the buildings he had raised at Rome, would needs give his judgment, and shewed he understood nothing of the matter. Apollodorus turned upon him bluntly, and said to him, "Go paint citruls, for you are very ignorant of the subject we are talking upon." Hadrian at this time boasted of his painting citruls well. This insult cost Apollodorus his life.

APOLLODORUS, a celebrated painter of Athens, about 408 years before the birth of Christ, was the first who invented the art of mingling the colours, and of expressing the lights and shadows. He was admired also for his judicious choice of subjects, and for the beauty and strength of colouring surpassed all the masters that went before him. He excelled likewise in statuary.

APOLLODORUS the Athenian, a famous grammarian, the son of Aclepiades, and disciple of Aristarchus. He wrote many works not now extant; but his most famous production was his *Bibliotheca*, concerning the origin of the gods: this work consisted of twenty-four books, but only three are now in being. Several other pieces of his are to be found in Fabricius's *Bibliotheca Græca*. There were various other persons of this name: Scipio Testi, a Neapolitan, has written a treatise of the Apollodoruses, which was printed at Rome in 1555; and Dr. Thomas Gale published a work of the same kind in 1675.

APOLLONIA, seats sacred to Apollo, instituted upon the following occasion. Apollo, having vanquished Python, went with his sister Diana to Ægiale; but, being driven from thence, he removed to the island of Crete. The Ægialeans were soon after visited with a plague; upon which, consulting the soothsayers, they were ordered to send seven young men, and as many virgins, to appease those deities and bring them back into their country. Apollo and Diana being thus appeased, returned to Ægiale: in memory of which, they dedicated a temple to Pitho, the goddess of persuasion; whence a custom arose of choosing every year seven young men, and as many virgins, to go as it were in search of Apollo and Diana.

APOLLONIUS RHODIUS, the author of the *Argonautics*, was born at Alexandria in Egypt: he taught rhetoric at

Rhodes, and hence was called *Rhodius*. He flourished about the 137th Olympiad, and was keeper of the Alexandrian library. Longinus, in his treatise *Of the Sublime*, commends this poet. The ancient Scholia upon his *Argonautics*, still extant, are extremely useful, and full of learning.

APOLLONIUS of Perga, a city of Pamphylia, was a great geometrician, under the reign of Ptolemy Euergetes, which reaches from the 2d year of the 133d Olympiad to the 3d year of the 139th. He studied a long time at Alexandria, under the disciples of Euclid; and composed several works, of which that only of the Conics remains.

APOLLONIUS, a Pythagorean philosopher, born at Tyana in Cappadocia, about the beginning of the first century. At sixteen years of age he became a strict observer of Pythagoras's rules, renouncing wine, women, and all sorts of flesh; not wearing shoes, letting his hair grow, and wearing nothing but linen. He soon after set up for a reformer of mankind, and chose his habitation in a temple of *Æsculapius*, where he is said to have performed many wonderful cures. Philostratus has wrote the Life of Apollonius, in which there are numberless fabulous stories recounted of him. We are told that he went five years without speaking; and yet, during this time, that he stopped many seditions in Cilicia and Pamphylia: that he travelled, and set up for a legislator; and that he gave out he understood all languages, without having ever learned them; that he could tell the thoughts of men, and understood the oracles which birds gave by their singing. The heathens were fond of opposing the pretended miracles of this man to those of our Saviour: and by a treatise which Eusebius wrote against one Hierocles, we find that the drift of the latter, in the treatise which Eusebius refutes, seems to have been to draw a parallel betwixt Jesus Christ and Apollonius, in which he gives the preference to this philosopher. Mr. Du Pin has wrote a confutation of Philostratus's Life of Apollonius. Apollonius wrote some works, *viz.* four books of judicial astrology; a treatise upon the sacrifices, shewing what was proper to be offered to each deity; and a great number of letters, all of which are now lost.

APONO (Peter d'), a famous philosopher and physician of his age, was born in 1250, in a village near Padua. He studied some time at Paris, and was there promoted to the degree of doctor in philosophy and physic. When he came to practise as a physician, he is said to have insisted on very large sums for his visits: we are not told what his demands were in the place of his residence, but it is affirmed that he would not attend the sick in any other place under an hundred and fifty florins a-day; and when he was sent for by Pope Honorius IV. he demanded four hundred ducats for each day's attendance. He was suspected of magic, and prosecuted by the inquisition on that account, but he died before the process against him was finished, being then in the eightieth year of his age. The most remarkable book which Apono wrote, was that which procured him the surname of Conciliator; he wrote also a piece entitled "De medicina omnimoda."

APOSTACY (*Encycl.*). The perversion of a Christian to Judaism, Paganism, or other false religion, was punished by the emperors Constantius and Julian with confiscation of goods; to which the emperors Theodosius and Valentinian added capital punishment, in case the apostate endeavoured to pervert others to the same iniquity. A punishment too severe for any temporal laws to inflict: and yet the zeal of our ancestors imported it into this country; for we find by Bracton, that in his time apostates were to be burnt to death. Doubtless the preservation of Christianity, as a national religion, is, abstracted from its own intrinsic truth, of the utmost consequence to the civil state: which a single instance sufficiently demonstrate. The belief of a future state of

rewards and punishments, the entertaining just ideas of the moral attributes of the supreme Being, and a firm persuasion that he superintends and will finally compensate every action in human life (all which are clearly revealed in the doctrines, and forcibly inculcated by the precepts, of our saviour Christ), these are the grand foundation of all judicial oaths; which call God to witness the truth of those facts, which perhaps may be only known to him and the party attesting: all moral evidence therefore, all confidence in human veracity, must be weakened by apostacy, and overthrown by total infidelity. Wherefore all assents to Christianity, or endeavours to depreciate its efficacy, in those who have once professed it, are highly deserving of censure. But yet the loss of life is a heavier penalty than the offence, taken in a civil light, deserves; and, taken in a spiritual light, our laws have no jurisdiction over it. This punishment, therefore, has long ago become obsolete; and the offence of apostacy was for a long time the object only of the ecclesiastical courts, which corrected the offender *pro salute anime*. But about the close of the last century, the civil liberties to which we were then restored being used as a cloak of maliciousness, and the most horrid doctrines subversive of all religion being publicly avowed both in discourse and writings, it was thought necessary again for the civil power to interpose, by not admitting those miscreants to the privileges of society, who maintained such principles as destroyed all moral obligation. To this end it was enacted by statute 9 and 10 W. III. c. 32. That if any person educated in, or having made profession of, the Christian religion, shall by writing, printing, teaching, or advised speaking, deny the Christian religion to be true, or the holy Scriptures to be of divine authority, he shall upon the first offence be rendered incapable to hold any office or place of trust; and, for the second, be rendered incapable of bringing any action, or of being guardian, executor, legatee, or purchaser of lands, and shall suffer three years' imprisonment without bail. To give room however for repentance, if, within four months after the first conviction, the delinquent will in open court publicly renounce his error, he is discharged for that once from all disabilities.

APOTOME (*Encycl.*). This term is employed by Euclid to denote the difference between two lines or quantities which are only commensurable in power. Such is the difference between 1 and $\sqrt{2}$, or the difference between the side of a square and its diagonal. The doctrine of apotomes in lines, as delivered by this ancient mathematician in the tenth book of his Elements, is a very curious subject, and has always been admired by such as understood it. The first algebraical writers in Europe, such as Lucas de Burgo, Cardan, Tartalea, Stifelius, &c. employed a considerable portion of their works on an algebraical exposition of that which led them to the doctrine of surd quantities.

APPALACHIKOLA, a river of North America, formed by the junction of the rivers Chatahouchee and Flint, which have their source in the Appalachian Mountains, and running nearly parallel in a southerly direction, flow united into the gulf of Mexico, opposite St. George's Island.

APPENZEL, a town of Switzerland, capital of the canton of the same name, which is divided into twelve communities; fix called the interior, are Roman-catholics; the fix exterior, are Protestants. It is forty miles E. of Zurich. Long. 9. 31. E. Lat. 47. 21. N.

APPIAN, an eminent writer of the Roman history in Greek, under the reigns of Trajan and Hadrian. He was of a good family in Alexandria in Egypt; whence he went to Rome, and there distinguished himself so well as an advocate, that he was chosen one of the procurators of the empire, and the government of a province was committed to him. He

did not complete the Roman history in a continued series; but wrote distinct histories of all nations that had been conquered by the Romans, in which he placed every thing relating to those nations in the proper order of time. His style is plain and simple: in the opinion of Pothius, he has shewn the greatest knowledge of military affairs, and the happiest talent at describing them, of any of the historians; for while we read him, we in a manner see the battles which he describes. Of all this voluminous work there remains only what treats of the Punic, Syrian, Parthian, Mithridatic, and Spanish wars, with those against Hannibal, the civil wars, and the wars in Illyricum, and some fragments of the Celtic or Gallic wars.

APPIUS CLAUDIUS, a Sabine by birth, one of the principal inhabitants of Regillum: his shining merit having drawn the envy of his fellow-citizens upon him, he retired to Rome with all his family. Appius was admitted into the senate, and was made consul, with Publius Servilius Priscus, in 238 from the building of Rome: but he was hated by the plebeians, being an austere opposer of their clamours and seditions. The Claudian family continued long one of the most illustrious of the patrician families in Rome; and several in succession of the name of Appius supported the same stern character that distinguished their first founder.

APRIES, son of Piammis king of Egypt; the fame with Pharaoh Hophrah in Jeremiah and Ezekiel. He ruined Sidon, and some say he put Jeremiah to death. He thought neither God nor man could dethrone him; which yet was easily done by Amasis, and he himself was strangled by the Egyptians.

APRIL-FOOL, a ludicrous trick played on the unsuspecting, on the first day of April. The origin of this childish and not very innocent frolic, has been variously accounted for; but probably it had its rise merely in the fickleness of the weather usual at this period of the year; since those whom fun-shine may have enticed abroad are liable to return wet to the skin by the rain.

APROSIO (Angelico), born at Ventimiglia, in the republic of Genoa, 1607, was a man of great reputation among the learned, and wrote several books. At fifteen years of age he entered into the order of the Augustines, where he became so much esteemed, that he was appointed vicar-general of the congregation of our Lady of Consolation at Genoa. As soon as he had finished his studies, he taught philosophy, which he continued to do for five years; after which he travelled into several parts of Italy, and settled at Venice in the year 1639, in the convent of St. Stephen. What rendered him most famous, was the library of the Augustins at Ventimiglia, which being chiefly collected by him, was a proof of his love for books, and his excellent taste. He published a book concerning this library, which is much sought after by the curious. He used to disguise himself under fictitious names in the title-pages of his books; which conduct might, perhaps, be owing to the subjects he wrote upon; they not being always suited to a religious life: such, for instance, as the Adonis of the cavalier Marino, &c. And if we consult the authors who have given us a catalogue of the writers of Liguria, we find that he assumed sometimes the name of Mafoto Galistoni, sometimes that of Carlo Galistoni, Scipio Glareano, Saprio Saprio, Odauro Scioppio, &c. His life is written in the book entitled *La Bibliotheca Aprosiana*. Several authors have bestowed upon him very great encomiums, some of whom have been perhaps rather too extravagant in their praises.

APT, an ancient town of France, in the department of the Mouths of the Rhone and late province of Provence. Its commerce consists in prunes, coarse ferges, and wax chandlery, for which last there is a great demand. There are many fine Roman antiquities, and it is seated on the river Calaron,

twenty miles N. of Aix, and twenty-five S. E. of Orange Long. 5. 30. E. Lat. 43. 51. N.

APTA, or **APTA JULIA** (Pliny); now *Api*, in Provence, on the river Calaron, seven leagues to the north of Aix, and nine to the north of Avignon. In the Notitie it is called *Civitas Aptensum*: Pliny reckons it among the Latin towns. That it was a colony, appears from an inscription on a stone found at Arles (Simond). E. Long. 5. 56. Lat. 43. 23.

APTERA (Strabo, Stephanus); **APTERON** (Pliny); **APTERIA** (Ptolemy): an inland town of Crete, whose port was Cifamus, on the west side of the island (Strabo); twelve miles to the south of Cydonia, towards the Montes Leuci, and as many from the Sinus Amphimales. So called from the Sirens, who, being there vanquished in song by the Muses, stript themselves of their wings, and out of grief leaped into the sea (Stephanus). There was a town of Lycia of the same name. E. Long. 25. Lat. 35. 50.

APULEIUS (Lucius), a Platonic philosopher, universally known by his performance of the Golden Ass. He lived in the second century, under the Antonines; and was born at Madaura, a Roman colony in Africa. He studied first at Carthage, then at Athens, and afterwards at Rome, where he learned the Latin tongue without the help of a master. He was a man of a curious and inquisitive disposition, especially in religious matters: this prompted him to take several journeys, and to enter into several societies of religion. He spent his whole fortune almost in travelling; so that, at his return to Rome, when he was about to dedicate himself to the service of Osiris, he had not money enough to defray the expence attending the ceremonies of the reception, and was obliged to pawn his clothes to raise the necessary sum. He supported himself afterwards by pleading causes; and as he was a great master of eloquence, and of a subtle genius, many considerable causes were trusted to him. But he availed himself more by a good marriage than by his pleadings: a widow, named *Pudentilla*, who was neither young nor handsome, but wanted a husband, and was very rich, took a great fancy to him. This marriage drew upon him a troublesome law-suit. The lady's relations, pretending he made use of force to gain her heart and money, accused him of being a magician before Claudius Maximus, proconsul of Africa. Apuleius was under no great difficulty of making his defence. As *Pudentilla* was determined, from considerations of health, to enter upon a second marriage, even before he had seen this pretended magician, the youth, deportment, pleasing conversation, vivacity, and other agreeable qualities, of Apuleius, were charms sufficient to engage her heart. He had the most favourable opportunities too of gaining her friendship, for he lodged some time at her house: *Pudentilla's* eldest son having a great friendship for him, was likewise desirous of the match, and solicited him in favour of *Pudentilla*. "Do you make a wonder (said Apuleius, in his defence) that a woman should marry again, after having lived a widow 13 years? it is much more wonderful that she did not marry again sooner. You think that magic must have been employed to prevail with a widow of her age, to marry a young man; on the contrary, this very circumstance shews how little occasion there was for magic." He offered to prove by his marriage-contract, that he got nothing of *Pudentilla* but a promise of a very moderate sum, in case he survived her and had children by her. He was also obliged to make such confessions in court as *Pudentilla* would gladly have excused. He said she was neither handsome nor young, nor such as could anyways tempt him to have recourse to enchantments: moreover, he added, that Pontianus her son proposed the marrying his mother to him only as a burden, and the action of a friend and philosopher. He also took notice of many inconveniences which attend the

marrying of widows, and spoke highly of the advantages of a maid above a widow: "A handsome virgin (said he), let her be ever so poor, is abundantly portioned; she brings to her husband a heart quite new, together with the flower and first-fruits of her beauty. It is with great reason that all husbands set to great a value upon the flower of virginity: all the other goods which a woman brings her husband are of such a nature, that he may return them again, if he has a mind to be under no obligation to her; that alone cannot be restored, it remains in the possession of the first husband. If you marry a widow, and she leaves you, she carries away all that she brought you." Upon which passage Mr. Bayle makes a very coarse remark, viz. "That this good which is never taken back out of the hands of a husband, is very chimerical; and that there is never a baker nor a butcher, who would lend sumpce upon this imperishable possession." The apology is still extant, and is reckoned a very fine piece. Apuleius was extremely indefatigable in his studies; and composed several books, some in verse, and others in prose; but most of them have been lost. He took great pleasure in declaiming, and was heard generally with great applause: when he declaimed at Occa, the audience cried out with one voice, that they ought to confer upon him the honour of citizen. The citizens of Carthage heard him with great satisfaction, and erected a statue to him; and several other cities did him the same honour. Several critics have published notes on Apuleius's Golden Ass, and there have been translations of it into different languages.

APULIA, now **PUGLIA**, a territory of Italy, bordering on the Adriatic, and extending from the river Rento to Tarentum in length, and from the Adriatic to the Lucani in breadth. *Apuli* the people (Horace), divided into the *Apulia Daunia*, now called *Puglia Pinna*, or the *Capitanata*; and into the *Apulia Peuceia*, now *Terra di Bari* (Pliny, Ptolemy). Apulia abounded in sheep, which yielded the finest wool (Martial). It is now the east side of the kingdom of Naples.

APURIMA, or **APORIMIA**, a rapid river of South America, in Peru, thirty miles from the river Abanazai.

AQUA-NEGRA, a town of Italy, in the Mantuan; on the river Chiera, twelve miles W. of Mantua. Long. 10. 25. E. Lat. 45. 12. N.

AQUA REGIA (*Encycl.*). In this article, line tenth, for "except silver," read "except gold."

AQUÆ AUGUSTÆ (Ptolemy); **AQUÆ TARBELLICÆ** (Antioine); **AQUENSIS CIVITAS**, in the Notitia. Now *Aqes*, or *Dax*, a town in Galsony, on the river Adour, famous for its baths. W. long. 1. 40. Lat. 43. 56.

AQUÆ CUTILLÆ, a lake of the Sabines, in the territory of Reate (Pliny); **LACUS CUTILLIENSIS** (Varro); with a moveable island in it (Seneca, Pliny); supposed to be the centre of Italy (Varro). The waters were medicinal, and extremely cold, good for a weak stomach and in weak nerves (Pliny). Vespasian used them every summer; and there he died (Sueton, Xiphilin of Dio). Now *Lago di Castiglione*.

AQUÆ FLAVIÆ, a town on the confines of Galicia and Portugal, so called from Vespasian and Titus. The inhabitants are called *Aquiflavienſes* (Coins). Now called *Chaves*, a mean hamlet; but the ruins of its bridge testify its former grandeur. W. long. 6. 6. Lat. 41. 40.

AQUÆ TAVRI, hot waters or baths in Tuscany, at the distance of three miles from the sea, said to be discovered by a bull; whence the appellation. There are still to be seen the ruins of these baths. The people are called *Aquensēs Taurini* (Pliny). Now *Aquapendente*, in Orvieto. E. long. 12. 40. Lat. 42. 40.

AQUARIANS (*Encycl.*). Epiphanius calls these aquarians mentioned in our original article *Encratites*, from their abstinence; St. Austin, *Aquarians*, from their use of water;

and Theodoret, who says they sprang from Tatian, *Hydroporustæ*, because they offered water instead of wine. But besides these there was another sort of Aquarians, who did not reject the use of wine as unlawful; for they administered the eucharist in wine at evening service; but, in their morning assemblies, they used water, for fear the smell of wine should discover them to the heathens.

AQUILEIA, a large city of the Carni, or Veneti, and a noble Roman colony, which was held thither between the first and second Macedonian wars (Livy). It is washed by two rivers, the *Natiso* and *Turrus* (Pliny). The reason of leading this colony was, in order to be a bulwark against the neighbouring barbarians. The colony was afterwards increased with 1500 families by a decree of the senate (Livy); from which it became a very famous port-town (Herodian). The emperor Julian ascribes the appellation to the augury of an eagle at the time of building it; but Isaac Vossius on Mela, to the great plenty of water, as if the town were called *Aquilegia*. The harbour, at the mouth of the *Natiso*, is distant sixty stadia from the city; so that ships of burden are towed up the river (Strabo). It is still called *Aquileia*, but greatly fallen from its former splendor. E. long. 15. 32. Lat. 45. 45.

AQUILINE, something belonging to or resembling an eagle; thus, an aquiline nose is one bent somewhat like an eagle's beak.

AQUINUS (St. Thomas), styled the *Angelical Doctor*, was of the ancient and noble family of the counts of Aquino, descended from the kings of Sicily and Aragon; and was born in the castle of Aquino, in the Terra di Lavoro in Italy, in the year 1224 or 1225. He entered into the order of the Dominicans; and, after having taught school-divinity in most of the universities of Italy, at last settled at Naples, where he spent the rest of his life in study, in reading of lectures, and in acts of piety; and was so far from the views of ambition or profit, that he refused the archbishopric of that city, when it was offered him by Pope Clement IV. He died in 1274, leaving an amazing number of writings, which were printed at Venice in 17 volumes, folio, in the year 1490. He was canonized by Pope John XXII. in the year 1323; and Pius V. who was of the same order with him, gave him, in 1567, the title of the Fifth Doctor of the church, and appointed his festival to be kept with the same solemnity as those of the other four doctors. His authority has always been of great importance in the schools of the Roman Catholics. Lord Herbert in his Life of Henry VIII. tells us, that one of the principal reasons which induced that king to write against Luther, was, that the latter had spoken contemptuously of Aquinas.

AQUINO (Philip d'), in Latin *Aquanus* or *Aquinus*, having turned from Judaism, had a pension from the clergy of France; and acquired much reputation by his knowledge of the Hebrew language, which he taught at Paris, in the reign of Lewis XIII. and by the books he published, among which is his *Dictionarium Hebræo-Chaldeo-Thaludico-Rabbinicum*. His grandson, Anthony D'Aquinus, was first physician to Lewis XIV.

ARACAN (*Encycl.*). It is capital of a small kingdom, to the north-east of the bay of Bengal, situated in E. long. 93. 0. N. Lat. 20. 30. It has the convenience of a spacious river, and a harbour large enough to hold all the ships in Europe. It is said by Schouten to be as large as Amsterdam; but the houses are slight, being made with palm-trees and bamboos, and covered with leaves of trees. They are seldom above six feet high, but have many windows or air-holes. But the people of the highest rank are much better accommodated. They have no kitchens, chimneys, or cellars, which obliges the women to dress the victuals out of doors. Some of the streets are on the ridges of rocks, wherein are a great many thops.

Their orchards and gardens contain all the fruit common to the Indies, and their trees are green all the year. Their common drink is toddy; which is the sap of the cocoa-tree, and when new will intoxicate like wine, but soon grows foul. Elephants and buffaloes are very numerous here, and are made use of instead of horses. They have plenty of provisions, and but little trade: for when Mr. Channoch was here in 1686, with six large ships, there was nothing to be had in the way of commerce; and yet the country produces lead, tin, flick-lac, and elephants' teeth. The Mogul's subjects come here to purchase these commodities; and sometimes meet with diamonds, rubies, and other precious stones. They were formerly governed by a king of their own, called the king of the *White Elephant*; but this country has been conquered by the king of Pegu. They pay little or no regard to the chastity of their women, and the common sailors take great liberties among them. Their religion is Paganism; and their idols, temples, and priests, are very numerous. The dress of the better sort is very light, for it consists chiefly of a piece of white cotton over their arms, breast, and belly, with an apron before. The complexion of the women is tolerable; they wear thin flowered gauze over their breast and shoulders, and a piece of cotton, which they roll three or four times round their waist, and let it hang as low as their feet. They curl their hair, and put glass rings in their ears, and stretch them of a monstrous length. On their arms and legs they have hoops of copper, ivory, silver, &c. The country produces great quantities of rice, and the water is good. Their flocks of sheep and herds of cattle are also numerous near Aracan; but what they say of the towns and villages, with which the country is pretended to be overpread, may be doubted. Captain Hamilton affirms, that there are but few places inhabited, on account of the great number of wild elephants and buffaloes, which would destroy the fruits of the ground; and that the tigers would destroy the tame animals. There are some islands near the sea, inhabited by a few miserable fishermen, who can just keep themselves from starving, though they are out of the reach of oppression. The rich burn the dead bodies; but the poor, who are not able to buy wood, throw them into the river.

ARÆ PHILENOR, or PHILENORUM (Strabo); to the south of the Syrtis Major; but in Peutinger, more westerly, to the south almost of the Syrtis Minor. In Strabo's time, the altars were not extant, but a village of the same name stood on the spot. On a dispute about limits, between the Cyrenæans and Carthaginians, it was agreed that two of each people should let out on the same day, and that where they should happen to meet, there the limits of both should be fixed. The Phileni, two brothers, Carthaginians, undertook it for Carthage; these, after having advanced a great many miles into the territory of the Cyrenæans, were met by their antagonists; who enraged at their being before-hand with them so far, gave them the option of either returning back, or of being buried alive on the spot: like zealous patriots, they chose the latter; and there the Carthaginians raised two altars in honour of the Phileni. (Sallust, Valerius Maximus.)

ARAL (*Encycl.*). Of this great lake, the length from north to south is said to be near 120 miles, and its breadth from east to west about seventy. The shore on the west side is high and rocky, and destitute of good water: yet there are abundance of wild horses, asses, antelopes, and wolves; as also a fierce creature called a *jolbart*, which the Tartars say is of such a prodigious strength as to carry off a horse. It is surprising that this lake should be quite unknown to geographers till within these few years. Several great rivers, which were supposed to run into the Caspian sea, are now known to fall into this lake, particularly the Sihun or Sirr, and the Gihun

or Arno, so often mentioned by the Oriental historians. This lake, like the Caspian sea, has no visible outlet. Its water is also very salt; and for that reason is conveyed by the neighbouring inhabitants by small narrow canals into sandy pits, where the heat of the sun, by exhaling the water, leaves them a sufficient quantity of salt. The same kinds of fish are found in Aral that are found in the Caspian sea. The former is also called the *Lake of Eagles*.

ARAM (Eugene), a man of considerable erudition, remarkable for his unhappy fate, and the singular circumstances that occasioned and attended it, was born at Ramsgill, a little village, in Netherdale, Yorkshire, in the year 1704. He was removed, when very young, together with his mother, to Skelton, near Newby: and when he was five or six years old, his father making a little purchase in Bondgate near Rippon, his family went thither. He was there sent to school, where he learned to read the New Testament in English, which was all he was ever taught, except that, some considerable time after, he was under the tuition of the Reverend Mr. Alcock of Burnal, for about a month. When he was about thirteen or fourteen years of age, he went to his father at Newby, and attended him in the family there, till the death of Sir Edward Blackett. It was in the house of this gentleman, to whom his father was gardener, that his propensity to literature first appeared. He was, indeed, always of a solitary disposition, and uncommonly fond of retirement and books; and here he enjoyed all the advantages of leisure and privacy. He applied himself at first chiefly to mathematical studies, in which he made a considerable proficiency. At about sixteen years of age, he was sent to London to the house of Mr. Christopher Blackett, whom he served for some time in the capacity of book-keeper. After continuing here a year or more, he was taken with the small-pox, and suffered severely under that distemper. He afterwards returned into Yorkshire, in consequence of an invitation from his father, and there continued to prosecute his studies, but found in polite literature much greater charms than in the mathematics; which occasioned him now chiefly to apply himself to poetry, history, and antiquities. After this he was invited to Netherdale, where he engaged in a school and married. But his marriage proved an unhappy connection; for to the misconduct of his wife he afterwards attributed the misfortunes that befel him. In the mean while, having perceived his deficiency in the learned languages, he applied himself to the grammatical study of the Latin and Greek tongues; after which he read, with great avidity and diligence, all the Latin classics, historians, and poets. He then went through the Greek Testament; and, lastly, ventured upon Hesiod, Homer, Theocritus, Herodotus, and Thucydides, together with all the Greek tragedians. In 1734, William Norton, esq., a gentleman who had a friendship for him, invited him to Knarsborough. Here he acquired the knowledge of the Hebrew, and read the Pentateuch in that language. In 1744 he returned to London, and served the Reverend Mr. Painblanc, as usher in Latin and writing, in Piccadilly; and, with this gentleman's assistance, he acquired the knowledge of the French language. He was afterwards employed, as an usher and tutor, in several different parts of England; during which time he became acquainted with heraldry and botany. He also ventured upon Chaldee and Arabic, the former of which he found easy from its near connection with the Hebrew. He then investigated the Celtic, as far as possible, in all its dialects; and having begun to form collections, and made comparisons between the Celtic, the English, the Latin, the Greek, and the Hebrew, and found a great affinity between them, he resolved to proceed through all these languages, and to form a comparative lexicon. But in the midst of these learned labours and inquiries, it appears,

that Aram committed a crime, which could not naturally have been expected from a man of so studious a turn, and which is the more extraordinary, as the inducement that led him to it is said to have been only gain, though he himself afterwards assigned a different motive. On the 8th of February, 1744-5, he murdered Daniel Clark, a shoemaker, in conjunction with whom, and another person, he seems before to have been concerned in some fraudulent practices. The murder, however, was concealed near fourteen years, and then was discovered by a skeleton being accidentally found, which was supposed to be that of Clark. This was a mistake; but it led to a discovery of the whole transaction; and Aram's wife, from whom he had separated a considerable time, was a principal evidence against him. When he was apprehended, on suspicion of this murder, he was usher of a school at Lynn in Norfolk. He was brought from thence to York-castle, and on the 3d of August, 1759, was tried at the county-assizes for the murder. He was found guilty on the testimony of Richard Houseman, corroborated by that of his own wife, and other circumstantial evidence. After his conviction, he confessed the justice of his sentence, but made an attempt upon his own life, by cutting his arm in two places with a razor, which he had concealed for that purpose. By proper applications, he was brought to himself, and, though weak, was conducted to the place of execution; where, being asked if he had any thing to say, he replied in the negative. He was immediately after executed, and his body being conveyed to Knaresborough forest, he was there hung in chains, pursuant to his sentence.

ARANDE-DE-DOUERO, a town of Old Castile in Spain, on the Douero, 42 miles E. of Valladolid. Long. 3. 30. W. Lat. 41. 40. N.

ARAR (Cæsar, Strabo); *Araris* (Dio Cassius); *Saucona* (Ammian); a river of Celtic Gaul, now the *Saône*; which rises out of mount Vogesus on the confines of Lorraine, runs through the Franche Comte and Burgundy, and below Lyons falls into the Rhone. It is so incredibly flow, that the eye cannot distinguish which way it moves (Cæsar); and therefore Ptolemy calls it the *Shuggih River*. Its course is from north to south. It is famous for a bridge of Cæsar, which was built by the soldiers in one day. It is navigable equally with the Rhone.

ARATUS, general of the Achæans, conquered Niocles tyrant of Sicyon. Two years after, he surprised the castle called *Acrocorinthus*, and drove out the king of Macedonia: he delivered Argos from its tyrants, and was poisoned by Philip II. king of Macedonia, whom he had newly restored: he was about 62 when he died, the second year of the 121st Olympiad. He was interred at Sicyon, and received the greatest honours from his countrymen. His son, who had also been prætor, was poisoned by King Philip. Polybius gives us so great a character of Aratus, the father's, Commentaries on History, that the loss of so valuable a work is highly to be regretted.

ARATUS, a Greek poet, born at Soli, or Solæ, a town in Cilicia, which afterwards changed its name, and was called *Pompeopolis*, in honour of Pompey the Great. He flourished about the 124th, or, according to some, the 126th Olympiad, in the reign of Ptolemy Philadelphus king of Egypt. He discovered in his youth a remarkable poignancy of wit, and capacity for improvement; and having received his education under Dionysius Heracleotes, a Stoic philosopher, he espoused the principles of that sect. Aratus was physician to Antigonus Gonatus, the son of Demetrius Poliorcetes, king of Macedonia: this prince, being a great encourager of learned men, sent for him to court, admitted him to his intimacy, and encouraged him in his studies. The *Phænomena* of Aratus, which is still extant, gives him a title to the character of an astronomer, as well as a poet; in this piece he describes the

nature and motion of the stars, and shews the particular influences of the heavenly bodies, with their various dispositions and relations. He wrote this poem in Greek verse: it was translated into Latin by Cicero; who tells us, in his first book *De oratore*, that the verses of Aratus are very noble. This piece was translated by others as well as Cicero; there being a translation by Germanicus Cæsar, and another into elegant verse by Festus Avienus. An edition of the *Phænomena* was published by Grotius, at Leyden, in 4to. 1600, in Greek and Latin, with the fragments of Cicero's version, and the translations of Germanicus and Avienus, all which the editor has illustrated with curious notes. He was certainly much esteemed by the ancients, since we find so great a number of scholiasts and commentators upon him. There are several other works also ascribed to Aratus. Suidas mentions the following: Hymns to Pan; Astrology and Astrothely; a composition of Antidotes; an *Emphylion* on Theopropus; an *Hæroica* on Antigonus; an Epigram on Phila, the daughter of Antipater, and wife of Antigonus; an Epicudium of Cleombrotus; a Correction of the Odysey; and some Epistles, in prose. Virgil, in his *Georgics*, has imitated or translated many passages from this author; and St. Paul has quoted a passage of Aratus. It is in his speech to the Athenians (Acts xvii. 28.) wherein he tells them, that some of their own poets have said, *Τὸ πᾶν καὶ γὰρ ἐξ αὐτοῦ*: "For we are all his offspring." These words are the beginning of the fifth line of the *Phænomena* of Aratus.

ARAUSIO, or *Civitas Arausensis*, or *Arauscorum* (Notitiæ); *Colonia Secundanorum* (Mela, Pliny, Coins), so called because the veterans of the second legion were there settled: the capital of the Cavares, in Gallia Narbonensis; now Orange, in the west of Provence, on an arm of the rivulet Egue, which soon after falls into the Rhone, from which it is distant a league to the east, at the foot of a mountain. Here is an ancient amphitheatre to be still seen. E. long. 4. 46. Lat. 44. 10.

ARBACES, governed Média under Sardanapalus. Seeing him spinning among a company of his women, he stirred up his people to revolt, and dethroned Sardanapalus; who thereupon burnt himself in his palace. Arbaces being crowned, began the monarchy of the Medes, which lasted 317 years under nine kings, till Astyages was expelled by Cyrus. Arbaces reigned 22 years, and died A. M. 3206.

ARBE, an episcopal town of the republic of Venice, in an island of the same name, on the coast of Dalmatia, from which it is but five miles distant.

ARBURY, a village of Cambridgehire, where are the remains of a camp, and where many coins have been found. It is one mile N. of Cambridge.

ARBUTHNOT (Alexander), principal of the university of Aberdeen in the reign of James VI. of Scotland, was born in the year 1538. He studied first at Aberdeen; and was afterwards sent over to France, where, under the famous Cujacius, he applied himself to the study of the civil law. In the year 1563 he returned to Scotland, and took orders. Whether he was ordained by a bishop, or by prebys, is a matter of uncertainty. In 1568 he was appointed minister of Arbuthnot and Logy-Buchan; and in the following year, Mr. Alexander Anderson being deprived, our author was made principal of the King's College at Aberdeen, in his room. In the general assembly which met at Edinburgh in the years 1573 and 1577, he was chosen moderator; and to the end of his life was an active supporter of the reformed religion. He died in 1583, in the 45th year of his age; and was buried in the college church of Aberdeen. We are told in the Biographia, that he was eminent as a poet, a philosopher, a mathematician, a lawyer, a divine, and a physician. He wrote, *Orationes de origine*

et dignitate juris, printed Edinb. 1572, 4to. His contemporary, Thomas Maitland, wrote a copy of Latin verses on the publication of this book : they are printed in the *Delic. Poetar. Scot.* He published Buchanan's History of Scotland in the year 1582.

ARCADIA (*Encycl.*). This district lies to the north Achaia, to the east Argos and Laconia, Mellœnia to the south, and Elis to the west. According to Pliny, the wine of this country cured barrenness in women, and inspired the men with rage; and the berries of the yew gathered there were so strong a poison, that whoever slept or took refreshment under that tree were sure to die. In Strabo's time there were few cities remaining in it, most of them being destroyed in the Grecian wars. Eustathius says, that the country was anciently called *Pelagîa*, from Pelagos, who brought the people, from roots, herbs, and leaves of trees, to feed on acorns, especially beech-mast; as Artemidorus observes, that the Arcadians usually lived on acorns. It was also called *Lycœonia*, *Gigantes*, and *Parrhesia* (Stephanus). The Arcadians are greatly commended for their love of, and skill in, music (Virgil, Polybius). To imitate the Arcadians, is to labour and toil for the benefit of others, never conquering their own, but the enemies of others (Hesychius). This probably took its rise from the ancient Arcadians being accustomed to hire themselves out as mercenaries to foreign nations. Homer commends their martial prowess, their pastures, their sheep, and their country well-watered. The gentilitious name is *Arcades*; who boasted of their great antiquity, and that they were older than the sun and moon (Apollonius Rhodius, Nonnius, Plutarch, Ovid, Statius). They were the first who had a year of three months, and therefore called *Proclentis*, because their year was prior to that adjusted in Greece to the course of the moon (Censorinus).

ARCESILAUS, a celebrated Greek philosopher, about 300 years before the Christian æra, was born at Pitane in Eolis. He founded the second academy, which is called the *second school*. He was a man of great erudition, and well versed in the writings of the ancients. He was remarkable for the severity of his criticisms; but nevertheless he knew how to accommodate himself to the age, and pursue the allurements of pleasure. He had a great number of disciples. His doctrines were different in several respects from those of the ancient school : and perhaps he was led into this diversity of opinions by many capital errors in the ancient school, such as the incredible arrogance of the dogmatists, who pretended to assign causes for all things; the mysterious air they had thrown upon the doctrine of ideas; the entirely discarding the testimony of the senses; the objections of the Pyrrhonists, who now began to broach their opinions; the powerful opposition of the Stoics and Peripatetics, who discovered the feeble parts of the academic philosophy. These might have given cause to reform the ancient school, and to found a new one. The middle school, therefore, laid it down as a principle, that we could know nothing; nor even assure ourselves of the certainty of this position; from whence they inferred, that we should affirm nothing, but always suspend our judgment. They advanced, that a philosopher was able to dispute upon every subject, and bring conviction with him, even upon contrary sides of the same question; for there are always reasons of equal force both in the affirmative and negative of every argument. According to this doctrine, neither our senses, nor even our reason, are to have any credit; and therefore, in common affairs, we are to conform ourselves to received opinions. Arcesilaus was succeeded by his disciple Lacydes.

ARCEUIL, a village of France, three miles south of Paris, remarkable for an aqueduct, which is thought to equal the works of the ancient Romans. It was built in 1624, by Mary

de Medicis: its water is distributed into the different parts of Paris.

ARCHELAUS, a celebrated Greek philosopher, the disciple of Anaxagoras, flourished about 440 years before Christ. He read lectures at Athens, and did not depart much from the opinions of his master. He taught that there was a double principle of all things, namely, the *expansion and condensation* of the air, which he regarded as infinite. Heat, according to him, was in continual motion. Cold was ever at rest. The earth, which was placed in the midst of the universe, had no motion. It originally resembled a wet marsh, but was afterwards dried up; and its figure, he said, resembled that of an egg. Animals were produced from the heat of the earth, and even men were formed in the same manner. All animals have a soul, which was born with them; but the capacities of which vary according to the structure of the organs of the body in which it resides.—Socrates, the most illustrious of his disciples, was his successor.

ARCHELAUS, the son of Herod the Great, was declared king of Judea the second year after the birth of Christ. He put to death 3000 persons before he went to Rome to be confirmed by Augustus. However, that emperor gave him half of what had been possessed by his father; but at length, on fresh complaints exhibited against him by the Jews, he banished him to Vienne in Gaul, A.D. 6, where he died.

ARCHELAUS, the son of Apollonius, one of the greatest sculptors of antiquity, was a native of Ionia, and is thought to have lived in the time of the Emperor Claudius. He executed, in marble, the apotheosis of Homer. This masterpiece in sculpture was found in 1568, in a place named *Pratochia*, belonging to the princes of Colonna, where, it is said, the Emperor Claudius had a pleasure-house. Father Kircher, Cupert, Spanheim, and several other learned antiquaries, have given a description and explication of this work.

ARCHILOCHUS, a famous Greek poet and musician, was, according to Herodotus, contemporary with Candaules and Gyges, kings of Lydia, who flourished about the 14th Olympiad, 724 years before Christ. But he is placed much later by modern chronologists; viz. by Blair 686, and by Priefley 660 years, B. C.

He was born at Paros, one of the Cyclades. His father Telecles was of so high a rank, that he was chosen by his countrymen to consult the oracle at Delphos concerning the sending a colony to Thafos : a proof that he was one of the most distinguished families upon the island. However, he is said to have sullied his birth by an ignoble marriage with a slave called *Enipo*, of which alliance our poet-musician was the fruit.

Though Archilochus shewed an early genius and attachment to poetry and music, these arts did not prevent his going into the army, like other young men of his birth; but in the first engagement at which he was present, the young poet, like Horace, and like our own Suckling, lost his buckler, though he saved his life by the help of his heels. *It is much easier, said he, to get a new buckler, than a new existence.* This pleasantry, however, did not save his reputation; nor could his poetry or prayers prevail upon Lycambes, the father of his mistress, to let him marry his daughter, though she had been long promised to him. After these mortifications, his life seems to have been one continued tissue of disgrace and repentment.

Archilochum prescribo rabies amavit iambos.

Hor. Art. Poet. 79.

Archilochus, with fierce resentment warn'd,
Was with his own severe jambics arm'd.

FRANCIS.

The rage of Archilochus was proverbial in antiquity; which

compared the provoking this satyrist to the treading upon a serpent; a comparison not very severe, if it be true that Lycambes, and, as some say, his three daughters, were so mortified by his satire, as to be driven to the consolation of a halter.

In this piece many adventurers are mentioned, full of de-famation, and out of the knowledge of the public. There were likewise many loose passages in it; and it is said to have been on account of this satire that the Lacedæmonians laid a prohibition on his verses.

However, according to Plutarch, there is no bard of antiquity by whom the two arts of poetry and music have been so much advanced, as by Archilochus. To him is attributed particularly the sudden transition from one rhythm to another of a different kind, and the manner of accompanying those irregular measures upon the lyre. Heroic poetry, in hexameter verse, seems to have been solely in use among the more ancient poets and musicians; and the transition from one rhythm to another, which lyric poetry required, was unknown to them: so that, if Archilochus was the first author of this mixture, he might with propriety be styled the *Inventor of Lyric Poetry*, which, after his time, became a species of versification wholly distinct from heroic.—To him is likewise ascribed the invention of *Epodes*. See *EPODES*.

Our poet-musician is generally ranked among the first victors of the Pythic games; and we learn from Pindar, that his muse was not always a termagant; for though no mortal escaped her rage, yet she was at times sufficiently tranquil and pious to dictate hymns in praise of the gods and heroes. One in particular, written in honour of Hercules, acquired him the acclamations of all Greece; for he sung it in full assembly at the Olympic games, and had the satisfaction of receiving from the judges the crown of victory consecrated to real merit. This hymn, or ode, was afterwards sung in honour of every victor at Olympia, who had no poet to celebrate his particular exploits.

Archilochus was at last slain by one Callonax Corax, of the island of Naxos; who, though he did it in fight, according to the laws of war, was driven out of the temple of Delphi, by command of the oracle, for having deprived of life a man consecrated to the Muses.

The names of Homer and Archilochus were equally revered and celebrated in Greece, as the two most excellent poets which the nation had ever produced. This appears from an epigram in the Anthologia; and from Cicero, who ranks him with poets of the first class, and in his Epistles tells us, that the grammarian Aristophanes, the most rigid and scrupulous critic of his time, used to say, that the longest poem of Archilochus always appeared to him the most excellent.

ARCHIMAGUS, the high-priest of the Persian Magi, or worshippers of fire. He resided in the highest fire-temple; which was had in the same veneration with them, as the temple of Mecca among the Mahometans. Zoroastres first settled it at Balch; but after the Mahometans had over-run Persia in the 7th century, the Archimagus was forced to remove from thence into Kerman, a province of Persia, lying on the southern ocean, where it hath continued to this day. Darius Hyastres took upon himself the dignity of Archimagus; for Porphyry tells us, he ordered before his death, that among the other titles, it should be engraven on his monument, that he had been *Master of the Magi*; which plainly implies that he had borne this office among them; for none but the Archimagus was master of the whole sect. From hence it seems to have proceeded, that the kings of

Persia were ever after looked on to be of the sacerdotal tribe, and were always initiated into the sacred order of the Magi, before they took on them the crown, and were inaugurated into the kingdom.

ARCHIMEDES. (*Encycl.*) Of the death of this celebrated geometrician, others have related the circumstances somewhat differently. Cicero, when he was quaestor in Italy, discovered his tomb, on which was carved a cylinder and sphere. Some of the works of this great mathematician are lost, but others are preserved. His pieces which remain are, 1. Two books of the Sphere and Cylinder. 2. The Dimensions of a Circle. 3. Of Centres of Gravity, or Equiponderants. 4. Of Spheroids and Conoids. 5. Of spiral Lines. 6. The Quadrature of a Parabola. 7. Of the Number of the Sand. 8. Of Bodies that float on Fluids. The best edition of these is that published at London, in 1675, 4to. Among the works of Archimedes which are lost, we may reckon the descriptions of the following inventions, which we may gather from himself and other ancient authors. 1. Περὶ τῆς εὐφρανίας, or his account of the method which he used to discover the mixture of gold and silver in the crown. 2. His description of the *Καρχήλιος*, or *Καρχήλιος*, an engine to draw water out of places where it is stagnated. Athenæus, speaking of the prodigious ship built by the order of Hiero, tells us, that Archimedes invented the cochlion, by means of which the hold, notwithstanding its depth, could be drained by one man. (Διωνυσίου, lib. v.) Diodorus Siculus informs us (lib. v.) that he contrived this machine to drain Egypt, and that by a wonderful mechanism it would empty the water from any depth. 3. The *Εκχ.* by means of which (according to Athenæus, Διωνύσιος, lib. v.) he launched Hiero's great ship. 4. The *Τραπέζιον*, of the power of which Tzetzes gives a hyperbolic relation, Chil. ii. hist. 35. 5. The machines he used in the defence of Syracuse against Marcellus. Of these we have an account in Polybius, Livy, and Plutarch. 6. His burning-glasses, with which he is said to have set fire to the Roman galleys. Galen, Περὶ κρασμάτων, lib. iii. 7. His pneumatic and hydraulic engines, concerning which he wrote books, according to Tzetzes, Chil. ii. hist. 35.

ARCHITECTURE (*Encycl.*). Correct the following errors in page 293: last line of the second column, for pl. 25 read pl. 26. In the title to Part III. omit the words "including aquatic works." The reference also in Sect. XVI. p. 293, is erroneous: for pl. 25 read pl. 26.

Under this article, vol. i. p. 277, we have spoken of that species of architecture generally termed *Gothic*, which we shall extend with the following extracts from a memoir published in the fourth volume of the Transactions of the Royal Society of Edinburgh, by Sir James Hall, bart. whose professed object is, to enquire how structures of such beauty, taste, and magnificence, could be the work of a people "whom we are accustomed to call ignorant and barbarous."

"Although the connection between beauty and utility (says the author) be still involved in such obscurity, that we are unable to decide concerning the universality of that connection; of one thing we are certain, that, in a work intended to answer some useful purpose, whatever visibly counteracts that purpose always occasions deformity. Hence it is, that, even where ornament is principally intended, the ostensibly useful object of the work, if it have any such, must be provided for, in the first place, in preference to every other consideration.

"But in most useful works, some parts occur, the shape of which is quite indifferent with respect to the proposed

utility, and which, therefore, the artist is at liberty to execute as he pleases: a liberty which has opened a wide field to the taste and invention of ingenious men of every age and country, who have turned their attention to the composition of ornaments; and whose exertions have been more or less influenced by the state of civilization in which they lived. It would seem, however, if we may judge by those various efforts, that little has been effected by mere human ingenuity; since we see that recourse has been had, almost universally, to nature, the great and legitimate source of beauty; and that ornament has been attained by the imitation of objects, to which she has given a determinate and characteristic form.

"Where the materials employed are themselves possessed of variety and elegance, the attainment of this object requires little or no alteration of their natural forms. Thus cups are made of shells, of cocoa nuts, or of ostrich eggs; the character and beauty of which depend upon the natural form of the materials: and in the case of the bottles used by the Roman-catholic pilgrims, an example occurs of an utensil, in which the natural form has undergone little or no variation, since it consists of the hard outward skin of a gourd, of the same shape in which it grew upon the plant. This last class of forms has been introduced, by imitation, into works composed of shapeless materials. Thus we have silver cups in the form of those made of shells, and fruit-dishes of stone-ware in the form of baskets.

"As stone is not naturally possessed of any peculiar shape, and as the useful object proposed, by structures formed of it, may be accomplished in various ways, very great latitude is left to the invention of the artist. We see, accordingly, that in every country where much refinement has been introduced, great pains have been bestowed in ornamenting stone buildings with figures representing various natural objects; whilst the building itself has been executed in imitation of a structure, composed of materials which naturally possess a determinate and characteristic form. Such was the method followed by the architects of ancient Greece, who constructed temples, and other public edifices, in imitation of a rustic fabric, composed of square beams, supported upon round posts or stems of trees, and who derived the numerous ornaments of that beautiful style from circumstances which would naturally take place in such a structure.

"A faint and distant resemblance, however, of the original, has generally been found to answer all the end proposed by the imitation; a resemblance, which may sometimes be traced in the general distribution of the edifice, sometimes in its minute parts, and not unfrequently in both.

"But the forms of nature thus introduced have been greatly modified by those of masonry. For though stone is by nature shapeless, yet, in the course of practice, many peculiar forms have been long established, and currently employed, in working it; such as straight lines, plane surfaces, square angles, and various mouldings used to soften the effect of abrupt terminations: all of which, originating in motives of mechanical convenience, and of simple ornament, had, in very early times, been appropriated to masonry, and considered as essential in every finished work of stone; so that, when the imitation of nature was introduced, these masonic forms still maintained their ground, and, being blended with the forms of nature, the two classes reciprocally modified each other.

"This combination of art with nature, of which we see the most perfect example in the Corinthian capital, produces

what are called architectonic forms, in which the variety of nature, being subjected to the regularity of art, the work acquires that peculiar character which, in a natural object, we consider as offensive, under the name of *formality*; but which, in architecture, we admire as a beauty, under the name of *symmetry*: thus, we reprobate the formality of an avenue, and praise the symmetry of a colonnade.

"Such is the nature of architectonic imitation; a device which probably originated in accident, but to which architecture is indebted for its highest attainments."

The stone edifices of ancient Greece having been constructed in imitation of wooden fabrics, composed of square beams laid at right angles on round posts or stems of trees, Sir James Hall conceives that the Gothic structures with pointed arches have been executed in imitation of a rustic dwelling, constructed in the following manner: "Suppose a set of round posts driven firmly into the ground in two opposite rows, the interval between the neighbouring posts in the same row being equal to that between the rows, and each post being raised above the ground to a height equal to three of those intervals: then a set of long and flexible rods of willow being applied to each post, let them be thrust into the ground at its base, and bound to it by two tyings, one near the ground, and another at two-thirds of its height: the rods being let loose from this last point upwards, and free to be moved in any direction. Let three rods be connected with each outside corner post, and five with each of the others, and let their position be such as to cover the inside of the post, so that when seen from between the rows the lower part of each post shall be concealed from the view, and appear to the eye like a bundle of rods (see Pl. 14.).

"Thus the skeleton of a thatched roof may be formed by means of the loose ends of the rods. A rod from one of the posts being so bent as to meet a similar one from the post immediately opposite to it, in the middle of the space between them, let the two rods be made to cross each other, and let them be bound together at their crossing (fig. 2.), and we shall have the exact form of the Gothic arch. The frame being done with each pair of opposite posts, and a set of pointed arches being formed, let them be connected together by means of a straight pole laid upon the forks of the crossing rods, and bound to each of them, as in fig. 3: then let a loose rod be brought from each of any two contiguous posts in the same row, so as to form a pointed arch, similar to that just described, and nearly of the same height. This being done with every two contiguous posts (fig. 4.), and a new set of pointed arches being thus produced, standing opposite to each other in pairs, let each pair be bound by a horizontal pole lying on the opposite forks, and crossing the longitudinal pole already spoken of.

"Two of the rods of each corner post, and three of those of each of the others, being thus disposed of, we have one of each corner post and two of each middle post still to employ, which is done as follows: A pair of these unoccupied rods being brought from any two posts which stand diagonally to each other, and made to meet in the middle, not as in the first case crossing in an angle, but side by side, forming a semicircle, and joined together after the manner of a hoop; and the same being done with every pair of diagonal posts (fig. 5.), the whole rods will have been employed.

"In this manner a frame would be constructed fit to support thatch or other covering; and such a one has probably been often used. It would seem, however, that, for the sake of strength, the number of rods has been increased in each cluster, by the introduction, between every two of them, of an additional rod, which rising with them to the

GOTHIC ARCHITECTURE.

Fig. 1.

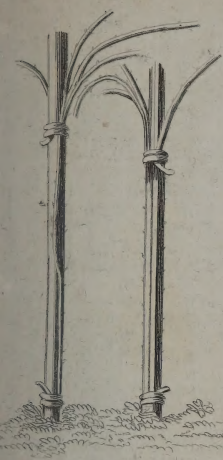


Fig. 2.

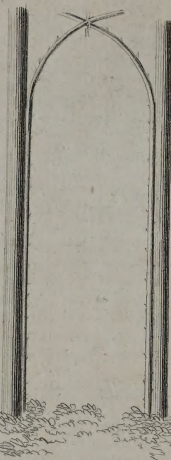


Fig. 3.



Fig. 4.

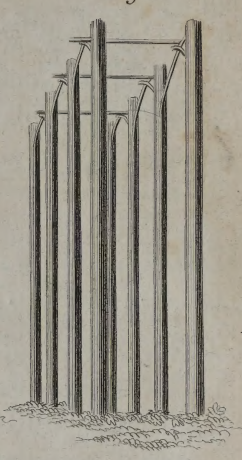


Fig. 7.

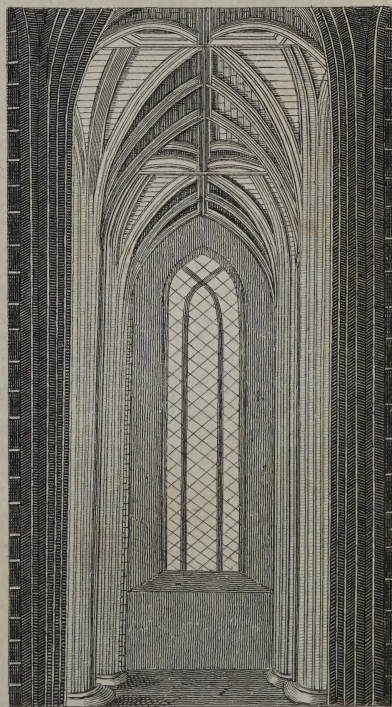


Fig. 6.

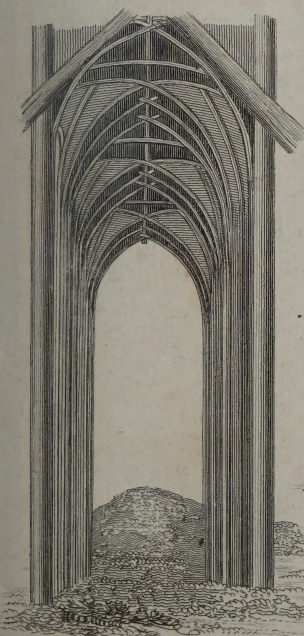
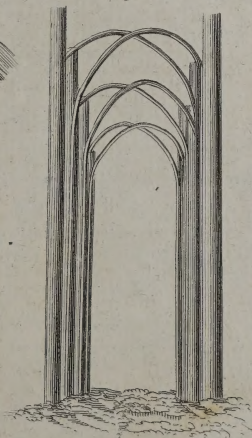


Fig. 5.



roof, still continues its middle position, as they spread afunder, and meets the horizontal pole at an intermediate point." This is shewn in fig. 6, which is drawn with its covering of thatch; and, from the imitation of a dwelling so constructed, we may easily trace the three leading characteristics of Gothic architecture, the pointed arch, the clustered column, and the branching roof, as exhibited in fig. 7.

Our author, upon similar principles, accounts for the peculiar forms of the Gothic door and window, the pointed spire, &c. but it seems he has not contented himself with speculative theories, but has actually submitted his hypothesis to the test of experiment. In short, Sir James Hall has constructed a building in this style, which has far surpassed even his own expectation, and has also gained the approbation of every man of taste and science by whom it has been seen. "A set of posts of ash, about three inches in diameter, were placed in two rows, four feet asunder, and at the interval of four feet in the rows; then a number of slender and tapering willow rods, ten feet in length, were applied to the posts, and, in the manner which we have described, formed into a frame, which being covered with thatch, produced a very substantial roof, under which a person can walk with ease.

"This little structure exhibits, in miniature, all the characteristic features of the Gothic style. It is in the form of a cross, with a nave, a choir, and a north and south transept. The thatch, being so disposed on the frame as not to hide the rods of which it is composed, they represent accurately the pointed and semicircular arches, and all the other peculiarities of a groined roof."

As the architects of the present age are miserably deficient in this beautiful species of building, the public are greatly indebted to Sir James Hall for his spirited endeavours to preserve and restore it in this country.

ARCHONS (*Encycl.*). The tribunal of the archons was composed of nine officers. The first was properly the *archon*; by whose name the year of his administration was distinguished. The title of the second was *king*; that of the third *poenæobus*: to these were added six *thesmothetæ*. These magistrates, elected by the scrutiny of beans, were obliged to prove, before their respective tribes, that they had sprung, both in their father's and their mother's side, for three descents, from citizens of Athens. They were likewise to prove that they were attached to the worship of Apollo, the tutelary god of their country; that they had in their house an altar consecrated to Apollo; and that they had been respectfully obedient to their parents; an important and sacred part of their character, which promised that they would be faithful servants to their country. They were likewise to prove, that they had served in a military capacity the number of years which the republic required of every citizen: and this qualification gave the state experienced officers; for they were not allowed to quit the army till they were forty years of age. Their fortune too, of which they were to inform those before whom they were examined, was a warrant for their fidelity.

After the commissioners, who were appointed to enquire into their character and other requisites, had made a report of them, they were then to swear that they would maintain the laws; which obligation if they neglected, they engaged to send to Delphi a statue of the weight of their bodies. According to a law of Solon, if an archon got drunk, he was condemned to pay a heavy fine, and sometimes even punished with death. Such magistrates as the Athenian archons were well entitled to respect. Hence it was eternal infamy to insult them; and hence Demosthenes observed, that

VOL. X.

to treat the thesmothetæ with disrespect, was to shew disrespect to the republic.

Another qualification indispensably required of the second officer of this tribunal, who was called the *king*, was, that he had married the daughter of an Athenian citizen, and that he had espoused her a virgin. This was exacted of him, says Demosthenes, because part of his duty was to sacrifice to the gods, jointly with his wife, who, instead of appealing, would have irritated them, if she had not possessed both those honours.

The enquiry into the private title of the nine archons was very severe; and this attention was the more necessary, as they had a right to take a seat in the Areopagus, after they had quitted their office, and given an account of their administration.

When any obscurity occurred in the laws, relative to religion and the worship of the gods, the interpretation was submitted to the tribunal of the archons.

Aristotle observes, that Solon, whose aim was to make his people happy, and who found their government in his time aristocratical, by the election of the nine archons, who were annual magistrates, tempered their power, by establishing the privilege of appealing from them to the people, called by lot to give their suffrage, after having taken the oath of the Heliastæ, in a place near the Panathænaum, where Hippias had formerly calmed a sedition of the people, and bound them to peace by an oath.

ARCHYTAS of Tarentum, a philosopher of the Pythagorean sect, and famous for being the master of Plato, Eudoxas, and Philolaus, lived about 408 years before Christ. He was an excellent mathematician, particularly in that part of the science which regards mechanics: he is said to have made a wooden pigeon that could fly, and to be the first that brought down mathematics to common uses. He is said to be the inventor of the ten categories. He asserted, that God was the beginning, the supporter, and the end, of all things. There are two epistles preserved in Diogenes Laertius, one from Archytas to Plato, and another from Plato to Archytas. He acquired great reputation in his legislative capacity. He likewise commanded the army seven times, and was never defeated; but was at last cast away in the Adriatic Sea, and thrown upon the coast of Apulia.

ARCOT, a city of Hindoostan, and capital of the Carnatic, situated on the river Palari. In a dispute among some of the native princes of India, Colonel Clive, with a small party of English, took possession of Arcot, in the year 1751, for Mahomed Ali Khan, son of Anawardi Khan, the nabob of Arcot, who had been killed in battle. The French attempted in vain to wrest it from him, but were compelled to raise the siege. In the year 1760, in a quarrel with the nabob, it was taken by Colonel Coote, after defeating the French at Wandewash; and the garrison surrendered prisoners of war after the batteries had been opened against it from the second to the sixth of February: fifty-five miles W.S.W. Madras, and sixty-five N.N.W. Pondicherry. Long. 79. 30. E. Greenwich. Lat. 12. 50. N.

ARDEA, a town of Latium, the royal residence of Turnus, king of the Rutuli (Livy); so called, either from the augury of the heron (Hyginus); or from the excessive heat of the country (Martial). It was a marshy sickly situation (Strabo, Seneca). It was built by Danaë, the mother of Perseus (Virgil); about five miles distant from the sea, and 20 from Rome: now a hamlet. It was a Roman colony (Livy). The inhabitants are called *Ardeates*. E. Long. 17. 49. Lat. 41. 30.

ARDECHE, a river of France, which gives name to one

of the departments, and rises three leagues from Langogne, and runs into the Rhone, about a league above Pont St. Esprit.

ARDENNE, a forest in France, formerly of vast extent; but the trees are in many places grubbed up, and where they flood are built cities, towns, and abbeys. At present it extends from Thionville, near the country of Liege, to Donchery and Sedan, on the confines of Champagne. The roads are so narrow in some places, that two waggoners cannot pass each other; and therefore the waggoners are obliged to provide themselves with bells or horns to give one another notice to stop in time.

ARDENNES, a forest of Germany and France, formerly of a great extent, comprehending, according to some, all the country between the Meuse and the Rhine, and according to others all between the Rhine and the Scheldt; what now remains is situated principally on the Meuse, from Montmedy to the bishopric of Liege. One of the departments of France takes its name from this forest; the principal towns are Mezieres, Sedan, Grandpre, Vouziers, Rethel, Rocroy, Donchery, and Givet.

ARDS, barony of, in the county of Down in Ireland: it is a narrow slip of land, in some places three, and in none above six miles broad; but the soil is for the most part tolerably good. It lies between the lake of Strangford and the sea, and in the fourth part it is opposite to Lecale. Sir Thomas Smith obtained a patent for this barony from Queen Elizabeth, and sent his natural son with a colony to possess it; but he was intercepted and slain by an Irishman. After Sir Thomas's death, Ards was granted by James I. to some of the Scots nobility.

ARDUBA, an ancient city of the Pannonians. It was taken by Germanicus about the 7th year of the Christian era; but its reduction was more owing to the disagreement that reigned among the inhabitants, than to the valour of the Romans. The greater part of the citizens were for submitting; but the women, more fond of their ancient laws and liberties than the men, joined some Roman deserters, and, falling upon their husbands, killed a great number of them: but being at last overcome by the men, who then submitted to the Romans, the women either threw themselves headlong from the tops of the walls, or setting fire to their houses, burnt themselves and their children to death.

AREKEA, a sea-port town on the coast of Africa, in the Red Sea: fifty-five miles from Suaken.

ARELATE, or **ARELATUM**, is a town of Gallia Narbonensis, situated on the Rhone, denoting a town on, or beyond, a marsh, according to the particular situation of the speaker; called *Arelate Sextanorum* (Pliny, Mela, Cato), because it had a colony of the sixth legion. Writers of the lower age call it *Arelas*, *atis* (Prudentius, Ausonius). There was a double Arelas, one on each side of the river and joined by a bridge (Ausonius); that on the left side is thought to have been built by Constantine. Tiberius's father was sent by Julius Caesar at the head of the colony (Suetonius); and hence the appellation *Julia Paterna*, as appears from an inscription. It was the favourite place of the Romans, and greatly ornamented; and hence called *Gallula Roma* (Ausonius). It is now called *Aries*. E. Long. 5. 5. Lat. 43. 40.

ARENSHARD, a tract in Denmark, in the duchy of Sleswick, containing the greatest part of the famous rampart, built by the Danish king Goric, in the beginning of the 9th century, as a defence against the irruptions of the Saxons and Slavi. It extends across the country, about nine miles in length.

ARENSWALDE, a town of Germany, in the circle of

Upper Saxony, and New Mark of Brandenburg: ninety-four miles N.E. Berlin, fifty N.N.E. Kustrin. Long. 33. 14. E. Ferro. Lat. 53. 10. N.

AREOPAGUS (*Encycl.*). The edifice of the Areopagus was extremely simple; and its roof, which was at first of the most common materials, remained in that state till the time of Augustus. This we learn from Vitruvius. Orestes was the first who thought of embellishing it. He raised in it an altar to Minerva. Helikewise adorned it with two feats of solid silver; on one of which the *accuser* sat, and the *accused* on the other. The one feat was consecrated to *Injury*, and the other to *Impudence*. This religious sketch was brought to perfection by Epimenides, who erected altars to those allegorical deities and soon after a temple, which Cicero mentions in his second book of laws. This temple corresponded with that which Orestes had built to the *Furies*, who brought him to Athens, and procured him the protection of Minerva. Epimenides dedicated it a second time to the *Furies*, or *severe Goddesses*, as they were termed by the Athenians. A man was thought lost without resource, and a victim to every human ill, if he enforced a perjury by invoking the sacred name of those tremendous divinities.

Those who employed their thoughts in solving the mysteries of Paganism, imagined that the Eumenides had their temple so near the court Areopagus, that they might enlighten the judges by their inspiration, and, by their continual assistance, prevent them from committing those errors to which human weakness is liable. To propitiate those terrible deities; and to procure their favour for the Areopagus, they were worshipped with great punctuality and devotion; and the senate itself appointed their priests. Demosthenes had been nominated to preside over their sacrifices; and he thought it very extraordinary, that he, to whom the republic had confided so important an office, should be publicly impeached.

It was natural to associate with the Eumenides the other deities who shared with them the sovereign empire over the dead. Epimenides placed in their temples the statues of Pluto, of Mercury, and of Tellus. They were all, according to Pausanias, of an agreeable form. Each of them was placed upon an altar, on which the citizens, or strangers, who had been acquitted by the Areopagus, made their grateful offerings.

But it was not to gratitude alone that these several deities owed all their incense that smoked upon their altars. They who had been accused before the senate, harassed with superstition, and uncertain how these deities would be affected towards them, were lavish of sacrifices to obtain their clemency, by which they hoped their judges would likewise be influenced.

The tomb of Oedipus was another of the ornaments of the Areopagus. It was in the outward court of the Areopagus, where a barge was likewise placed, which made a part of the pomp at the public games.

Whatever homage and implicit obedience the court of Areopagus might derive from all this religious parade, the public good was always dearer to them than any lower advantages they might have drawn from the altars and temples with which they were surrounded.

The senate assembled in a hall built on the summit of a hill, which was ascended with difficulty by the old men bent with age. However, as for some time they only assembled on the three last days of each month, they bore with patience this inconvenient situation. But public affairs multiplied to such a degree, that they were obliged to add to the three former sittings, a fourth, which was held on the

seventh day of the month, and which was soon succeeded by an assembly every day. Their meetings were so regular, that they were not interrupted by the most solemn festivals, till Cephisodorus was archon, who, in the third year of the 105th Olympiad, made a decree, which obliged the Areopagites to celebrate, after the example of the other courts, the Apaturian feasts, which lasted five days.

This assiduous and painful exercise of their office made the Areopagites feel all the inconvenience of the situation of their tribunal, and determined them to remove it to a part of the city, called the *Royal Portico*. It was a square, exposed to all the inclemencies of the weather. When the judges, who assembled there in profound silence, had taken their places, they were inclosed by a thread, or rather a cord, drawn around them.

They held their assemblies in the night, that their attention to public affairs might not be diverted by external objects;—and (adds Lucian) that they might only be influenced by the arguments, and not by the presence and action, of the speakers. This circumstance explains a passage in Athenæus, who tells us, that none knew the numbers nor faces of the Areopagites. The custom of administering justice in the open air was not peculiar to them. It was followed by all the other tribunals, when they tried for murder; for two reasons:—1st, That the judges, the sworn protectors of innocence, might not be hurt by being under cover with criminals, whose hands were polluted with blood. 2dly, That the accuser and the accused might not be under the same roof.

When all the members of the senate were convened, a herald enjoined silence, and ordered the people to retire. As soon as they had departed, the assembly proceeded to business; and as they deemed the least preference a flagrant injustice, the causes which they were to determine were drawn by a kind of lottery; and the same chance which brought them up, distributed them to different numbers of judges, small or great, according to the importance of the several causes.

In early times, the parties themselves stated their cause in a simple manner. The eloquence of advocates was thought a dangerous talent, fit only to varnish crimes. But afterwards the Areopagus, on this point, relaxed from their severity;—at first the accused, and soon after the accusers, were permitted to engage those to make the attack and the defence, whose profession it was to exert the art of speaking, for others, with accuracy and elegance.

Sextus Empiricus seems not to have sufficiently distinguished times, where he says, that the court of Areopagus did not suffer those who were to be tried at their bar to avail themselves of the abilities of others. What undoubtedly led him into that mistake, was, an inviolable custom of that tribunal, which prohibited, in pleadings, all that warm and picturesque oratory which seduces the judgment and inflames the passions. When the suffrages were collected, each person gave his in silence. They voted with a small flint, which they held betwixt the thumb and the two next fingers, and which they put into one of the two urns that stood in a corner of the hall. One stood before the other. The first was called the *urn of death*; the second, the *urn of compassion*. That of death was of brass, and was termed *proper*; that of compassion was of wood, and was termed *improper*. The judges commonly brought their flint to the assembly, and put it into the urn; but, that all the suffrages might be collected, the herald took the two urns, and presented them, one after another, to every senator, commanding him, in the name of the republic, no longer to defer his acquittal, or condemnation. For this method of giving sentence, which was called *ἀποδοὺν ψήφους*, because it kept

the vote of each person undiscovered, the Thirty Tyrants, to make themselves masters of the decisions of the Areopagus, substituted another, by means of which they knew exactly the opinion of each of the judges: for they obliged them to bring their flints publicly, and lay them upon two tables placed before them, the situation of which was quite opposite to that of the urns; for the first of those tables was that of *life*, and the second that of *death*.

The first substances with which they gave their suffrages were not small pieces of the bones of a hog, as some authors assert, but sea-shells, for which pieces of brass of the same form, termed *spindyla*, were afterwards substituted. The substances with which they voted were distinguished by their form and colour. Those which condemned were black, and perforated in the middle; the others were white, and not perforated. The precaution of piercing the black ones tends to prove, what we have already observed, that the court of Areopagus sat in the night: for what end did it serve to pierce the black shells or flints, if the judges could have seen them and the white ones, and consequently have distinguished their colours by the assistance of the light? But as they passed sentence in the dark, it is evident that a difference besides that of colour was necessary, to know the black ones from the white. The judges were likewise permitted to multiply at pleasure the distinction between signs, which essentially distinguished the fates of men.

After the suffrages were collected, they were taken out of the two urns, and put into a third vase of brass. They were then counted; and as the number of white or black flints was higher or inferior, one of the judges drew with his nail a shorter or a longer line, on a tablet, with a waxen surface, on which the result of each cause was marked. The short line expressed acquittal; the long condemnation.

With regard to the emoluments of the judges they were as moderate as those of the advocates. The length of the process did not enhance its expence; and when the decision of a cause was postponed till the next day, the committee were only paid an obolus on that day. Hence Mercury, in Lucian, is surprised that such sensible old men as the senators of Areopagus were, should sell at so low a price the trouble of ascending to high.

As to the number of the judges which composed the Areopagus, some authors, attentive only to a part of Solon's regulations, by which he enacted, that for the future none but the nine archons should be admitted members of the Areopagus, have imagined that this tribunal was filled anew every year, and that it never consisted of more than nine magistrates. This opinion, and some others, are refuted by the circumstantial account which Diogenes Laertius gives us of the condemnation of Socrates. This great man had wished to substitute a rational hypothesis for the fabulous and extravagant system of religion which prevailed in his time. His project, however laudable, appeared impious in the eye of superstition. Information was laid against him before the Areopagus, and he had as many accusers as fellow-citizens. After the charges and the answers were heard, they proceeded to suffrages; the opinions were divided, but not equally, for the number of those who condemned him exceeded by 281 the number of those who declared him innocent. He made an ironical reply to this iniquitous sentence, by telling his judges, that he took it for granted, they would admit him to a maintenance in the Prytanæum. On this sarcasm, 80 of those who had voted in his favour forsook him, went over to the opposite party, and condemned him to die. Here then we have 361 judges who condemn; to whom if we add those who persist in acquitting him, the number must be very considerable.

Of all the judgments of the Areopagus, the most famous one, excepting that of Mars, was the sentence which they passed on Orestes. His trial, which happened under Demophon the 12th king of Athens, in 375 of the Attic æra, owed all its lame to a remarkable circumstance, that gave rise to a custom which was observed ever afterwards. Orestes had killed his mother; he was accused before the Areopagus, and cited to appear in that court. He would have lost his life in consequence of the equal division of the votes, had not Minerva, moved with his misfortunes, declared herself for those who had absolved him, and joined her suffrage to theirs. Thus Orestes was saved. In veneration to this miracle, the Areopagites, whenever the suffrages were equally divided, decided in favour of the accused, by granting him what they termed the *shell of Minerva*. Cephalus and Dædalus were condemned by the Areopagus long before the time of Orestes.

We find in ancient authors some decisions of this tribunal, which bear the strongest marks of justice, though their objects are not interesting. We shall here quote an anecdote from Aulus Gellius, and Valerius Maximus, of a woman who was accused of having poisoned her husband and her son. She was taken, and brought before Dolabella, who was then procenful of Asia. She was no sooner in his presence, than she owned the fact; and added, that she had very good reasons for putting her husband and her son to death.—“I had (said she), to my first husband, a son whom I tenderly loved, and whose virtues rendered him worthy of my affection. My second husband, and the son whom I bare to him, murdered my favourite child. I thought it would have been unjust to have suffered those two monsters of barbarity to live. If you think, sir, that I have committed a crime, it is your province to punish it; I certainly shall never repent of it.” This affair embarrassed Dolabella. She was afterwards sent to the Areopagus; and that court, when they had examined her a long time, ordered her and her accuser to appear before them again a hundred years after, from the first day of her trial.

We must not, however, suppose that the Areopagus always preserved its own reputation; for such is the constitution of human affairs, that perfection, with regard to them, is a violent, consequently a transitory, state. Pericles, who lived about a hundred years after Solon, to flatter the people and win them to his party, used his utmost efforts to weaken the authority of the Areopagus, which was then disliked by the multitude. He took from it the cognizance of many affairs which had before come under its jurisdiction; and, to forward his design of humbling it, employed the eloquence of Ephialtes, whose talents were formidable, and who was an avowed enemy to the great men of Athens.

The Areopagus itself seemed to second the endeavours of a man who projected its ruin, and by its misconduct hastened its fall. The old rules of the court, by which none were admitted its members but those whose unexceptionable conduct would support its majesty, seemed too severe. They grew less delicate in their choice; and presuming that the faults with which they dispensed, would soon be reformed in the society of so many good examples, vice imperceptibly crept among them: corruption, at first secret and timid, grew insensibly open and daring, and made such progress, that the most shameful crimes were soon exhibited on the stage; and they were not copied from the low and abandoned multitude but from those senators, once the venerable and austere censors of idleness and of vice. Demetrius, the comic poet, wrote a piece, which he entitled *The Areopagite*,

where he strips the mask off those hypocritical legislators, who were never equally apt to be seduced by wealth and by beauty. So much had the Athenian senate degenerated in the days of Isocrates, cir. 340 years before the Christian æra.

Before this tribunal St. Paul was called to give an account of his doctrine, and converted Dionysius one of their number.

The end of this court of judicature is as obscure as its origin, which was derived from very remote antiquity. It existed, with the other magistracies, in the time of Pausanias, i. e. in the 2d century. The term of its subsequent duration is not ascertained; but a writer, who lived under the emperors Theodosius the elder and younger, in the 5th century, mentions it as extinct.

ARETIN (Guido), famous for his musical improvements, lived in the 11th century. He was a native of Arezzo, a city in Tuscany; and having been taught the practice of music in his youth, and probably retained as a chorister in the service of the Benedictine monastery founded in that city, he became a monk professed, and a brother of the order of St. Benedict.

In this retirement he seems to have devoted himself to the study of music, particularly the system of the ancients, and, above all, to reform their method of notation. The difficulties that attended the instruction of youth in the church-offices were so great, that, as he himself says, ten years were generally consumed barely in acquiring the knowledge of the plain-song; and this consideration induced him to labour after some amendment, some method that might facilitate instruction, and enable those employed in the choral office to perform the duties of it in a correct and decent manner. If we may credit those legendary accounts that are extant in old monkish manuscripts, we should believe he was assisted in his pious intention by immediate communications from heaven; some speak of the invention of the syllables as the effect of inspiration; and Guido himself seems to have been of the same opinion, by his saying it was revealed to him by the Lord; or, as some interpret his words, in a dream: but graver historians say, that being at vespers in the chapel of his monastery, it happened that one of the offices appointed for that day was the hymn to St. John.

*UT queant laxis
Mira gestorum
Solus polluit*

*REsonare fibris
Famuli tuorum
LAbis reatum.*

Sancite Joannes.

During the performance of the hymn, he remarked the iteration of the words, and the frequent returns of *UT, RE, MI, FA, SOL, LA*: he observed likewise a dissimilarity between the closeness of the syllable *MI*, and the broad open sound of *FA*, which he thought could not fail to impress upon the mind a lasting idea of their congruity; and immediately conceived a thought of applying the six syllables to perfect an improvement either then actually made by him, or under consideration, viz. that of converting the ancient tetrachords into hexachords.

Struck with the discovery, he retired to his study; and having perfected his system, began to introduce it into practice: the persons to whom he communicated it were the brethren of his own monastery, from whom it met with but a cold reception, which, in the epistle to his friend, he ascribes and outwardly to its true cause, envy; however, his interest with the abbot, and his employment in the chapel, gave him an opportunity of trying the efficacy of his method on the boys who were training up

for the choral service, and it exceeded the most sanguine expectation. "To the admiration of all (says Cardinal Baronius), a boy thereby learnt, in a few months, what no man, though of great ingenuity, could before that attain in several years."

The fame of Guido's invention soon spread abroad, and his method of instruction was adopted by the clergy of other countries: we are told by Kircher, that Hermanus bishop of Hamburg, and Elviricus bishop of Osnaburg, made use of it; and by the authors of the *Histoire Littéraire de la France*, that it was received in that country, and taught in all the monasteries in the kingdom. It is certain that the reputation of his great skill in music had excited in the pope a desire to see and converse with him; of which, and of his going to Rome for that purpose, and the reception he met with from the pontiff, he himself has given a circumstantial account in the epistle hereafter mentioned.

The particulars of this relation are very curious; and as we have his own authority, there is no room to doubt the truth of it. It seems that John XX. or, as some writers compute, the 19th pope of that name, having heard of the fame of Guido's school, and conceiving a desire to see him, sent three messengers to invite him to Rome; upon their arrival, it was resolved by the brethren of the monastery that he should go thither attended by Grimaldo the abbot, and Peter the chief of the canons of the church of Arezzo. Arriving at Rome, he was presented to the holy father, and by him received with great kindness. The pope had several conversations with him, in all which he interrogated him as to his knowledge in music; and upon sight of an antiphony which Guido had brought with him, marked with the syllables agreeable to his new invention, the pope looked on it as a kind of prodigy; and ruminating on the doctrines delivered by Guido, would not stir from his seat till he had learned perfectly to sing off a verse: upon which he declared, that he could not have believed the efficacy of the method, if he had not been convinced by the experiment he had himself made of it. The pope would have detained him at Rome; but labouring under a bodily disorder, and fearing an injury to his health from the air of the place, and the heats of the summer, which was then approaching, Guido left that city upon a promise to revisit it, and explain to his holiness the principles of his new system. On his return homewards, he made a visit to the Abbot of Pomposa, a town in the duchy of Ferrara, who was very earnest to have Guido settle in the monastery of that place; to which invitation it seems he yielded, being, as he says, desirous of rendering so great a monastery still more famous by his studies there.

Here it was that he composed a tract on music, entitled *Micrologus*, i. e. "a short discourse;" which he dedicated to Theobald bishop of Arezzo; and finished, as he himself at the end of it tells us, under the pontificate of John XX. and in the 34th year of his age. Vossius speaks also of another musical treatise written by him, and dedicated to the same person.

Most of the authors who have taken occasion to mention Guido, speak of the *Micrologus* as containing the sum of his doctrine: but it is in a small tract, entitled *Argumentum novi Cantus inveniendi*, that his declaration of his use of the syllables, with their several mutations, and in short his whole doctrine of solmisation, is to be found. This tract makes part of an epistle to a very dear and intimate friend of Guido, whom he addresses thus, "Beatissimo atque dulcissimo fratri Michaeli;" at whose request the tract itself seems to have been composed.

Whether Guido was the author of any other tracts, is not easy to determine. It no where appears that any of his works were ever printed, except that Baronius, in his *Annales Ecclesiastici*, tom. XI. p. 73, has given at length the epistle from

him to his friend Michael of Pomposa, and that to Theobald bishop of Arezzo, prefixed to the *Micrologus*; and yet the writers on music speak of the *Micrologus* as a book in the hands of every one. Martini cites several manuscripts of Guido; namely, two in the Ambrosian library at Milan, the one written about the 12th century, the other less ancient; another among the archives of the chapter of Pistoja, a city in Tuscany; and a third in the Mediceo-Laurenziano library at Florence, of the 15th century: these are clearly the *Micrologus*. Of the epistle to Michael of Pomposa, together with the *Argumentum novi Cantus inveniendi*, he mentions only one, which he says is somewhere at Ratibon. Of the several tracts above mentioned, the last excepted, a manuscript is extant in the library of Balliol College in Oxford. Several fragments of the two first, in one volume, are also among the Harleian manuscripts now in the British Museum, No. 3199; but so very much mutilated, that they afford but small satisfaction to a curious enquirer.

ARETIN (Leonard), one of the most learned men of the 15th century, was secretary to the republic of Florence, and translated from the Greek into Latin some of the Lives of Plutarch, and Aristotle's Ethics: he also composed three books of the Punic war, that may serve as a supplement to those wanting in Livy; the history of the transactions in Italy during his time; that of ancient Greece; that of the Goths; that of the republic of Florence; and many other books. He died in 1443, aged 74.

ARETIN (Francis), a man of great reading, and well acquainted with the Greek language. He translated into Latin the Commentaries of St. Chrysostom upon St. John, and about twenty Homilies of the same father: he also translated the Letters of Phalaris into Latin, and wrote a treatise *De balneis Puteolanis*. He studied at Sienna, about the year 1443; and afterwards taught law there with such reputation, that they called him the *Prince of Subtleties*, and his wit became a proverb. He displayed his talents chiefly in disputes, in which nobody could withstand him. He gave his opinions in law with so much confidence, as to assure those who consulted him, that they should carry their cause: nor did experience contradict him; for it was a common saying at the bar, such a cause has been condemned by Aretin, it must therefore be lost. He taught also in the university of Pisa, and in that of Ferrara. He was at Rome under the pontificate of Sixtus IV. but did not stay here long; for he soon perceived that the great hopes which he had built upon his reputation would come to nothing. This pope, however, declared he would have given him a cardinal's hat, had he not thought he should have done a public injury by depriving the youth of such an excellent professor. When old age would not permit him to go through the duties of his office, they dispensed with his reading of lectures, and his salary was continued. He continued, however, sometimes to mount the chair; and although his lectures had now but little spirit in them, yet he had still many hearers on account of his reputation. One day when the students were gone to some public shows, there were but forty persons in his auditory: which so mortified him, that he threw away his book; and cried out, "Aretin shall never explain law to a few persons," retired in a passion, and would teach no more. He was severe in his temper, and never kept a servant longer than a month or two; for it was a maxim of his, "That new-hired servants always serve best." He was honoured with the title of *knight*, and spent all his life in celibacy; and his way of living was so parsimonious, that he was thereby enabled to amass a great deal of wealth. He had designed this wealth for the maintenance of a college; but he altered his resolution, and left it to his relations.

ARETIN (Peter), a native of Arezzo, who lived in the 16th

century. He was famous for his satirical writings; and was so bold as to carry his invectives even against sovereigns, and from thence got the title of the *Scourge of Princes*. Francis I. the Emperor Charles V. most of the princes of Italy, several cardinals, and many noblemen, courted his friendship by presents, either because they liked his compositions, or perhaps from an apprehension of falling under the lash of his satire. Aretin became thereupon so insolent that he is said to have got a medal struck, on one side of which he is represented with these words *IL DIVINO ARETINO*; and on the reverse, sitting upon a throne, receiving the presents of princes, with these words, *I PRINCIPI TRIBUTATI DA POPOLI, TRIBUTANO IL SERVITOR LORO*. Some imagine that he gave himself the title of *Divine*, signifying thereby that he performed the functions of a god upon earth, by the thunderbolts with which he struck the heads of the highest personages. He used to boast, that his lampoons did more service to the world than sermons; and it was said of him, that he had subjected more princes by his pen, than the greatest had ever done by their arms. Aretin wrote many irreligious and obscene pieces; such are his dialogues, which are called *Ragionamenti*. There is likewise imputed to him another very obscene performance, *De Omnis Veneris Ichematibus*. "It was about the year 1525 (says Mr. Chevallier), that Julio Romano, the most famous painter of Italy, infligated by the enemy of the salvation of mankind, invented drawings to engrave 20 plates: the subjects are so immodest, that I dare only name them. Peter Aretin composed sonnets for each figure. George Vasari, who relates this in his *Lives of the Painters*, says, he does not know which would be the greatest impurity, to cast one's eyes upon the drawings of Julio, or to dip into the verses of Aretin." Some say that Aretin changed his libertine principles; but however this may be, it is certain that he composed several pieces of devotion. He wrote a Paraphrase on the penitential Psalms, and another on Genesis; he wrote also the Life of the Virgin Mary, and that of St. Catherine of Siena, and of St. Thomas Aquinas. He was author likewise of some comedies. He died in the year 1556, being about 65 years old.

ARGALL (John), was the third son of Thomas Argall, by Margaret his wife, daughter of John Talkarne of the county of Cornwall. He was born in London, and entered a student in Christ-church, in Oxford, towards the latter end of Queen Mary's reign. He took the degree of master of arts in 1565, and was senior of the act celebrated the eighteenth of February the same year. Afterwards he applied himself to the study of divinity, and having taken holy orders, obtained the living of Haleworth in Suffolk. Being at a feast at Cheffon, a mile distant from that town, he died suddenly at the table. His body was carried to Haleworth, and buried there, Oct. 8, 1606. During his stay at the university, he was a noted disputant, and a great actor of plays at Christ-church, particularly when the queen was entertained there in 1566. He was esteemed a very good scholar, and was so much devoted to his studies that he lived and died like a philosopher, with a thorough contempt for the things of this world. He was the author of two tracts, the one entitled "De vera Penitentia, the other "Introductio ad Artem Dialecticam."

ARGEIA, or *Argolis*, a district of Peloponnesus, situated between Arcadia to the west, the Egean Sea to the east, Laconica and the Sinus Argolicus to the south, and to the north the territory of Corinth and the Sinus Saronicus (Livy, Ptolemy); so called from Argos the capital: now *Romania di Morea*.

ARGEIL, a people of Greece, so called by the Greeks, from *Argi*, or *Argus*; *Argui*, by the Romans: Homer seems to call the Greeks in general *Argei*, as also *Achei*.

ARGENS (Jean Baptiste de Boyer, marquis de), a French

writer, famous for the number of his productions, was born at Aix in Provence, in 1704. His talents shewed themselves early, and his father intended him for the magistracy; but a gallant and voluptuous humour disposed him rather to the military, in which he served some time. Disgusted, however, with this profession, he passed into Holland, and devoted himself to the exercise of the pen; when the King of Prussia gave him an invitation, and attached him to him in quality of chamberlain. After having spent about five-and-twenty years with this monarch, he began to look towards his native country, and returned to Aix, where he lived like a philosopher; and died at the end of 1770. He had an ardent desire of knowledge, and knew a great deal. He was master of many languages: he painted very well; and was a considerable proficient in anatomy and chemistry. His works are very well known to the public, the principal of which are "Lettres Juives, Lettres Chinoises, Lettres Cabalistiques, Philosophie du bon Sens," &c. &c. He translated also from the Greek into French, "Ocellus Lucanus," and "Julian's Discourse upon Paganism." There is learning, knowledge, and good sense, scattered through all his writings; but they are very little favourable to religion; on the contrary, they are strongly tinged with libertinism.

ARGENTARIA, a town of ancient Gaul, thought to stand in the place where the city Colmar now stands. It is remarkable for a great victory gained by the emperor Gratian over the Lentiens, in the month of May, A.D. 378. The Romans, being but few in number, were at first overpowered, and obliged to give ground; but soon returning to the charge, they gained in the end a complete victory. Thirty thousand of the barbarians, and among the rest their king Tiarus, were killed on the spot; and all the rest, except 5000, taken prisoners.

ARGENTIERE, a town of France, in the late province of Provence, now a district of the department of Ardeche. It is five miles S.W. of Aubenas, and 17 W. of Viviers. Long. 4. 22. E. Lat. 44. 30. N.

ARGENTORA, *Argentum* (Notitia); *Argentoratum* (Ptolemy); *Argentoratus* (Ammian); a city of the Tribocci; one of the fifty forts built by Drusus on the Rhine (Florus): an appellation formed by the Romans from the German, *Argen Straffen*, or *Stralen*, "unsafe roads for travellers," from the marauding parties of the garriſons that infested the roads. Now *Strasbourg*, in the lower Alsace, on the rivulet Ill, near the Rhine. E. Long. 7. 35. Lat. 48. 38.

ARGIPPEANS, a part of the ancient Scythian nation. The men and the women were bald, hump-backed, and had great chins. Their language was totally peculiar to themselves. Their dress was the same with that of the other Scythians. Their food was the fruit of a tree called *Pontica*, about as high as a fig-tree: it bore a kind of filbert; the kernel of which in form resembled a bean. They sucked from it a thick black liquor; and this liquor they sometimes drank with milk. The groffer part of this fruit, after it had been pressed, served them instead of animal food; for they had but few cattle, and were therefore unskilled in the care of flocks and herds. They lay in winter under trees, over which they spread a white covering; this covering they used not in the summer. None dared to offer them any injury; for they were deemed sacred. Therefore they had no arms; and were unacquainted with the art of war. They determined the differences and disputes of their neighbours; and whoever fled to them from persecution, found a safe asylum; it would have been sacrilege to hurt, to insult him in their country.

ARGIVI (*Encycl.*). For the subject referred to, but accidentally omitted, see ARGÆIA, in this Supplement.

ARGOS, an ancient name of Peloponnesus; from Argos, one of the kings. (Homer. Strabo.)

ARGOS, the capital, and an inland town, of Argolis. It had different furnames; as *Achaicum*, from the country, or an ancient people (Homer); *Inachus*, from the river Inachus, which runs by (Pliny); &c. It had two citadels (Livy); the one called *Larissa* (Strabo); the other unnamed. At the siege of this city, Pyrrhus king of Epirus was killed by a tile thrown by an old woman. ARGOS was 26 stadia distant from Temenium, a maritime town, and 50 to the south of Mycenæ: now *Argo*. E. Long. 23. 5. Lat. 37. 30.

ARGOS HIPPIUM, the ancient name of *Arpi*; but *Lampe* is a still more ancient; afterwards called *Argyrippa*, and *Argippa*; built by, and the residence of, Diomedes, on the Cerebalus (Virgil); afterwards a large and populous city (Livy). A town of Apulia; now in ruins, and the place called *Arpe*.

ARGOSTOL, a seaport of the isle of Cefalonia, over-against Albania. It is the best harbour in all the island, and the provisor resides in the fortrefs, which is five miles distant.

ARGUN, a river of Asia, which divides the Russian from the Chinese empire.

ARGUN, a town of Eastern Tartary, on the frontiers of the Chinese empire. There are mines of silver and lead near it; and a pearl fishery in the river Argun. Long. 103. 56. E. Lat. 42. 30. N.

ARGYROPOEIA, among alchemists, a pretended art of transmuting or changing other metals into silver.

ARGYROPYLUS (Joannes), one of the first of those learned persons, who fled into Italy upon the taking of Constantinople by Mahomet II. in 1453, and contributed to the revival of the Greek learning in the west. Cosimo de Medicis, duke of Tuscany, made him professor of Greek at Florence, and appointed him preceptor to his son Peter, and to his grandson Laurence. He had several illustrious pupils at Florence, to whom he read lectures in the Greek language and philosophy; and among the rest Angelus Politianus. In 1456 he went into France, to implore the assistance of Charles VII. in behalf of some friends and relations, whom he wanted to redeem from Turkish slavery. He continued many years in his professorship at Florence; but the plague at length obliging him to quit it, he went to Rome, where he publicly read lectures upon the Greek text of Aristotle. He was carried off by an autumnal fever, which he got by an intemperate eating of melons, in the 70th year of his age, and about the year 1480.

ARGYRUNTUM, a maritime town of Illyria (Ptolemy, Pliny). Now Novigrad, a town of Dalmatia. E. Long. 17. 30. Lat. 44. 30.

ARIANO, a town of Italy, in the Ferrarese, on a branch of the river Po, 22 miles N. E. of Ferrara. Long. 12. 8. E. Lat. 45. 0. N.

ARIAS MONTANUS, a learned Spanish divine, employed by Philip II. of Spain to publish another edition of the Bible, after that of Cardinal Ximenes; which he finished with applause, and died at Seville in 1598.

ARICONIUM, a town of the Silures (Antonine); near Hereford (Camden). W. Long. 2. 42. Lat. 52. 6.

ARIMASPI (Pliny), a people of Sarmatia Europea, to the south of the Montes Rhipæi, said by Mela to have but one eye; a fable broached by Aristeas Proconnesius, according to Herodotus.

ARIMINUM, a town of Umbria, or Romagna, at the mouth of the Ariminus, on the Gulf of Venice. The seizing on by Cæsar gave rise to the civil war. Now called *Rimini*. E. Long. 13. 30. Lat. 44. 8.

ARION, an excellent musician and poet, inventor of dithyrambs. Periander entertained him at his court, where getting an estate, and returning to Corinth, the sailors, for

lucre of his money, threw him into the sea; when according to the poets, a dolphin, charmed with his music, took him on her back and carried him safe to shore.

ARISTANDER, a famous foothfayer under Alexander the Great, over whom he gained a wonderful influence by the good success of his art. He had already had the same employment at the court of King Philip; and it was he who explained better than his brethren the dream that this prince had after having married Olympias.

ARISTARCHUS, a Grecian philosopher of Samos, one of the first that maintained that the earth turns upon its own centre. We are not sure of the age in which he lived; and have none of his works but a *Treatise of the Greatness and Distance of the Sun and Moon*, translated into Latin by Frederic Commandine, and published with Pappus's explanations in 1572.

ARISTARCHUS, a celebrated grammarian, much esteemed by Ptolemy Philometor, who committed to him the education of his son. He applied himself chiefly to criticism, and made a revival of Homer's poems, but in too magisterial a way; for such verses as he did not like he treated as spurious. He commented on other poets. Cicero and Horace made use of his name to express a very rigid critic.

ARISTIDES, surnamed the *Just*, flourished at Athens at the same time with Themistocles, who triumphed over him by his boisterous eloquence, and got him banished, 483 years before Christ; but Aristides being recalled a short time after, would never join with the enemies of Themistocles, to get him banished; for nothing could make him deviate from the strictest rules of moderation and justice. Aristides brought the Greeks to unite against the Persians; distinguished himself at the famous battle of Marathon, and that of Salamine and Platea; and established an annual income of 460 talents for a fund to supply the expenses of war. This great man died poor, though he had the management of the revenues of Greece, that the state was obliged to pay his funeral expences, to give fortunes to his daughters in marriage, and a maintenance to his son Lyfianachus.

ARISTIDES of Miletus, a famous Greek author, often cited by the ancients.

ARISTIDES, a very eloquent Athenian orator, who became a convert to the Christian religion, and about the year 124 presented to the Emperor Adrian an apology for the Christians.

ARISTIDES (Ælius), a celebrated orator, born in Mysia, about 129 years before the Christian æra. The best edition of his works is that of Oxford, printed in Greek and Latin, in two volumes quarto.

ARISTIDES, a painter contemporary with Apelles, flourished at Thebes about the 122d Olympiad. He is said to have been the first who attempted to delineate the passions of the mind in colours. His Bacchus was so excellent a piece, as to become proverbial.

ARISTIPPUS, the founder of the Cyrenaic sect of philosophy, was the son of Aretades, and born at Cyrene in Libya. He flourished about the 96th Olympiad. The great reputation of Socrates induced him to leave his own country, and remove to Athens, that he might have the satisfaction of hearing his discourses. He was chiefly delighted with those discourses of Socrates that related the most to pleasure; which he asserted to be the ultimate end in which all happiness consists. His manner of life was agreeable to his opinion; for he indulged himself extremely in all the luxuries of dress, wine, and women. Though he had a good estate, and three country seats, yet he was the

only one of the disciples of Socrates who took money for teaching: which being observed by the philosopher, he asked Aristippus, How he came to have so much? Who in reply asked him, How he came to have so little? Upon his leaving Socrates, he went to Ægina, as Athenæus informs us, where he lived with more freedom and luxury than before. Socrates sent frequent exhortations to him, in order to reclaim him; but all in vain: and with the same view he published that discourse which we find in Xenophon. Here Aristippus became acquainted with Leis, the famous courtesan of Corinth; for whose sake he took a voyage to that city. He continued at Ægina till the death of Socrates, as appears from Plato's *Phædo*, and the epistle which he wrote upon that occasion. He returned at last into his own country Cyrene, where he professed philosophy, and instituted a sect which, as we observed above, was called the *Cyrenaic*, from the place, and by some writers the *Hedonic*, or voluptuous; from its doctrines. During the height of the grandeur of Dionysius the Sicilian tyrant, a great many philosophers resorted to him; and among the rest Aristippus, who was tempted thither by the magnificence of that court. Dionysius asking him the reason of his coming, he replied, "That it was in order to give what he had, and to receive what he had not;" or, as others represent it, "That when he wanted wisdom, he went to Socrates; but now as he wanted money, he was come to him." He very soon insinuated himself into the favour of Dionysius; for, being a man of a soft easy temper, he conformed himself exactly to every place, time, and person, and was a complete master of the most refined complaisance.

We have several remarkable passages concerning him during his residence at that court, mentioned by Diogenes Laertius. Dionysius, at a feast, commanded that all should put on women's purple habits, and dance in them. But Plato refused, repeating these lines:

I cannot in this gay effeminate dress
Disgrace my manhood, or my sex betray.

But Aristippus readily submitted to the command, and made this reply immediately:

—At feasts, where mirth is free,
A sober mind can never be corrupted.

At another time, interceding with Dionysius in behalf of a friend, but not prevailing, he cast himself at his feet: being reproved by one for that excess of humility, he replied, "That it was not he who was the cause of that submission; but Dionysius, whose ears were in his feet." Dionysius shewed him three beautiful courtesans, and ordered him to take his choice. Upon which, he took them all three away with him, alleging, that Paris was punished for preferring one to the other two; but when he had brought them to his door, he dismissed them, in order to shew that he could either enjoy or reject with the same indifference. Having desired money of Dionysius, the latter observed to him, that he had assured him a wife man wanted nothing. "Give me (says he) what I ask, and we will talk of that afterwards." When Dionysius had given it him, "Now (says he), you see I do not want." By this complaisance he gained so much upon Dionysius, that he had a greater regard for him than for all the rest of the philosophers, though he sometimes spoke with such freedom to that king, that he incurred his displeasure. When Dionysius asked, Why philosophers haunted the gates of rich men, but not rich men those of philosophers? he replied, "Because the latter know what they want, and the others not." Another time, Dionysius repeating (out of Sophocles, as Plutarch affirms, who ascribes this to Zeno) these verses,

He that with tyrants seeks for bare support,
Enslaves himself, though free he came to court;

he immediately answered,

He is no slave, if he be free to come.

Diocles, as Laertius informs us, related this in his *Lives of the Philosophers*; though others ascribe this saying to Plato. Aristippus had a contest with Antisthenes, the Cynic philosopher; notwithstanding which, he was very ready to employ his interest at court for some friends of Antisthenes, to preserve them from death, as we find by a letter of his to that philosopher. Diogenes followed the example of his master Antisthenes in ridiculing Aristippus, and called him the *court-spaniel*.

We have many apophthegms of his preserved. Suidas observes, that he surpassed all the philosophers in the acuteness of his apophthegms. Being once rallied at, he left the room; and the person who abused him, following him, and asking him why he went away, he answered, "Because it is in your power to rail, but it is not in my power not to hear you." A person observing, that the philosophers frequented the houses of rich men; "Why (says he), the physicians frequent the chambers of the sick, yet that is no reason why a man should rather choose to lie sick than be cured." To one who boasted of his great reading, he said, "That as they who feed and exercise most are not always more healthy than they who only eat and exercise to satisfy nature; so neither they who read much, but they who read no more than is useful, are truly learned." Among other instructions which he gave to his daughter Arete, he advised her particularly to despise superfluity. To one who asked him what his son would be the better for being a scholar? "If for nothing else (said he), yet for this alone, that when he comes into the theatre, one stone will not fit upon another." When a certain person recommended his son to him, he demanded 200 drachmas; and upon the father's replying, that he could buy a slave for that sum, "Do so (said he), and then you'll be master of a couple." Being reproached, because, having a suit of law depending, he fed a lawyer to plead for him, "Just so (said he), when I have a great supper to make, I always hire a cook." Being asked what was the difference between a wife man and a fool, he replied, "Send both of them together naked to those who are acquainted with neither of them, and then you'll know." Being reproved by a certain person (who, according to Mr. Stanley, was Plato) for his costly and voluptuous feasts, "I warrant you (said he), that you would not have bestowed three farthings upon such a dinner;" which the other confessing, "Why then (said he) I find myself less indulgent to my palate, than you are to your covetous humour;" or, as it is otherwise represented, "I find, that I love my belly, and you love your money." When Simus, treasurer to Dionysius, shewed him his house magnificently furnished, and paved with costly marble (for he was a Phrygian, and consequently profuse); Aristippus spit in his face: upon which the other growing angry, "Why, truly (said he), I could not find a fitter place." His servant carrying after him a great weight of money, and being ready to sink upon the road under his burden, he bid him throw away all what was too much for him to carry. Horace mentions this fact in his third satire of the second book:

Quid simile isti

Græcus Aristippus? qui servos projicere aurum
In media jussit Libya, quia tarasius irent
Propter onus segnes.

Being asked what things were most proper for children to be instructed in? he answered, "Those which might prove of

the greatest advantage to them when they came to be men." Being reproached for going from Socrates to Dionyſius, he replied, "That he went to Socrates when he wanted ſerious inſtruction, and to Dionyſius for diverſion." Having received money of Dionyſius at the ſame time that Plato accepted a book only, and being reproached for it, "The reaſon is plain (lays he), I want money, and Plato wants books." Having loſt a conſiderable farm, he ſaid to one who ſeemed exceſſively to compaſſionate his loſs, "You have but one field; I have three left: why ſhould not I rather grieve for you?" Plutarch, who relates this in his book *De Tranquillitate Animi*, obſerves upon it, that it is very abſurd to lament for what is loſt, and not to rejoice for what is left. When a perſon told him, "That the land for his ſake was loſt," he replied, "That it was better fo, than that he ſhould be loſt for the land." Being caſt by ſhipwreck aſhore on the iſland of Rhodes, and perceiving mathematical ſchemes and diagrams drawn upon the ground, he ſaid, "Courage, friends; for I ſee the footſteps of men."

After he had lived a long time with Dionyſius, his daughter Arete ſent to him, to deſire his preſence at Cyrene, in order to take care of her affairs, ſince he was in danger of being oppreſſed by the magiſtrates. But he fell ſick in his return home, and died at Lipara, an Æolian iſland. With regard to his principal opinions, like Socrates, he rejected the ſciences as they were then taught, and pretended that logic alone was ſufficient to teach truth and fix its bounds. He aſſerted, that pleaſure and pain were the criterions by which we were to be determined; that theſe alone made up all our paſſions; that the firſt produced all the ſoft emotions, and the latter all the violent ones. The aſſemblage of all pleaſure, he aſſerted, made true happineſs, and that the beſt way to attain this was to enjoy the preſent moments. He wrote a great many books; particularly the Hiſtory of Libya, dedicated to Dionyſius; ſeveral Dialogues; and four books Of the Luxury of the Ancients. There are four epiſtles of his extant in the Socratic Collection publiſhed by Leo Allatius.

Befides Arete his daughter, whom he educated in philoſophy, Ariſtippus had alſo a ſon, whom he diſinherited for his ſtupidity. Arete had a ſon, who was named *Ariſtippus* from his grandfather, and had the ſurname of *Μετρίππας* from his mother's inſtructing him in philoſophy. Among his auditors, beſides his daughter Arete, we have an account of Æthiops of Ptolemais, and Antipater of Cyrene. Arete communicated the philoſophy, which he received from her father, to her ſon Ariſtippus, who transmitted it to Theodorus the *Atheiſt*, who inſtituted the ſect called *Theodorean*. Antipater communicated the philoſophy of Ariſtippus to Epitímedes his diſciple; Epitímedes to Paræbates; Paræbates to Heggeſias and Anniceris; and theſe two laſt, improving it by ſome additions of their own, obtained the honour each of them of giving a name to the *Heggeſiac* and *Annicerian* ſects.

Laertius mentions two other perſons of the name of Ariſtippus; one, who wrote the Hiſtory of Arcadia; the other, a philoſopher of the New Academy.

ARISTO, a Stoic philoſopher, the diſciple of Zeno the chief of the Stoics, flouriſhed about 290 years before the Chriſtian æra. He differed but little from his maſter Zeno. He rejected logic as of no uſe, and natural philoſophy as being above the reach of the human underſtanding. It is ſaid, that being bald, the ſun burnt his head; and that this cauſed his death. There is a ſaying of his recorded, which might render the doctrine of Ariſtippus leſs odious than it ordinarily is (ſee *ARISTIPPUS*). He uſed to ſay, "That a philoſopher might do thoſe of his hearers a prejudice who put a wrong interpretation upon good meanings; as for example, that the ſchool of Ariſtippus might

ſend out debauchees, and that of Zeno Cynics;" which ſeems to imply, that the doctrine of this philoſopher never produced this effect but when it was miſunderſtood. He ſhould alſo have added, that every teacher is therefore obliged to forbear laying down ambiguous maxims, or to prevent falſe gloſſes being put upon them.

ARISTO (Titus), a Roman lawyer, perfect maſter of the public and civil law, of hiſtory and antiquity. The Pandects mention ſome books of his, as does Aulus Gellius.—He was contemporary with Pliny the Younger, who gives him a noble character, and had a moſt tender friendſhip for him. See *Plinii Epist.* lib. i. ep. 22.

ARISTOGITON, a famous Athenian, who, with Armodius, killed Hipparchus, tyrant of Athens, about 513 years before the Chriſtian æra. The Athenians erected a ſtatue to him.

ARISTOMENES, a general of the Meſſenians, renowned for his valour and virtue.

ARISTOTLE (*Encycl.*), beſides his treatiſes on philoſophy, wrote alſo on poetry, rhetoric, law, &c. to the number of 400 treatiſes, according to Diogenes Laertius; or more, according to Francis Patricius of Venice. An account of ſuch as are extant, and of thoſe ſaid to be loſt, may be ſeen in Fabricius's *Bibliotheca Græca*. He left his writings with Theophrastus, his beloved diſciple and ſucceſſor in the Lyceum; and forbade that they ſhould ever be publiſhed. Theophrastus, at his death, truſted them to Neleus, his good friend and diſciple; whoſe heirs buried them in the ground at Scepsis, a town of Troas, to ſecure them from the king of Pergamus, who made great ſearch every-where for books to adorn his library. Here they lay concealed 160 years, until, being almoſt ſpoiled, they were fold to one Apellicon, a rich citizen of Athens. Sylla found them at this man's houſe, and ordered them to be carried to Rome. They were ſome time after purchaſed by Tyrannium a grammarian; and Andronicus of Rhodes having bought them of his heirs, was in a manner the firſt reſtorer of the works of this great philoſopher; for he not only repaired what had been decayed by time and ill-keeping, but alſo put them in a better order, and got them copied. There were many who followed the doctrine of Ariſtotle in the reigns of the twelve Cæſars, and their numbers increaſed much under Adrian and Antoninus: Alexander Aphrodiſus was the firſt profeſſor of the Peripatetic philoſophy at Rome, being appointed by the emperors Marcus Aurelius and Lucius Verus; and in ſucceeding ages the doctrine of Ariſtotle prevailed among almoſt all men of letters, and many commentaries were written upon his works.

The firſt doctors of the church diſapproved of the doctrine of Ariſtotle, as allowing too much to reaſon and ſenſe; but Anatolius biſhop of Laodicea, Didymus of Alexandria, St. Jerome, St. Auguſtin, and ſeveral others, at length wrote and ſpoke in favour of it. In the ſixth age, Boethius made him known in the weſt, and tranſlated ſome of his pieces into Latin. But from the time of Boethius to the eighth age, Joannes Damascenus was the only man who made an abridgement of his philoſophy, or wrote any thing concerning him. The Grecians, who took great pains to reſtore learning in the 11th and following ages, applied much to the works of this philoſopher, and many learned men wrote commentaries on his writings: amongſt theſe were Alfarabius, Algazel, Avicenna, and Averoes. They taught his doctrine in Africa, and afterwards at Cordova in Spain. The Spaniards introduced his doctrine into France, with the commentaries of Averoes and Avicenna; and it was taught in the univerſity of Paris, until Amauri, having ſupported ſome particular tenets on the principles of this philoſopher, was condemned of hereſy, in a coun-

cil held there in 1210, when all the works of Aristotle that could be found were burnt, and the reading of them forbidden under pain of excommunication. This prohibition was confirmed, as to the physics and metaphysics, in 1215, by the Pope's legate; though at the same time he gave leave for his logic to be read, instead of St. Augustin's used at that time in the university. In the year 1265, Simon, cardinal of St. Cecil, and legate from the holy see, prohibited the reading of the physics and metaphysics of Aristotle. All these prohibitions, however, were taken off in 1366; for the cardinals of St. Mark and St. Martin, who were deputed by Pope Urban V. to reform the university of Paris, permitted the reading of those books, which had been prohibited: and in the year 1448, Pope Stephen approved of all his works, and took care to have a new translation of them into Latin.

Passing from hand to hand, in the manner above mentioned, the works of Aristotle have greatly suffered from the ignorance or the inaccuracy of transcribers. This has given birth to much obscurity, and to omissions that are now irreparable: it is this which has rendered the sense of Aristotle so doubtful, and opened such a wide field for the combats of scholastic philosophy. Besides, our philosopher was not himself very much inclined to be perfectly plain and familiar. His style was difficult and concise. He has employed a mathematical manner of communication; often uses terms which have no determinate meaning; and, with many of his doctrines, he mixes ancient opinions as taken for granted, which are altogether false or uncertain. In a word, the Peripatetic philosophy is very obscure in itself, and commentators have rather contributed to increase the obscurity.

ARISTOXENUS, the most ancient musical writer, of whose works any traces are come down to us. He was born at Tarentum, a city in that part of Italy called *Magna Græcia*, now Calabria. He was the son of a musician, whom some call *Mnesias*, others *Spintharus*. He had his first education at Mantinea, a city of Arcadia, under his father, and Lamprus of Erythra; he next studied under Xenophilus, the Pythagorean; and lastly under Aristotle, in company with Theophrastus. Suidas, from whom these particulars are transcribed, adds, that Aristoxenus, enraged at Aristotle having bequeathed his school to Theophrastus, traduced him ever after. But Aristotles the Peripatetic, in Eusebius, exculpates Aristoxenus in this particular, and assures us that he always spoke with great respect of his master Aristotle. From the preceding account it appears that Aristoxenus lived under Alexander the Great, and his first successors. His *Harmonics* in three books, all that are come down to us, together with Ptolemy's *Harmonies*, were first published by Gogavinus, but not very correctly, at Venice, 1562, in 4to, with a Latin version. John Meurinus next translated the three books of Aristoxenus into Latin, from the MS. of Jos. Scaliger; but, according to Meibomius, very negligently. With these he printed at Leyden, 1616, 4to. Nicomachus and Alypius, two other Greek writers on music. After this, Meibomius collected these musical writers together; to which he added Euclid, Bacchius senior, Aristides Quintilianus; and published the whole, with a Latin version and notes, from the elegant press of Elzevir, Amst. 1652. The learned editor dedicates these ancient musical treatises to Christina queen of Sweden. Aristoxenus is said by Suidas to have written 452 different works, among which those on music were the most esteemed; yet his writings on other subjects are very frequently quoted by ancient authors, notwithstanding Cicero and some others say that he was a bad philosopher, and had nothing in his head but music. The titles of several of the lost works of Aristoxenus, quoted by Athenæus and others, have been collected by Meur-

sius in his notes upon this author, by Tossius and Menage, all which Fabricius has digested into alphabetical order.

ARLESHEM, a handsome town of Switzerland, in the bishopric of Basle, where the canons of that city reside.

ARMACALES, a river of Babylon (Abydenus); called *Fessa Regia*, the *Royal Trench*, or *Cut* (Polybius); the *Royal River* (Ptolemy); *Almarachur* (Pliny); *Naarmalcha* (Ammian); a factitious channel, or cut, made by Nebuchadonofor, and a horn or branch of the Euphrates (Abydenus). The Euphrates naturally divides into two channels, one passing through Babylon, the other through Seleucia, and then falls into the Tigris; the factitious channel between these two is the Royal River; which mixes with the Tigris, a great deal lower down than Seleucia, at Apamea (Ptolemy).

ARMAGH, a city of Ireland, and capital of the county so called, the see of an archbishop, who is lord primate of all Ireland. St. Patrick founded the see in the year 444. This city was much decayed, but by the munificence of Lord Rokeby, the archbishop, it has been considerably increased; he has built a handsome palace, and a noble house for the school, which is a royal foundation; to which he added a public library for the promotion of science. He has also erected an observatory, with a liberal income for an astronomer, securing the endowments by several acts of the legislature; 62 miles N. Dublin, and 46 S. S. E. Londonderry. Long. 6. 35. W. Greenwich. Lat. 54. 21. N.

ARMENE, or ARMINA, anciently a hamlet of Paplagonia (Ptolemy). The inhabitants encompassed it with a wall, because of the coldness of the place, imagining by that means to render it warmer. But this proving ineffectual, gave rise to the proverb *Armenen muro cingere*, used to express some egregious folly.

ARMENIA (*Encycl.*). The Armenians are an honest, civil, polite people, scarce troubling themselves about any thing else but trade, which they carry on in most parts of the world, by which means they have spread themselves over the east, and also great part of Europe; and wherever they come, commerce is carried on with spirit and advantage.

The religion of the Armenians is the Christian, of the Eutychian sect: that is, they own but one nature in Jesus Christ; and when they speak of the hypostatical union, that he is perfect God and perfect man without mixture. They have a high esteem for a book they call the *Little Gospel*, which treats of the infancy of Jesus, and says that the Virgin Mary being pregnant, her sister Salome accused her of having prostituted herself; to which the Virgin answered, that she needed only to lay her hand on her belly, and the world know how she came to be with child: this Salome accordingly did, and fire came out of her belly, which consumed the half of her arm; upon which she acknowledged her fault, and drew it back: after which it was healed by putting it to the same place.

The Armenian clergy consist of patriarchs, archbishops, doctors, secular priests, and monks. The secular priests are not allowed to marry a second time; and therefore they take care to choose young healthy wives: they maintain themselves and families by following some occupation, inasmuch, that they have hardly time to perform their ecclesiastical functions: they lie in the churches on the vigils of those days they are obliged to officiate.

The Armenian monks are of the order of St. Basil; and every Wednesday and Friday they eat neither fish, nor eggs, nor oil, nor any thing made of milk, and during Lent they live upon nothing but roots: they are allowed wine only on the Saturday in the Holy Week, and meat on the Easter Sunday. Besides the great Lent, they have four others of eight

days each, which are instituted to prepare for the four great festivals of the Nativity, the Ascension, the Annunciation, and of St. George; in which times they must not so much as speak of eggs, fish, oil, or butter.

The Armenians have seven sacraments; baptism, confirmation, penance, the eucharist, extreme unction, orders, and matrimony. In baptism, the child is plunged three times into the water, and the same form of words that is used with us is repeated every time; the priest then puts a small cord made with silk and cotton on the neck of the infant, and anoints his forehead, chin, stomach, arm-pits, hands, and feet, making the sign of the cross on each part. When the child is baptized, he is carried home by the godfather with the sound of drums and trumpets. The women do not go to church till forty days after their delivery; and they observe many Jewish customs.

At the communion, to which infants of two or three months old are admitted, the priests give a piece of the consecrated host, soaked in the consecrated wine. The elements are covered with a great veil, and placed in a cup-board near the altar, on the side of the gospels. When the priest takes the chalice and paten, he is followed by his deacons, and sub-deacons, with flambeaux and plates of copper furnished with bells: in this manner, with a censer before him, he goes in procession round the sanctuary; he then sets them on the altar, pronounces the words of consecration, and turns himself to the people, who fall down, kiss the earth, and beat their breasts: then, after taking it himself, he distributes the host soaked in wine to the people.

The Armenians seem to place the chief part of their religion in fastings and abstinences: and among the clergy, the higher the degree, the lower they must live; inasmuch that it is said the archbishops live on nothing but pulse. They consecrate holy water but once a-year, at which time every one fills his pot and carries it home, which brings in a considerable revenue to the church.

ARMINIUS (James), whose real name in Low Dutch was James Harmanni, a famous Protestant divine, from whom the modern sect of Arminians take their name, was born at Oude-water, in Holland, in 1560. He was ordained minister at Amsterdam on the 11th of August, 1588; when he soon distinguished himself by his sermons, which were remarkable for their solidity and learning, and gained him universal applause: but Martin Lydias, professor of divinity at Franeker, judging him a fit person to refute a writing in which Beza's doctrine of predestination had been attacked by some ministers of Delft, Arminius at his intreaties undertook the task; but upon thoroughly examining the reasons on both sides, he came into the opinions he proposed to destroy, and afterwards went still farther than the ministers of Delft had done. In 1600 he opposed those who maintained that ministers should subscribe the confession and catechism every year. In 1602 a pestilential disease raged at Amsterdam, during which he acted with the greatest resolution and courage, in assisting the poor, and comforting the sick; and Lucas Trelocatius and Francis Junius dying of that disease at Leyden, the curators of that university chose Arminius professor of divinity there, and he was afterwards made doctor of divinity. Disputes upon grace were soon after kindled in that university; and he was at length engaged in a new contest, occasioned by a disputation of his concerning the divinity of the Son. These contests, his continual labour, and the concern of seeing his reputation blasted by a multitude of slanders in relation to his opinions, impaired his health, and threw him into a fit of sickness, of which he died on the 19th of October, 1609.

Arminius was esteemed an excellent preacher: his voice was low, but very agreeable; and his pronunciation admir-

able: he was easy and affable to persons of all ranks, and facetious in his conversation amongst his friends. His great desire was, that Christians would bear with one another in all controversies which did not affect the fundamentals of their religion; and when they persecuted each other for points of indifference, it gave him the utmost dissatisfaction. The curators of the university of Leyden had so great a regard for him, that they settled a pension upon his wife and children.

He left several works, viz. 1. *Disputationes de diversis Christiane religionis capitulis*. 2. *Orationes, itemque tractatus insigniores aliquot*. 3. *Examen modeste libelli Guilielmi Perkinii de predestinationis modo et ordine, itemque de amplitudine gratiae divinae*. 4. *Analysis capitis noni ad Romanos*. 5. *Differtatio de vero et genuino sensu capitis septimi epistolae ad Romanos*. 6. *Amica collatio cum D. Francisco Junio de predestinatione per litteras habita*. 7. *Epistola ad Hippolytum a collibus*.

ARMOZA, or HARMOZIA, a town in Carmania, at the mouth of the Anamis, which falls into the Persian Gulf (Arrian); *Arnuza* (Ptolemy); and from this the neighbouring island, and a small kingdom, take the modern name of *Ormuz*. E. long. 56. 17. N. lat. 27. 20.

ARMSTRONG (*Encycl.*), like Akenfide, another poet and physician, never arrived at much practice. In 1735 he published a little humorous fugitive pamphlet, entitled, *An Essay for abridging the Study of Physic*; to which is added, *A Dialogue betwixt Hygeia, Mercury, and Pluto*; as also an Epistle from Utbek the Persian to Joshua Ward, Esq. In 1737 he published *A Synopsis of the History and Cure of Venereal Diseases*. This was soon followed by the *Economy of Love*, a poem which has much merit, but is too strongly tinged with the licentiousness of Ovid. His Art of preserving Health, which was published in 1744, is his best performance, and will transmit his name to posterity as one of the first English writers. In 1746 Dr. Armstrong was appointed one of the physicians to the hospital for lame and sick soldiers, behind Buckingham-house. In 1751 he published his poem *On Benevolence*; and in 1753, *Taste*, an Epistle to a young Critic. In 1760 he had the honour of being appointed physician to the army in Germany; where, in 1761, he wrote a poem called *Day*, an Epistle to John Wilkes, of Aylesbury, Esq. In this poem, which is not collected in his works, he wantonly hazarded a reflection on Churchill, which drew out him the serpent-toothed vengeance of that severest of satirists. In 1770 Dr. Armstrong published a collection of *Miscellanies* in two volumes; containing, 1. *The Art of preserving Health*. 2. *Of Benevolence*, an Epistle to Eumenes. 3. *Taste*, an Epistle to a young Critic, 1753. 4. *Imitations of Shakspeare and Spenser*. 5. *The Universal Almanac*, by Noureddin Ali. 6. *The Forced Marriage*, a Tragedy. 7. *Sketches*. In 1771 he published *A short Ramble through some Parts of France and Italy*, by Lancelot Temple; and in 1773, a quarto pamphlet, under the title of *Medical Essays*. He died in September 1770.

ARMSTRONG (Sir Thomas), descended of an ancient and loyal family, was born at Nimegen in Holland. As he grew up, he discovered a vigorous, martial disposition, which recommended him to the acquaintance and esteem of many persons of quality, who looked upon him as a man of a warm heart, and a good head. He was a very stirring and active royalist during the exile of King Charles II. which exposed him to the malice of the Protector, Cromwell, who caused him to be confined a year in Lambeth-house, which in those times was a prison. He suffered greatly in this imprisonment; for the royalists were at that time so exhausted, that, how warm-foever their charity might be in their hearts, its effects were but cold, and therefore Mr. Armstrong was very near sinking;

under this misfortune, when by some accident or other he recovered his liberty. This usage, hard and cruel as it was, could neither break his spirits, nor abate his loyalty, which induced the principal friends the king had in his dominions, to make choice of him to go to his majesty, then at Brussels, with bills of exchange of great value, and other papers of still greater importance, which commission he executed with such diligence and discretion, that he not only put the bills and papers safely into the king's hands, but brought home and delivered as safely the answers with which he was entrusted. But the Protector had so good intelligence, that within a week after he came back, he was seized and sent to the Gatchouse, where he suffered another sharp imprisonment, and was in great danger of losing his life. This service was so acceptable to the king when performed, that he conferred on him the honour of knighthood; and yet the remembrance of it was so far from being of any service to him in his troubles, that it was thought one principal reason for taking away his life. After this he was again imprisoned in the Tower, and obtained his liberty only by the death of the Protector, and on his obtaining it, returned to the service of his master, and was one of those distinguished royalists, that signed that excellent address to the Lord General Monk, that operated so strongly in favour of the Restoration. On the king's return he was taken into great favour, was employed in many services of importance, promoted to the rank of lieutenant in one of the troops of horse-guards, and was gentleman of horse to his majesty. The heat and vehemence of his temper betrayed him however into some excesses, and particularly into one, which was extremely fatal to his reputation, and, but for the king's favour, might have been fatal also to his life. This was the killing one Mr. Scroop in a play-house quarrel, which misfortune rendered it necessary, or at least expedient, for him to leave the kingdom, but he did it in an honourable way, and as an attendant upon the king's natural son, Mr. James Crofts, afterwards so well known to the world, by the title of Duke of Monmouth. He served with him in Flanders with great reputation, and there acquired such a degree of military skill, as made him be considered as an active and accomplished officer, which made him the more dear to those noblemen of a martial disposition who attached themselves to that duke. After the war was over he returned to England, and stood in all appearance in as high favour, and as great credit with the king, as ever. But this did not continue long; for the times growing troublesome, and factions arising both in the court and country, he had the misfortune to fall into such measures as disobliterated his master, drew upon him at first his coldness and displeasure, and ended at last in removing him from all his places, and in his total dismission from court. The long intercourse of friendship he had with, and his great dependence on, the Duke of Monmouth, proved the first cause of his troubles, and in the end that of his ruin. The court had no sooner received informations of a traitorous nature against Sir Thomas; than they took all imaginable pains to get him into their hands; but he having timely notice of the discoveries made against him, made his escape, and after some time spent, with as much secrecy as possible, in England, he withdrew into Holland, and passed by the name of Mr. Henry Lawrence, and there thought himself safe; but Mr. Chudleigh, King Charles's minister there, obtaining a warrant from the States, for apprehending such of the conspirators as had fled from England, he was seized at Leyden, and delivered up to the king's minister, who sent him to England. While this unfortunate gentleman was in Holland, an indictment was preferred against him in London, for high-treason, upon which he was outlawed, and upon his being brought home, it was resolved to proceed against him upon this outlawry, without allowing him the benefit of a trial. He was

accordingly committed to Newgate, and on the 20th of June, 1684, executed at Tyburn as a traitor.

ARNA, a town of Andros, an island of the Archipelago, with a good harbour.

ARNALD (Richard), was born at London, and admitted a pensioner of Benet College, Cambridge, in 1714. After taking the degree of B. A. being disappointed of a fellowship, he removed to Emanuel College, March 10, 1718, where he proceeded M. A. and was elected fellow in 1721. He commenced B. D. seven years after, as the statutes of that house required, and continued there till the society presented him to the rectory of Thurcaston in Leicestershire. Whilst fellow of that college, he printed two copies of Sapphics on the death of King George; a sermon preached at Bishop Stortford school-feast, August 3, 1726; and another at the archdeacon's visitation at Leicester, April 22, 1737. A third, preached at Thurcaston, October 9, 1746, was published under the title of The Parable of the Cedar and Thistle, exemplified in the great victory at Culloden, 4to. In 1744 he published his celebrated Commentary on Widdow, in folio; that on Ecclesiastics, in 1748; and another on Tobit, 8vo. in 1752. He married a daughter of Mr. Wood, rector of Wilford, near Nottingham, and died in 1756.

ARNALL (William), a noted political writer in defence of Sir Robert Walpole, was originally an attorney's clerk; but being recommended to Walpole, he employed him for a course of years in writing the *Free Briton* and other papers in defence of his administration. By the report of the secret committee, he appears to have received, in the space of four years, no less than 10,997l. 6s. 8d. out of the treasury for his writings! but spending his money as fast as it came, and his supplies stopping on Sir Robert's resignation, he died broken-hearted and in debt, in the 26th year of his age. His invention was so quick, that his honourable employer used to say, no man in England could write a pamphlet in so little time as Arnall.

ARNAUD DE MERVEILL, or MERVEIL, a poet of Provence, who lived at the beginning of the 13th century. He wrote a book entitled, *Las cecafenas de sa contesse*; and a collection of poems and sonnets. He died in the year 1220. Petrarch mentions him in his *Triumph of Love*.

ARNAUD DE VILLA NOVA, a famous physician, who lived about the end of the 13th and beginning of the 14th century. He studied at Paris and Montpellier, and travelled through Italy and Spain. He was well acquainted with languages, and particularly with the Greek, Hebrew, and Arabic. He was at great pains to gratify his ardent desire after knowledge; but this passion carried him rather too far in his researches: he endeavoured to discover future events by astrology, imagining this science to be infallible; and upon this foundation he published a prediction, that the world would come to an end in the middle of the 14th century. He practised physic at Paris for some time: but having advanced some new doctrines, he drew upon himself the resentment of the university; and his friends, fearing he might be arrested, persuaded him to retire from that city. Upon his leaving France, he retired to Sicily, where he was received by King Frederic of Arragon with the greatest marks of kindness and esteem. Some time afterwards, this prince sent him to France, to attend Pope Clement in an illness; and he was shipwrecked on the coast of Genoa, about the year 1313. The works of Arnaud, with his life prefixed, were printed in one volume, in folio, at Lyons, in 1520; and at Basil in 1585, with the notes of Nicholas Tolerus.

ARNAUD D'ANDILLY (Robert), the son of a celebrated advocate of the parliament of Paris, was born in 1588; and, being introduced young at court, was employed in many considerable offices, all which he discharged with great integrity and reputation. In 1644 he quitted business, and retired into

the convent of Port Royal des Champs, where he passed the remainder of his days in a continued application to works of piety and devotion; and enriched the French language with many excellent translations of different writers, as well as with religious compositions of his own. He died in 1674, and his works are printed in eight volumes folio.

ARNAUD (Anthony), brother of the preceding, and a doctor of the Sorbonne, was born in 1612. He published, in 1643, *A Treatise on frequent Communion*, which highly displeased the Jesuits; and the disputes upon grace, which broke out about this time in the university of Paris, and in which he took a zealous part with the Janenists, helped to increase the animosity between him and the Jesuits. But nothing raised so great a clamour against him, as the two letters he wrote on *Abolition*; in the second of which the faculty of divinity found two propositions which they condemned, and M. Arnaud was expelled the society. Upon this he retired; and during a retreat which lasted near 25 years, he composed that great variety of works which are extant of his, on grammar, geometry, logic, metaphysics, and theology. In 1679 he withdrew from France, living in obscurity in the Netherlands, and died in 1694. His heart, at his own request, was sent to be deposited in the Port Royal. Arnaud had a remarkable strength of genius, memory, and command of his pen, nor did these decay even to the last year of his life. Mr. Bayle says, he had been told by persons who had been admitted into his familiar conversation, that he was a man very simple in his manners; and that unless any one proposed some question to him, or desired some information, he said nothing that was beyond common conversation, or that might make one take him for a man of great abilities; but when he set himself to give an answer to such as proposed a point of learning, he seemed as it were transformed into another man: he would then deliver a multitude of fine things with great perspicuity and learning, and had a particular talent at making himself intelligible to persons of not the greatest penetration.

ARNDT (John), a famous protestant divine of Germany, born at Ballentitz in the duchy of Anhalt, in the year 1555. At first he applied himself to the study of physic; but falling into a dangerous sickness, he made a vow to change his profession for that of divinity, if he should be restored to health; which he accordingly did upon his recovery. He was minister first at Quedlinburg, and then at Brunswick. He met with great opposition in this last city: his success as a preacher raised the enmity of his brethren, who became his bitter enemies. In order to ruin his character, they ascribed a variety of errors to him; and persecuted him to such a degree, that he was obliged to leave Brunswick, and retire to Ilse, where he was minister for three years. In 1611, George duke of Lauenburg, who had a high opinion of his integrity and sanctity, gave him the church of Zell, and appointed him superintendent of all the churches in the duchy of Lauenburg; which office he discharged for 11 years, and died in 1621. It is reported that he foretold his death, having said to his wife, upon his return home after his last sermon, that now he had preached his funeral sermon. He wrote in High Dutch *A Treatise on true Christianity*, which has been translated into several languages.

ARNE (Dr. Thomas Augustine), distinguished by his great musical talents, was the son of Mr. Arne, an upholsterer in Covent-Garden, whom Addison is supposed to have characterized in No. 155, and No. 160, of *The Tatler*; and brother of Mrs. Cibber, the player. He was early devoted to music, and soon became eminent in his profession. July 6, 1759, he had the degree of doctor of music conferred on him at Oxford. His compositions are universally applauded, and he was especially skilful in instructing vocal performers.

Vol. X.

He died March 5, 1778, having written the following pieces: Artaxerxes, 1762; *The Guardian Outwitted*, 1764; *The Rife*, 1778; all of them operas, and in high esteem.

ARNEBERG, a town of Germany in Brandenburg, on the Elbe, between Angermund and Werben, three miles from each.

ARNEDO, a sea-port of Peru, 25 miles N. of Lima. ARNISÆUS (Henningus), a philosopher and physician of great reputation, about the beginning of the 17th century. He was born at Halberstadt in Germany, and was professor of physic in the university of Helmstadt. His political works are much esteemed. The most remarkable of them is his book *De autoritate principum in populum semper inviolabili*, printed at Frankfort in 1612. In this he maintains that the authority of princes ought not to be violated. He wrote also upon the same doctrine his three books *De jure majestatis*, printed at the same place in 1610; and his *Reflectiones politicae*, printed at Frankfort in 1615. Having received an invitation to go to Denmark, he went thither, and was made counsellor and physician to the king. He travelled into France and England, and died in November 1635. Besides the pieces already mentioned, he wrote several philosophical, medicinal, and political treatises.

ARNO, a large river in Tuscany. It has its source in the Apennines, and passing by Florence and Pisa, falls into the sea a little below the latter.

ARNOBIUS, professor of rhetoric at Sicca in Numidia, towards the end of the third century. It was owing to certain dreams which he had, that he became desirous of embracing Christianity. For this purpose he applied to the bishops to be admitted into the church. But they, remembering the violence with which he had always opposed the true faith, had some distrust of him; and, before they would admit him, insisted on some proofs of his sincerity. In compliance with this demand, he wrote against the Gentiles; wherein he has refuted the absurdities of their religion, and ridiculed their false gods. In this treatise he has employed all the flowers of rhetoric, and displayed great learning: but from an impatience to be admitted into the body of the faithful, he is thought to have been in too great a hurry in composing his work, and thence it is that there does not appear in this piece such an exact order and disposition as could be wished; and not having a perfect and exact knowledge of the Christian faith, he published some very dangerous errors. Mr. Bayle remarks, that his notions about the origin of the soul, and the cause of natural evil, and several other important points, are highly pernicious. St. Jerom, in his epistle to Paulinus, is of opinion that his style is unequal and too diffuse, and that his book is written without any method; but Dr. Cave thinks this judgment too severe, and that Arnobius wants neither elegance nor order in his composition. Vossius styles him *the Varro of the ecclesiastical writers*. Du Pin observes that his work is written in a manner worthy of a professor of rhetoric: the turn of his sentiments is very oratorical; but his style is a little African, his expressions being harsh and inelegant. We have several editions of this work of Arnobius against the Gentiles, one published at Rome in 1542, at Basil in 1546 and 1560, at Paris in 1570, at Antwerp in 1582, and one at Hamburg in 1610, with notes by Gebhard Elmenhorstius, besides many others. He wrote also a piece entitled, *De rhetorica institutione*; but this is not extant.

ARNOLD, of Brescia, in Italy, distinguished himself by being the founder of a sect, which opposed the wealth and power of the Romish clergy. He went into France, where he studied under the celebrated Peter Abelard. Upon his return to Italy, he put on the habit of a monk, and maintained in his sermons, That the pope and the clergy ought not to enjoy any

temporal estate; and that those ecclesiastics who had any estates of their own, or held any lands, were entirely cut off from the least hopes of salvation: that the clergy ought to subsist upon the alms and voluntary contributions of Christians; and that all other revenues belonged to princes and states, in order to be disposed of amongst the laity, as they thought proper. He maintained also several heresies with regard to baptism and the Lord's supper. St. Bernard has drawn his character in very strong colours. "Would to God (says he) that his doctrine was as holy as his life is strict: would you know what sort of man this is? Arnold of Brescia is a man that neither eats nor drinks; who, like the devil, is hungry and thirsty after the blood of souls; who goes to and fro upon the earth, and is always doing among strangers what he cannot do amongst his own countrymen; who ranges like a roaring lion, always seeking whom he may devour; an enemy to the cross of Christ, an author of discords, an inventor of schisms, and a disturber of the public peace: he is a man, whose conversation has nothing but sweetness, and his doctrine nothing but poison in it; a man who has the head of a dove, and the tail of a scorpion." He engaged a great number of persons in his party, who were distinguished by his name, and proved very formidable to the popes. His doctrines rendered him so obnoxious, that he was condemned in the year 1139, in a council of near 1000 prelates, held in the church of St. John Lateran at Rome, under Pope Innocent II. Upon this he left Italy, and retired to Switzerland. After the death of that pope, he returned to Italy, and went to Rome, where he raised a sedition against Pope Eugenius III. and afterwards against Hadrian IV. who laid the people of Rome under an interdict till they had banished Arnold and his followers. This had its desired effect: the Romans seized upon the houses which the Arnolds had fortified, and obliged them to retire to Otricoli in Tuscany; where they were received with the utmost affection by the people, who considered Arnold as a prophet. However, he was seized some time after by Cardinal Gerard; and, notwithstanding the efforts of the viscounts of Campanio, who had rescued him, he was carried to Rome, and condemned by Peter, the prefect of that city, to be hanged, and was accordingly executed in the year 1155. Thirty of his followers went from France to England, about the year 1160, in order to propagate their doctrine there; but they were immediately seized and destroyed.

ARNOLDUS (Gothofredus), pastor and inspector of the churches of Perleberg, and historiographer to the King of Prussia, was born at Annaburg in the mountains of Misnia, in 1666. He was a zealous defender of Pietists, a sect among the German Protestants, and composed a great number of religious works; particularly an *Ecclesiastical History*, which exposed him to the resentment of the divines; and another giving an account of the doctrines and manners from the first ages, in which he frequently animadverts upon Cave's primitive Christianity. He died in 1714. Various are the opinions concerning Arnoldus in Germany; some of his own countrymen and profession extolling him to the skies as a saint of the last century, and setting an inestimable value upon his works; while others pronounce damnation upon him as an arch-heretic, and condemn his writings as heterodox.

ARNSHEIM, a town of Germany, in the palatinate of the Rhine, eight miles from Crutzenach.

ARNULPH, or ERNULPH, bishop of Rochester in the reign of Henry I. He was born in France, where he was some time a monk of St. Lucian de Beauvais. The monks led most irregular lives in this monastery; for which reason he resolved to quit it, but first took the advice of Lanfranc archbishop of Canterbury, under whom he had studied in the abbey of Bec, when Lanfranc was prior of that monastery.

This prelate invited him over to England, and placed him in the monastery of Canterbury, where he lived a private monk till Lanfranc's death. When Anselm came to the archiepiscopal see, Arnulph was made prior of the monastery of Canterbury, and afterwards abbot of Peterborough. In 1115 he was consecrated bishop of Rochester, which see he held nine years; and died in March 1124, aged 84.

ARNULPH wrote, 1. A piece in Latin concerning the foundation, endowment, charters, laws, and other things relating to the church of Rochester: it is generally known by the title of *Textus Roffensis*, and is preserved in the archives of the cathedral church of Rochester. 2. An Epistle in Answer to some Questions of Lambert, Abbot of Munster; and, 3. An Epistle on Incestuous Marriage.

ARNWAY (John), a clergyman distinguished by his benevolence and loyalty to King Charles I. was descended from a very good family in the county of Salop, from which he inherited a considerable estate. He was educated at Oxford; and, having received holy orders, obtained the rectories of Hodnet and Lightfield, where he distinguished himself by his piety and exemplary charity: for it was his custom to clothe annually 12 poor people, and every Sunday to entertain as many at his table, not only plentifully, but with intimacy and respect. The civil war breaking out, he preached against rebellion and raised and clothed eight troopers for the service of King Charles I. upon which his house was plundered by the parliament's army. He then went to Oxford to serve the king in person, which subjected him to a new train of misfortunes: for his estate was soon after sequestered, and himself imprisoned till the king's death; after which, he went to the Hague, where he published, 1. The Tablet, or the Moderation of Charles I. the Martyr; and, 2. An Alarm to the Subjects of England. He at last went to Virginia, where he died in 1653.

AROBÆ (*Encycl.*). The word AROBAS, referred to in that article should have been spelled ARROBAS.

AROMATA, a town of Lydia, famous for its generous wines; and hence the appellation (Strabo). Also the name of a trading town and promontory of Ethiopia, at the termination of the Sinus Aivalites of the Red Sea (Arrian).

ARPINAS, or ARPINO (Joseph Caesar), a famous painter, born in the year 1560, at the castle of Arpinas, in the kingdom of Naples. He lived in great intimacy with Pope Clement VIII. who conferred upon him the honour of knighthood, and bestowed on him many other marks of his friendship. In the year 1600 he went to Paris with Cardinal Aldobrandini, who was sent legate to the French court on the marriage of Henry IV. with Mary of Medicis. His Christian majesty gave Arpinas many considerable presents, and created him a knight of St. Michael. The colouring of this painter is thought to be cold and inanimate; yet there is spirit in his designs, and his compositions have somewhat of fire and elevation. The touches of his pencil being free and bold, give therefore pleasure to connoisseurs in painting; but they are generally incorrect. What he painted of the Roman history is the most esteemed of all his works. The French king has in his collection the following pieces of this master; viz. the nativity of our Saviour, Diana and Acteon, the rape of Europa, and a Sufanna. He died at Rome in 1640.

ARPINUM, a town of the Volsci, a little to the east of the confluence of the rivers Liris and Fibrenus, in the Terra di Lavoro; now decayed, and called *Arpino*. It was the native place of Cicero, and of C. Marius (Sallust).

ARRAN, a town of Switzerland, on the Aar, 25 miles S. W. of Baden.

ARRETUM (Cicero, Caesar); *Arrhetium* (Ptolemy); *Urbs Arrhetinorum* (Polybius); one of the twelve ancient towns of Tuscany, near the Arnum and Clanis, situated in 2

pleasant valley. Now *Arezzo*, 42 miles east of Florence. E. long. 13. 18. Lat. 43. 15.

ARRIAN, a famous philosopher and historian under the Emperor Hadrian and the two Antonines, was born at Nicomedia in Bithynia. His great learning and eloquence procured him the title of *The second Xenophon*; and raised him to the most considerable dignities at Rome, even the consulship itself. We have four books of his *Dissertations upon Epictetus*, whose scholar he had been; and his *History of Alexander the Great*, in seven books, is greatly admired by the best judges.

ARRIEGE, a department of France, containing the late provinces of Couserans and Foix. It is so named from a river which rises in the Pyrenæes, and passing by Foix and Pamiers, falls into the Garonne, near Toulouse. Gold dust is found among its sands.

ARSAMAS, a town of the Russian empire, seated on the river Mokka-reca, on the road to Astracan, 300 miles S. by E. of Moscow, and 500 N. by W. of Astracan.

ARSENATES, in the new chemistry, are combinations of arsenic with metallic substances. In the Phil. Trans. Part I. for 1801, we find a description of the arseniates of copper, and of iron, from the county of Cornwall, by the Count de Bournon.

This paper is divided into two sections: the first of which contains an account of the *arseniates of copper*, the natural combination of the arsenic acid with copper; and the different aspects under which this combination appears, according to the proportions in which these two substances are united, Count de Bournon observes, were among those objects of mineralogy, respecting which our imperfect knowledge required the aid of study and observation. A new copper mine, lately worked, called Huel Gorland, in the parish of Gwennap, in the county of Cornwall, having, within the last two years, enriched the cabinets of London with some very fine specimens of these arseniates, he was induced to pay particular attention to them; and in this paper he gives a very accurate description of the different species of these ores. He says,

"It is now above twenty years since arseniate of copper was discovered in the county of Cornwall; it was first found either in Carrarach mine, in the parish of Gwennap, or in Tincroft mine, in the parish of Allogan. Its matrix, like that of almost all the copper ores of this country, was siliceous, and consisted of a decomposed granite, of which the greatest part of the feldspar had passed into the state known by the name of kaolin. It was accompanied with grey vitreous copper-ore, frequently in considerable masses: also with much black oxyd of copper; and with various oxyds of iron.

"The arseniate here spoken of, which had never been found in large quantity, had ceased to exist in the above-mentioned mines, when Huel Gorland mine, lately wrought, began to enrich mineralogy with this uncommon substance. The matrix of this is likewise siliceous; sometimes crystalline; and sometimes in an amorphous mass. Here and there we find mixed with it, in greater or less profusion, all the known oxyds of copper; many of the argillaceous oxyds of iron; also grey vitreous copper ore; arsenical pyrites; and the rich deep-coloured yellow copper ore."

The existence of arseniate of copper seems, even at this day, to be an object of doubt among the French mineralogists: for "the Abbé Haüy does not mention it in the 28th and following numbers of the *Journal des Mines*, although they contain an interesting extract of a system of mineralogy, which he was then preparing for the press; nor has M. Fourcroy even hinted at it, in his *Système des Connoissances Chimiques*, lately published."

Nature appears to have established very remarkable dif-

ferences between the arseniates of copper; and these take place not only in their forms, but likewise in their hardness and specific gravity. These differences arise, either from the manner in which the arsenic acid is combined with the copper, or from the different proportions in which these two substances are combined."

The Count follows the same order, and divides the arseniates of copper into four different species; and the very interesting analysis of this substance, made by Mr. Chevenix, has, he observes, afforded the most satisfactory sanction to this division.

The first species is, arseniate of copper in the form of an obtuse octaedron—2d, in hexaedral laminae, with inclined sides—3d, in the form of an acute octaedron: of this species, he describes five varieties—4th, in the form of a triedral prism.

The second section contains an account of the *arseniates of iron*.

"Muttrell mine," our author observes, "which is immediately contiguous to Huel Gorland mine, in the county of Cornwall, has produced some specimens of arseniates of copper, exactly similar to those described in the former part of this paper. But this mine is still more interesting to mineralogists, on account of a combination found therein, of arsenic acid with iron, and also a double combination of that acid with both iron and copper.

"The first mentioned of these arseniates seems analogous to those crystals, or cubes, of a fine green colour, of which some specimens had already been found in Carrarach and Tincroft mines; and which Klaproth, in his Memoir upon the Mineralogy of Cornwall, considered as belonging to the arseniates of copper; but, according to the analysis made by Mr. Chevenix, with all the care which his extensive knowledge and extreme zeal for science would naturally lead him to employ; it appears to be a true arseniate of iron, containing only a small quantity of copper; and even that quantity seems to be merely an accidental mixture. As, in the specimens from the old mines of Tincroft and Carrarach, the greatest part of the crystals adhered to vitreous grey copper ore, it is possible that some particles of that ore remained attached to the crystals; or, as I have frequently found to be the case, that some such particles had penetrated into the crystals, and that Mr. Klaproth had been thereby deceived, by finding in the button left by the blow-pipe, a much greater proportion of copper than this ore really contains. The natural decomposition of this arseniate, which produces an oxyd of iron of a fine reddish yellow colour, strongly confirms the result of Mr. Chevenix's analysis.

"The double combination of the arsenic acid with iron and copper, although it had appeared to exist in the arseniate just spoken of, in the mines of Tincroft and Carrarach, had not excited the attention of mineralogists. It is however possible, that the transparency, the brilliancy, and the pale blue colour of its crystals, might occasion them to be mistaken for crystals of a stony nature. Besides, their smallness might easily cause them to escape the notice of common observation, particularly when they are not in pretty large groups."

The matrix of these arseniates appears, from our author's description, to be exactly the same as that of the arseniates of copper; "consisting, like that, of quartz, mixed with yellow, grey, and vitreous ores of copper, with oxyds of iron, and with mispickel. The mines of Huel Gorland and Muttrell, although not situated in the district of the tin mines, have yet produced some specimens of tin, the crystals of which are covered with those of the arseniate here spoken of. Two specimens of this kind are in the collection of Sir John St. Aubyn."

Of these arseniates, the count describes two species: 1st,

Simple arseniate of iron, which crystallizes in perfect cubes, and, cupreous arseniate of iron. The crystals of this species are of uncommon brilliancy, and perfectly transparent. Their form is a rhomboidal tetraedral prism, having two of its edges very obtuse, and the other two very acute.

Our limits do not permit us to present our readers with the descriptions of this very accurate mineralogist, but we refer them to the work itself: the paper is accompanied by two plates, containing delineations of the figures of the crystals of the different species.

The next article in the volume contains the "Analysis of the Arseniates of Copper, and of Iron, described in the preceding Paper; likewise an Analysis of the red octaedral Copper Ore of Cornwall; with Remarks on some particular modes of Analysis, by Richard Chenevix, Esq. M. R. I. A."

Mr. Chenevix writes thus, "when the Count de Bournon had completed what appeared to him the mineralogical classification of these copper ores, he gave me some specimens of each kind, numbered indiscriminately, for the very purpose of excluding prejudice; and it was not till my task was ended, that we compared our observations. If I had been admitted into any previous knowledge of the arrangement dictated to him by the principles of crystallography, I should have been afraid, that I had merely thought true, what I wished to be so. But I can, most conscientiously, indulge in the satisfaction which the according results of different means to prove the same proposition naturally excite; and which is justly due to the truth of the outward marks, however delicate, yet still to be perceived, that Nature has left visible to those who will observe her."

The following are the general results of this analysis.

The first species described by the Count de Bournon in the preceding paper, according to Mr. Chenevix, contains 49 parts of oxyd of copper, 14 of arsenic acid, and 35 of water. The second species contains 58 of oxyd of copper, 21 of arsenic acid, and the same quantity of water. The third species was found to contain 60 parts of oxyd of copper, and 39.7 of arsenic acid. In the fourth were found 54 parts of oxyd of copper, 30 of arsenic acid, and 16 of water.

After having expelled the water of crystallization by exposure to a proper degree of heat in a platina crucible, the residuum was dissolved in diluted nitric acid, and nitrat of lead poured in. Arseniate of lead and nitrat of copper were thus formed, by double decomposition. To separate these two salts, alcohol was added, on which the arseniate of lead fell to the bottom, while the nitrat of copper was held in solution. From the arseniate of lead procured by filtration, it was easy to calculate the quantity of arsenic acid which the ore contained; and the spirituous solution being distilled, from the nitrat of copper remaining, the quantity of that metal was obtained, by boiling the solution with potash or soda.

Mr. Chenevix next proceeds to the examination of the arseniates of iron, which were formerly included among the arseniates of copper, but which are now separated from them upon the authority of chemical analysis. Our author very properly observes, that "although to recognize, by external character and form, in all their modifications, substances already known, is particularly the province of crystallography; yet he, who would expect that it should declare the nature of those substances which it beholds for the first time, would exact more than it ever has promised, or ever could perform. Among fossils, it may class, and find new species; but chemical analysis is the basis of all arrangement, among metallic ores. In them, to separate, is the task of the one; to assign a place, is the business of the other."

The cupreous arseniate of iron was found to be composed of

3 parts of silica, 33.5 of arsenic acid, 27.5 of oxyd of iron, 22.5 of oxyd of copper, and 12 of water.

The simple arseniate of iron is found to contain 4 parts of silica, 31 of arsenic acid, 45.5 of oxyd of iron, 9 of oxyd of copper, and 13.5 of water. This ore, our author observes, appears to be a pure arseniate, mixed accidentally with a little copper, as some of the cupreous arseniates casually give traces of iron.

The third section of this ingenious and elaborate essay, contains an "Analysis of the red octaedral Copper Ore, in which the Metal exists in a State hitherto unknown in Nature."

In the course of the experiments which have been stated in the preceding sections, the author observes, that he had occasion to examine a great number of copper ores, particularly those from Cornwall; but the only ore which afforded any interesting results, was the well-known species called red copper ore, crystallized in regular and brilliant octaedrons. This ore has been so long known, and so often mentioned by mineralogists, that it may excite our surprize when we reflect that its chemical nature has not been accurately ascertained before; and that mineralogists differ so very much in their accounts of it.

"Romé de Lile, the Baron de Born, Lametherie, the Abbé Hany, and indeed every other mineralogist, concur in calling this substance red calx of copper; but some of them assert, that it contains a portion of carbonic acid. Among the many analyses which have been made of this ore, by Fontana, Monnet, de Born, Renovant, and others, I could not find one, that in the proportions, or even in the ingredients, resembled what I had found to be its contents. The highest amount of copper (that given by Fontana), does not exceed 66 per cent. and is far short of the real quantity. The remainder, as he states, consists of water, and of pure and fixed airs."

The difference in the results which our author obtained together with some new facts he had occasion to observe during his experiments, induced him, he says, to consider the subject at some length; he particularly describes his experiments, which presented a number of curious and some unexpected results, and states the component parts of this ore to be 88.5 of copper, and 11.5 of oxygen; so that this ore is a suboxyd of copper; a state in which it has not before been supposed to exist in nature.

Mr. Chenevix observes, that when "we reflect, not so much on the quantity as upon the extreme purity of the copper, and the wonderful facility with which this useful metal may be extracted, it will be found much superior to every copper ore hitherto discovered. It would be well worth the attention of miners to keep a constant look-out for this substance, which, I am informed, is not rare in Cornwall. It contains no iron, and no sulphur; the absence of which latter is a peculiar advantage. It is a fact not generally known, I believe, that there is hardly such a thing in commerce, as copper which does not contain a little sulphur; at least I have rarely met with any such; and it requires but a very minute portion of sulphur, to increase the fusibility of copper. The advantage of obtaining copper free from sulphur, is too obvious to require to be pointed out; and that advantage does this ore possess."

Besides an account of the experiments for the purposes of analysis, this paper contains a number of ingenious observations and disquisitions, and some valuable remarks on the methods generally used in the doctrinastic art, which we have not room to transcribe, and they are incapable of abridgment. We shall conclude our account with a quotation, which we have little doubt will afford as great pleasure to the reader.

"But, what is not the least to be admired, is the wonderful accordance in the order which two sciences, operating with very different instruments, have allotted to be the same substances.

By that, not only the sagacity of nature becomes very striking; but, from the acknowledged accuracy of one method of investigation, the reliance to be placed upon the other is rendered more conspicuous; and each receives additional strength and confirmation. Chemistry has long been in the habit of aiding the science of mineralogy, of which it laid the foundation; but it was not till lately, that crystallography could form a judgment of its own; much less confirm the truth of the source from which it sprung."

ARSENIOUS, a deacon of the Roman church, of great learning and piety. He was pitched upon by the pope to go to the Emperor Theodosius, as tutor to his son Arcadius. Arsenius arrived at Constantinople in the year 383. The emperor happening one day to go into the room where Arsenius was instructing Arcadius, his son was seated and the preceptor standing; at this he was exceedingly displeased, took from his son the imperial ornaments, made Arsenius sit in his place, and ordered Arcadius for the future to receive his lessons standing uncovered. Arcadius, however, profited but little by his tutor's instructions, for some time after he formed a design of dispatching him. The officer, to whom Arcadius had applied for this purpose, divulged the affair to Arsenius, who retired to the deserts of Scete, where he passed many years in the exercises of the most strict and fervent devotion. He died there, at ninety-five years of age.

ARTS, *Progress of the (Encycl.)*. In all countries where the people are barbarous and illiterate, the progress of arts is extremely slow. It is vouched by an old French poem, that the virtues of the loadstone were known in France before anno 1180. The mariner's compass was exhibited at Venice anno 1260, by Paulus Venetus, as his own invention. John Goya of Amalfi was the first who, many years afterward, used it in navigation; and also passed for being the inventor. Though it was used in China for navigation long before it was known in Europe, yet to this day it is not so perfect as in Europe. Instead of suspending it in order to make it act freely, it is placed upon a bed of sand, by which every motion of the ship disturbs its operation. Hand-mills, termed *querns*, were early used for grinding corn; and when corn came to be raised in greater quantity, horse-mills succeeded. Water-mills for grinding corn are described by Vitruvius. Wind-mills were known in Greece and in Arabia as early as the seventh century; and yet no mention is made of them in Italy till the fourteenth. That they were not known in England in the reign of Henry VIII. appears from a household book of an earl of Northumberland, contemporary with that king, stating an allowance for three mill-horses, "two to draw in the mill, and one to carry stuff to the mill and fro." Water-mills for corn must in England have been of a later date. The ancients had mirror-glasses, and employed glass to imitate crystal vases and goblets: yet they never thought of using it in windows. In the 13th century, the Venetians were the only people who had the art of making crystal glass for mirrors. A clock that strikes the hours was unknown in Europe till the end of the 12th century. And hence the custom of employing men to proclaim the hours during night; which to this day continues in Germany, Flanders, and England. Galileo was the first who conceived an idea that a pendulum might be useful for measuring time; and Huygens was the first who put the idea in execution, by making a pendulum clock. Hook, in the year 1660, invented a spiral spring for a watch, though a watch was far from being a new invention. Paper was made no earlier than the 14th century; and the invention of printing was a century later. Silk manufactures were long established in Greece before silk-worms were introduced there. The manufacturers were provided with raw silk from Persia: but that commerce being frequently interrupted by war, two

monks, in the reign of Justinian, brought eggs of the silk-worm from Hindostan, and taught their countrymen the method of managing them.—The art of reading made a very slow progress. To encourage that art in England, the capital punishment for murder was remitted if the criminal could but read, high in law-language is termed *benefit of clergy*. On would imagine that the art must have made a very rapid progress when so greatly favoured: but there is a signal proof of the contrary; for so small an edition of the Bible as 600 copies, translated into English in the reign of Henry VIII. was not wholly sold off in three years. The people of England must have been profoundly ignorant in Queen Elizabeth's time, when a forged clause added to the 20th article of the English creed passed unnoticed till about forty years ago.

The discoveries of the Portuguese on the west coast of Africa is a remarkable instance of the slow progress of arts. In the beginning of the 15th century, they were totally ignorant of that coast beyond Cape Non, 28 deg. north latitude. In 1410 the celebrated Prince Henry of Portugal fitted out a fleet for discoveries, which proceeded along the coast to Cape Bojadore in 26 deg. but had not courage to double it. In 1418 Tristram Vaz discovered the island Porto Santo; and the year after, the island Madeira was discovered. In 1439 a Portuguese captain doubled Cape Bojadore; and the next year the Portuguese reached Cape Blanco, lat. 20. deg. In 1446 Nuna Tristram doubled Cape Verd, lat. 14. 40. In 1448 Don Gonzalvo Vallo took possession of the Azores. In 1449 the islands of Cape Verd were discovered for Don Henry. In 1471 Pedro d'Elcavar discovered the island St. Thomas and Prince's island. In 1484 Diego Cam discovered the kingdom of Congo. In 1486 Bartholomew Diaz, employed by John II. of Portugal, doubled the Cape of Good Hope, which he called *Capo Tormentoso*, from the tempestuous weather he found in the passage.

The exertion of national spirit upon any particular art, promotes activity to prosecute other arts. The Romans, by constant study, came to excel in the art of war, which led them naturally to improve upon other arts. Having, in the progress of society, acquired some degree of taste and polish, a talent for writing broke forth. Nevius composed in verse seven books of the Punic war; besides comedies, replete with bitter raillery against the nobility. Ennius wrote annals, and an epic poem. Lucius Andronicus was the father of dramatic poetry in Rome. Pacuvius wrote tragedies. Plautus and Terence wrote comedies. Lucilius composed satires, which Cicero esteems to be slight and void of erudition. Fabius Pictor, Cincius Alimentus, Piso Frugi, Valerius Antias, and Cato, were rather annalists than historians, confining themselves to naked facts, ranged in order of time. The genius of the Romans for the fine arts was much inflamed by Greek learning, when free intercourse between the two nations was opened. Many of those who made the greatest figure in the Roman state commenced authors; Cæsar, Cicero, &c.: Sylla composed memoirs of his own transactions, a work much esteemed even in the days of Plutarch.

The progress of art seldom fails to be rapid, when a people happen to be roused out of a torpid state by some fortunate change of circumstances: prosperity contrasted with former abasement, gives to the mind a spring, which is vigorously exerted in every new pursuit. The Athenians made but a mean figure under the tyranny of Pisistratus; but upon regaining freedom and independence, they were converted into heroes. Miletus, a Greek city of Ionia, being destroyed by the King of Persia, and the inhabitants made slaves, the Athenians, deeply affected with the misery of their brethren, boldly attacked the king in his own dominions, and burnt the city of Sardis. In less than ten years after, they gained a

signal victory at Marathon; and, under Themistocles, made head against that prodigious army with which Xerxes threatened utter ruin to Greece. Such prosperity produced its usual effect: arts flourished with arms, and Athens became the chief theatre for sciences as well as for fine arts. The reign of Augustus Cæsar, which put an end to the rancour of civil war, and restored peace to Rome with the comforts of society, proved an auspicious era for literature; and produced a cloud of Latin historians, poets, and philosophers, to whom the moderns are indebted for their taste and talents. One who makes a figure rouses emulation in all: one catches fire from another, and the national spirit is every-where triumphant: classical works are composed, and useful discoveries made in every art and science. With regard to Rome, it is true, that the Roman government under Augustus was in effect despotic: but despotism, in that single instance, made no obstruction to literature, it having been the policy of that reign to hide power as much as possible. A similar revolution happened in Tuscany about three centuries ago. That country having been divided into a number of small republics, the people, excited by mutual hatred between small nations in close neighbourhood, became ferocious and bloody, flaming with revenge for the slightest offence. These republics being united under the Great Duke of Tuscany, enjoyed the sweets of peace in a mild government. That comfortable revolution, which made the deeper impression by a retrospect to recent calamities, roused the national spirit, and produced ardent application to arts and literature. The restoration of the royal family in England, which put an end to a cruel and envenomed civil war, promoted improvements of every kind: arts and industry made a rapid progress among the people, though left to themselves by a weak and fluctuating administration. Had the nation, upon that favourable turn of fortune, been blessed with a succession of able and virtuous princes, to what a height might not arts and sciences have been carried! In Scotland, a favourable period for improvement was the reign of the first Robert, after shaking off the English yoke: but the domineering spirit of the feudal system rendered abortive every attempt. The restoration of the royal family, mentioned above, animated the legislature of Scotland to promote manufactures of various kinds: but in vain; for the union of the two crowns had introduced despotism into Scotland, which sunk the genius of the people, and rendered them heartless and indolent. Liberty, indeed, and many other advantages, were procured to them by the union of the two kingdoms; but the salutary effects were long suspended by mutual enmity, such as commonly subsists between neighbouring nations. Enmity wore out gradually, and the eyes of the Scots were opened to the advantages of their present condition; the national spirit was roused to emulate and to excel; talents were exerted, hitherto latent; and Scotland at present makes a figure in arts and sciences, above what it ever made while an independent kingdom.

Another cause of activity and animation, is the being engaged in some important action of doubtful event; a struggle for liberty, the resisting a potent invader, or the like. Greece, divided into small states, frequently at war with each other, advanced literature and the fine arts to unrivalled perfection. The Corsicans, while engaged in a perilous war for defence of their liberties, exerted a vigorous national spirit: they founded an university for arts and sciences, a public library, and a public bank. After a long stupor during the dark ages of Christianity, arts and literature revived among the turbulent states of Italy. The Royal Society in London, and the Academy of Sciences in Paris, were both of them instituted after civil wars that had animated the people and roused their activity.

As the progress of arts and sciences toward perfection is greatly promoted by emulation, nothing is more fatal to an

art or science than to remove that spur, as where some extraordinary genius appears who fears above rivalry. Mathematics seem to be declining in Britain: the great Newton, having surpassed all the ancients, has not left to the moderns even the faintest hope of equalling him; and what man will enter the lists who despairs of victory?

In a country thinly peopled, where even necessary arts want hands, it is common to see one person exercising more arts than one: in several parts of Scotland, one man serves as a physician, surgeon, and apothecary. In every populous country, even simple arts are split into parts, and each part has an artist appropriated to it. In the large towns of ancient Egypt, a physician was confined to a single disease. In mechanic arts that method is excellent. As a hand confined to a single operation becomes both expert and expeditious, a mechanic art is perfected by having its different operations distributed among the greatest number of hands: many hands are employed in making a watch; and a still greater number in manufacturing a web of woollen cloth. Various arts or operations carried on by the same man, enervate his mind, because they exercise different faculties; and as he cannot be equally expert in every art or operation, he is frequently reduced to supply want of skill by thought and invention. Constant application, on the contrary, to a single operation, confines the mind to a single object, and excludes all thought and invention: in such a train of life, the operator becomes dull and stupid, like a beast of burden. The difference is visible in the manners of the people: in a country, where, from want of hands, several occupations must be carried on by the same person, the people are knowing and conversable; in a populous country, where manufactures flourish, they are ignorant and uncivilized. The same effect is equally visible in countries where an art or manufacture is confined to a certain class of men. It is visible in India, where the people are divided into castes, which never mix even by marriage, and where every man follows his father's trade. The Dutch linboers are a similar instance: the same families carry on the trade from generation to generation; and are accordingly ignorant and brutish even beyond other Dutch peasants. The inhabitants of Buckhaven, a sea-port in the county of Fife, were originally a colony of foreigners, invited hither to teach our people the art of fishing. They continue fishers to this day, marry among themselves, have little intercourse with their neighbours, and are dull and stupid to a proverb.

Useful arts paved the way to fine arts. Men upon whom the former had bestowed every convenience, turned their thoughts to the latter. Beauty was studied in objects of sight; and men of taste attached themselves to the fine arts, which multiplied their enjoyments and improved their benevolence. Sculpture and painting made an early figure in Greece; which afforded plenty of beautiful originals to be copied in these imitative arts. Statuary, a more simple imitation than painting, was sooner brought to perfection: the statue of Jupiter by Phidias, and of Juno by Polyceles, though the admiration of all the world, were executed long before the art of light and shade was known. Apollodorus, and Zeuxis his disciple, who flourished in the 15th Olympiad, were the first who figured in that art. Another cause concurred to advance statuary before painting, in Greece, viz. a great demand for statues of their gods. Architecture, as a fine art, made a slower progress: Proportions, upon which its elegance chiefly depends, cannot be accurately ascertained, but by an infinity of trials in great buildings: a model cannot be relied on; for a large and a small building, even of the same form, require different proportions.

From the fine arts mentioned, we proceed to literature. It is agreed, among all antiquaries, that the first writings were

in verse, and that writing in prose was of a much later date. The first Greek who wrote in prose was Phereclides Syrus: the first Roman was Appian Cæcilius, who composed a declamation against Pyrrhus. The four books of the Chatah Bhade, which is the sacred book of Hindostan, are composed in verse stanzas; and the Arabian compositions in prose followed long after those in verse. To account for that singular fact, many learned pens have been employed; but without success. By some it has been urged, that as memory is the only record of events where writing is unknown, history originally was composed in verse, for the sake of memory. This is not satisfactory. To undertake the painful task of composing in verse, merely for the sake of memory, would require more fore-thought than ever was exerted by a Barbarian: not to mention that other means were used for preserving the memory of remarkable events; a heap of stones, a pillar, or other object that catches the eye. The account given by Longinus is more ingenious. In a fragment of his treatise on verse, the only part that remains, he observes, "that measure or verse belongs to poetry, because poetry represents the various passions with their language; for which reason the ancients, in their ordinary discourse, delivered their thoughts in verse rather than in prose." Longinus thought, that anciently men were more exposed to accidents and dangers, than when they were protected by good government, and by fortified cities. But he seems not to have adverted, that fear and grief, inspired by dangers and misfortunes, are better suited to humble prose than to elevated verse. It may be added, that however natural poetical diction may be when one is animated with any vivid passion, it is not supposable that the ancients never wrote nor spoke but when excited by passion. Their history, their laws, their covenants, were certainly not composed in that tone of mind.

An important article in the progress of the fine arts, which writers have not sufficiently attended to, will, perhaps, explain this mystery. The article is the profession of a bard, which sprung up in early times, before writing was known (see the article WRITING); and died away gradually as writing turned more and more common (see BARD).

The songs of the bards, being universal favourites, were certainly the first compositions that writing was employed upon: they would be carefully collected by the most skillful writers, in order to preserve them in perpetual remembrance. The following part of the progress is obvious. People acquainted with no written compositions, but what were in verse, composed in verse their laws, their religious ceremonies, and every memorable transaction that was intended to be preserved in memory by writing. But when subjects of writing multiplied, and became more and more involved; when people began to reason, to teach, and to harangue; they were obliged to descend to humble prose; for to confine a writer or speaker to verse in handling subjects of that nature, would be a burden unsupportable.

The prose compositions of early historians are all of them dramatic. A writer destitute of art is naturally prompted to relate facts as he saw them performed: he introduces his personages as speaking and conferring; and he himself relates what was acted, and not spoke. The historical books of the Old Testament are composed in that mode; and so addicted to the dramatic are the authors of those books, that they frequently introduce God himself into the dialogue. At the same time, the simplicity of that mode is happily suited to the poverty of every language in its early periods. The dramatic mode has a delicious effect in expressing sentiment, and every thing that is simple and tender. Read, as an instance of a low incident becoming, by that means, not a little interesting, Ruthi. 8. to iv. 16.

The dramatic mode is far from pleasing so much in relating bare historical facts. Read, as an example, the story of Adonijah in 1 Kings i. 11—49.

In that passage there are frequent repetitions; not however by the same person, but by different persons who have occasion in the course of the story to say the same things; which is natural in the dramatic mode, where things are represented precisely as they were transacted. In that view, Homer's repetitions are a beauty, not a blemish; for they are confined to the dramatic part, and never occur in the narrative.

But the dramatic mode of composition, however pleasing, is tedious and intolerable in a long history. In the progress of society new appetites and new passions arise; men come to be involved with each other in various connections; incidents and events multiply, and history becomes intricate by an endless variety of circumstances. Dialogue accordingly is more sparingly used, and in history plain narration is mixed with it. Narration is as it were the ground-work; and dialogue is raised upon it, like flowers in embroidery. Homer is admitted by all to be the great master in that mode of composition.

The narrative mode came in time so to prevail, that in a long chain of history, the writer commonly leaves off dialogue altogether. Early writers of that kind appear to have very little judgment in distinguishing capital facts from minute circumstances, such as can be supplied by the reader without being mentioned. The history of the Trojan war by Dares Phrygius is a curious instance of that cold and creeping manner of composition. The Roman histories before the time of Cicero are chronicles merely. Cato, Fabius Pictor, and Piso, confined themselves to naked facts. In the Augustæ Historiæ Scriptores we find nothing but a jejune narrative of facts, commonly of very little moment, concerning a degenerate people, without a single incident that can rouse the imagination or exercise the judgment. The Monkish histories are all of them composed in the same manner.

The dry narrative manner being very little interesting or agreeable, a taste for embellishment prompted some writers to be copious and verbose. Saxo-Grammaticus, who in the 12th century composed in Latin a history of Denmark, surprisingly pure at that early period, is extremely verbose and full of tautologies. Such a style, at any rate unpleasant, is intolerable in a modern tongue, before it is enriched with a flock of phrases for expressing aptly the great variety of incidents that enter into history.

The perfection of historical composition, which writers at last attain to after wanderings through various imperfect modes, is a relation of interesting facts, connected with their motives and consequences. An history of that kind is truly a chain of causes and effects.

The history of Thucydides, and still more that of Tacitus, are shining instances of that mode.

Eloquence was of a later date than the art of literary composition; for till the latter was improved, there were no models for studying the former. Cicero's oration for Roiceus is composed in a style diffuse and highly ornamented; which, says Plutarch, was universally approved, because at that time the style in Asia, introduced into Rome with its luxury, was in high vogue. But Cicero, in a journey to Greece, where he leisurely studied Greek authors, was taught to prune off superfluities, and to purify his style, which he did to a high degree of refinement. He introduced into his native tongue a sweetness, a grace, a majesty, that surprised the world, and even the Romans themselves. Cicero observes with great regret, that if ambition for power had not drawn Julius Cæsar from the bar to command legions, he would have become the most complete orator in the world. So partial are men to the profession in which they excel. Eloquence triumphing at

popular assembly, makes some figure in a court of law composed of many judges, very little where there is but a single judge, and none at all in a despotic government. Eloquence flourished in the republics of Athens and Rome; and makes some figure at present in a British House of Commons.

The Greek stage has been justly admired among all polite nations. The *tragedies* of Sophocles and Euripides in particular are by all critics held to be perfect in their kind, excellent models for imitation, but far above rivalry. If the Greek stage was so early brought to maturity, it is a phenomenon not a little singular in the progress of arts. The Greek tragedy made a rapid progress from Theſpis to Sophocles and Euripides, whose compositions are wonderful productions of genius, considering that the Greeks at that period were but beginning to emerge from roughness and barbarity into a taste for literature. The compositions of Æschylus, Sophocles, and Euripides, must have been highly relished among a people who had no idea of any thing more perfect. We judge by comparison, and every work is held to be perfect that has no rival. It ought at the same time to be kept in view, that it was not the dialogue which chiefly enchanted the Athenians, nor variety in the passions represented, nor perfection in the actors; but machinery and pompous decoration, joined with exquisite music. That these particulars were carried to the greatest height, we may with certainty conclude from the extravagant sums bestowed on them: the exhibiting a single tragedy was more expensive to the Athenians, than their fleet or their army in any single campaign.

One would imagine, however, that these compositions were too simple to enchant for ever; as variety in action, sentiment, and passion, is requisite, without which the stage will not continue long a favourite entertainment: and yet we find not a single improvement attempted after the days of Sophocles and Euripides. The manner of performance, indeed, prevented absolutely any improvement. A fluctuation of passion and refined sentiments would have made no figure on the Grecian stage. Imagine the discordant scene between Brutus and Cassius in Julius Cæsar to be there exhibited, or the handkerchief in the Moor of Venice: how slight would be their effect, when pronounced in a mask, and through a pipe? The workings of nature upon the countenance, and the flexions of voice expressive of various feelings, so deeply affecting in modern representation, would have been entirely lost. If a great genius had arisen with talents for composing a pathetic tragedy in perfection, he would have made no figure in Greece. An edifice must have been erected of a moderate size: new actors must have been trained to act with a bare face, and to pronounce in their own voice. And after all there remained a greater miracle still to be performed, viz. a total reformation of taste in the people of Athens. In one word, the simplicity of the Greek tragedy was suited to the manner of acting; and that manner excluded all improvements.

With respect to *comedy*, it does not appear that the Greek comedy surpassed the tragedy in its progress toward perfection. Horace mentions three stages of Greek comedy. The first well suited to the rough and coarse manners of the Greeks, when Eupolis, Cratinus, and Aristophanes, wrote. These authors were not ashamed to represent on the stage real persons, not even disguising their names: of which we have a striking instance in a comedy of Aristophanes, called *The Clouds*, where Socrates is introduced, and most contemptuously treated. This sort of comedy, sparing neither gods nor men, was restrained by the magistrates of Athens, so far as to prohibit persons to be named on the stage. This led writers to do what is done at present: the characters and manners of known persons were painted so much to the life, that there

could be no mistake; and the satire was indeed heightened by this regulation, as it was an additional pleasure to find out the names that were meant in the representation. This was termed the *middle comedy*. But as there still remained too great scope for obloquy and licentiousness, a law was made prohibiting real events or incidents to be introduced upon the stage. This law happily banished satire against individuals, and confined it to manners and customs in general. Obedient to this law are the comedies of Meander, Philemon, and Diphilus, who flourished about 300 years before the Christian æra. And this is termed the *third stage* of Greek comedy. The comedies of Aristophanes, which still remain, err not less against taste than against decency. But the Greek comedy is supposed to have been considerably refined by Menander and his contemporaries. Their works, however, were far from perfection, if we can draw any conjecture from their imitator Plautus, who wrote about a century later. Plautus was a writer of genius; and it may be reasonably supposed that his copies did not fall much short of the originals, at least in matters that can be faithfully copied; and he shews very little art, either in his compositions, or in the conduct of his pieces. With respect to the former, his plots are wondrous simple, very little varied, and very little interesting. The subject of almost every piece is a young man in love with a music-girl, desiring to purchase her from the procurer, and employing a favourite slave to cheat his father out of the price; and the different ways of accomplishing the cheat is all the variety we find. In some few of his comedies the story rises to a higher tone, the music-girl being discovered to be the daughter of a free-man, which removes every obstruction to a marriage between her and her lover. In the conduct of his pieces there is a miserable defect of art. Instead of unfolding the subject in the progress of the action, as is done by Terence, and by every modern writer, Plautus introduces a person for no other end but to explain the story to the audience. In one of his comedies, a household-god is so obliging as not only to unfold the subject, but to relate before-hand every particular that is to be represented, not excepting the catastrophe.

The *Roman theatre*, from the time of Plautus to that of Terence, made a rapid progress. Aristotle defines comedy to be "an imitation of light and trivial subjects, provoking laughter." The comedies of Plautus correspond accurately to that definition: those of Terence rise to a higher tone.

Nothing is more evident than the superiority of Terence above Plautus in the art of writing; and, considering that Terence is a later writer, nothing would appear more natural, if he did not copy the same originals. It may be owing to genius that Terence excelled in purity of language, and propriety of dialogue; but how account for his superiority over Plautus in the construction and conduct of a play? It will not certainly be thought, that Plautus would imitate the worst constructed plays, leaving the best to those who should come after him. This difficulty does not seem to have occurred to any of the commentators. Had the works of Menander and of his contemporaries been preserved, they probably would have explained the mystery; which for want of that light will probably remain a mystery for ever.

Homer has for more than 2000 years been held the prince of poets. Such perfection in an author who flourished when arts were far short of maturity, is truly wonderful. The nations engaged in the Trojan war are described by him as in a progress from the shepherd-state to that of agriculture. Frequent mention is made in the Iliad of the most eminent men being shepherds. Andromache, in particular, mentions seven of her brethren who were slain by Achilles as they tended their father's flocks and herds. In that state, garments

of woollen cloth were used; but the skins of beasts, the original clothing, were still worn as an upper garment: every chief in the Iliad appears in that dress. Such indeed was the simplicity of this early period, that a black ewe was promised by each chief to the man who would undertake to be a spy. In times of such simplicity, literature could not be far advanced; and it is a great doubt, whether there was at that time a single poem of the epic kind for Homer to imitate or improve upon. Homer is undoubtedly a wonderful genius, perhaps the greatest that ever existed: his fire, and the boldness of his conceptions, are inimitable. But in that early age, it would fall little short of a real miracle, to find such ripeness of judgment, and correctness of execution, as in modern writers are the fruits of long experience and progressive improvements during the course of many centuries. Accordingly, that Homer is far from being so ripe, or so correct, cannot escape the observation of any reader of taste and discernment. One striking particular is, his digressions without end, which draw our attention from the principal subject. Diomedes, for instance, meeting with Glaucus in the field of battle, and doubting, from his majestic air, whether he might not be an immortal, enquires who he was, declaring that he would not fight with a god. Glaucus lays hold of this very slight opportunity, in the very heat of action, to give a long history of his family. In the mean time, the reader's patience is put to a trial, and his ardour cools. Again, Agamemnon desiring advice how to resist the Trojans, Diomedes springs forward; but, before he offers advice, gives the history of all his progenitors, and of their characters, in a long train. And, after all, what was the sage advice that required such a preface? It was, that Agamemnon should exhort the Greeks to fight bravely. At any rate, was Diomedes so little known, as to make it proper to suspend the action at so critical a juncture, for a genealogical history? There is a third particular, which justly merits censure; and that is, an endless number of minute circumstances, especially in the description of battles, where they are most improper. The capital beauty of an epic poem is, the selection of such incidents and circumstances as make a deep impression, keeping out of view every thing low or familiar. An account of a single battle employs the whole fifth book of the Iliad, and a great part of the sixth: yet in the whole there is no general action; but unknown warriors, whom we never heard of before, killed at a distance with an arrow or a javelin; and every wound described with anatomical accuracy. The whole seventeenth book is employed in the contest about the dead body of Patroclus, stuffed with minute circumstances, below the dignity of an epic poem. In such scenes the reader is fatigued with endless particulars; and has nothing to support him but the melody of Homer's versification.

Having traced the progress of the fine arts toward maturity, in a summary way, the *decline of these arts* comes next in order. An art, in its progress toward maturity, is greatly promoted by emulation; and, after arriving at maturity, its downfall is not less promoted by it. It is difficult to judge of perfection but by comparison; and an artist, ambitious to outstrip his predecessors, cannot submit to be an imitator, but must strike out something new, which, in an art advanced to ripeness, seldom fails to be a degeneracy. This cause of the decline of the fine arts may be illustrated by various instances. The perfection of vocal music is to accompany passion, and to enforce sentiment. In ancient Greece, the province of music was well understood; which, being confined within its proper sphere, had an enchanting influence. Harmony at that time was very little cultivated, because it was of very little use: melody reaches the heart, and it is by it chiefly that a sentiment is enforced, or a passion soothed: harmony, on the con-

trary, reaches the ear only; and it is a matter of undoubted experience, that the most melodious airs admit but of very simple harmony. Artists, in latter times, ignorant why harmony was so little regarded by the ancients, applied themselves seriously to its cultivation; and they have been wonderfully successful. But they have been successful at the expence of melody; which, in modern compositions, generally speaking, is lost amid the blaze of harmony. These compositions tickle the ear by the luxury of complicated sounds, but seldom make any impression on the heart. The Italian opera, in its form, resembles the Greek tragedy, from which it is evidently copied; but very little in substance. In the latter, music being made subservient to sentiment, the dialogue is nervous and sublime: in the former, the whole weight is laid on music; and the dialogue, devoid of sentiment, is weak and spiritless. Restless man knows no golden mean, but will be attempting innovations without end.—By the same ambition, architecture was visibly declined from its perfection. The Ionic was the favourite order when architecture was in its height of glory. The Corinthian order came next; which, in attempting greater perfection, has deviated from the true simplicity of nature: and the deviation is still greater in the Composite order. With respect to literary productions, the first essays of the Romans were very imperfect. We may judge of this from Plautus, whose compositions are abundantly rude, though much admired by his contemporaries, being the best that existed at that time. The exalted spirit of the Romans hurried them on to the grand and beautiful; and literary productions of all kinds were in perfection when Augustus reigned. In attempting still greater perfection, the Roman compositions became a strange jumble of inconsistent parts: they were tumid and pompous; and, at the same time, full of antitheses, conceit, and tinsel wit. Every thing new in the fine arts pleases, though less perfect than what we are accustomed to; and, for that reason, such compositions were generally relished. We see not by what gradual steps writers, after the time of Augustus, deviated from the patterns that were before them; for no book of any moment after that time is preserved, till we come down to Seneca, in whose works nature and simplicity give place to artificial thought and bastard wit. He was a great corrupter of the Roman taste; and after him nothing was relished but brilliant strokes of fancy, with very little regard to sentiment: even Virgil and Cicero made no figure in comparison. Lucan has a forced elevation of thought and style, very difficult to be supported; and, accordingly, he sinks often into puerile reflections; witness his encomium on the river Po, which, says he, would equal the Danube, had it the same number of tributary streams. Quintilian, a writer of true and classical taste, who was protected and encouraged by Vespasian, attempted to stem the tide of false writing. His rhetoric is composed in an elegant style; and his observations contain every delicacy of the critical art. At the same time flourished Tacitus, possessing a more extensive knowledge of the nature of man than any other author, ancient or modern, if Shakspeare be not excepted. His style is original, concise, compact, and comprehensive; and, in what is properly called his *history*, perfectly correct and beautiful. He has been imitated by several, but never equalled by any. Brutus is said to be the last of the Romans for love of liberty: Quintilian and Tacitus may be said to be the last of the Romans for literary genius. Pliny the Younger is no exception: his style is affected, turgid, and full of childish brilliancy. Seneca and Pliny are proper examples of writers who study show more than substance, and who make sense yield to sound. The difference between these authors and those of the Augustan age, resembles the difference between Greek and Italian music. * Music, among the Greeks,

limited itself to the employment to which it is defined by nature, viz. to be the handmaid of sense, to enforce, enliven, or sweeten a sentiment. In the Italian opera, the mistress is degraded to be handmaid; and harmony triumphs, with very little regard to sentiment.

Another great cause that precipitates the downfall of every fine art is despotism. The reason is obvious; and there is a dismal example of it in Rome, particularly with regard to eloquence. We learn from a dialogue accounting for the corruption of the Roman eloquence, that in the decline of the art it became fashionable to stuff harangues with impertinent poetical quotations, without any view but ornament merely; and this also was long fashionable in France. It happened unfortunately for the Romans, and for the world, that the fine arts were at their height in Rome, and not much upon the decline in Greece, when despotism put an end to the republic. Augustus, it is true, retarded their fall, particularly that of literature; it being the politic of his reign to hide despotism, and to give his government an air of freedom. His court was a school of urbanity, where people of genius acquired that delicacy of taste, that elevation of sentiment, and that purity of expression, which characterize the writers of his time. He honoured men of learning, admitted them to his table, and was bountiful to them. It would be painful to follow the decline of the fine arts in Rome to their total extirpation. The tyranny of Tiberius, and of subsequent emperors, broke at last the elevated and independent spirit of the brave Romans, reduced them to abject slavery, and left not a spark of genius. The science of law is the only exception, as it flourished even in the worst of times: the Roman lawyers were a respectable body, and less the object of jealousy than men of power and extensive landed property. Among the Greeks also, a conquered people, the fine arts decayed; but not so rapidly as at Rome; the Greeks, farther removed from the seat of government, being less within the reach of a Roman tyrant. During their depression, they were guilty of the most puerile conceits; witness verses composed in the form of an ax, an egg, wings, and such like. The style of Greek authors, in the reign of the Emperor Adrian, is unequal, obscure, stiff, and affected. Lucian is the only exception that may be made.

We need scarce any other cause but despotism, to account for the decline of *statuary and painting* in Greece. These arts had arrived at their utmost perfection about the time of Alexander the Great; and from that time they declined gradually with the vigour of a free people: for Greece was now enslaved by the Macedonian power. It may in general be observed, that when a nation becomes stationary in that degree of power which it acquires from its constitution and situation, the national spirit subsides, and men of talents become rare. It is still worse with a nation that is sunk below its former power and pre-eminence; and worst of all when it is reduced to slavery. Other causes concurred to accelerate the downfall of the arts mentioned. Greece in the days of Alexander was filled with statues of excellent workmanship; and there being little demand for more, the later statuary was reduced to heads and busts. At last the Romans put a total end both to statuary and painting in Greece, by plundering it of its finest pieces; and the Greeks, exposed to the avarice of the conquerors, bestowed no longer any money on the fine arts.

The decline of the fine arts in Rome is by Petronius Arbitrator, a writer of taste and elegance, ascribed to a cause different from any above mentioned, a cause that overwhelms manhood as well as the fine arts wherever it prevails; and that is *opulence*, joined with its faithful attendants avarice and luxury. "In ancient times (says he), when naked virtue had her admirers, the liberal arts were in their highest vigour; and there was a generous contest among men, that nothing of real and

permanent advantage should long remain undiscovered. Democritus extracted the juice of every herb and plant; and, left the virtue of a single stone or twig should escape him, he consumed a lifetime in experiments. Eudoxus, immersed in the study of astronomy, spent his age upon the top of a mountain. Chrysis, to stimulate his inventive faculty, thrice purified his genius with hellebore. To turn to the imitative arts: Lyfippus, while labouring on the forms of a single statue, perished from want. Myron, whose powerful hand gave to the brass almost the soul of man, and animals—at his death found not an heir! Of us of modern times what shall we say? Immersed in drunkenness and debauchery, we want the spirit to cultivate those arts which we possess. We inveigh against the manners of antiquity; we study vice alone; and vice is all we teach. Where now is the art of reasoning? Where astronomy? Where is the right path of wisdom? What man now-a-days is heard in our temples to make avow for the attainment of eloquence, or for the discovery of the fountain of true philosophy? Nor do we even pray for health of body, or a sound understanding. One, while he has carved entered the porch of the temple, devotes a gift in the event of the death of a rich relation; another prays for the discovery of a treasure; a third for a ministerial fortune. The senate itself, the exemplary preceptor of what is good and laudable, has promised a thousand pounds of gold to the capitol; and, to remove all reproach from the crime of avarice, has offered a bribe to Jupiter himself. How should we wonder that the art of painting has declined, when, in the eyes both of the gods and men, there is more beauty in a mass of gold, than in all the works of Phidias and Apelles."—In England, the fine arts are far from such perfection as to suffer by opulence. They are in a progress, it is true, toward maturity: but they proceed in a very slow pace.

There is still another cause that never fails to undermine a fine art in a country where it is brought to perfection, abstracting from every one of the causes above mentioned. It is remarked a little above, that nothing is more fatal to an art or to a science than a performance so much superior to all of the kind as to extinguish emulation. This remark is exemplified in the great Newton, who, having surpassed all the ancients, has not left to his countrymen even the faintest hope of rivaling him; and to that cause is attributed the visible decline of mathematics in Great Britain. The same cause would have been fatal to the arts of statuary and painting among the Greeks, even though they had continued a free people. The decay of painting in modern Italy is, probably, owing to the same cause: Michael Angelo, Raphael, Titian, &c. are lofty oaks that bear down young plants in their neighbourhood, and intercept from them the sunshine of emulation. Had the art of painting made a slower progress in Italy, it might have there continued in vigour to this day. Velleius Paterculus says judiciously, "Ut primo ad consequendos quos priores docimus accendimur; at, ubi aut præteriti aut æquari eos posse desperavimus, studium cum spe fenescit; et quod adsequi non potest, sequi definit: præteritque eo in quo eminere non possumus, aliquid in quo nitamur conquirimus."

The decline of an art or science proceeding from the foregoing cause, is the most rapid where a strict comparison can be instituted between the works of different masters. The superiority of Newton above every other mathematician can be ascertained with precision; and hence the sudden decline of that science in Great Britain. In Italy a talent for painting continued many years in vigour, because no painter appeared with such superiority of genius as to carry perfection in every branch of the art. As one surpassed in designing, one in colouring, one in graceful attitudes, there was still scope for emulation. But when at last there was not a single perfection but what one

or other master had excelled in, from that period the art began to languish. Architecture continued longer in vigour than painting, because the principles of comparison in the former are less precise than in the latter. The artist who could not rival his predecessors in an established mode, fought out a new mode for himself, which though perhaps less elegant or perfect, was for a time supported by novelty.

Useful Arts will never be neglected in a country where there is any police; for every man finds his account in them. Fine arts are more precarious. They are not relished but by persons of taste, who are rare; and such as can spare great sums for supporting them, are still more rare. For that reason they will never flourish in any country, unless patronised by the sovereign, or by men of power and opulence. They merit such patronage, as one of the springs of government: and a capital spring they make, by multiplying amusements, and humanizing manners; upon which account they have always been encouraged by good princes.

General Theory of the Polite Arts. The essence of the polite arts, as before observed, consists in *expression*. The end of all these arts is *pleasure*; whereas the end of the sciences is *instruction and utility*. Some of the polite arts indeed, as eloquence, poetry, and architecture, are frequently applied to objects that are useful, or exercised in matters that are instructive, as we shall then more particularly in their proper place; but in these cases, though the ground-work belongs to those sciences which employ the understanding, yet the expression arises from the inventive faculty. It is a picture that is designed by Minerva, to which the muses add the colouring, and the graces the frame. This union forms therefore the perfection of the art, according to that sententious and well-known precept of Horace: *Omne tulit punctum, qui miscuit utile dulci*.

Under the denomination, therefore, of Polite Arts, we comprehend, 1. Eloquence; 2. Poetry; 3. Music; 4. Painting; 5. Sculpture; 6. Graving; 7. Architecture; 8. Declamation; 9. Dancing. Particular descriptions of these arts are given under their respective names. This branch of the present article is intended as a general introduction to them; and, as such, will be occasionally referred to.

There is one very essential reflection, which it appears to us proper to make in the first place, on the polite arts in general. All the rules in the world are not sufficient to make a great poet, an able orator, or an excellent artist; because the quality, necessary to form these, depends on the natural disposition, the fire of genius, which no human art can confer, but which is the pure gift of Heaven. The rules, however, will prevent a man from being a bad artist, a dull orator, or a wretched poet; seeing they are the reflections of the greatest masters in those arts, and that they point out the rocks which the artist should shun in the exercise of his talents. They are of use, moreover, in facilitating his labours, and in directing him to arrive by the shortest and surest road to perfection. They refine, strengthen, and confirm his taste. Nature, abandoned to herself, has constantly something wild and savage. Art, founded on just and sagacious rules, gives her elegance, dignity, and politeness; and it is impossible to sacrifice properly to the graces, without knowing the incense that is pleasing to them.

Beauty is the object of all the polite arts. It is not however so easy, as it may seem, to give a clear and determinate idea of what we precisely mean by that term. Many able writers, who have treated expressly on the subject, have shewn that they were totally ignorant of what it was. It is one of those expressions that we comprehend immediately, that present us with a clear and precise idea, that leave a distinct impression on our minds, when it is simply written or pronounced; but which philosophers envelope in darkness, when they attempt to elucidate it by definitions and descriptions; and the

more, as mankind have different ideas of beauty, their opinions and tastes being as various as their understandings and physiognomies. We may say, however, in general, that beauty results from the various perfections of which any object is susceptible, and which it actually possesses; and that the perfections which produce beauty consist principally in the agreeable and delightful proportions which are found, 1. Between the several parts of the same object; 2. Between each part and the whole together; 3. Between the parts and the end or design of the object to which they belong. *Genius*, or invention, is that faculty of the mind by which *beauty* is produced. *Taste*, disposition, or rather the natural sensation of the mind refined by art, serves to guide the genius in discerning, embracing, and producing, that which is beautiful of every kind. From whence it follows, that the general theory of the polite arts is nothing more than the knowledge of what they contain that is truly beautiful and agreeable; and it is this knowledge, this theory, which modern philosophers call by the Latin name of *aesthetica*.

It should be constantly remembered, that the essence of the polite arts consists in expression. This expression lies sometimes in the words, and sometimes in the pen; sometimes in sounds and their harmony, and at others in corporeal attitudes; sometimes in the pencil or in the chisel, and at others in the graver; sometimes in a proper disposition or judicious employment of the mechanic arts, and at others merely in their manner of acting. From whence arise those arts that we have mentioned, and which are described in their order.

The general theory of the polite arts, or *aesthetics*, necessarily supposes, therefore, certain rules; but these general rules are of no great number. The first is, That whoever would devote himself to the polite arts, should above all things consult his *genius*: divest himself of all self-love; and examine if he be a true son of Apollo, and cherished by the muses: for

In vain, rash author, dost thou strive to climb,
By lofty verse, Parnassus' height to sublime,
If Heaven does not by secret powers inspire,
Or if thy natal stars dart not poetic fire.

This precept, with regard to poetry in particular, is applicable to all the polite arts in general; for their most happy success is founded on *imagination*. By this term we understand, in general, a faculty of the mind, a particular genius, a lively invention, a certain subtil spirit, which gives a facility in discovering something new. But it is necessary also to prescribe just bounds to this term *new*, which must not be here taken in an absolute sense. Solomon wisely remarks, that, even in his time, *there was nothing new under the sun*. In fact, all that exists, and all that is capable of being discovered in the known world, has already been discovered. The fine arts in their imitations of nature, in their expressions, can borrow images, figures, comparisons, from those things only that exist and are known. As there have been, from the beginning of the world to our days, millions of authors in each of the polite arts, almost all the possible combinations of the various subjects have been produced by their lively imaginations; and when we hear the ignorant part of mankind talk of a work of wit or of art that is *entirely new*, that offers ideas which were before utterly unknown, that had never entered into the brain of any other man, we should refer such assertions to the class of popular errors; and reflect on those stories we every day hear of certain empirics, who pretend to be alone possessed of marvellous methods of cure by means of simples; as if there were any plant, any stalk of grass that grows in our world, that can have escaped the researches of botanists. But the novelty, of which we here speak, consists in the ingenious use of combinations of all the various objects of nature, that are new, happy, and agreeable, that have not yet been exhausted, and

which appear even to be inexhaustible; and of the use which the artist makes of all new discoveries, which he turns to his advantage, by a judicious application. Invention therefore supposes a considerable fund of preliminary knowledge, such as is capable of furnishing ideas and images, to form new combinations. But there is no art by which invention itself can be produced; for that, as we have already said, is the gift of Heaven; and it is an endowment which we cannot even make use of whenever we please. We would rather say, therefore, that invention consists in producing, in works of genius, *that which is unexpected*; an object, a harmony, a perfection, a thought, an expression, of which we had no idea, that we could not foresee, nor hope to find, where the artist has so happily placed it, and where we perceive it with delight. This idea appears applicable to such of the polite arts as affect the mind by the hearing as well as by the sight; and it is a matter that is highly essential.

The *second rule* is, That every artist ought incessantly to labour in the improvement of his *taste*; in acquiring that sensible, refined, and clear discernment, by which he will be enabled to distinguish the real beauties in each object, the ornaments that are agreeable to it, and the proportions and relations that subsist among the several parts: and by this faculty, he will be regulated in the employment of his natural talents. This labour consists not only in the profound reflections he will make on the properties of objects as they relate to the fine arts, but also in a constant, assiduous study of the grand models of beauty.

The *third rule*, to be observed in the practice of the polite arts, is the *imitation of nature*. Every object in the universe has its peculiar nature, of which the artist should never lose sight in his manner of treating it. In vain will he otherwise ornament his work with the most refined and most brilliant strokes; for, if nature be not justly imitated, it will for ever remain imperfect. The sublime Homer has sometimes sinned against this rule: for, as the gods have a nature peculiar to themselves, it cannot be a just imitation when we attribute to them passions that are scarce pardonable in mortals, and make them frequently converse in a language that is at once vulgar and ridiculous. It was not to imitate nature, to put into the mouth of a hero, at the moment of a decisive battle, an harangue that must become tedious by its excessive length, and which certainly could not have been heard by the thousandth part of a numerous army: but we have already touched upon some of the faults that are sown over the poems of that great man; to multiply or dwell upon them would be ungrateful. We must however observe, that this imitation of nature, which appears at first view so simple and so easy, is of all things the most difficult in practice; and that it requires a discernment so sagacious, and an expression so happy, as is rarely bestowed by Heaven on mortal man.

Persepicity forms the fourth rule of expression. In all the fine arts, in general, an obscure, perplexed, ambiguous, and elaborate expression, is always bad. The true, striking beauty must be manifest, and perceptible to the most ignorant of mankind as well as the most learned. Those are very false or inferior beauties that have occasion for a covering, a kind of veil that may make them appear greater than they really are: true beauty wants no veil, but shines by its native lustre. From the union of the true imitation of nature with persepicity of expression arises that *truth* which is so essential in the productions of the fine arts.

In all the polite arts, and in all the subjects they embrace, there must necessarily reign an *elevation of sentiment*, that expresses each object in the greatest perfection of which it is susceptible; that imitates Nature in her most exalted beauty. This makes the fifth general rule. The design of the fine arts

being to excite pleasure by the expression of that which is beautiful, every artist should raise himself above his subject; and, choosing the most favourable light wherein to place it, should there embellish it with the greatest, most noble, and beautiful ornaments, that his own genius can suggest; still, however, observing a strict imitation of nature.

From the observation of these two last rules results the *sublime*, which is the union of the greatest persepicity with the strictest truth and most exalted elevation possible. It is necessary to remark here, that the most simple and common subjects are susceptible of a sublime that is agreeable to their nature. An idyl or landscape may be as sublime in their kinds as an epic poem or a history-piece. When Moses begins the book of Genesis with these words, *In the beginning, God created the heaven and the earth*; or when he tells us, that God said, *Let there be light, and there was light*; these expressions are sublime in the highest degree, because they are perfectly clear, true, and elevated. Every author should therefore endeavour after the sublime in every subject that he undertakes; and this makes the sixth and last general rule in the practice of the polite arts. But if he cannot attain to this, it is, however, indispensably necessary that he constantly make use of expressions that are *noble and refined*. Every thing that is *low, indecent, or disjagreeable*, is naturally repugnant to the sublime, and ought to be for ever banished from all works that proceed from the noble and liberal arts.

ARTABANUS, the name of several kings of Parthia. See PARTHIA.

ARTABAZUS, the son of Pharnaces, commanded the Parthians and Chorasmians in the famous expedition of Xerxes. After the battle of Salamis, he escorted the king his master to the Hellespont with 60,000 chosen men; and after the battle of Plataea, in which Marodonius engaged contrary to his advice, he made a noble retreat, and returned to Asia with 40,000 men under his command.

ARTALIS (Joseph), born at Mazara in Sicily, 1628, had an early passion for poetry, and a strong inclination for arms. He finished his studies at fifteen years of age, about which time he fought a duel, in which he mortally wounded his adversary. He saved himself by taking shelter in a church; and it was owing to this accident that he afterwards applied himself to the study of philosophy. His parents being dead, and himself much embarrassed in his circumstances, he resolved to quit his country, and seek his fortune elsewhere. He accordingly went to Candia, at the time when that city was besieged by the Turks; and gave there so many proofs of his bravery, that he obtained the honour of knighthood in the military order of St. George. When he was upon his return for Italy, he was often obliged to draw his sword: he was sometimes wounded in these encounters, but being an excellent swordsman had often the advantage. He rendered himself so formidable even in Germany, that they used to style him *Chevalier de Sang*. Earnest duke of Brunswick and Lunenburg appointed him captain of his guards; but this did not make him neglect the muses, for he cultivated them amidst the noise of arms. He was member of several academies in Italy, and became highly in favour with many princes, especially the Emperor Leopold. He died in 1679 at Naples.

ARTAXATA, *orum*, the royal residence, and metropolis of Armenia Major (Strabo, Pliny, Juvenal), and built according to a plan of Hannibal, for King Artaxias, after whom it was called. It was situated on an elbow of the river Araxes, which formed a kind of peninsula, and surrounded the town like a wall, except on the side of the lithmus, but this side was secured by a rampart and ditch. This town was deemed so strong, that Lucullus, after having defeated Tigranes, durst not lay siege to it; but Pompey compelled him to deliver it

up without striking a blow. It was then levelled with the ground; but the Armenians have a tradition that the ruins of it are still to be seen at a place called *Ardachat*. Sir John Chardin says, that it has the name of *Ardachat* from Artaxias, whom in the East they call *Ardechir*. Here are the remains of a stately palace which the Armenians take to be that of Tiridates who reigned in the time of Constantine the Great. One front of this building is but half ruined, and there are many other fine antiquities which the inhabitants call *Tach*, *Tardat*, that is, the throne of Tiridates. Tavernier also mentions the ruins of Artaxata between Erivan and mount Ararat, but does not specify them. The ancient geographers mention another city of the same name, likewise situated on the Araxis, but in the northern part of Media, known among the ancients by the name of *Atropatia*.

ARTAXERXES, the name of several kings of Persia. See Persia.

ARTEMIDORUS, famous for his Treatise upon Dreams. He was born at Ephesus, but took upon him the surname of *Dadrianus* in this book, by way of respect to his mother's country, Daltis. He styled himself the *Ephesian* in his other performances. He not only bought up all that had been written concerning the explication of dreams, which amounted to many volumes; but he likewise spent many years in travelling, in order to contract an acquaintance with fortune-tellers: he also carried on an extensive correspondence with all the people of this sort in the cities and assemblies of Greece, Italy, and the most populous islands; collecting at the same time all the old dreams, and the events which are said to have followed them. The work which he wrote on dreams consisted of five books: the first three were dedicated to one Cassius Maximus; and the last two to his son, whom he took a good deal of pains to instruct in the nature and interpretation of dreams. This work, though filled with frivolous observations, contains some things that are interesting. It was first printed in Greek, at Venice, in 1518; and Rigaltius published an edition at Paris, in Greek and Latin, in 1603, and added some notes. Artemidorus wrote also a treatise upon Auguries, and another upon Chirurgery; but they are not extant. He lived under the Emperor Antoninus Pius.

ARTEMISIA, wife of Mausolus king of Caria, has immortalized herself by the honours which she paid to the memory of her husband. She built for him in Halicarnassus a very magnificent tomb, called the *Mausoleum*, which was one of the seven wonders of the world, and from which the title of *mausoleum* was afterwards given to all tombs remarkable for their grandeur: but she died of regret and sorrow before the Mausoleum was finished. She appointed panegyrics to be made in honour of him, and propoled a prize of great value for the person who should compose the best. He died about the end of the 16th Olympiad, 351 years before the Christian æra.

ARTEMISIA, queen of Caria, and the daughter of Ligdamis, thrived in person in the expedition of Xerxes against the Greeks, and performed wonders in the sea-fight near Salamis, 480 years before the Christian æra. Being pursued by an Athenian vessel, she attacked one of the Persian ships, commanded by Demasthymus, king of Calyndus, her enemy, and sunk it; on which the Athenians, thinking that her ship was on the side of the Greeks, ceased their pursuit: but Xerxes was the principal person imposed upon in this affair; for believing she had sunk an Athenian vessel, he declared, that "the men had behaved like women, and the women like men." Xerxes intrusted her with the care of the young princes of Persia, his sons; when, agreeably to her advice, he abandoned Greece, in order to return to Asia. These great qualities did not secure her from the weakness of love: she was passionately fond of a man of

Abydos, whose name was Dardanus, and was so enraged at his neglect of her, that she put out his eyes while he was asleep. The gods, in order to punish her for this, inspired her with still a stronger passion for him; so that the oracle having advised her to go to Leucas, which was the refuge of desperate lovers, she took the leap from thence, and was interred at that place.—Many writers confound this Artemisia with the former, the wife of Mausolus.

ARTEMISIUM, either a promontory (Harpocration), or a part of the sea-coast, on the north-east of Eubœa (Plutarch); called *Leon*, and *Cale Æbe* (Ptolemy); memorable for the first fee-engagement between the Greeks and Xerxes.—Another promontory of Caria (Strabo). A third in Spain, now called *Cape Martin*, in Valencia: in the meridian of London, and lat. 38. 50.

ARTEMISIUM, a town of Oenotria (Stephanus): now *S. Agatha*, in the Hither Calabria, on the river Pisaurus, or *La Foglia*, distant eight miles from the Tuscan Sea.—Another of the Contestani, in Spain (Strabo); otherwise called *Danium*: now *Denia*, on the sea-coast of Valencia. W. long. 20. Lat. 39.

ARTHRINGTON (Henry), a gentleman of a good family in Yorkshire, who, towards the latter end of the reign of Queen Elizabeth, engaged in some seditious practices against the government. He was a man of moderate sense and learning, zealously addicted to the Geneva discipline, and was engaged for several years in distributing books in defence of a farther reformation, and containing severe reflections on the lords of the privy-council, the judges, and other magistrates. In the prosecution of his designs, he became acquainted with Mr. Edmund Copping, a younger brother of a good family, and sworn servant to Queen Elizabeth, who was as far gone as himself in fanatical opinions, and who was continually representing to him the necessity of a thorough reformation in church and state. This acquaintance of theirs lasted several years, till by frequent conversations, hearing warm sermons, and praying together, they had greatly heated their imaginations, in consequence of which, they began to believe themselves very extraordinary persons. Some time in Easter term, 1591, Copping became acquainted with Hacket, and soon after introduced Arthington also to his acquaintance. On Thursday, the 14th of July, 1591, Arthington penned his prophecy of judgments against England. Copping also drew up a life of Hacket, which Arthington wrote over again for, and annexed to it his prophecy. The same day they penned a joint letter to Mr. Thomas Lancaster, a school-master, signed by Copping as the messenger of peace, and by Arthington as the prophet of God's judgments, though it seems Arthington did well know why he styled himself so. For on Friday, the 15th of July, Copping having sent for Arthington out of his bed, declared to him, that he had had a revelation, which assured him that he was prophet of mercy, and Arthington prophet of judgment; that Hacket was king of Europe, and that they were to go before him, and separate the sheep from the goats. Arthington the more readily credited this, because he found a mighty burning in himself, which he interpreted a commencement of the angelic nature. Their first exploit was to go together to the house of a gentleman in the city, between six and seven in the morning, to appoint him chief governor under his majesty; but he would have nothing to do with them, nor would he suffer them to pray. Then they went to Wood-street Compter, to Mr. Wigginton, a minister, with whom they had a long conference; then they left him and went to Hacket's chamber, at the house of one Walker, at Broken Wharf. Afterwards they went together towards Cheap-side, by Watling-street, and the Old Change, crying out, "Christ is come," &c. To this Arthington added, "Repent, England, repent;"

threatening also strange judgments against the city of London. A paper was taken out of Arthington's sleeve, which he said he was glad of, for it was an epistle to the queen, which she would not receive, and therefore she was no longer queen, but deprived of her dignity. About one o'clock they were apprehended and conducted to the lord mayor's, where several privy-councillors were met, to whom Arthington refused to shew the least respect. He did not recede in the least from his strange notions, even after he had heard that Hacket was tried and condemned; but in the afternoon of Wednesday the 23th of July, when he was assured that Hacket was actually hanged, drawn, and quartered, he presently discerned his own delusion and great danger. Upon this he wrote in the most humble manner to the chancellor, and to the treasurer, beseeching them to pardon the injuries he had done them; and afterwards he wrote to the body of the council, giving the best account he was able of the whole business, beseeching them to intercede with her majesty for him, that he might not be proceeded against as his companions had been. As for Coppinger, he, a little after he was apprehended, ran absolutely distracted, and never recovered his senses, but obstinately refusing all nourishment, died of hunger the day after Hacket was executed. It was thought proper to detain Arthington some time in Wood-street Compter, in order to discover whether his repentance was sincere, as also whether there was no danger of his relapsing into his enthusiastic fit. But he remaining perfectly sober and sensible, the queen was pleased to extend her mercy towards him, by granting him a pardon. He afterwards recovered his reputation so far, as to be thought an honest and sincere, though a warm and weak man.

ARTICLES of Religion, in the church of England. In the beginnings of Christianity, the declaration that was required of a Christian's faith was conceived in very general terms; but, as heresies sprung up, it was found necessary to guard against them, by enlarging the creeds or confessions of faith. It was in imitation of this procedure that the reformers were so copious in stating the doctrines of the church of England in that work which is entitled, "Articles whereupon it was agreed by Archbishops and Bishops of both provinces, and the whole Clergie, in the convocation holden at London, in the year of our Lorde God 1562, according to the computation of the Church of Englands, for the voiding of the diversities of opinions, and for the establishing of consent touching true religion." There were two particular circumstances in that time which made this seem to be the more necessary: the one was, that there sprung up, together with the reformation, many impious and extravagant sects; the other, that, having but just got rid of Popery, it was absolutely necessary to take the utmost precautions against it for the future. These articles were prepared, as is most probable, by the bishops Cranmer and Ridley, and were published by royal authority. The most authentic manuscript of them is in the library of Corpus Christi College in Cambridge. It belonged to Archbishop Parker, and was left by him to that college.

The subscription to these articles is enjoined by statute, which establishes them, and requires every clergyman to declare his assent, and subscribe them in the presence of his ordinary. The form of the subscription is not prescribed by the statute; but by the canon it is expressly required, that he acknowledge them, and every one of them, to be agreeable to the word of God. There is a clause in the statute, which subjects every minister, who maintains any doctrine repugnant to these articles, to deprivation.

ARTIGI, indeclinable (Pliny); *Artigis* (Ptolemy); a town of the Turduli, in Bætica. Now *Alhama*. See *ALHAMA*.

ARTOBRIGA, a town of Vindelicia (Ptolemy); now *Altzburg*, in Bavaria, on the Danube, below Ingolstadt (Aven-

tinus); but Cluverius supposes it to be *Lebanau*, on the Saltzbach, below Lauffen, in the archbishopric of Saltzburg.

ARUCCI, a town of Bætica, in the Conventus Hispalensis (Pliny); now *Morón*, in Andalusia, from an ancient inscription; five leagues to the west of Offuna. W. long. 5. 20. Lat. 37.

ARVERNI, an appellation early used for the capital of the Arverni, according to the custom of the latter ages of naming towns from the people; it was formerly called *Nemossus* (Strabo). The *Arverni*, a brave and ancient people, and one of the most powerful nations of Gaul, claimed affinity with the Romans, as descendants from Antenor (Lucan): and after their conquest by the Romans, their ancient liberty was preserved to them, on account of their bravery (Pliny). Above 1000 years ago the town was called *Clarus Mons*, from its situation (Valesius). Now *Clermont*, in Auvergne. E. long. 3. 20. N. lat. 45. 42.

ARVIRAGUS, an ancient British king who flourished in the time of the Emperor Domitian. He gained a complete victory over Claudius; but being soon after besieged in the city of Winchester, he made a treaty with the Romans, and married the emperor's daughter Genuiffa. This monarch lived to a good old age; he confirmed the ancient laws, enacted new ones, and liberally rewarded persons of merit.

ARUN, a river which rises in the western border of Sussex, and falls into the sea below Arundel. It is famous for mullets.

ARUNDA, a town of Hispania Bætica, on the Annas, or Guadiana (Ptolemy, Pliny): now said to be *Ronda*, in the province of Granada, on the confines of Andalusia. W. long. 5. 40. Lat. 36. 26.

ARUNDEL (Thomas), archbishop of Canterbury, in the reigns of Richard II. Henry IV. and Henry V. He was the second son of Robert earl of Arundel and Warren, and brother to Richard earl of Arundel, who was beheaded. At twenty-two years of age (from being archdeacon of Taunton, he was raised to the bishopric of Ely, the 6th of April, 1375, in the reign of Edward III. He was a great benefactor to the church and palace of this see. In 1386 he was appointed lord chancellor of England; two years after, he was translated to the see of York; and in 1396, was advanced to the archiepiscopal see of Canterbury, when he resigned the chancellorship. This was the first instance of the translation of an archbishop of York to the see of Canterbury. Scarce was he fixed in this see, when he had a contest with the university of Oxford, about the right of visitation. The affair was referred to King Richard, who determined it in favour of the archbishop. At his visitation in London, he revived an old constitution, by which the inhabitants of the respective parishes were obliged to pay to their rector one halfpenny in the pound of the rent of their houses. In the second year of his translation, a parliament being held at London, the commons, with the king's leave, impeached the archbishop, together with his brother the Earl of Arundel, and the Duke of Gloucester, of high-treason. The archbishop was sentenced to be banished, and within forty days to depart the kingdom upon pain of death. He retired first to France, and then to the court of Rome, where Pope Boniface IX. gave him a kind reception, and wrote a letter to King Richard in his favour; but this having no effect, his holiness resolved to interpose his authority; he accordingly nominated Arundel to the bishopric of St. Andrew's, and declared his intention of giving him several preferments in England. The king being informed of the pope's designs, wrote a letter, which had to good an

effect upon his holiness, that he withheld his intended favours from Arundel; and, at the king's request, promoted Roger Walden to the see of Canterbury.

Next year Arundel returned to England with the Duke of Lancaster, afterwards Henry IV. upon whose accession to the throne, the pope revoked the bull granted Walden, and restored Arundel to his see. In the year 1408, Arundel began to exert himself against the Lollards, or Wickliffites: he summoned the bishops and clergy at Oxford, in order to stop the progress of this new sect, and prevent the university's being farther tainted with their opinions. In 1411, being informed that this doctrine gained ground, notwithstanding the condemnation thereof in a full congregation at Oxford, he resolved to visit the university, and apply some farther remedy. His rigorous proceedings rendered Arundel extremely odious to the Wickliffites, and his zeal for suppressing that sect, carried him to several unjustifiable severities against the heads of it, particularly against Sir John Oldcastle and Lord Cobham. This prelate died at Canterbury, the 20th of February, 1413, having held the archiepiscopal see seventeen years.

ARUNDEL (Thomas), earl of Arundel and Surrey, lord-marshal of England, who sent William Petty into Asia to search for some curious monuments of antiquity, where he bought those which we call the *Arundel marbles*, of a Turk, who had taken them from a learned man sent by the famous Pierresq into Greece and Asia upon the same design. These curious marbles were placed in the earl's house and gardens, upon the banks of the Thames, and afterwards entrusted to the care of the university of Oxford, where they now are. This chronology, engraved 264 years before the Christian æra, serves to rectify the dates of a great many events of the ancient history of Greece. The great Selden wrote a book on their contents, 1629. They have since been published by Dr. Prideaux, 1676, at Oxford; and again, at London, 1732, with commentaries, and an index, by Maittaire. The reader will meet with a correct Latin and English translation of these marbles, in *The Chronological Tables of Universal History*, by the learned Abbé Lenglet Dufrenoy, lately translated into English.

ARUSINI CAMPI, plains in Lucania, famous for the last battle fought between the Romans and Pyrrhus, and the total defeat of the latter (Fiorus, Frontinus).

ARZINA, a river of Russian Lapland, into a bay of which, in 1553, two English vessels, which had penetrated as high as the 72d degree of latitude to the coast of Spitzbergen, were forced by frosts of weather; and the crews of both were frozen to death.

ASAD-ABAD, a handsome town of Persia, 68 miles N. E. of Amadon. Long 48. 25. Lat. 36. 20. N.

ASAPH (St.) gave his name to the episcopal see of St. Asaph in Wales. He was descended of a good family in North Wales, and became a monk in the convent of Llan-Elvy, over which Kentigern the Scotch bishop of that place presided. That prelate, being recalled to his own country, resigned both his convent and cathedral to Asaph, who demeaned himself with such sanctity, that after his death Llan-Elvy lost its name, and took that of the saint. St. Asaph flourished about the year 590, under Carentinus king of the Britons. He wrote the Ordinances of his Church, the Life of his master Kentigern, and some other pieces. The time of his death is not certainly known. Bale tells us, he was the first who received union from the pope.

ASAR-ADDON, or ESAR-HADDON, the son of Sennacherib, succeeded his father about 712 years before the

Christian æra, and united the kingdoms of Nineveh and Babylon. He rendered himself master of Syria; sent a colony to Samaria; and his generals took King Manasses, and carried him loaded with chains to Babylon. Alasr-Addon died after a reign of 12 years.

ASBAMEA, a fountain of Cappadocia, near Tyana, sacred to Jupiter, and to an oath. Though this fountain bubbled up, as in a state of boiling, yet its water was cold; and never ran over, but fell back again; (Philostratus, Ammian).

ASCALON, an ancient city, and one of the five satrapies or principalities of the Philistines; situated on the Mediterranean, 43 miles to the south-west of Jerusalem (Antonie), between Azotus to the north, and Gaza to the south. The birth place of Herod the Great, thence surnamed *Ascalonita* (Stephanns). Famous for its scalions, which take name from this town (Strabo, Pliny). Now *Scalona*. E. Long. 34. 30. Lat. 31. 30.

ASCANIUS, the son of Æneas and Creusa, succeeded his father in the kingdom of the Latins, and defeated Mezentius king of the Tuscans, who had refused to conclude a peace with him. At length he founded Alba Longa; and died about 1139 years before the Christian æra, after a reign of 38 years.

ASCHAM (Roger), was born at Kirby-Wilke, near North-Allerton in Yorkshire, in the year 1516. His father was steward to the noble family of Scroop. Our author Roger was educated in the family of Sir Anthony Wingfield, who, about the year 1530, sent him to St. John's College, Cambridge, where he was soon distinguished for his application and abilities. He took his degree of bachelor of arts at the age of eighteen, was soon after elected fellow of his college, and in 1536 proceeded master of arts. In 1544 he was chosen university orator; and in 1548 was sent for to court, to instruct the Lady Elizabeth (afterwards queen) in the learned languages. In the year 1550 he attended Sir Richard Morefine, as secretary, on his embassy to the Emperor Charles V. at whose court he continued three years, and in the mean time was appointed Latin secretary to King Edward VI. But, upon the death of that prince, he lost his preferment and all his hopes, being professedly of the reformed religion; yet, contrary to his expectations, he was soon after, by the interest of his friend Lord Paget, made Latin secretary to the king and queen. In June 1554 he married Mrs. Margaret How, a lady of a good family, with whom he had a considerable fortune. It is very remarkable of Mr. Ascham, that though he was known to be a Protestant, he continued in favour not only with the ministry of those times, but with Queen Mary herself. Upon the accession of Queen Elizabeth, he was not only confirmed in his post of Latin secretary, but was constantly employed as preceptor to her Majesty in the Greek and Latin languages. He died in the year 1558, much regretted, especially by the queen, who said she had rather lost ten thousand pounds. Camden and some other writers tell us, that he had a great propensity to dice and cock-fighting. He certainly died poor. He wrote,

1. *Toxophilus*. The scholæ or partitions of shooting, contained in two books, written by Roger Ascham, 1544, and now newly perused. Pleasant for all gentlemen and yeomen of England, &c. Lond. 1571. Whilst at the university he was fond of archery by way of exercise and amusement, for which he was censured; and on that account he sat down to write this book, which was dedicated to Henry VIII. who settled a pension of 10l. per annum on

the author. It is rather whimsical; but is admirably well written, and full of learning. 2. A report and discourse, written by Roger Afham, of the affairs and state of Germany, and the Emperor Charles, his court, &c. 4to. A valuable curiosity. 3. The Schoolmaster. First printed in 1573, 4to. Mr. Upton published an edition with notes in 1711. It has uncommon merit; abounding in great good sense, as well as knowledge of ancient and modern history: it is also expressive of the great humanity of the author, who was for making the paths of knowledge as level and pleasant as possible, and for trying every gentle method of enlarging the mind and winning the heart. 4. Latin Epistles. First published by Mr. Grant in 1576; have since passed many editions: the best is that of Oxford in 1703: Much admired on account of the style, and esteemed almost the only classical work of that kind written by an Englishman. 5. *Apoloogia contra misam*: 1577, 8vo.

ASCHERLEBEN, a town of Germany, in the principality of Anhalt, seated on the river Elbe.

ASCLEPIADES, one of the most celebrated physicians among the ancients, was a native of Prusa, in Bithynia; and practised physic at Rome, under Pompey, ninety-six years before the Christian æra. He was the head of a new sect; and, by making use of wine and cold water in the cure of the sick, acquired a very great reputation. He wrote several books, which are frequently mentioned by Galen, Celsus, and Pliny; but they are now lost.

ASCLEPIADES, a famous physician under Hadrian, of the same city with the former: he wrote several books concerning the composition of medicines, both internal and external.

ASCONIUS (PEDIANUS), an ancient grammarian of Padua; and, if we believe Servius, an acquaintance of Virgil's. Yet Jerome says that he flourished under the Vespasians, which is rather at too great a distance for one and the same man; but Jerome's account is rejected by the learned. We have some Commentaries of Asconius upon the Orations, which indeed are but fragments: they have been published separately, but they are to be found in many editions of Cicero's works.

ASCOT HEATH, a famous race-ground, four miles from Windsor, in the road from the Great Park to Reading. Here the King's stag-hounds are kept.

ASCOUGH (WILLIAM), doctor of laws, and bishop of Salisbury, in the reign of King Henry VI. was descended from a very ancient family, seated at Kelsey in Lincolnshire. He was consecrated to the afore-mentioned see in the chapel of Windsor, July 20, 1438: soon after which he was appointed king's confessor; this being the first instance of a bishop's discharging that office. The most remarkable particular concerning this prelate was the tragical manner of his death. For after he had fat near twelve years, the famous rebel Jack Cade and his followers, coming to Edington in Lincolnshire, where the bishop then was, and being joined by several of that prelate's own tenants, fell upon his carriages and plundered them. The next day they assaulted the bishop himself, whilst he was officiating at the altar, and dragged him away to a neighbouring hill, where they barbarously murdered him, by dashing out his brains: then tearing his bloody shirt in pieces, to be preserved in memory of the action; they left his body naked on the place. This massacre happened the 29th of June, 1450.

ASEER, or ASEERGER, a strong fortress of the soubah of Candesh, in the Deccan of Hindoostan, 20 miles N. E. of Barhanpore. Long. 76. o. E. Lat. 31. 35. N.

ASGILL (John), a very humorous writer, was bred to

the law, and practised in Ireland with great success. He was there elected a member of the house of commons, but was expelled for writing a treatise on the possibility of avoiding death; and being afterwards chosen a member for the borough of Bramber in Sussex, he was also on the same account expelled the parliament of England. After this, he continued thirty years a prisoner in the Mint, Fleet, and King's-bench: during which time he published a multitude of small political pamphlets, several of which were in defence of the succession of the house of Hanover, and against the Pretender. He died in the rules of the King's-bench, in the year 1738, when he was upwards of fourscore.

ASHES (*Encycl.*). Some observations concerning the ashes of different kinds of wood, by C. Pissis, M. D. published in the *Annales de Chimie*, are worthy of being annexed to our original article.

"Having burnt a considerable quantity of poplar-wood," says Mr. Pissis, "during the winter of the year 8 (of the French Republic), I observed that the ashes when heated again formed semi vitreous crusts, such as that produced from the ashes of the sea-weed, excepting that they were very thin and small, having been neither agitated, nor exposed to any other heat than that of a moderate chamber fire.

"At first I supposed the cause to be an extraordinary quantity of potash, but as I could not attribute it to the quality of the wood, white woods having always been reckoned to yield a smaller quantity of salt than the others (for example, the aspin (*populus tremula*, Linn.), a tree of the same genus as our poplar (*populus alba*), yields only gros. 45 grs. of potash to the quintal of the wood), I imagined that the circumstance depended upon a change in the ligneous substance. We cultivate poplar for the purpose of procuring props for our vines; and as it is bad fuel, we do not cut it down till it has ceased to produce any more shoots. It is not rare to see poplars, the bark and branches of which appear still to possess a great deal of life, whilst the trunk is reduced to a few handfuls of mould.

"This idea of the augmentation of the potash in rotten wood was not strictly just; but it shall be shewn that it has led me to some conclusions very different from the ideas generally received. I shall revert to all the points of theory, after having related the following facts, which tend to throw a light upon them.

"1. One hundred parts of dry sound poplar wood yielded four parts of ashes.

"2. One hundred parts of dry poplar wood, that was rotten, but not reduced to mould, yielded eight parts of ashes.

"3. One hundred parts of each of these kinds of ashes, lixiviated till the water was drawn off insipid, and perfectly dried in a red heat, lost twenty-eight parts of their weight; the first waters having been very strongly impregnated.

"4. One hundred parts of the same ashes, heated over again, and treated in the same manner as above, lost twenty-two parts; the leys were more strong and caustic than the preceding.

"5. One hundred parts of the ashes of dry and sound oak, when heated over again, and treated as above, lost sixteen parts.

"6. One hundred parts of the wet mould of rotten oak, of the colour of ochre, when placed upon a red hot plate of iron, were very soon dried and incinerated, leaving three parts of ashes, which, even when heated over again, had the colour of iron filings. This is nearly twice as much as the quintal of dry oak has generally yielded! These ashes were perfectly insipid.

"7. One hundred parts of the crusts, of which I have spoken at the beginning of this memoir, when treated in the same manner as the ashes No. 3, lost thirty-seven parts of their weight. This crust at first seems insipid, the potash being as it were in a latent state; but after it has been kept for some time, and triturated, water extracts from it a large quantity of this salt; it is however probable, that some of it still remains in residuum. These leys are extremely caustic.

"8. Some pieces of this crust having been made red-hot, and afterwards extinguished in a small quantity of water, yielded a ley sufficiently caustic to form soap with melted wax and tallow, upon which I poured the cold ley.

"9. This ley, when filtrated through plaster (calcareous sulphate mixed with lime), burnt into powder, lost its alkaline taste, and yielded, by spontaneous evaporation, fine crystals of sulphate of potash.

"From these facts it appears:

"1. From the four first compared with the fifth, that the wood of the white poplar abounds more in salt than that of the oak; so that this is an exception from the maxim generally adopted, that the hard woods contain a greater abundance of potash than the soft.

"The wood of the poplar is of so spongy a texture, that rats cannot gnaw it through, as its fibres resist the impression of their teeth in the same manner as those of hemp; it is also difficult to saw; this quality renders it expensive for articles of furniture, and the more so, as this wood, which is very subject to rot, ought, in order to be fit for sawing, to be cut down whilst in its full vigour, against which there is a great objection, as has been already mentioned.

"This wood burns, when it is dry, with a white flame, emits very little heat, is quickly consumed, and yields no live coal. It is evident that the combustible particles abound more in it than in the other kinds of wood; as is also the case with the willow, which yields twice as much ashes, but only about the same quantity of salt as the oak; that is to say, 15 grammes for one myriagramme of the wood, whilst our poplar yields 72. To what then are we to ascribe this large quantity? this might be determined by analysing its sap: possibly also the acid and viscous fluid of its buds, which is used in pharmacy, might furnish some data towards solving the question.

"According to a calculation made from the returns of the revenue collectors, a myriagramme of aspen wood yields only seven grammes of salt. (Ann. de Chimie, t. xix. p. 178.)

"This difference in the quantity of salt, which is in the proportion of more than ten to one, in two trees of the same genus, will not surprise those who know that the dock and sorrel are of the same genus, and that the four and the bitter cherry are of one and the same species. Nature is not subject to our confined ideas of analogy. It has been laid down as a principle, that plants of the same family may mutually supply the place of each other for medicinal purposes; but prudence requires that we should not act upon this principle, till after having accurately analyzed the two plants which we intend to substitute the one for the other.

"2. From the five first experiments it appears, that rotten wood yields a larger quantity of ashes than sound, frequently more than twice as much. This circumstance is easily accounted for. The wood, whilst it rots, becomes spongy and light: I have seen some rotten wood which did not weigh more than half as much as an equal bulk of the sound wood of the same tree. It burns without flame, like tinder, and it cannot be incinerated but with great difficulty. It appears that the hydrogen has been almost entirely destroyed; and that the carbon, by being sheathed in the earthy particles, escapes the effects of combustion.

"This wood has frequently a phosphorescent quality, the

cause of which still remains to be discovered. We ought not to confound rotten wood with wood that has been eaten by worms. In the latter case, the wood, without losing its colour, is reduced to an impalpable powder, and in that portion of the wood which still retains its solidity we may find the passage which the worm has formed for itself, and frequently the worm itself. One hundred parts of vine-stalks, reduced to an impalpable powder by the worms, and burnt in a red heat, were perfectly incinerated, leaving three parts of ashes, which is nearly the quantity obtained from a quintal of dry vine twigs burnt under the inspection of the revenue officers. This wood, to which the term of worm-eaten peculiarly belongs, has nothing in common with the rotten wood, which is also termed worm-eaten, excepting its appellation, which is very improperly applied to the latter.

"It has been asserted that rotten wood yields little salt; and this assertion is true as far as applied only to wood washed out by the rain, and it is proved by Experiment 8; but Experiment 3 proves that wood which has rotted without being washed out in this manner, has not lost one particle of its potash; and that, as an equal weight of rotten wood yields twice as much ashes of equal quality, it will furnish double the quantity of salt: hence manufactories may derive great advantage, considering the small value which this wood generally bears.

"One might employ, both in the preparation of leys for domestic purposes, and in the manufactories of nitre and salt, the ashes of dead trees, whose summits and bark being still in good preservation have prevented the access of the rain-water to the trunk. The mould of these trees might also be used as an excellent manure, since it retains the whole of its potash. It is further evident, that when this mould is washed by the rain it must be of advantage to the vegetation. The experiments of Citizen Vauquelin have shewn us, that in the sap of trees the potash exists in the state of an acetate: it would be interesting to know also in what state it exists as well in the wood as in the mould of trees.

"3. Experiment 4 shews that by baking the ashes over again they lose one-fifth of their salt: this is a necessary consequence of their losing more and more of their carbonic acid; but at the same time they gain in quality, as is proved by Experiment 8. However, if we bake over again ashes of a very rich quality, like those of our poplar, we shall obtain a half vitrified crust, which will retain a part of the potash; it will further be necessary to triturate this crust, in order to lixiviate it, which will add to the labour of the workmen. This crust, from which salt may be extracted in the proportion of 30 per cent. and which contains still a good deal more in a concealed state, might perhaps be employed in the manufacture of glass equally well with many kinds of soda. This semi-vitreous state of the substance, and the solidity of the soaps obtained in Experiment 8, led me at first to suspect that the ashes of the poplar contained soda; but the Doctor was undeceived by Experiment 9. He made use of some parget, which he had by him for want of sulphuric acid, which was not immediately at hand. Franklin says, it is good to know how to saw with a whimble. For the same reason he made use of wax and tallow."

Dr. Piffis concludes with some ideas to which this experiment gave rise. Melted wax, tallow, and hog's-lard, and heated oils, acquire a temperature higher than that of water, and even of boiling ley: when an alkaline ley is added, the mixture immediately puffs up in an extraordinary manner, the whole of the water is instantly evaporated; and when the ingredients are employed in equal proportions, the soap remains more solid than that made according to the processes usually employed in the manufactories; besides which, it is dry as soon as formed. "These advantages," says Dr. Piffis, "are

well worth the trouble of making some experiments, by which we might examine the following questions :

" 1. If the oil were heated before the water, would not the expansion, which takes place when they are mixed together, occasion some accident ?—To me it appears that it would not, provided the boiler were sufficiently large, and only one-fourth of its capacity filled.

" 2. Might the mixture be stirred ?—It might, after the whole of the ley has been added, as the mixture then remains in a tranquil state of fusion.

" 3. Would the salts which are of no use in forming the soap, particularly the alkaline carbonates, be carried off by the tube ?—I apprehend they would not ; for, in the experiments which I have made on a small scale, no liquid was left behind.

" 4. Would not the only substances, by being too much heated, have their properties so altered as to affect the quality of the soap ?—I fear they would ; for the soaps which I obtained were of a greyish colour."

ASHLEY (Robert), a Wiltshire gentleman, descended from the family of that name residing at Nathill, in that county, was admitted a gentleman-commoner of Hart Hall in Oxford, in the year 1580, being then fifteen years of age. From the university he removed to the Middle Temple, where he was called to the dignity of barrister at law. After some time, he travelled into Holland, France, &c. conversing with the learned, and frequenting the public libraries. Being returned into England, he lived many years in the Middle Temple, and honoured the commonwealth of learning with several of his lucubrations. He died, in a good old age, the beginning of October, 1641. His other works were for the most part translations.

ASHMOLE (Elias), a great antiquary and herald, founder of the Ashmolean museum at Oxford, was born at Lichfield in Staffordshire, 1617. In the early part of his life he practised in the law ; and in the civil war had a captain's commission under the king, and was also comptroller of the ordnance. He married the Lady Mainwaring in 1649, and settled at London ; where his house was frequented by all the learned and ingenious men of the time. Mr. Ashmole was a diligent and curious collector of manuscripts. In the year 1650 he published a treatise written by Dr. Arthur Dee, relating to the philosopher's stone ; together with another tract on the same subject, by an unknown author. About the same time, he was busied in preparing for the press a complete collection of the works of such English chemists as had till then remained in manuscript. This undertaking cost him great labour and expence ; and at length the work appeared, towards the close of the year 1652. He proposed at first to have carried it on to several volumes ; but he afterwards dropped this design, and seemed to take a different turn in his studies. He now applied himself to the study of antiquity and records : he was at great pains to trace the Roman road, which in Antoninus's Itinerary is called *Benueanna*, from Weedon to Lichfield, of which he gave Mr. Dugdale an account in a letter. In 1658 he began to collect materials for his history of the Order of the Garter, which he lived to finish, and thereby did no less honour to the order than to himself. In September following, he made a journey to Oxford, where he set about giving a full and particular description of the coins presented to the public library by Archbishop Laud.

Upon the restoration of King Charles II. Mr. Ashmole was introduced to his Majesty, who received him very graciously ; and on the 18th of June, 1660, bestowed on him the place of Windsor herald. A few days after, he appointed him to give a description of his medals, which were accordingly delivered into his possession, and King Henry VIII.'s closet was assigned

for his use. On the 15th of February, Mr. Ashmole was admitted a fellow of the Royal Society ; and, on the 6th of February following, the king appointed him secretary of Surinam, in the West Indies. On the 19th of July, 1699, the university of Oxford, in consideration of the many favours they had received from Mr. Ashmole, created him doctor of physick by diploma, which was presented to him by Dr. Yates, principal of Brazen Nose College. On the 8th of May, 1672, he presented his "Institution, Laws, and Ceremonies, of the most noble Order of the Garter," to the king ; who received it very graciously, and, as a mark of his approbation, granted him a privy seal for 400l. out of the custom of paper. On the 26th January, 1679, a fire broke out in the Middle Temple, in the next chamber to Mr. Ashmole's, by which he lost a noble library, with a collection of 9000 coins, ancient and modern, and a vast repository of seals, charters, and other antiquities and curiosities ; but his manuscripts and his most valuable gold medals were luckily at his house at Lambeth. In 1683, the university of Oxford having finished a magnificent repository near the theatre, Mr. Ashmole sent thither his curious collection of rarities ; which benefaction was considerably augmented by the addition of his manuscripts and library at his death, which happened at Lambeth, the 18th of May, in the 76th year of his age. He was interred in the church of Great Lambeth in Surrey, on the 26th of May, 1692, and a black marble stone laid over his grave, with a Latin inscription.

Besides the works which we have mentioned, Mr. Ashmole left several which were published since his death, and some which remain still in manuscript.

ASHTED, a village of Surrey, situated near Epfom, on one of the most delightful spots in the county.

ASHTON (Charles), one of the most learned critics of his age, elected master of Jesus College, Cambridge, July 5, 1701, was installed in a prebend of Ely on the 14th of the same month. His great knowledge in ecclesiastical antiquities was excelled by none, and equalled by few ; as his MS. remarks upon the fathers, and corrections of the mistakes of translators, will sufficiently shew. His critical skill in the writers of the classics is well known. Dr. Taylor always spoke with raptures of his correction of the inscription to Jupiter Urius, which he looked on as the happiest thing, and the most to the credit of the doer, and the art itself, that he knew of. He lived to a good old age, but in the latter part of his life seldom appeared abroad.

ASHTON (Thomas), educated at Eton, and elected thence to King's College, Cambridge, 1733, was probably the person to whom Mr. Horace Walpole addressed his Epistle from Florence, in 1740, under the title of Thomas Ashton, esq. tutor to the Earl of Plymouth. He was presented to the rectory of Aldingham in Lancashire, which he resigned in March, 1749 ; and, on the 3d of May following, was presented by the provost and fellows of Eton to the rectory of Sturminster Marshall in Dorsetshire. He was then M. A. and had been chosen a fellow of Eton in December, 1745. In 1752 he was collated to the rectory of St. Botolph, Bishopsgate : in 1759, took the degree of D. D. ; December 10, 1760, he married Miss Amyand ; and in May, 1762, was elected preacher at Lincoln's Inn, which he resigned in 1764. In 1770 he published, in 8vo. a volume of Sermons on several Occasions. Dr. Ashton died March 1, 1775, at the age of fifty-nine, after having for some years survived a severe attack of the palsy. His discourses, admirable as they are in themselves, were rendered still more so by the excellence of his delivery. His other publications were : 1. A Dissertation on 2 Peter i. 19. 1750. 2. A Letter to the Rev. Mr. Thomas Jones. 3. An Extract from the Cafe of the Obligation of the

Electors of Eton College, to supply all Vacancies in that Society with those who are, or have been, Fellows of King's College, Cambridge, so long as Persons properly qualified are to be had within that Description. London, 1771. 4. A Letter to the Rev. Dr. Morell, on the Question of electing Aliens into the vacant Places in Eton College. 5. A Second Letter to Dr. Morell.

ASHTON-UNDER-LINE, a village of Lancashire, seven miles east of Manchester. It has a manufactory of cotton, and an iron foundry, both very considerable.

ASHWELL (George), rector of Hanwell, near Banbury, in Oxfordshire, son of Robert Ashwell, of Harrow on the Hill, Middlesex, was born in London, November 18, 1612. He was admitted a scholar of Wadham College, in Oxford, in 1627, took the degrees in arts, was elected fellow, and became a celebrated tutor in that house. In the time of the grand rebellion he continued in Oxford, and preached several times before the king, court, and parliament. A little before the surrender of the garrison of Oxford, he had the degree of bachelor in divinity conferred on him. About the latter end of the year 1658, he was presented to the living of Hanwell, vacant by the death of Dr. Robert Harris, having been before (as Mr. Wood thinks) chaplain in the family of Sir Anthony Cope, lord of the manor of Hanwell. He had the character of a very peaceable and religious man, and was well versed in logic, the schoolmen, and the fathers. He wrote the following books: 1. A Discourse asserting the received Authors and Authority of the Apostles Creed. Oxon. 1653. 2. A double Appendix, the first touching the Athanasian, the second touching the Nicene Creed. 3. Concerning the Gesture to be used at the receiving of the Sacrament. Oxon. 1668. 4. A Treatise concerning Socinus, and the Socinian Herefy. 5. A Dissertation concerning the Church of Rome. Oxon. 1688. 6. An Answer to Plato Redivivus. 7. He also translated out of Latin into English, Philophus Autodidactus. Our author died at Hanwell, the 8th of February, 1693.

ASHWELL, a village of Hertfordshire, in Doomſday Book called a borough, having 14 burgesses and a mayor. Near the church are the remains of a Roman camp, which consists of 12 acres of land, inclosed by a deep ditch, and formerly a rampart. It is situated near Caldicot, on the borders of Cambridgeshire.

ASINIUS (Pollio), consul and Roman orator, distinguished himself under Augustus by his exploits and his literary works. He is frequently mentioned with praises by Horace and Virgil, and is said to have collected the first library at Rome. He died at Prescati, at 80 years of age.

ASKEATON, a town of Ireland, in the county of Limerick, on the river Shannon. It sends two members to parliament.

ASMONEUS, or ASSAMONEUS, the father of Simon, and chief of the Asmoneans, a family that reigned over the Jews during 126 years.

ASNA (Encycl.). This town in Upper Egypt is believed by some authors to be the ancient Syene, though others say the ruins of it are still to be seen near Assuan. It is so near the cataracts of the Nile, that they may be heard from thence. It contains several monuments of antiquity; and among the rest an ancient Egyptian temple, pretty entire, all painted throughout, except in some places that are effaced by time. The columns are full of hieroglyphic figures. This superb structure is now made use of for a stable, wherein they put oxen, camels, and goats. A little way from thence are the ruins of an ancient nunnery, said to be built by St. Helena, surrounded with tombs. Asna is the principal town in these parts, and the inhabitants are rich in corn and cattle. They drive a considerable trade into Lower Egypt and Nubia, by

means of the Nile, and also by the caravans that pass over the Desert. The inhabitants are all Arabs, except about 200 Copts, the ancient inhabitants, and a sort of Christians. They are under the government of the Turks, who have a cadi, and the Arabs have two sheriffs of their own nation.

ASOPUS, a river of Phrygia Major, which, together with the Lycus, washes Laodicea (Pliny).—Another of Beotia, which running from mount Citheron, and watering the territory of Thebes, separates it from the territory of Plataea, and falls with an east course into the Euripus, at Tanagra. On this river Adraſtus, king of Sicyon, built a temple to Nemeſis, thence called Adraſtea. From this river Thebæ came to be surnamed Aiopides (Strabo). It is now called Aiopo. A third Aiopus, a river of Peloponnesus, which runs by Sicyon (Strabo); and with a north-west course falls into the Sinus Corinthiacus, to the west of Corinth. A fourth, a small river of the Locri Epizeſimidi, on the borders of Thessaly (Pliny); rising in Mount Oeta, and falling into the Sinus Maliacus.

ASOPUS, a town of Laconica (Pausanias); on the Sinus Laconicus, with a port in a peninsula, between Boæ to the east, and the mouth of the Eurotas to the west. The citadel only remains standing, now called by the sailors Caſtel Rampano.

ASPA, a town of Parthia (Ptolemy); now Iſpahan (Hofſtenius). In Ptolemy the latitude seems to agree, being 33°; but whether the longitude does, is a question. E. Long. 51. Lat. 32. 30.

ASPICUETA (Martin de), commonly called the *Doctor of Navarre*, or *Doctor Navarrus*; was descended of a noble family, and born the 13th of December 1491, at Varafayn, a small city of Navarre, not far from Pampeluna. He entered very young into the monastery of Regular canons at Roncevaux, where he took the habit, which he continued to wear after he left the convent. He studied classical learning, natural and moral philosophy, and divinity, at Alcalá, in New Castile, adopting chiefly the system of Petrus Lombardus, commonly called the *Maſter of the Sentences*. He applied to the study of the law at Ferrara, and taught it with applause at Toulouse and Cahors. After being first professor of canon law at Salamanca for fourteen years, he quitted that place to be professor of law at Coimbra, with a larger salary. The duties of this office he discharged for the space of twenty years, and then resigned it to retire into his own country, where he took care of his nieces, the daughters of his deceased brothers. Having made a journey to Rome, to plead the cause of Bartholomeo de Caranza archbishop of Toledo, who had been accused of heresy before the tribunal of the inquisition in Spain, and whose cause was, by the pope's order, to be tried in that city, Aspicueta's writings, which were well known, procured him a most honourable reception. Pope Pius V. made him assistant to Cardinal Francis Aciat, his vice-penitentiary; and Gregory XIII. never passed by his door without calling for him, and stopped sometimes a whole hour to talk with him in the street. His name became so famous, that even in his life-time the highest encomium on a learned man was to call him a *Navarrus*. He was consulted as an oracle. By temperance he prolonged his life to a great length. His economy enabled him to give substantial proofs of his charity. Being very old, he used to ride on a mule through the city, and relieved all the poor he met; to which his mule was so well accustomed, that it stopped of its own accord at the sight of every poor man, till its master had relieved him. He refused several honourable posts in church and state, that he might have leisure to correct and improve the works he had already written, and compose others. He

died at the age of ninety-four, on the 21st of June, 1586. He wrote a vast number of treatises, all which are either on morality or canon law.

ASSAM, a country of Asia, bounded on the W. by Bengal and Bootan, on the N. by the mountains of Thibet, and on the S.E. and S. by Meckley. The river Burrampoote flows through the whole length of it. Its capital is Ghergon. The natives prefer the flesh of dogs to any other kind of animal food. They pay no taxes, the king being the sole proprietor of all the gold, silver, and other metals, found in his kingdom. They live comfortably; almost each housekeeper having an elephant, for the convenience of his wives. The invention of gunpowder is ascribed to the Assamese. It is certain that gunpowder was known in China and Hindoostan, far beyond all periods of investigation; and, in the code of Gentoo laws, is a prohibition of the use of fire-arms. Assam lies between 91° and 96° E. long. and 25° and 28° N. lat.

ASSELYN (John), a famous Dutch painter, was born in Holland, and became the disciple of Jsaiah Vandervele, the battle-painter. He distinguished himself in history-paintings, battles, landscapes, animals, and particularly horses. He travelled into France and Italy; and was so pleased with the manner of Bambocchio, that he always followed it. He painted many pictures at Lyons, where he married the daughter of a merchant of Antwerp, and returned with her to Holland. Here he first discovered to his countrymen a fresh and clear manner of painting landscapes, like Claude Lorraine; upon which, all the painters imitated his style, and reformed the dark brown they had hitherto followed. Asselyn's pictures were so much admired at Amsterdam, that they sold there at a high price. He died in that city, in 1660. Twenty-four pieces of landscapes and ruins, which he painted in Italy, have been engraved by Perelle.

ASSER, John (or ASSERIUS MENEVENSI, that is, *Assir of St. David's*), bishop of Shyrburn in the reign of Alfred the Great. He was born in Pembrokehire, in South Wales; and educated in the monastery of St. David's by the Archbishop Allierius, who, according to Leland, was his kinsman. In this monastery he became a monk, and by his assiduous application soon acquired universal fame as a person of profound learning and great abilities. Alfred, the munificent patron of genius, about the year 880, sent for him to court. The king was then at Dean in Wiltshire. He was so charmed with Asser, that he made him his preceptor and companion. As a reward for his services, he appointed him abbot of two or three different monasteries; and at last promoted him to the episcopal see of Shyrburn, where he died, and was buried, in the year 910. He was, says Pits, a man of a happy genius, wonderful modesty, extensive learning, and great integrity of life. He is said to have been principally instrumental in persuading the king to restore the university of Oxford to its pristine dignity and lustre.—He wrote, *De vita et rebus gestis Alfredi*, &c. Lond. 1574, published by Archbishop Parker, in the old Saxon character, at the end of *Walsingham's hist.*—Francf. 1602, fol. 61x. 1722, 8vo. Many other works are ascribed to this author by Gale, Bale, and Pits; but all doubtful.

ASSHETON (William), doctor of divinity, and rector of Beckenham in Kent, was born in the year 1641, and was educated at Brazen-nose College, Oxford. After entering into orders, he became chaplain to the Duke of Ormond, and was admitted doctor of divinity in 1673. Soon after, he was nominated to a prebend in the church of York, presented to the living of St. Antholin, London, and to the rectory of Beckenham in Kent. He was the first projector of the scheme for providing for clergymen's widows, and others, by a jointure payable out of the mercers' company. He wrote several pieces against the Papists and Dissenters, and some devotional tracts.

He died at Beckenham, in September 1711, in the 70th year of his age.

ASSOS, a seaport town of Natolia, seated on a bay of the Archipelago, twelve miles S.E. of Troas, subject to the Turks. Long. 26. 36. E. Lat. 39. 32. N.

ASSUS, *i*, feminine (Strabo); *Assum*, or *Affon*, *i*, neuter (Ptolemy); a town of Troas (though by others supposed to be of Myfia), and the fame with Apollonia (Pliny); but different from the Apollonia on the river Rhodacus. Ptolemy places it on the sea-coast, but Strabo more inland; if he does not mean the head of an inland bay, as appears from Diodorus Siculus. It was a town of the Leleges, the country of Cleanthes the stoic philosopher, who succeeded Zeno; and is still called *Affos*. E. long. 27. 30. N. lat. 38. 30.

ASSYNT, a district in the western part of Sutherlandshire, in Scotland. It exhibits an assemblage of shattered mountains, heaped, as it were, upon each other; and seemingly torn and convulsed in a truly tremendous manner. Toward the rugged peninsula of Assynt Point, are several vast conic hills, the highest of which is distinguished by the name of the Sugar Loaf.

ASTA, an inland town of Liguria, a colony (Ptolemy); on the river Tanarus; now *Asti*. E. Long. 8. 15. Lat. 44. 40.

ASTA Regia, a town of Betica (Pliny); situated at that mouth of the Bætis, which was choked up with mud, to the north of Cadiz; sixteen miles distant from the port of Cadiz (Antonine). Its ruins shew its former greatness. Its name is Phœnician, denoting a *smith*, or arm of the sea, on which it stood. It is said to be the fame with XERA; which see.

ASTAROTH, the royal residence of Og king of Bashan; whether the fame with Astaroth Carnain, is matter of doubt: if one and the fame, it follows from Eusebius's account, that it lay in Bashan, and to the east of Jordan, because in the confines of Arabia.

ASTARTE, a city on the other side Jordan; one of the names of Rabbath Ammon, in Arabia Patraea (Stephanus).

ASTELL (Mary), the great ornament of her sex, and country, was the daughter of — Astell, an opulent merchant at Newcastle-upon-Tyne, where she was born about the year 1668. She was educated in a manner suitable to her station; and, amongst other accomplishments, was mistress of the French, and had some knowledge of the Latin tongue. Her uncle, a clergyman, observing in her some marks of a promising genius, took her under his tuition, and taught her mathematics, logic, and philosophy. She left the place of her nativity when she was about twenty years of age, and spent the remaining part of her life at London, and at Chelsea. Here she pursued her studies with great assiduity, made great proficiency in the above-mentioned sciences, and acquired a more complete knowledge of many classic authors. Among these Seneca, Epicætus, Hierocles, Antoninus, Tully, Plato, and Xenophon, were her principal favourites.

Her life was spent in writing for the advancement of learning, religion, and virtue; and in the practice of those religious duties which she so zealously and pathetically recommended to others, and in which perhaps no one was ever more sincere and devout. Her sentiments of piety, charity, humility, friendship, and other Christian graces, were uncommonly refined and sublime; and religion sat gracefully upon her, unattended with any forbidding airs of mournfulness or of gloom. Her mind was generally calm and serene; and her conversation was innocently facetious, and highly entertaining. She would say, "The good Christian only hath reason, and he always ought to be cheerful;" and, "That dejected looks and melancholy airs were very unbecomingly in a Christian." But these subjects she hath treated at large in some of her excellent writings.

She was remarkably abstemious; and seemed to enjoy an uninterrupted state of health, till a few years before her death; when, having one of her breasts cut off, it so much impaired her constitution, that she did not long survive it. This painful operation she underwent without discovering the least timidity, or so much as uttering a groan; and shewed the same resolution and resignation during her whole illness. When she was confined to her bed by a gradual decay, and the time of her dissolution drew near, she ordered her shroud and coffin to be made, and brought to her bed-side; and there to remain in her view, as a constant memento of her approaching fate, and to keep her mind fixed on proper contemplation. She died in the year 1731, in the 63d year of her age, and was buried at Chelsea. She wrote, 1. A serious Proposal to the Ladies. 2. An Essay in Defence of the Female Sex. 3. Letters concerning the Love of God. 4. Reflections upon Marriage. 5. Moderation truly stated. 6. The Christian Religion, as professed by a Daughter of the Church of England; and some other works.

ASTIGI, indelible; a colony, and conventus juridicus, of Bætica, furnished *Augytha Firma*, situated on the Singulus, which falls into the Bætis; called also *Colonia Astigitana* (Pliny): now *Eceja*, midway between Seville and Corduba. W. Long. 5. Lat. 37. 20.

ASTLEY (John), was born at Wem in Shropshire, of parents much less showy in their circumstances, but, morally, much more enviable. His father practised medicine. After a little time spent at a country school, which usually does little more than turn ignorance into presumption, John Astley came to London, and was apprenticed to Hudson the portrait painter, who, bad as he was, was the best of his time; and, though otherwise not worth the remembering, will never be forgotten, as the master of Sir Joshua Reynolds. Astley, too, though not so elegantly minded as Reynolds, might have been conspicuous in his art. When he left Hudson, and went to Rome, he shewed such parts as got, and kept, the patronage of Lord Chesterfield. The best pictures he ever painted, were copies of the Bentivoglios, and Titian's Venus, and a head much in the manner of Shakspeare. When he returned from Rome, he was received for several months into the house of a friend, whose abundant kindness he never returned: he then went an adventurer to Ireland; there his fortune was so good, and his use of it so diligent, that in three years he left the country with three thousand pounds more than he brought into it.

As he was painting his way back to London, in his own post-chaise, and with an out-riding, he loitered with a little pardonable vanity, in his native neighbourhood; and entering Knutsford assembly with Major Este, of the 68th, Lady Daniel was at once won by his appearance. She contrived the next day to sit for her portrait, and the next week she gave him the original: superceding the claims of Mr. Smith Barry, Lady Daniel married Mr. Astley. The marriage articles relieved her fortune to herself; but so satisfactory was his behaviour, that the soon gave him the Tably estate; and dying soon after, settled on him, after the death of her eldest daughter, by Sir W. Daniel, the whole Duckenfield estate in fee, amounting together to five thousand pounds a-year.

In the structure and decoration of small buildings, rich as the time is in architecture, Astley's architecture was pre-eminent. Pall-Mall is one instance; Lady Archer's saloon and conservatory at Barnes is another; Duckenfield is yet finer than either. The saloon, the loggio in front, the chamber on each side, and the great octagon, are all as exquisite as original, from their first idea to the last.

Astley's ingenuity led him also to commercial arts; but in this adventure the balance was against him. In the different

sinkings on his colliery, he sunk more money than he raised; in the furnaces for his iron-stone, he consumed more metal from his pocket than the mine.

But in the article of money, his destiny was inexhaustible. The wastes of folly were more than equalled by the wantonness of fortune. His brother, the Putney furgeon, was run over by a waggon at Wimbledon, and breathed his last on the road: this at once, more than replaced the ten thousand pounds he had run down in the furnace. Estimating what he got by painting, by legacies, and by his marriage, he was worth above 100,000l. Of this, about 25,000l. were spent in arts, and elegant accommodations, blameless at least, if not praise-worthy. Thirty thousand pounds, he told Dr. Warren, he had spent on seven years' excesses, when he was languishing under their consequences; and, in the self-disapprobation of a retrospective hour, he declared he would give the remaining 100,000l. to redeem the time he had lost. He died at Duckenfield, November 14, 1787.

ASTON (Sir Arthur), an officer of note in King Charles the First's army, was son of Sir Arthur Aston, of Fulham in Middlesex. He was a great traveller, and made several campaigns in foreign countries. Being returned to England about the beginning of the grand rebellion, with as many soldiers of note as he could bring with him, he took part with the king against the parliament. He commanded the dragoons in the battle of Edge-hill, and with them did his majesty considerable service. The king having a great opinion of his valour and conduct, made him governor of the garrison of Reading in Berkshire, and commissary-general of the horse; in which post he three times repulsed the earl of Essex, who, at the head of the parliament army, laid siege to that place; but Sir Arthur being dangerously wounded, the command devolved on Colonel Richard Fielding, the eldest colonel in the garrison. Sir Arthur was suspected of taking this opportunity to get rid of a dangerous command. Some time after he was appointed governor of the garrison of Oxford, in the room of Sir William Pennynman, deceased. In September following, he had the misfortune to break his leg by a fall from his horse, and was obliged to have it cut off; whereupon, on the 25th of December, he was discharged from his command, which was conferred on Colonel Gage. After the king's death, Sir Arthur was employed in the service of King Charles II. and went with the flower of the English veterans into Ireland, where he was appointed governor of Drogheda. At length Cromwell having taken the town, about the 10th of August, 1649, and put the inhabitants to the sword, Sir Arthur, the governor, was cut to pieces, and his brains beaten out with his wooden leg.

ASTRABAD, a town of Persia, capital of a province of the same name, on the Caspian Sea, 200 miles N. of Ispahan. Long. 55. 35. E. Lat. 36. 50. N.

ASTROP-WELLS, near Banbury in Oxfordshire, much resorted to on account of the virtues of their waters.

ASTYAGES, son of Cyaxares, the last king of the Medes. He dreamed that from the womb of his daughter Mandane, married to Cambyzes king of Persia, there sprang a vine that spread itself over all Asia. She being with child, he resolved to kill the infant as soon as born. Its name was Cyrus; and Harpagus, being sent to destroy it, preserved it: which Astyages after a long time hearing of, he caused Harpagus to eat his own son. Harpagus called in Cyrus, who dethroned his grandfather, and thereby ended the monarchy of the Medes. See MEDIA and PERSIA.

ASTYANAX, the only son of Hector and Andromache: after the taking of Troy, he was thrown from the top of a tower by Ulysses's orders.

ATABYRIS, a very high mountain in the island of Rhodes,

on which, according to Strabo and Diodorus Siculus, there stood a temple of Jupiter Atarabyrius, whose worship a colony of Rhodians carried into Sicily, where a temple was built to the same deity at Agrigentum.

ATACAMA, a harbour of South America, in Peru. There is a great desert of the same name, and a chain of mountains which separate Peru from Quito. On the mountains the cold is so violent, that passengers are sometimes frozen to death. Long. 80. 20. W. Lat. 0. 22. S.

ATALAUA, a town of Portugal, in Estramadura, on an eminence, with a fort, five miles S. of Tomer, and as near the Trajo. Long. 7. 56. W. Lat. 39. 25. N.

ATE (*Encycl.*), the goddess of mischief, was daughter of Jupiter, and cast down from heaven at the birth of Hercules. For Juno having deceived Jupiter, in causing Erisiftheus to be born before Hercules, Jupiter expressed his resentment on Ate, as the author of that mischief; and threw her headlong from heaven to earth, swearing she should never return thither again (*Homeri Il. xix. 125*). The name of this goddess comes from *αταω, noceo, to hurt*. Her being the daughter of Jupiter means, according to mythologists, that no evil happens to us but by the permission of Providence; and her banishment to earth denotes the terrible effects of divine justice among men.

ATENA, a town of Italy, in Naples, near the river Negro twenty-two miles N. of Policastro. Long. 15. 58. E. Lat. 40. 36. N.

ATERNUM, a town of Lucania in Italy; now *Aterni* (*Cluvenus*): also a town in the territory of the Piceni; now *Picra*, a port-town of Naples, situated on the Adriatic. E. long. 15. 25. N. lat. 42. 30.

ATESTE, a town in the territory of Venice in Italy, now called *Elle*. E. long. 12. 6. N. lat. 45. 25.

ATH, a small, handsome, and strong town in Hainault. It was taken by the French in 1745, but restored to the Austrians. It is seated on the Dender, twelve miles N. W. of Mons. Long. 3. 44. E. Lat. 50. 35. N.

ATHANASIA (*Encycl.*), **GOLDBLOCKS**. Of this genus of plants Linnæus mentions eleven species; of which the following fix are, by Mr. Miller, reckoned worthy of a place in those gardens where there are conveniences for preserving tender plants, as none of these species will outlive the winters of this country. 1. The *dentata* grows naturally at the Cape of Good Hope. It rises three or four feet high, sending out many side-branches, garnished with pretty long narrow leaves, having some resemblance to those of buckthorn plantain. The branches are generally terminated by yellow flowers formed into a kind of umbel. These flowers appear early in summer, and the seeds ripen in autumn. 2. The *trifurcata*, is also a native of Africa, as are the three following sorts. It is a shrubby plant, about the height of the former, sending out several weak shoots, garnished with awl-shaped trifid leaves set close to them, of a pale silvery colour. The flowers are yellow, and terminate the branches in a corymbus. They appear in August, and the seeds ripen in October. 3. The *crithmifolia* rises with a strong shrubby stalk to the height of six or eight feet, sending out many ligneous branches garnished with long narrow leaves terminating in four or five parts like those of lampbrush. The flowers are like those of the former, and appear in July and August, being succeeded by seeds which ripen in October. 4. The *pubescens* hath strong woody stalks four or five feet high, covered with a woolly bark, as are also the branches, which are closely garnished with entire, spear-shaped, woolly leaves, and are terminated by yellow flowers having a long foot-stalk, and are sometimes succeeded by seeds that ripen in the autumn. 5. The *annua* is a low annual plant, seldom rising above a foot high, and sending

forth two or three slender branches garnished with wing-pointed leaves: the stalks are terminated by bright yellow flowers growing in umbels, which appear in August and September; but unless the season is very favourable, the seeds do not ripen in this country. 6. The *maritima*, or sea cuedweed, grows naturally on the coasts of the Mediterranean, as also in Wales, and some other parts of Britain; notwithstanding which, Mr. Miller says it must be put under a glass-frame in winter, and rarely perfects good seeds in Britain. It rises two or three feet high, sending out a few weak branches, garnished with white spear-shaped leaves terminated by a single flower upon each foot-stalk. The first four of these sorts may be propagated either by seeds or cuttings; and their culture is not materially different from that of the common hot-bed plants.

ATHANASIUS (St.), bishop of Alexandria, and one of the greatest defenders of the faith against the Arians, was born in Egypt. He followed St. Alexander to the council of Nice, in 325, where he disputed against Arius, and the following year was made bishop of Alexandria; but, in 335, was deposed by the council of Tyre: when, having recourse to the Emperor Constantine, the Arian deputies accused him of having hindered the exportation of corn from Alexandria to Constantinople; on which the emperor, without suffering him to make his defence, banished him to Treves. The emperor, two years after, gave orders that he should be restored to his bishopric: but, on his return to Alexandria, his enemies brought fresh accusations against him, and chose Gregory of Cappadocia to his see; which obliged Athanasius to go to Rome to reclaim it of Pope Julius. He was there declared innocent, in a council held in 342, and in that of Sardica in 347, and two years after was restored to his see by order of the Emperor Constantine: but after the death of that prince, he was again banished by the Emperor Constantius, which obliged him to retire into the deserts. The Arians then elected one George in his room; who being killed in a popular sedition under Julian, in 360, St. Athanasius returned to Alexandria, but was again banished under Julian, and restored to his see under Jovian. He addressed to that emperor a letter, in which he proposed that the Nicene creed should be the standard of the orthodox faith, and condemned those who denied the divinity of the Holy Ghost. He was also banished by Valen in 367, and afterwards recalled. St. Athanasius died on the 2d of May, 373.

His works principally contain a defence of the mystery of the Trinity, and of the incarnation and divinity of the Word and Holy Spirit. There are three editions of his works which are esteemed; that of Commelin, printed in 1600; that of Peter Nannius, in 1627; and that of Father Montfaucon. As to the creed which bears his name, see the church Liturgy.

ATHELNEY, a river-land of Somersetshire, at the confluence of the Thone and Parret, memorable for having afforded shelter, amid its inaccessible morasses, to the illustrious King Alfred. Here he collected some of his retainers; on which account, he called it *Æthelingay*, or the Isle of Nobles; and hence he made frequent and unexpected sallies upon the Danes.

ATHENEUS, a physician, born in Cilicia, contemporary with Pliny, and founder of the pneumatic sect. He taught that the fire, air, water, and earth, are not the true elements, but that their qualities are, *viz.* heat, cold, moisture, and dryness; and to these he added a fifth element, which he called *spirit*, whence his sect had its name.

ATHENEUS, a Greek grammarian, born at Naucratis in Egypt, in the 3d century, one of the most learned men of his time. Of all his works we have none extant but his *Deipnosophias*, i. e. the *Sophists at Table*; there is an infinity of facts

and quotations in this work which render it very agreeable to admirers of antiquity.

There was also a mathematician of this name, who wrote a treatise on mechanics, which is inserted in the works of the ancient mathematicians, printed at Paris in 1693, in folio, in Greek and Latin.

ATHENAGORAS, an Athenian philosopher, flourished about the middle of the 2d century; and was remarkable for his zeal for Christianity, and his great learning, as appears from the apology which he addressed to the emperors Marcus Aurelius Antoninus and Lucius Commodus.

ATHENODORUS, a famous stoic philosopher, born at Tarsus, went to the court of Augustus, and was made by him tutor to Tiberius. Augustus had a great esteem for him, and found him by experience a man of virtue and probity. He used to speak very freely to the emperor. He, before he left the court to return home, warned the emperor not to give himself up to anger, but, whenever he should be in a passion, to rehearse the 24 letters of the alphabet before he resolved to say or do any thing. He did not live to see his bad success in the education of Tiberius.

ATHENOPOLIS, a town of the Massiliensës, an ancient nation of Gaul. It is conjectured by Harduin to be the same with *Telo Martius*, now *Toulon*; by others to be the same with *Antipolis* or *Antibes*.

ATTIGNY, an ancient town of Champagne in France, where several of the kings of France had their residence. It is seated on the river Arne, in E. long. 4. 47. N. lat. 49. 30.

ATKINS (Sir Robert), lord chief-baron of the Exchequer, was born in 1621, and educated at the university of Oxford, from whence he removed to the inns of court, and became eminent in the law. He was made knight of the Bath, with many other persons of the first distinction, at the coronation of King Charles II. In 1672 he was appointed one of the judges of Common Pleas; in which honourable station he continued till 1679, when foreseeing the troubles that soon after ensued, he thought fit to resign, and retire into the country. In 1689 he was made by King William, lord chief-baron of the Exchequer; and about the same time executed the office of speaker to the House of Lords, which had been previously refused by the Marquis of Halifax. He distinguished himself by an unshaken zeal for the laws and liberties of his country. He wrote several pieces, which have been collected into one volume 8vo, under the title of *Parliamentary and Political Tracts*. The authors of the *Biographia Britannica* remark, that whoever inclines to be thoroughly informed of the true constitution of his country, of the grounds and reasons of the revolution, and of the danger of suffering prerogative to justify law, cannot read a better or plainer book than those tracts of Sir Robert Atkins. He died in 1709, aged 88.

ATKINS (Sir Robert), son of the preceding, was born in 1646, and was eminent for all the virtues that could adorn an English gentleman. He wrote the ancient and present state of Gloucester, in one large volume in folio; and died October 29, 1711.

ATKYNs (Richard), was descended from a good family, and was born at Tuffleigh in Gloucestershire, in the year 1615. He was educated at Oxford, from whence he removed to Lincoln's Inn, and afterwards distinguished himself by his loyalty to King Charles I. for whom he raised a troop of horse at his own expence. At the restoration he was made one of the deputy lieutenants of Gloucestershire, and distinguished himself by his attachment to the government. But at length being committed prisoner to the Marshalsea in Southwark for debt, he died there on the 14th of September,

1677. He wrote several pieces, particularly a treatise on the origin of Printing.

ATLAS, king of Mauritania, a great astronomer, contemporary with Moïses. From his taking observations of the stars from a mountain, the poets feigned him to have been turned into a mountain, and to sustain the heavens on his shoulders. Being an excellent astronomer, and the first who taught the doctrine of the sphere, they tell us that his daughters were turned into stars: seven of them forming the Pleiades, and other seven the Hyades.

ATREUS, in fabulous history, the son of Pelops and Hippodamia, and the father of Agamemnon and Menelaus, is supposed to have been king of Mycenæ and Argos about 1228 years before the Christian æra. He drove his brother Thyestes from court, for having a criminal commerce with Ærope his wife: but understanding that he had had two children by her, he sent for him again, and made him eat them; at which horrid action, the sun, it is said, withdrew his light.

ATTENTION, is that state of mind which prepares one to receive impressions. According to the degree of attention, objects make a stronger or weaker impression. Attention is requisite even to the simple act of seeing: the eye can take in a considerable field at one look; but no object in the field is seen distinctly, but that singly which fixes the attention: in a profound reverie that totally occupies the attention, we scarce see what is directly before us. In a train of perceptions, no particular object makes such a figure as it would do singly and a part; for when the attention is divided among many objects, no particular object is entitled to a large share. Hence, the fullness of night contributes to terror, there being nothing to divert the attention:

Horror ubique animos, simul ipsa silentia terrent, *Æneid* ii.

Zara. Silence and solitude are ev'ry-where!
Through all the gloomy ways and iron doors
That hither lead, nor human face nor voice
Is seen or heard. A dreadful din was wont
To grate the sense, when enter'd here, from groans
And howls of slaves condemn'd, from clink of chains,
And crash of rusty bars and creaking hinges;
And ever and anon the sight was dash'd
With frightful faces, and the meagre looks
Of grim and ghastly executioners.
Yet more this fullness terrifies my soul
Than did that scene of complicated horrors.

Mourning Bride, act 5. sc. 8.

In matters of slight importance, attention is mostly directed by will; and for that reason, it is our own fault if trifling objects make any deep impression. Had we power equally to withhold our attention from matters of importance, we might be proof against any deep impression. But our power fails us here: an interesting object seizes and fixes the attention beyond the possibility of control; and while our attention is thus forcibly attached to one object, others may solicit for admittance; but in vain, for they will not be regarded. Thus a small misfortune is scarce felt in presence of a greater:

Lear. Thou think'st 'tis much, that this contentious storm
Invades us to the skin; so 'tis to thee;
But where the greater malady is fix'd,
The lesser is scarce lay. Thou'dst thou a bear;
But if thy flight lay tow'rd the roaring sea,
Thou'dst meet the bear i' the mouth. When the mind's free,
The body's delicate: the tempest in my mind
Doth from my senses take all feeling else,
Save what beats there. *King Lear*, act 3. sc. 5.

ATTERBURY (Lewis), father of the celebrated Dr. Atterbury, bishop of Rochester, was born about the year 1631. He was the son of Francis Atterbury, rector of Middleton-Malfer, or Milton, in Northamptonshire, who, among other ministers, subscribed the Solemn League and Covenant, in 1648. Lewis was entered a student of Christ-church, Oxford, in 1647, took the degree of bachelor of arts on the 23d of February, 1649, and was created master of arts by virtue of a dispensation from Oliver Cromwell the chancellor, March 1, 1651. He was one of those who had submitted to the authority of the visitors appointed by the parliament. In 1654 he became rector of Great or Broad-Ridlington in Gloucestershire; and after the restoration, took a presentation for that benefice under the great seal, and was instituted again to confirm his title to it. On the 11th of September, 1657, he was admitted rector of Milton, or Middleton Keynes, in Bucks; and at the return of Charles II. took the same prudent method to corroborate his title to this living. July 25, 1660, he was made chaplain-extraordinary to Henry duke of Gloucester; and on the 1st of December, in the same year, was created doctor in divinity. Returning from London, whither the law-suits he was frequently involved in had brought him, he had the misfortune to be drowned near his own house, in the beginning of December, 1693.

ATTERBURY (Lewis), eldest son of the preceding, was born at Caldecot, in the parish of Newport-Pagnel, in Bucks, on the 2d day of May, 1656. He was educated at Westminster-school under Dr. Busby, and sent to Christ-church, Oxford, at the age of eighteen. He was ordained deacon in September, 1679, being then bachelor of arts; and priest the year following, when also he commenced master of arts. In 1683 he served the office of chaplain to Sir William Pritchard, lord mayor of London. In February, 1684, he was instituted the rector of Symel in Northamptonshire, which living he afterwards resigned upon his accepting of other preferments. July 8, 1687, he accumulated the degrees of bachelor and doctor of civil-law. In 1691 we find him lecturer of St. Mary Hill in London. Soon after his marriage he settled at Highgate, where he supplied the pulpit of the reverend Mr. Daniel Latham, who was very old and infirm, and had lost his sight: and, upon the death of this gentleman, was, in June 1695, elected by the trustees of Highgate chapel to be their preacher. He had a little before been appointed one of the six preaching chaplains to the Princeess Anne of Denmark, at Whitehall and St. James's, which place he continued to supply after she came to the crown, and likewise during part of the reign of George I. When he first resided at Highgate, observing what difficulties the poor in the neighbourhood underwent for want of a good physician or apothecary, he set himself to the study of physic: and after acquiring considerable skill, practised it gratis occasionally among his poor neighbours. In 1707 the queen presented him to the rectory of Shepperton in Middlesex; and in March 1719 the Bishop of London collated him to the rectory of Hornsey, which was the more agreeable to him, because the chapel of Highgate being situate in that parish, many of his constant hearers became now his parishioners.

In 1720, on a report of the death of Dr. Sprat, archdeacon of Rochester, he applied to his brother, in whose gift this preferment was, to be appointed to succeed him: but the bishop refused.

Dr. Lewis Atterbury died at Bath, whither he went for a paralytic disorder, October 20th, 1731. He published in his life-time two volumes of sermons, and four occasional ones, besides some other pieces. In his will he gave some few books to the libraries of Bedford and Newport, and his whole collection of pamphlets, amounting to upwards of two hundred

volumes, to the library of Christ-church, Oxford. He charged his estate for ever with the payment of ten pounds yearly to a school-mistress to instruct girls at Newport-Pagnel, which salary he had himself in his life-time paid for many years.

ATTICUS (Titus Pomponius), one of the most honourable men of ancient Rome. He understood the art of managing himself with such address, that, without leaving his state of neutrality, he preserved the esteem and affection of all parties. His strict friendship with Cicero did not hinder him from having great intimacy with Hortensius. The contents at Rome between Cinna's party and that of Marius induced him to go to Athens, where he continued for a long time. He was very fond of polite learning, and kept at his house several librarians and readers. He might have obtained the most considerable posts in the government; but chose rather not to meddle, because in the corruption and faction which then prevailed he could not discharge them according to the laws. He wrote Annals. He married his daughter to Agrippa; and attained to the age of 77.

ATILA, king of the Huns, surnamed *the scourge of God*, lived in the 5th century. He may be ranked among the greatest conquerors, since there was scarcely any province in Europe which did not feel the weight of his victorious arms. See **HUNS**.

ATTOCK, a city and fortress of Hindoostan Proper, on the E. bank of the Indus; supposed to stand on the site of the Taxila of Alexander, where he crossed that river. It was built by the Emperor Achar, in 1581; and is 180 miles N.W. of Lahore. Long. 70. 36. E. Lat. 32. 27. N.

ATTOCK, a river, which rises in the Tartarian mountains, N. of Hindoostan, and passing by Cabul, flows into the Indus, above Attack.

ATURE, an ancient town in the district of Novempopulana in Aquitania, on the river Aturus; now Aire in Gascony, on the Adour. E. long. o. 3. N. lat. 43. 40.

AVA, a large river of Asia, which rises in Thibet, and crossing the kingdoms of Burmah and Pegu, falls into the bay of Bengal, by several mouths.

AVA (Encycl.), a kingdom Asia, in the peninsula beyond the Ganges. The king is very powerful, his dominions being bounded by Mogulistan on the west, Siam on the south, Tonquin and Cochinchina on the east, and by Tibet and China on the north. Several large rivers run through this country, which annually overflow their banks like the Nile, and thus render it extremely fertile. Here are mines of lead and copper, together with some of gold and silver, besides large quantities of the finest oriental rubies, sapphires, emeralds, &c.

AVA, the metropolis of the kingdom of the same name, is situated in E. long. 66. 30. N. lat. 21. 0. It is pretty large; the houses built with timber or bamboo canes, with thatched roofs, and floors made of teak plank or split bamboo. The streets are very straight, with rows of trees planted on each side. The king's palace is an exact quadrangle, each side of which is 800 paces, and is surrounded with a brick wall; but the palace itself is of stone. It has four gates; the golden gate, through which all ambassadors enter; the gate of justice, through which the people bring petitions, accusations, or complaints; the gate of grace, through which those pass who have received any favours, or have been acquitted of crimes laid to their charge; and the gate of state, through which his majesty himself passes when he shews himself to the people.

AVARICUM, an ancient town of the Bituriges in Gallia Celtica, situated on the rivulet Avara, in a very fertile soil (Cæsar). Now Bourges in Berry. E. long. 2. 30. N. lat. 47. 10.

AUBE, a department of France, containing part of the

late province of Champagne. It takes its name from a considerable river, which passing by Bar-sur-Aube, and Arcis falls into the Seine near Nogent.

AUBIGNE (Theodore Agrippa d'), a very illustrious Frenchman, and grandfather of the no less illustrious madam de Maintenon, was born about the year 1550. His parts were so uncommon, and his progress in letters so very rapid, that he is said to have translated the "Crito" of Plato from the Greek into French, when no more than eight years old. His father dying when he was thirteen, and leaving him nothing but with his name and his debts, he attached himself to the person and cause of King Henry IV. imagining that his sword would provide for him better than his pen. Henry made him gentleman of his bedchamber, and raised him successively to several high offices and commands; and Aubigné was absolutely a favourite with him: but he lost at length his favour, partly by refusing to comply with the passions of his master, but chiefly by a certain hardness and inflexibility of temper, which is not agreeable to any body, but is particularly disgusting to kings, and all who think that some homage is due to superiority of station. He quitted therefore the court of Henry, and afterwards the kingdom, and took refuge at Geneva, where he met with the most welcome reception, and was distinguished with the highest honours. Here he spent a good portion of his time in writing, and is the author of several productions. His principal work is *Histoire Universelle*, from 1550 to 1601, with a short account of the death of Henry IV. in three volumes folio. The first volume was scarcely published, when the parliament of Paris caused it to be burnt, as a production wherein kings are not only treated with little respect, but sometimes outraged. Aubigné died at Geneva in 1630, aged eighty.

AUBIN, a town of the island of Jersey. It has a good harbour defended by a fort.

AUCKLAND, BISHOP'S, a town in the bishopric of Durham, with a market on Thursday. It is pleasantly seated on the side of a hill, and noted for its castle, beautifully repaired about one hundred years ago; for its chapel, whose architecture is very curious; and for its bridge. It is eight miles S. by W. of Durham, and 25½ N.N.W. of London. - Long. 1. 31. W. Lat. 54. 43. N.

AUDE, a department of France, part of the late province of Languedoc. It receives its name from a river, which rises in the Pyrenées, and flowing by Quillan and Limoux, falls into the Mediterranean below Narbonne.

AUDEUS, the chief of the Audéans, obtained the name of an heretic, and the punishment of banishment, for celebrating Easter in the manner of the Jews, and attributing an human form to the Deity. He died in the country of the Goths, about the year 370.

AUDLEY (James), Lord Audley, of Heleigh, in the county of Stafford, was born about the year 1314, being the 7th of Edward II. By the special favour of Edward III. he had livery of all the lands of his inheritance, in the third year of that prince's reign, though he was not then of full age. This prince soon after did him a great favour: Roger Mortimer, earl of March, who was this lord's guardian, had in his minority exacted from him a recognizance for ten thousand marks, which debt, on the attainer of Mortimer, becoming due to the king, he totally discharged Lord Audley therefrom. In 1343 the same prince made him governor of Berwick-upon-Tweed, and the two next years he served in France. In 1348 he was elected into the noble order of the Garter, then first founded, and in 1353 he reduced a great part of the country of Valois. In 1356, and thirtieth of Edward III. he was present at the famous battle of Poitiers; where, having

demanding of the Black Prince leave to charge in the front, it was, on account of a vow he had made, given him. There, with four esquires who attended him, he performed such extraordinary feats of arms, as distinguished him from all the gallant noblemen who that day engaged. At length, however, he was so grievously wounded, that his esquires were constrained to bear him out of the field of battle. In 1390 he attended King Edward III. and his three sons, in their wars in France; and in the year following, swore to the peace then concluded in the name of King Edward. For these services he was appointed constable of the castle of Gloucester for life; and was also governor of Aquitain, and seneschal of Poitou. He died April 1, 1386.

AUDLEY (Edmund), son of James lord Audley, was educated in Lincoln College, in Oxford, and in the year 1463 took the degree of bachelor of arts in that university. In 1471 he became prebendary of Farendon, in the church of Lincoln; and in October 1475 attained the like preferment in the church of Wells. On Christmas-day, the same year, he became archdeacon of the East Riding of Yorkshire, and had other considerable preferments. These preferments he quitted, on his being promoted to the bishopric of Rochester, in 1480, being the twentieth of Edward IV. in which see he succeeded John Russell, who was translated into Lincoln, and who was tutor to Edward prince of Wales. In 1492, being the eighth of Henry VII. our Bishop Audley was translated to Hereford, and thence, in 1502, being the eighteenth of the same king, to Salisbury, and about that time was made chancellor of the most noble order of the Garter. He was a man of learning, and of a generous spirit. In 1518, he gave four hundred pounds to Lincoln College, to purchase lands; and bestowed upon the same house the patronage of a chantry, which he had founded in the cathedral church of Salisbury. He was a benefactor, likewise, to St. Mary's church, in Oxford. He died August 23, 1524.

AUDLEY (Sir Thomas), was descended of an ancient and honourable family in Essex, and born in 1488. He had the advantage of an university education, and afterwards studied the law in one of the inns of court. In 1526 he was autumn-reader of the Inner-Temple. On the recommendation of the Duke of Suffolk, the king took notice of him, and finding him to be a man of great parts and good address, procured him to be chosen speaker of that parliament which met on the 3d of November, 1529. Audley's conduct on this station, fully answered the king's expectations. The next year he was made attorney of the duchy of Lancaster; and May 20, 1532, upon the resignation of Sir Thomas More, the king delivered to him the great seal, with the title of lord-keeper, and at the same time conferred on him the honour of knighthood. In January following the king appointed him lord-chancellor; and soon after granted him the site of the priory of Christ-church, near Aldgate, now called Duke's-Place, with all the church plate and lands belonging to that house. In this high office he was as diligent in the king's business, as he had been when speaker of the House of Commons; for in July 1535 he sat in judgment, and pronounced sentence of death, upon Sir Thomas More, indicted of high treason, for refusing to acknowledge the king's supremacy in the church. When sentence was past, Sir Thomas said, that he had for seven years bent his mind and study upon this cause, but as yet he found it no where writ, by any approved doctor of the church, that a layman could be head of the ecclesiastical state. To which Audley returned, "Sir, will you be reckoned wiser, or of a better conscience, than all the bishops, the nobility, and the whole kingdom?"

On the 20th of November, 1538, he was created Baron Audley, of Walden in Essex, and installed knight of the Garter. A little before his death, he obtained from the king a licence to change the name of Buckingham College, in Cambridge, into that of Magdalen, or Maudlin. To this college he was a great benefactor, bestowed on it his own arms, and is generally reputed its founder. He died on the last of April, 1544, having held the seals upwards of twelve years, and in the fifty-sixth year of his life.

AVEIRON, a department of France, including the late province of Rouergue. It is named from a river, which rises near Séverac-le-Château, and flowing by Rhodéz and Villefranche, falls into the Garonne, below Montauban.

AVELLINO, a city in Italy, in the kingdom of Naples, with a bishop's see. It was almost ruined by an earthquake in 1694. E. long. 15. 13. N. lat. 40. 53.

AVENACEOUS, something belonging to or partaking of the nature of oats.

AVENIO, an ancient town of the Cavares, and one of the most opulent in Gallia Narbonensis; now *Avignon*, in Provence. See **AVIGNON**.

AVENTINE (John), author of the annals of Bavaria, was born of mean parentage, in the year 1466, at Abensperg, in the country just named. He studied first at Ingolstadt, and afterwards in the university of Paris. In 1503 he privately taught eloquence and poetry at Vienna; and in 1507 he publicly taught Greek at Cracow in Poland. In 1509 he read lectures on some of Cicero's pieces at Ingolstadt; and in 1512 was appointed to be preceptor to Prince Lewis and Prince Ernest, sons of Albert the Wise, duke of Bavaria; and travelled with the latter of those two princes. After this he undertook to write the annals of Bavaria, being encouraged by the dukes of that name, who settled a pension upon him, and gave him hopes that they would defray the charges of the book. This work, which gained its author great reputation, was first published in 1554, by Jerome Zieglerus, professor of poetry in the university of Ingolstadt; and afterwards at Basil in 1580, by Nicholas Cfiner. An affront which Aventine received in the year 1529, flung by him all the rest of his life: he was forcibly taken out of his sister's house at Abensperg, and hurried to a gaol; the true cause of which violence was never known: but it would probably have been carried to a much greater length, had not the Duke of Bavaria interposed, and taken this learned man into his protection. Mr. Bayle remarks, that the incurable melancholy which from this time possessed Aventine, was so far from determining him to lead a life of celibacy, as he had done till he was 64, that it induced him perhaps to think of marrying. The violence of his new passion was not however so great, but that it suffered him to advise with two of his friends, and consult certain passages of the bible relating to marriage. The result was, that it was best for him to marry; and having already lost too much time, considering his age, he took the first woman he met with, who happened to be his own maid, ill-tempered, ugly, and extremely poor. He died the 9th of January, 1534, aged 68; leaving one daughter, who was then but two months old. He had a son, who died before.

AVERNO (*Encycl.*), also called **AVERNUS**. See **AVERNUS**.
AVERRHOA (*Encycl.*). Correct an obvious botanical mistake in that article; the *clasi* being put for the *order*, and vice versa.

AVERROES, an Arabian philosopher, was a native of Corduba, and flourished in the twelfth century. He was instructed in the laws and the religion of the country by his father, who was high priest and chief judge (under the emperor

of Morocco) of the kingdom of Corduba, his authority extending over all Andalusia and Valencia. Averroes was professor in the university of Morocco, and after the death of his father succeeded to his places, the duties whereof he discharged with great approbation, being eminently skilled in law and divinity. He had also studied natural philosophy, medicine, astrology, and mathematics; but understood the theory of medicine much better than the practice. The king of Morocco making him an offer of the place of judge of Morocco and Mauritania, with leave to keep those he held at Corduba, he accepted it, went over to Morocco, and having settled judges as his subdelegates, returned to Corduba.

He referred all criminal causes to his deputy, never giving his own opinion. One Abraham Ibnu Sahal, a philosopher, physician, and astrologer, at Corduba, in an unlucky hour fell in love, and began to write verses, without any regard to his character as a doctor. The Jews, his brethren in religion, advising him not to publish them, he returned them a profane answer in verse. This obliged them to apply to the civil magistrate. They represented to Averroes, that Sahal had debauched the whole city, and especially the youth of both sexes, by his poems; and that nothing else was sung at the marriage feasts. Averroes forbade him to write any more, under a penalty; but being afterwards informed that his prohibition could not stop the poetical humour of the Jew, he resolved to be assured of the truth of it, and sent to him a trusty person, who reported at his return, that he found nobody at his house but Averroes's eldest son, writing verses; and that there was neither man, woman, nor child, at Corduba, who had not got by heart Abraham Ibnu Sahal's verses. Upon this Averroes dropped the prosecution, saying, "Can one single hand stop a thousand mouths?"

Surprising things are related of his patience, liberality, and meekness. Once, when he was reading a lecture in the civil law, the servant of one of his enemies came and whispered something in his ear: Averroes changed countenance, and answered only, "Yes, yes." The next day the same servant returned, and publicly asked pardon, confessing that he had said a rude thing to Averroes the day before, when he whispered him in the ear. "God bless you," replied Averroes, "for declaring that I am endued with patience." He gave him afterwards a sum of money, and bid him not to do to others as he had done to him. Though Averroes was rich both by marriage and his posts, he was always in debt, because he was very liberal to men of letters in necessity, whether they were his friends or enemies. He would not consent to his youngest son's accepting of the honours offered him at the court of Morocco; and was so far from shewing any peculiar satisfaction at the deference paid to this young man, which was intended to do a pleasure to his father, that he was absolutely uneasy at it. He explained Aristotle's doctrine of the unity of the intellect in such a manner, as to overturn the immortality of the soul, and consequently future rewards and punishments. Observing the people to eat the sacrament they had just worshipped, "Let my soul," said he, "be with those of the philosophers, since the Christians worship what they eat." His good qualities did not hinder him from having a great many enemies among the nobility and doctors of Corduba; who representing to Manzor king of Morocco that the philosophical tenets he had maintained in a lecture to his pupils were gross heresy, that prince fell into a passion, ordered his estate to be confiscated, and confined him to the Jews' quarter. After this, Averroes being pelted with stones by the children as he went to mosque to perform his devotions, removed from Corduba to Fez, and lay concealed there for some days; but being discovered, was sent to gaol. Manzor assembled a great many doctors in divinity and law, to consider what punishment he deserved.

The greatest part of them replied, that as an heretic, he merited capital punishment; but others were of opinion, that a man of his eminence ought not to be put to death, but be obliged to retract. Manfor approving of this advice, our philosopher was conducted, one Friday, at the hour of prayer, to the gate of the mosque, and placed bare-headed upon the highest step, and all who entered into the mosque spat in his face. Prayers being ended, the doctors, with notaries, and the judge with his assessors, came thither, and asked this unhappy man, whether he repented of his heresy? He answered, "Yes!" upon which he was discharged. He staid at Fez, and read lectures in law. Some time after, Manfor gave him leave to return to Corduba, where he lived very unhappily, being deprived of his estate and books. In the mean time, the judge who had succeeded him, behaved in such a manner, and justice was so badly administered, that the people groaned under heavy oppression: wherefore Manfor assembled his council, and propoed the restoring of Averroes. This motion being approved of by the majority, Averroes was brought back to Morocco, and invested with his former office. Being asked in what situation his mind was whilst under prosecution, "I was pleased," said he, "and displeased. I was glad to be discharged from the troublesome office of a judge, but I was uneasy to be oppressed by false witnesses. I did not wish to be restored to my post as a magistrate, and have not accepted it again till my innocence has been made to appear."

He died at Morocco in 1206. He was excessively fat, though he ate but once a day. He spent all his nights in the study of philosophy; and when he was fatigued, amused himself with reading poetry or history. Of Averroes's medicinal works himself gives the following account in the preface to them: "At the desire of the noble lord Audelach Sempfe, who by the advice of his philosophers, Avofait and Avenchlit, enjoined me to write a book in Arabic, which should contain the whole art of physic, in order to assist them in forming a judgment of the opinions of the ancients, I compiled this work Colliget, that is, Universal; so entitled on account of the order to be observed in this science, which descends from universals to particulars: for in this book I have begun with general rules, and hereafter, with God's assistance, shall undertake another treatise upon particulars," &c. He wrote a great many amorous verses, but when he grew old he cast them into the fire. His other poems are all lost, except a small piece, in which he declares that when he was young he acted against his reason, but that when he was in years he followed the dictates of it: upon which he utters this wish; "Would to God I had been born old, and that in my youth I had been in a state of perfection."

AVESBURY (Robert), an English historian, of whom little more is known, than that he was keeper of the registry of the Court of Canterbury in the reign of Edward III. and consequently that he lived in the 14th century. He wrote *Memorabilia gesta magnifici regis Anglie domini Edwardi tertii post conquestum, procerumque; tactis primitus quibusdam gestis de tempore patris sui domini Edwardi secundi, quo in regnis Anglie, Scotie, et Francie, ac in Aquitania et Britannia, non humana sed Dei potentia, contigerunt, per Robertum de Avesbury*. This history ends with the battle of Poitiers, about the year 1356. It continued in manuscript till the year 1720, when it was printed by the industrious Thomas Hearne, at Oxford, from a manuscript belonging to Sir Thomas Seabright. It is now become very scarce.

AUGUSTA *Ausciorum*, a town of Aquitania, so named out of compliment to Augustus, being originally called *Climberium*, which name it afterwards resumed. In the middle age, it took the name of the people, *Ausii*; and is now called *Auch*, the capital of Gascony.

AUGUSTA *Emerita*, a town of Lusitania on the river Anas, the capital of the province; a colony of the Emeriti, or such soldiers as had served out their legal time, were men of experience, or had received marks of favour. The colony was founded by Augustus; and is now called *Merida*, a city of Spain, in Estremadura, on the river Guadiana. See *MERIDAN*.

AUGUSTA *Prætoria*, a town and colony of Gallia Cisalpina, and capital of the Salassi; seated at the foot of the Alps Graia on the Duria. Now *Aoste* in Piedmont. See *AOSTE*.

AUGUSTA *Rauracorum*, a town of Gallia Belgica: now a small village called *Auguß*, at the bend of the Rhine northwards, but from the ruins, which are still to be seen, appears to have been a considerable colony, at the distance of six miles from Basil to the East.

AUGUSTA *Suessonum*, a town of Gallia Belgica on the Aroqa; so called from Augustus, and with great probability supposed to be the Noviodunum Suessonum of Caesar.—Now *Soissons*, on the river Aisne, in the Isle of France. See *SOISSONS*.

AUGUSTA *Taurinorum*, a town of the Taurini, at the foot of the Alps, where the Duria Minor falls into the Po; now *Turin*, the capital of Piedmont.

AUGUSTA *Treba*, a town of the Æqui, near the springs of the river Anio, in Italy; now *Trevi* in Umbria, or in the east of the Campagna di Roma.

AUGUSTA *Treverorum*, a town of the Treviri, a people inhabiting between the Rhine and the Meuse, but especially about the Moselle; now *Triers*, or *Treves*, in the circle of the Lower Rhine on the Moselle.

AUGUSTA *Vindelicorum*, a town of the Licates on the Licus; called by Tacitus a noble colony of *Rætia*; now *Augßburg*, the capital of Suabia.

AUGUSTIN, or AUSTIN (St.), the first archbishop of Canterbury, was originally a monk in the convent of St. Andrew, at Rome, and educated under St. Gregory, afterwards Pope Gregory I. by whom he was dispatched into Britain with 40 other monks of the same order, about the year 596, to convert the English Saxons to Christianity.—They landed in the Isle of Thanet; and having sent some French interpreters to King Ethelbert, with an account of their errand, the king gave them leave to convert as many of his subjects as they could, and assigned their place of residence at Dorovernum, since called *Canterbury*; to which they were confined till the king himself was converted, whose example had a powerful influence in promoting the conversion of his subjects; but though he was extremely pleased at their becoming Christians, he never attempted to compel them. He dispatched a priest and a monk to Rome, to acquaint the pope with the success of his mission, and to desire his resolution of certain questions. These men brought back with them a pall, and several books, vestments, utensils, and ornaments for the churches. His holiness, by the same messengers, gave Augustin directions concerning the settling of episcopal sees in Britain; and ordered him not to pull down the idol-temples, but to convert them into Christian churches; only destroying the idols, and sprinkling the place with holy water, that the natives, by frequenting the temples they had been always accustomed to, might be the less shocked at their entrance into Christianity. Augustin resided principally at Canterbury, which thus became the metropolitan church of England; and having established bishops in several of the cities, he died on the 26th of May, 607. The Popish writers ascribe several miracles to him. The observation of the festival of St. Augustin was first enjoined in a synod held under Cuthbert archbishop of Canterbury, and afterwards by the pope's bull, in the reign of King Edward III.

AUGUSTINE (St.), an illustrious father of the church, was born at Thagaste, a city of Numidia, on the 13th of November, 354. His father, a bourgeois of that city, was called *Patricius*; and his mother *Monica*, who, being a woman of great virtue, instructed him in the principles of the Christian religion. In his early youth he was in the rank of the catechumens; and falling dangerously ill, earnestly desired to be baptized; but the violence of the distemper ceasing, his baptism was delayed. His father, who was not yet baptized, made him study at Thagaste, Madaura, and afterwards at Carthage. Augustine, having read Cicero's books of philosophy, began to entertain a love for wisdom, and applied himself to the study of the holy scriptures; nevertheless, he suffered himself to be seduced by the Manicheans. At the age of 19, he returned to Thagaste, and taught grammar, and also frequented the bar: he afterwards taught rhetoric at Carthage with applause. The insolence of the scholars at Carthage made him take a resolution to go to Rome, though against his mother's will. Here also he had many scholars; but disliking them, he quitted Rome, and settled at Milan, and was chosen public professor of rhetoric in that city. Here he had opportunities of hearing the sermons of St. Ambrose, which, together with the study of St. Paul's epistles, and the conversion of two of his friends, determined him to retract his errors, and quit the sect of the Manicheans: this was in the 32d year of his age. In the vacation of the year 386 he retired to the house of a friend of his, named *Perecundus*, where he seriously applied himself to the study of the Christian religion, in order to prepare himself for baptism, which he received at Easter, in the year 387. Soon after this, his mother came to see him at Milan, and invite him back to Carthage; but at Ostia, whither he went to embark in order to his return, he died. He arrived in Africa about the end of the year 388; and having obtained a garden-plot without the walls of the city of Hippo, he associated himself with eleven other persons of eminent sanctity, who distinguished themselves by wearing girdles, and lived there in a monastic way for the space of three years, exercising themselves in fasting, prayer, study, and meditation, day and night: from hence sprung up the Augustine friars, or eremites of St. Augustine, being the first order of mendicants; those of St. Jerome, the Carmelites, and others, being but branches of this of St. Augustine.—About this time, or before, Valerius bishop of Hippo, against his will, ordained him priest: nevertheless, he continued to reside in his little monastery, with his brethren, who, renouncing all property, possessed their goods in common. Valerius, who had appointed St. Augustine to preach in his place, allowed him to do it in his presence, contrary to the custom of the churches in Africa. He explained the creed, in a general council of Africa, held in 393. Two years after, Valerius, fearing he might be preferred to be bishop of another church, appointed him his coadjutor or colleague, and caused him to be ordained bishop of Hippo, by Megalus bishop of Calame, then primate of Numidia. St. Augustine died the 28th day of August, 430, aged 76 years, having had the misfortune to see his country invaded by the Vandals, and the city where he was bishop besieged for seven months.

The works of St. Augustine make ten volumes; the best edition of them is that of Maurin, printed at Antwerp, in 1700. They are but little read at this time, except by the clergy of the Greek church, and in the Spanish universities. The booksellers of London receive frequent commissions for them, and indeed for the most of the fathers, from Russia, and also from Spain.

AUGUSTOBONA, a city of the Tricassers in ancient

Gaul, from whom it was afterwards called *Tricassus*, and *Treccia*; and still farther corrupted to *Trace*, or *Treti*; whence the modern name *Troyes*, in Champagne on the Seyne. See *Troyes*.

AUGUSTODUNUM, the capital of the *Ædui*, where there was a famous academy or school for the education of youth; now *Aulun*, or *Aulun*, in the duchy of Burgundy, on the Arroux. See *Aulun*.

AUGUSTOMAGUS, an ancient town of Gallia Belgica; now *Sentis* in the Isle of France. E. long. 2. 30. N. lat. 49. 10.

AUGUSTUS (Cains Julius Cæsar Octavianus), the nephew of Julius Cæsar, was born at Rome 63 years before Jesus Christ. When he understood that his uncle had adopted him for his heir, he went to Italy and attached himself to his party. He quarrelled with M. Antonius; but afterwards entering into a treaty with him and Lepidus, these three formed the second triumvirate, agreed to a proscription of their respective enemies, and divided the empire among them. Lepidus being abandoned by his army, was sent into exile; and Antonius being reduced to destroy himself, Octavius assumed the title of Emperor, and the appellation of *Augustus*. He was cruel in his triumvirate, but seemed to have adopted new virtues with his imperial dignity; since he now appeared just, affable, moderate, and liberal: he maintained peace; advanced men of merit; and patronised arts and sciences, which under his reign were brought to the greatest perfection. He died at the age of 75. See *Rome*.

AVICENNA, a celebrated philosopher and physician among the Mohammedans, was born in the year 980. By the time he was ten years old, he had learned the Koran, and made a great progress in classical literature. He was next sent to a man who dealt in herbs, and was skilled in the Indian method of accounts, to learn arithmetic. After this, the rudiments of logic and the first five or six propositions of Euclid were explained to him by a private tutor. He went through the rest of Euclid by himself, consulting the commentaries; when he entered on the *Almagest*, his tutor left him. He next applied himself to the study of physic, and to gain experience, visited patients, being then about sixteen. The following year and a half he employed with incredible application in reading; and when any difficulty occurred, he had recourse to Heaven. Having attained to a perfect knowledge of logic, natural philosophy, and mathematics, he proceeded to divinity, and as a proper preparation for this study, he was desirous to make himself master of Aristotle's *Metaphysics*; but having read the book over forty times, and even got it by heart, without being able to comprehend the author's meaning, he laid it by as unintelligible.—One day whilst he was in a bookseller's shop, a broker offered him a book of metaphysics to sell, which he rejected with scorn, saying it was an useless science: the broker, however, telling him he might have it cheap, the owner being under the necessity of selling it, he purchased it. The book proved to be a treatise of Al Farabius, "concerning the objects of metaphysics;" which Avicenna had no sooner run over, than he plainly perceived the sense of Aristotle, whose words he retained in his memory, and out of joy gave a considerable alms to the poor. Having recovered the King of Khorasan, who during a fit of illness had sent for Avicenna, though a very young man, that prince kept him near his person, and allowed him free access to his large and valuable library; which happening to be burnt soon after, Avicenna's enemies accused him of having set it on fire, that nobody else might enjoy the same advantage, and that what he had learned there might be taken for his own.

A very remarkable story is told of Avicenna's sagacity. When he was at Jorgân Kabûs, the sovereign of the country sent for him to visit his nephew, who was confined to his bed by a disorder, which baffled all the physicians of that country. Avicenna, having felt the young man's pulse and seen his urine, judged his illness to proceed from concealed love. He sent for the chief eunuch of the palace, and whilst he kept his finger on the patient's pulse, desired him to call over the names of the several apartments: observing great emotions in the sick man at the naming of one particular apartment, he made the eunuch name all the women in that apartment; and finding his patient's pulse to beat extremely high at the mention of one person, he no longer doubted but that she was the object of his passion, and declared that his cure was only to be expected from the enjoyment of that lady. Avicenna died in the year 1036. He had a good constitution, which he greatly impaired by a too free use of women and wine. The number of his books, including his smaller tracts, is computed at near 100, the greatest part of which is either lost, or not known in Europe.

AVILES, a town of Spain, in the principality of Asturias, on the bay of Biscay, 25 miles N. of Oviedo. Long. 6. 5. W. Lat. 43. 27. N.

AVISON (Charles), organist of Newcastle, and a disciple of Geminiani, was the author of an essay on musical expression, published in the year 1752, in which are some judicious reflections on music in general, but his division of the modern authors into classes is rather fanciful than just. Throughout his book he celebrates Marcello and Geminiani; the latter frequently in prejudice to Mr. Handel. In the year 1753 came out remarks on Mr. Avison's essay on musical expression, the author whereof first points out sundry errors against the rules of composition in the works of Avison. In the same year Avison republished his essay, with a reply to the author of the remarks; and a letter, containing a number of loose particulars relating to music collected in a course of various reading, unquestionably written by Dr. Jortin. Avison promoted and assisted in the publication of Marcello's music to the psalms adapted to English words. Of his own composition there are extant five collections of concertos for violins, forty-four in number; and two sets of sonatas for the harpsichord and two violins, a species of composition little known in England till his time. The music of Avison is light and elegant, but it wants originality; a necessary consequence of his too close attachment to the style of Geminiani, which in a few particulars only he was able to imitate. *Hawkins's Hist. of Music.*

AUNGRVYLE (Richard), commonly known by the name of *Richard de Bury*, was born in 1281, at St. Edmund's Bury, in Suffolk, and educated at the university of Oxford. —After this he entered into the order of Benedictine monks, and became tutor to Edward prince of Wales, afterwards King Edward III. Upon the accession of his royal pupil to the throne he was appointed cofferer, then treasurer of the wardrobe, archdeacon of Northampton, prebendary of Lincoln, Sarum, and Litchfield, keeper of the privy seal, dean of Wells, and last of all was promoted to the bishopric of Durham. He likewise enjoyed the offices of lord high-chancellor, and treasurer of England; and discharged two important embassies at the court of France. Learned himself, and a patron of the learned, he maintained a correspondence with some of the greatest geniuses of the age, particularly with the celebrated Italian poet Petrarch. He was also of a most humane and benevolent temper, and performed many signal acts of charity. Every week he made eight quarters of wheat into bread, and gave it to the

poor. Whenever he travelled between Durham and Newcastle, he distributed eight pounds sterling in alms; between Durham and Stockton, five pounds; between Durham and Auckland, five marks; and between Durham and Middleham, five pounds. He founded a public library at Oxford, for the use of the students, which he furnished with the best collection of books then in England; and appointed five keepers, to whom he granted yearly salaries. At the dissolution of religious houses in the reign of Henry VIII. Durham College, where he fixed the library, being dissolved among the rest, some of the books were removed to the public library, some to Balliol College, and some came into the hands of Dr. George Owen, a physician of Godslow, who bought that college of King Edward VI. Bishop Aungervyle died at his manor of Auckland, April 24, 1545, and was buried in the fourth part of the cross aisle of the cathedral church of Durham, to which he had been a benefactor. He wrote, 1. *Philobiblos*, containing directions for the management of his library at Oxford, and a great deal in praise of learning, in bad Latin, 2. *Epistola familiarium*; some of which are written to the famous Petrarch. 3. *Orationes ad principes*; mentioned by Bale and Pitts.

AVON, a river which rises in Wilts, coats the edge of the New Forest, and enters the English Channel at Christchurch-bay, in Hampshire.

AVON, a river that rises in Leicestershire, and running S.W. by Warwick, continues its course by Evesham, and falls into the Severn at Tewksbury.

AVON, LOWER, a river that rises in Wiltshire, and running W. to Bath, becomes navigable there, continues its course to Bristol, and falls into the Severn N.W. of that city.

AURELIANUS (Lucius Domitius), emperor of Rome, was one of the greatest generals of antiquity, and commanded the armies of the Emperor Claudius with such glory, that after the death of that emperor all the legions agreed to place him on the throne; this happened in the year 270. He carried the war from the east to the west, with as much facility, says a modern writer, as a body of troops marches from Alsace into Flanders. He defeated the Goths, Sarmatians, Marcomanni, the Persians, Egyptians, and Vandals; conquered Zenobia, queen of the Palmyrenians, and Tetricus, general of the Gauls; both of whom were made to grace his triumph, in the year 274. He was killed by one of his generals in Thrace, in the year 275, when he was preparing to enter Persia with a great army. See *ROME*.

AURICULAR, whatever belongs or relates to the ear.

AURICULAR Tube, an instrument to facilitate hearing. See *ACOUTICS* and *TRUMPET*.

AURUNGABAD, a considerable city of Asia, in the Decan of Hindoostan. It is but a modern city; owing its rise, from a small town, to the capital of Dowlatabad, to the great Aurungzebe, from whom it had its name. It is 260 miles N.E. of Bombay. Long. 76. 2. E. Lat. 19. 45. North.

AUSONIUS. (in Latin *Decius*, or rather *Decimus*, Magnus Ausonius), one of the best poets of the fourth century, was the son of an eminent physician, and born at Bourdeaux. Great care was taken of his education, the whole family interesting themselves in it, either because his genius was very promising, or that the scheme of his nativity, which had been cast by his grandfather on the mother's side, made them imagine that he would rise to great honour. He made an uncommon progress in classical learning, and at the age of 30 was chosen to teach grammar at Bourdeaux. He was promoted some time after to be professor of rhetoric,

in which office he acquired so great a reputation, that he was sent for to court to be preceptor to Gratian, the Emperor Valentinian's son. The rewards and honours conferred on him for the faithful discharge of his office prove the truth of Juvenal's maxim, that when fortune pleases she can raise a man from a rhetorician to the dignity of a consul. He was actually appointed consul by the Emperor Gratian, in the year 379, after having filled other considerable posts; for besides the dignity of quaestor, to which he had been nominated by Valentinian, he was made prefect of the Prætorium in Italy and Gaul, after that prince's death. His speech, returning thanks to Gratian on his promotion to the consulship, is highly commended. The time of his death is uncertain; he was still living in 392, and lived to a great age. The Emperor Theodosius had a great esteem for Ausonius, and pressed him to publish his poems. There is a great inequality in his works; and in his manners and his style there is a harshness which was perhaps rather the defect of the times he lived in, than of his genius. Had he lived in Augustus's reign, his verses, according to good judges, would have equalled the most finished of that age. He is generally supposed to have been a Christian: some ingenious authors indeed think otherwise, but, according to Mr. Bayle, without just reason.—The best edition of his poems is that of Amsterdam, in 1671.

AUSTIN (St.). See ST. AUGUSTINE.

AUTRE-ÉGLISE, a village of Brabant, in the Austrian Netherlands; to which the left wing of the French army extended, when the confederates obtained the victory at Ramillies, in 1706. E. long. 4° 50'. N. lat. 50° 40'.

AUTRICUM, the capital of the Carnutes, a people of Gallia Celtica; afterwards called *Carnotena*, *Carnotenus*, and *Civitas Carnotensium*; now *Chartres*, in the Orleanois on the Eure. E. long. 1° 32'. N. lat. 48° 47'.

AWATSKA-BAY, a harbour of Kamtschatka, said to be the safest and most extensive that has been discovered, and the only one, in that part of the world, that can admit vessels of a considerable burden. The entrance into it is in 52° 51'. N. lat. 158° 48'. E. long.

AWE, Loch, one of the most beautiful lakes of Scotland, in Argyleshire, about thirty miles long, and, in some parts, above two broad. It contains many fine little islands, tufted with trees. The river Awe, the outlet of this lake, is discharged into Loch Etive, at the village of Bunawe.

AXATI, a town of ancient Bætica, in the Bætis; now *Lora*, a small city of Andalusia in Spain, seated on the Guadalquivir. W. long. 5° 20'. N. lat. 37° 20'.

AXIOPOLIS, a town of the Triballi, in Mæsia Inferior; now *Axiopolis* in Bulgaria. E. long. 34° 0'. N. lat. 45° 40'.

AXTEL (Daniel), a colonel in the service of the long parliament, and executed for the share he had in the murder of King Charles I. He was of a good family, and had a tolerable education, that is to say, such a one as might fit him for the course of life it was intended he should lead, being placed by his relations as an apprentice to a grocer in Watling-street. As he was of a very serious disposition, and had been very early tainted with those principles which were in that age styled puritanical, he became an eager follower of such ministers as distinguished themselves by their zealous preaching. His great attachment to these sort of people, and the natural warmth of his own temper, were the occasions of his quitting his own calling, and going into the army, in which he behaved with so much zeal, courage, and conduct, that he rose by degrees to the several commands of captain, major, and lieutenant-colonel, in a regiment of foot. It was in this last capacity, that he acted

with great vehemence against all endeavours for a reconciliation with the king.

On the twentieth of January, when the king was brought before the high court of justice, Colonel Stubberd, and Colonel Axtel, had the command of the soldiers below stairs. The king demanded of Serjeant Bradshaw, who was the president, by what authority they brought him there? And the president appealing to the charge, which was in the name of the Commons and People of England, Lady Fairfax, the general's wife, cried out, "It is a lie, it is false, not a half, not a quarter of the people; Oliver Cromwell is a rogue and a traitor;" which words were repeated by Mrs. Nelson. Upon this Colonel Axtel cried out, "Down with the whores, shoot them;" which vehemence of his made him be taken notice of. After the sentence was passed, the king was carried through the middle of King-street, in a common sedan, by two porters, who, out of reverence to his person, went bare headed, till the soldiers, under Colonel Axtel's command, beat them, and forced them to put on their hats. After the murder of the king, when Cromwell was sent into Ireland, the regiment in which Colonel Axtel served was drawn out by lot for that expedition, which occasioned his going over into that kingdom, where he made a considerable figure, was much esteemed and trusted by Cromwell, and raised, for his fidelity, courage, and conduct, to the command of a regiment, and the government of Kilkenny and the adjacent precinct.

After the death of the protector, Oliver, which happened on the third of September, 1658, things took a new turn, and Axtel used his utmost industry to conceal himself, as foreseeing that it would not be long before he might be called to an account for the large share he had taken in the trial of the king; but his care in this respect was to very little purpose, for before the close of the month, he was discovered and committed to prison. On the 10th of October following, the grand jury for the county of Middlesex, having found bills against twenty-eight persons, for their concern in the king's murder, of which Mr. Axtel was the last, they were brought to the sessions-house, in the Old Bailey, where Colonel Axtel was the same day arraigned, upon an indictment for compassing and imagining the death of the late king. The trial lasted, on account of the prisoner's long and large defence, for upwards of three hours; but the jury, without going from the bar, found him guilty, and on the 19th of October he was executed at Tyburn.

AXUM, a village, supposed to have been once the capital of Abyssinia. Its ruins are very extensive, but, like the cities of ancient times, consist altogether of public buildings. In one square there are forty obelisks, none of which have any hieroglyphics on them. They are all of one piece of granite, and on the top of that which is standing, is a *patera* exceedingly well carved in the Greek taste. It is 125 miles W. of the Red Sea. Long. 36° 4'. E. Lat. 14° 6' N.

AYLESBURY (Thomas), the second son of William Aylesbury, was born in London, in the year 1576. He received his education in Westminster-school, from whence he went to Oxford, and in 1598 became a student of Christ-church. He distinguished himself there by his assiduous application to his studies, and especially affected the mathematics. This made him known to persons of the greatest parts in the university, and was the reason of his being cherished by some of the greatest quality in the kingdom. On the 19th of June, 1605, he took his degree of master of arts. After he quitted the university, he became secretary to Charles,

earl of Nottingham, then lord high-admiral of England; in which post he had an opportunity of improving his mathematical knowledge, as also of giving many and shining proofs of it. On this account, when George Villiers, duke of Bucks, succeeded the Earl of Nottingham as high-admiral, Mr. Aylebury not only kept his employment, but was also, by the favour of that powerful duke, created a baronet, the 19th of April, 1627, having been before made master of requests, and master of the mint. These great employments, as they furnished him with the means of expressing his regard for learned men, so in him they met a person who put them to their right use. He not only made all men of science welcome at his table, and afforded them all the countenance he could, but likewise gave to such of them as were in narrow circumstances, regular pensions out of his pocket, and carried them with him to his house in Windsor-park, where he usually spent the summer. In 1642, adhering steadily to the king, he was of consequence stripped of his places, and plundered of his estate. However, he bore up cheerfully under his misfortunes till 1649, when, having seen the bloody murder of his sovereign, he grew sick of his country, and retiring with his family into Flanders, lived for some time at Brussels. In 1652 he removed to Breda, where he led a very private life, his loyalty having left him very little to live on; and in 1657, being then eighty-one years of age, he ended his days with honour.

AYLESBURY (William), son of the before-mentioned Sir Thomas Aylebury, became very early a gentleman-commoner of Christ-church, and took a degree in arts at sixteen years of age. Though he had at that time the prospect of a very plentiful fortune, yet he pursued his studies with such diligence, and behaved with so much modesty and prudence, that King Charles I. made choice of him to be governor to George Villiers, duke of Bucks, and his brother Lord Francis, with whom he went to travel. He met in Italy with a very extraordinary misfortune. Walking one evening in the garden of the house where they lodged, he was shot, through a hole in the wall, and a couple of bullets lodged in his thigh: those who did it leaped over the wall, came up, and looked upon him, begged his pardon, told him they were mistaken, and that they intended to have shot another person, which was all the satisfaction he ever received. He returned into England with his pupils a little after the civil war commenced, and carried them with him to Oxford, where he presented them to the king. His majesty expressed his great satisfaction in regard to Mr. Aylebury's conduct, and promised on the first vacancy, to make him groom of his bed-chamber; which promise, however, he lived not to perform. After the king's murder, he retired with his father to Antwerp, and dwelt there as long as his circumstances would afford it: but at length, through very want, returned into England in the year 1650; spending his time here, as most of the Royalists did, in seeking shelter and a meal of meat where it was to be had. Living sometimes in one place, sometimes in another, chiefly at Oxford, which was always loyal, till the year 1657, when the protector fitted out a fleet to go on some expedition to the West Indies, as also to carry a supply to the island of Jamaica, our author, from pure necessity, engaged himself as secretary to the governor; which post he enjoyed not long, death removing him when he had been but a short time in the island.

AYLMER (John), was born of a good family at Aylmer-hall in Norfolk, about the year 1521. Grey marquis of Dorset, and afterwards duke of Suffolk, taking a liking to him when he was very young, entertained him as his scholar, and gave him an exhibition at the university of Cambridge, where Mr. Wood supposes he took his degrees in arts; after which

the marquis made him tutor to his children, among whom was the Lady Jane Grey, afterwards queen. He early adopted the opinions of the reformers; and under the patronage of the Duke of Suffolk and the Earl of Huntingdon, in the reign of Edward VI. was for some time the only preacher in Leicester-therne, and was highly instrumental in bringing over the people of that county to the Protestant religion. In 1553 he was made archdeacon of Stow in the diocese of Lincoln. In the convocation which sat in the first year of Queen Mary, he distinguished himself by his warmth against popery. The violent measures of that queen's ministry rendered his stay in England unsafe; he retired beyond sea, and resided first at Strasburg, and afterwards at Zurich in Switzerland, where he undertook the instruction of several young gentlemen in classical learning and religion. During his exile he also visited the universities of Italy and Germany. At that of Jena in Saxony he was offered the Hebrew professorship; but, having a near prospect of returning home, he declined it. After the accession of Queen Elizabeth, he came back to England; and in the beginning of that prince's reign, was one of the eight divines appointed to dispute at Westminster, before many persons of distinction, against an equal number of popish bishops. In 1562, by the interest of Secretary Cecil, he was made archdeacon of Lincoln; and assisted at the synod held this year, wherein the doctrine and discipline of the church, and the reformation from popery, were established. He continued long without any other considerable preferment, though often nominated by the Archbishop of Canterbury to some vacant bishopric. However, he was appointed one of the queen's justices of the peace for the county, and one of her ecclesiastical commissioners. In 1573 he accumulated the degree of bachelor and doctor in divinity in the university of Oxford. In 1576 on the translation of his friend and fellow exile, Dr. Edwin Sandys, to the archbishopric of York, he was made bishop of London; and though Sandys had been very instrumental in his promotion, recommending him to the queen as a proper person for his successor, he sued him for dilapidations, and after some years' prosecution recovered 500 or 1000*l*.

When the plague raged in London in 1578, his principal attention was directed to preserve the lives of his clergy; and yet to make provision that the infected might be visited, and have proper assistance with respect to religion. He summoned the London clergy before him, in order to elect and appoint out of their body visitors of the sick, purposing to spare the rest by reason of the danger of the infection. Strype tells us, that the forwardness of many ministers to undertake this office was remarkable; some from covetousness, others from vain glory, and others to supply their wants. The bishop likewise ordered books, containing directions for preventing the rage of the pestilence, to be printed and dispersed.

In 1581 he proposed that a number of learned and sound divines might be appointed to preach at set times before great assemblies, particularly at St. Paul's Cross, for confirming the people's judgments in the doctrine and discipline of the established church, which was then struck at and undermined by many; and that for the support of it, contributions should be made and settled on the preachers by the city. But Sir John Branch, lord mayor, and the aldermen, did not much like this motion, on account of the standing charge to which it must put the city; so the design was dropped.

Beginning now to be uneasy in his diocese of London, he used all his endeavour to obtain a removal to the see of Ely, or that of Winchester, but without success. When he came to be broken with age, he was desirous to resign his bishopric to Dr. Bancroft, but the latter refused it. He died at Fulham, the 3d of June, 1594, aged seventy-three. He was an excel-

lent logician and historian, and well skilled in the Hebrew tongue: he understood the civil law, divinity, and the ancient writers; and was a rhetorical, bold, and pathetic preacher.

AYLOFFE (Sir Joseph), of Framfield in Suffex, was descended from a Saxon family, anciently seated at Boston Alost near Wye, in the county of Kent, in the reign of Henry III. who removed to Horn-church in the county of Essex in that of Henry IV. and to Sudbury in that of Edward IV. Sir William Ayloffe of Great Braxtate in the county of Essex was knighted by James I. May 1, 1603, and created a baronet November 25, 1612; and from his eldest son by his third wife, the late baronet was the fourth in descent and fifth in title. His father and grandfather were both of Gray's Inn. He was born about the year 1708; received the early part of his education at Westminster-school; admitted of Lincoln's Inn 1724, and in the same year was entered a gentleman-commoner at St. John's College, Oxford, which college he quitted about 1728; elected F.A.S. February 10, 1731; one of the first council under their charter, 1751; vice-president, and F.R.S. June 3, 1731. He prevailed on Mr. Kirby, painter in Ipswich, to make drawings of a great number of monuments and buildings in Suffolk, of which twelve were engraved, with a description, 1743; and others remain unpublished. He had at that time an intention to write a history of the county; but, being disappointed of the materials which he had reason to expect for so laborious a work, they were never published. On the building of Westminster-bridge, he was appointed secretary to the commissioners 1736-7; and on the establishment of the Paper-office, on the respectable footing it at present is, by the removal of the state-papers from the old gate at Whitehall to new apartments at the Treasury, he was nominated the first in the commission for the care and preservation of them. In 1757 he circulated proposals for printing, by subscription, *Encyclopædia*; or, a rational Dictionary of Arts and Sciences, and Trade. In 1772 he published, in 4to. *Calendars of the Ancient Charters, &c.* and of the Welsh and Scottish Rolls now remaining in the Tower of London, &c. and in the introduction gives a most judicious and exact account of our public records. He drew up the account of the chapel of London-bridge, of which an engraving was published by Vertue, 1748, and again by the Society of Antiquaries, 1777. His historical description of the interview between Henry VIII. and Francis I. on the Champ de Drap d'Or, from an original painting at Windsor, and his account of the paintings of the same age at Cowdray, were inserted in the third volume of the *Archæologia*, and printed separately to accompany engravings of two of these pictures by the Society of Antiquaries, 1775. His account of the body of Edward I. as it appeared on opening his tomb, 1774, was printed in the same volume, p. 376. Having been educated, as has been observed, at Westminster, he acquired an early affection for that venerable cathedral; and his intimate acquaintance with every part of it displayed itself in his accurate description of five monuments in the choir, engraved in 1779 by the same Society, who must reckon, among the many obligations which they owe to his zeal and attention to their interests, the last exertions of his life to put their affairs on the most respectable and advantageous footing, on their removal to their new apartments in Somerset-Place. He superintended the new edition of Leland's *Collectanea*, in nine volumes 8vo. and also of the *Liber Niger Scaccarii*, in two volumes 8vo. to each of which he added a valuable appendix. He also revised through the press a new edition of Hearne's *Curious Discourses*, 1771, two volumes 8vo.; and likewise the *Registrum Rossense*, published by Mr. Thorpe in 1769, folio. At the beginning of the seventh volume of Somers's *Tracts* is advertised, *A Collection of Debates in Parliament before the Restoration*, from

MSS. by Sir Joseph Ayloffe, bart. which is supposed never to have appeared. Sir Joseph died at his house at Kennington-lane, Lambeth, April 19, 1781, aged seventy-two.

AYRMIN, or AYERMIN (William), bishop of Norwich in the reigns of Edward II. and III. was descended of an ancient and wealthy family, seated at Osgodby in Lincolnshire. He was a canon in the cathedral church of York, and afterwards in that of Wells; and was for some time keeper of the seal, and vice-chancellor to King Edward II. under the chancellor John bishop of Norwich, who could not discharge his office by reason of sickness. About this time, ann. 1319, a war having broken out between England and Scotland, Ayrmyn had the misfortune to be taken prisoner, in a battle between the Scotch and Yorkists. Afterwards recovering his liberty, he was made chancellor of England under King Edward III. and afterwards treasurer. Being sent ambassador to the court of Rome, he is said to have neglected the business of his embassy, and to have employed his time and interest in obtaining the bishopric of Norwich, which was then vacant. In which application meeting with success, he returned to take possession of that see: which the king hearing, and being disgusted at his proceedings, sent soldiers to Norwich to apprehend him; but Ayrmyn lay hid in the cathedral church, till, by the interposition of friends, the king was reconciled to him, and contented to his consecration.

AYSCOUGH (George Edward), esq. a lieutenant in the first regiment of foot-guards, was only son of the Rev. Dr. Francis Ayscough, who was tutor to Lord Lyttleton at Oxford, and at length dean of Bristol. In September 1777 he went to the Continent for the recovery of his health. While on his travels, he wrote an account of his journey, which, on his return, he published under the title of *Letters from an Officer in the Guards to his Friend in England*; containing some Accounts of France and Italy, 1778, 8vo. He received however but a temporary relief from the air of the Continent. After lingering for a short time, he died October 14, 1779.

AYSCUE, AYSOUGH, ASKEW (Sir George), an eminent English admiral in the last century. He was descended from a very good family in Lincolnshire, and entered early into the sea service, where he obtained the character of an able and experienced officer, and the honour of knighthood from King Charles I. This, however, did not prevent him from adhering to the parliament, when, by a very singular intrigue, they got possession of the fleet; and so zealous he was in the service of his masters, that when, in 1648, the greatest part of the navy went over to the Prince of Wales, he, who then commanded the *Lion*, secured that ship for the parliament, which was by them esteemed an acceptable service, and an action of great importance. As this was a sufficient proof of his fidelity, he had the command given him in a squadron, that was employed to watch the motions of the Prince of Wales; and accordingly sailed thither with the coast of Ireland, where, by his vigilance, he prevented his highness from doing what he would otherwise have done, and by his great interest with the seamen he drew many of them back to that service from which they had deserted. This recommended him strongly to the parliament, who, the next year, sent him with a considerable number of ships, and the honourable title of admiral in those seas, to the coast of Ireland, which commission he discharged with equal vigour and vigilance. After the war was finished in Ireland, and the parliament had thereby time and opportunity to think of the proper means of subduing the rest of the dominions of the crown of England to their obedience, Sir George Ayscue had orders to sail with a small squadron to reduce the island of Barbadoes, which he effected.

On the 21st of June, 1652, Sir George Ayscue, in obedience to the orders he had received from London, came to Dover,

with his eleven sail, and there joined his old friend Admiral Blake, on board whose ship he dined, and was received with all imaginable marks of respect and kindness by that famous commander. In the beginning of the next month, Blake having received orders to sail northward, and destroy the Dutch herring fishery, Sir George Ayscue was left to command the fleet in the Downs. Within a few days after Blake's departure, he took five sail of Dutch merchantmen, and had scarcely brought them in, before he received advice, that a fleet of forty sail had been seen not far from the coast, upon which he gave chase, fell in amongst them, took seven, sunk four, and ran twenty-four upon the French shore, all the rest being separated from their convoy, which, considering that Sir George had with him only the squadron he brought with him from Barbadoes, was very gallantly performed. After various other successful engagements with the Dutch, Sir George at length laid down his commission. He retired after this to his country seat in the county of Surrey, and lived there in great honour and splendor till the death of the Protector. On the restoration of Charles II. Sir George Ayscue had the honour to be introduced to his majesty, and to kiss his hand. Soon after the Dutch war breaking out, he was immediately put into commission by the direction of the Duke of York, who then commanded the English fleet. In the spring of the year 1665, Sir George Ayscue hoisted his flag as rear-admiral of the blue, under the right honourable the Earl of Sandwich, and in the great battle that was fought the 3d of June in the same year, that squadron had the honour to break through the Dutch fleet, and thereby made way for one of the most glorious victories ever obtained by this nation at sea: for, in this battle, the Dutch had ten of their largest ships sunk or burned, besides their Admiral Opdam's, which blew up in the midst of the engagement, by which the admiral himself, and upwards of five hundred men, perished. Eighteen men-of-war were taken, four fire-ships destroyed, thirteen captains, and two thousand and fifty private men, made prisoners; and this with fo inconsiderable a loss, as that of one ship only, and three hundred private men.

On the 1st of June, 1666, the Dutch and English fleets again met. This day's fight was very fierce and bloody; for the Dutch, confiding in their numbers, pressed furiously upon the English fleet, while the English officers, being men of determined resolution, fought with such courage and constancy, that they not only repulsed the Dutch, but renewed the attack, and forced the enemy to maintain the fight longer than they were inclined to do, so that it was ten in the evening before their cannon were silent. The following night was spent in repairing the damages suffered on both sides, and next

morning the fight was renewed by the English with fresh vigour. On the third day Sir George Ayscue, who commanded the Royal Prince (being the largest and heaviest ship of the whole fleet), unfortunately struck upon the sand called the Galloper, where, being threatened by the enemy's fire-ships, and hopeless of assistance from his friends (whose timely return, the near approach of the enemy, and the tide, had absolutely rendered impossible), he was forced to surrender, and was carried to the Hague. It is said, that he afterwards returned to England, and spent the remainder of his days in peace.

AYR, a borough and sea-port of Ayrshire, situated on a sandy plain, and built on both sides of the river Ayr, over which is a bridge of four arches. Its chief trade is in coal and grain; the fishery being in a manner given up. In the New-Town are many good houses, and the ruins of a Dominican monastery, founded by Alexander II. in 1230. A mile north from the town, is a house called King's Chapel, founded for lepers by Robert Bruce. The leprosy was a disease so common in those days, as to be the subject of several parliamentary statutes; but it is now scarcely known in Europe. Ayr is 65 miles S. W. of Edinburgh. Long. 4. 39. E. Lat. 55. 30. N.

AYRSHIRE, a county of Scotland, bounded on the west, north-west, and north, by the frith of Clyde and Renfrewshire; on the east by the counties of Lanerk and Dumfries; and on the south-east and south by the shires of Kirkcudbright and Wigton. It exhibits the shape of two wings, extending to the north-west and south-west, and forming a vast bay at the mouth of the frith of Clyde. Between its extreme points, it measures about 50 miles; its greatest breadth is not quite 27. Its most northerly division is Cunningham, the north-west angle of which, though mountainous, is rich in pasture.

AYTONIA (*Encycl.*). In that article the *clafs* is erroneously put for the *order*; and *vice versa*.

AZARIAH, or UZZIAH, king of Judah, succeeded his father Amaziah, 850 years before Christ. He assembled an army of above 300,000 men, with which he conquered the Philistines, and demolished the walls of Gath, Jabnial, and Ashdod; built up the walls of Jerusalem; furnished the city with conduits; and planted gardens and vineyards: but at last being elated with his prosperity, and resolving to usurp the office of high-priest, he was struck with a leprosy, which obliged him to remain shut up in his palace for the rest of his days. He died about 759 years before the Christian æra, and was succeeded by Jonathan his son.—There are several other persons of this name mentioned in the sacred Scriptures.

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BABINGTON (Gervase), bishop of Worcester, was born, according to Fuller, in Nottinghamshire; but in what year is uncertain. He was sent to Trinity College, Cambridge, of which he was made fellow; and, in 1578, was incorporated master of arts at Oxford. He appears, however, to have made Cambridge the place of his residence, where he became an eminent preacher; and, being now doctor in divinity, was

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made domestic chaplain to Henry earl of Pembroke. In this station he is supposed to have assisted the countsess in her translation of the Psalms. In 1581, he was installed prebend of Hereford, and, in 1591, consecrated bishop of Landaff. In 1594, he was translated to the see of Exeter, and thence to Worcester in 1597. About this time, or soon after, he was made queen's counsel for the marches of Wales. He was a

considerable benefactor to the library belonging to the cathedral of Worcester, where he was buried, in May 1610, without a monument. The several historians, who have mentioned this prelate, agree in giving him the character of a learned and pious man. His writings, like those of most of his contemporaries, abound with puns and quaint expressions. His works were printed both in folio and quarto in 1615, and again in folio in 1637, under this title: *The works of the right reverend father in God Gerouse Babington, late Bishop of Worcester, containing comfortable notes upon the five books of Moses, viz. Genesis, &c. As also an exposition upon the Creed, the Ten Commandments, the Lord's Prayer; with a conference betwixt man's frailty and faith, and three sermons, &c.*

BABOLITZA CARETHNA, or BABOLIZA, a town of Scлавonia, seated near the river Drave, between Poßlega and Zygeth.

BABYLON (*Enegel*). This capital was surrounded with walls, in thickness 87 feet, in height 350 feet, and in compass 480 furlongs, or 60 of our miles. Thus Herodotus, who was himself at Babylon; and though some disagree with him in these dimensions, yet most writers give us the fame, or near the fame, as he does. Diodorus Siculus diminishes the circumference of these walls very considerably, and takes somewhat from the height of them, as in Herodotus; though he seems to add to their breadth, by saying, that six chariots might drive a-breast thereon; while the former writes, that one chariot only might turn upon them; but then he places buildings on each side of the top of these walls, which, according to him, were but one story high: which may pretty well reconcile them together in this respect. It is observed, that those who give the height of these walls but at 50 cubits, speak of them only as they were after the time of Darius Hytaspis; who had caused them to be beaten down to that level. These walls formed an exact square, each side of which was 120 furlongs, or 15 miles, in length; and were all built of large bricks cemented together with bitumen, which in a short time grows harder than the very brick and stone which it cements. The city was encompassed, without the walls, with a vast ditch filled with water, and lined with bricks on both sides; and, as the earth that was dug out of it served to make the bricks, we may judge of the depth and largeness of the ditch from the height and thickness of the walls. In the whole compass of the wall there were 100 gates, that is, 25 on each of the four sides, all made of solid brais. Between every two of these gates, at proper distances, were three towers, and four more at the four corners of this great square, and three between each of these corners and the next gate on either side, and each of these towers was ten feet higher than the walls. But this is to be understood only of those parts of the walls where towers were needful for defence. For some parts of them being upon a morass, and inaccessible by an enemy, there the labour and cost was spared, which, though it must have spoiled the symmetry of the whole, must be allowed to have favoured of good economy; though that is what one would not have expected from a prince who had been so determined, as Nebuchadnezzar must have been, to make the city complete both for strength and beauty. The whole number, then, of these towers amounted to no more than 250; whereas a much greater number would have been necessary to have made the uniformity complete all round. From the 25 gates in each side of this square, there was a straight street, extending to the corresponding gate in the opposite wall; whence the whole number of the streets must have been but 50; but then they were each about 15 miles long, 25 of them crossing the other 25 exactly at right angles. Besides these whole streets, we must reckon four half streets, which were but rows of houses facing the four inner sides of the walls. These four

half streets were properly the four sides of the city within the walls, and were each of them 200 feet broad, the whole streets being about 150 of the fume. By this intersection of the 50 streets, the city was divided into 676 squares, each of four furlongs and an half on each side, or two miles and a quarter in compass. Round these squares on every side towards the streets stood the houses, all of three or four stories in height, and beautified with all manner of ornaments; and the space within each of these squares was all void, and taken up by yards, or gardens, and the like, either for pleasure or convenience.

A branch of the Euphrates divided the city into two, running through the midst of it, from north to south; over which, in the very middle of the city, was a bridge, a furlong in length, or rather more, and indeed much more, if we hearken to others, who say it was no less than five fadles or furlongs in length, though but 30 feet broad, a difference we shall never be able to decide: this bridge, however, is said to have been built with wonderful art, to supply a defect in the bottom of the river, which was all sandy. At each end of this bridge were two palaces; the old palace on the east side, the new one on the west side of the river; the former of which took up four of the squares above mentioned, and the latter nine. The temple of Belus, which stood next to the old palace, took up another of the same squares.

The whole city stood in a large flat or plain, in a very fat and deep soil; that part or half of it on the east side of the river was the old city, and the other on the west was added by Nebuchadnezzar, both being included within the vast square bounded by the walls aforesaid. The form of the whole was seemingly borrowed from Nineveh, which was also 480 furlongs; but, though it was equal in dimensions to this city, it was less with respect to its form, which was a parallelogram, whereas that of Babylon was an exact square. It is supposed that Nebuchadnezzar, who had destroyed that old seat of the Assyrian empire, proposed that this new one should rather exceed it; and that it was in order to fill it with inhabitants, that he transported such numbers of the captives from other countries hither; though that is what may be disputed, seeing he therein only followed the constant practice of the kings of Assyria, who thought this the most certain means of assuring their conquests either to themselves, or their posterity.

But it plainly appears, that it was never wholly inhabited; so that, even in the meridian of its glory, it may be compared with the tower of the field, which flourishes to-day, and to-morrow is no more. It never had time to grow up to what Nebuchadnezzar visibly intended to have made it; for, Cyrus removing the seat of the empire soon after to Shushan, Babylon fell by degrees to utter decay; yet it must be owned, that no country was better able to support so vast and populous a city, had it been completed up to its first design. But so far was it from being finished according to its original design, that, when Alexander came to Babylon, Q. Curtius tells us, "No more than 90 furlongs of it were then built:" which can be no otherwise understood than of so much in length; and, if we allow the breadth to be as much as the length (which is the utmost that can be allowed), it will follow, that no more than 8100 square furlongs were then built upon: but the whole space within the walls contained 14,400 square furlongs; and therefore there must have been 6300 square furlongs remaining unbuilt, which, Curtius tells us, were plowed and sown. And, besides this, the houses were not contiguous, but all built with a void space on each side, between house and house.

The next great work of Nebuchadnezzar was the temple of Belus. The wonderful tower, however, that stood in the mid-

le of it, was not his work, but was built many ages before; that, and the famous tower of Babel, being, as is commonly supposed, one and the same structure. This tower is said to have been composed of eight pyramidal ones raised above one another, and by Herodotus said to have been a furlong in height; but as there is an ambiguity in his expression, it has been disputed whether each of the towers was a furlong in length, or the whole of them taken together. On the latter supposition, which is the most probable, this tower must have exceeded the highest of the Egyptian pyramids by 179 feet, though it fell short of its breadth at the basis by 33. The way to go up was by stairs on the outside round it; whence it seems most likely, that the whole ascent was, by the benching in, drawn in a sloping line from the bottom to the top eight times round it; and that this made the appearance of eight towers, one above the other. Till the times of Nebuchadnezzar, it is thought this tower was all the temple of Belus; but as he did by the other ancient buildings of the city, so he did by this, making great additions thereto, by vast edifices erected round it, in a square of two furlongs on every side, and just a mile in circumference, which exceeded the square at the temple of Jerusalem by 1800 feet. On the outside of these buildings was a wall, which inclosed the whole; and, in consideration of the regularity wherewith this city was to all appearance marked out, it is supposed that this wall was equal to the square of the city wherein it stood, and so is concluded to have been two miles and a half in circumference. In this wall were several gates leading into the temple, and all of solid brass; which it is thought may have been made out of the brazen sea, and brazen pillars, and other vessels and ornaments of the kind, which Nebuchadnezzar had transported from Jerusalem; for in this temple he is said to have dedicated his spoils from that of Jerusalem.

In this temple were several images or idols of massy gold, and one of them, as we have seen, 40 feet in height; the same, as supposed, with that which Nebuchadnezzar consecrated in the plains of Dura. For though this last is said to have been 60 cubits, or 90 feet high, these dimensions appear so incredible, that it has been attempted to reconcile them into one, by supposing, that in the 90 feet the height of the pedestal is included, and that the 40 feet are for the height of the statue without the pedestal; and, being said to have weighed 1000 talents of Babylon, it is thence computed, that it was worth three millions and a half of our money. In a word, the whole weight of the statues and decorations, in Diodorus Siculus, amounting to 5000 and odd talents in gold, the whole is estimated at above-one-and-twenty millions of our money; and a sum about equal to the same, in treasure, utensils, and ornaments, not mentioned, is allowed for.

Next to this temple, on the east side of the river, stood the old palace of the kings of Babylon, being four miles in circumference. Exactly opposite to it, on the other side of the river, was the new palace built by Nebuchadnezzar, eight miles in circumference, and consequently four times as big as the old one.

But nothing was more wonderful at Babylon than the hanging-gardens, which Nebuchadnezzar made in compliance to his wife Amyte; who, being a Mede, and retaining a strong inclination for the mountains and forests of her own country, was desirous of having something like them at Babylon. They are said to have contained a square of four plethra, or 400 feet, on each side; and to have consisted of terraces one above another, carried up to the height of the wall of the city, the ascent from terrace to terrace being by steps ten feet wide. The whole pile consisted of substantial arches upon arches, and was strengthened by a wall surrounding it on every side, 22 feet thick; and the floors on each of them were laid in this order:

first, on the tops of the arches was laid a bed, or pavement of stones 16 feet long, and four feet broad; over this was a layer of reed mixed with a great quantity of bitumen; and over this two courses of brick, closely cemented together with plaster; and over all these were thick chests of lead; and on these the earth or mould of the garden. This floorage was designed to retain the moisture of the mould; which was so deep, as to give root to the greatest trees which were planted upon every terrace, together with great variety of other vegetables pleasing to the eye. Upon the uppermost of these terraces was a reservoir, supplied by a certain engine with water from the river, from whence the gardens on the other terraces were supplied.

The other works attributed to Nebuchadnezzar by Berofus and Abydenus, were the banks of the river, the artificial canals, and the great artificial lake said to have been sunk by Semiramis. The canals were cut out on the east side of the Euphrates, to convey the waters of that river, when it overflowed its banks, into the Tigris, before they reached Babylon. The lake was on the west side of Babylon; and, according to the lowest computation, 40 miles square, 160 in compass, and in depth 35 feet, as we read in Herodotus; or 75, as Megasthenes will have it; the former, perhaps, measured from the surface of the sides, and the latter from the tops of the banks that were cut upon them. This lake was dug to receive the waters of the river, while the banks were building on each side of it. But both the lake, and the canal which led to it, were preserved after that work was completed, being found of great use, not only to prevent all overflowings, but to keep water all the year, as in a common reservoir, to be let out, on proper occasions, by sluices, for the improvement of the land.

The banks were built of brick and bitumen, on both sides of the river, to keep it within its channel; and extended on each side throughout the whole length of the city, and even farther, according to some, who reckon they extended 160 furlongs, or twenty miles; whence it is concluded they must have begun two miles and a half above the city, and have been continued an equal distance below it, the length of the city being no more than 15 miles. Within the city they were built from the bottom of the river, and of the same thickness with the walls of the city itself. Opposite to each street, on either side of the river, was a brazen gate in the said wall, with stairs leading down from it to the river: these gates were open by day, and shut by night.

Berofus, Megasthenes, and Abydenus, attribute all these works to Nebuchadnezzar; but Herodotus tells us, the bridge, the banks, and the lake, were the work of a queen after him, called Nitocris, who may have finished what Nebuchadnezzar left imperfect, and thence have had the honour this historian gives her of the whole.

The tower and temple stood till the time of Xerxes. But that prince, on his return from the Grecian expedition, having first plundered it of its immense wealth, demolished the whole, and laid it in ruins. Alexander, on his return to Babylon from his Indian expedition, proposed to rebuild it, and accordingly set 10,000 men on work to clear away the rubbish. But his death happening soon after, a stop was put to all further proceedings in that design. After the death of that conqueror, the city of Babylon began to decline apace; which was chiefly owing to the neighbourhood of Seleucia, built by Seleucus Nicator, as is said, out of spite to the Babylonians, and peopled with 500,000 persons drawn from Babylon, which by that means continued declining till the very people of the country were at a loss to tell where it had stood.

Such is the description we have by ancient historians of the grandeur of this city; which, if these accounts are not exaggerated, must have exceeded every piece of human grandeur

that hath yet appeared. Many of the moderns, however, are of opinion that these magnificent descriptions are very far from being true; although it is certain that few other arguments can be brought against the reality of them, than that we do not see things of a similar kind executed in our own days.

BABYLONIA (*Encycl.*). Concerning the nature of the country, manners, customs, &c. of the ancient Babylonians, the following account is collected by M. Sabbathier.

"As all the nations under the dominion of Cyrus, beside the ordinary tributes, were obliged to maintain him and his army, the monarch and his troops were supported by all Asia. The country of Babylon alone was obliged to maintain him four months of the year; its fertility, therefore, yielded a third of the produce of Asia. The government of this country, which the Persians termed *Jatruppy*, was richer and more extensive, than any of the rest. It maintained for the king, besides the war-horses, a stud of 800 stallions, and 16,000 mares. So great a number of Indian dogs were likewise bred in this province for the king, that four of its cities kept those animals; and, in return, they were exempted from all taxes and tributes.

"It rained very seldom in this country, according to Herodotus. The earth was watered by the river, which was here diffused by human industry, as the Nile is over Egypt by nature: for all the country of Babylon was divided by canals, the greatest of which was navigable, and flowed from south to north, from the Euphrates to the Tigris. In short, it was one of the finest countries for corn in the world; but for producing trees, the fig-tree, the vine, and the olive, it was not famous. It was so luxuriant in grain, that it commonly yielded a hundred times more than what was sown; and in its good years it yielded three hundred times more than it received. The leaves of its wheat and barley were four inches broad. "Though I know," says Herodotus, "that the millet and the sesame of that country grow to the size of trees, I will not describe them particularly; lest those who have not been in Babylonia should think my account fabulous."

"They had no oil but what they made from Indian corn. The country abounded with palm-trees, which grew spontaneously; and most of them bore fruit, of which the inhabitants made bread, wine, and honey. They cultivated these trees and their fig-trees in the same manner. Some of them, as of other trees, the Greeks called *male ones*. They tied the fruit of the male to the trees which bore dates; that the mosquito, leaving the male, might cause the date to ripen, by penetrating it; for without that assistance it came not to maturity. Mosquitos bred in the male palms, as in the wild fig-trees.

"But we must not here omit to give an account of the peculiar and surprising construction of their boats of skins, in which they sailed along the river to Babylon. These boats were invented by the Armenians, whose country lay north from Babylonia. They made them with poles of willow, which they bent, and covered with skins: the bare side of the skins they put outwards; and they made them so tight, that they resembled boards. The boats had neither prow nor stern, but were of a round form, like a buckler. They put straw on the bottom. Two men, each with an oar, rowed them down the river, laden with different wares, but chiefly with palm-wine. Of these boats some were very large, and some very small. The largest carried the weight of 500 talents. There was room for an ass in one of their small boats; they put many into a large one. When they had unloaded, after their arrival at Babylon, they fold the poles of their boats, and the straw; and loading their asses with the skins, returned to Armenia: for they could not sail up the river, its current was so rapid. For this reason they made their boats of skins, instead

of wood; and on their return to Armenia with their asses, they applied the skins to their former use.

"As to their dresses, they wore a linen shirt, which came down to their feet. Over it they wore a woollen robe; their outer garment was a white veil. Their shoes resembled those of the Thebans. They let their hair grow. On their heads they wore a turban. They rubbed their bodies all over with fragrant liquors. Each man had a ring on his finger; and an elegant cane in his hand, with an apple at the top, or a rose, a lily, or an eagle, or some other figure; for they were no suffered to use canes without devices.

"With regard to their policy, Herodotus thinks that their best law was one which the Heneti, an Illyrian people, likewise observed in every town and village. When the girls were marriageable, they were ordered to meet in a certain place, where the young men likewise assembled. They were then sold by the public crier; but he first sold the most beautiful one. When he had sold her at an immense price, he put up others to sale, according to their degrees of beauty. The rich Babylonians were emulous to carry off the finest women, who were sold to the highest bidders. But as the young men who were poor could not aspire to have fine women, they were content to take the ugliest with the money which was given them: for when the crier had sold the handsomest, he ordered the ugliest of all the women to be brought; and asked, if any one was willing to take her with a small sum of money. Thus she became the wife of him who was most easily satisfied; and thus the finest women were sold; and from the money which they brought, small fortunes were given to the ugliest, and to those who had any bodily infirmity. A father could not marry his daughter as he pleased; nor was he who bought her allowed to take her home, without giving security that he would marry her. But, after the sale, if the parties were not agreeable to each other, the law enjoined that the purchase money should be restored. The inhabitants of any of their towns were permitted to buy wives at these auctions. Such were the early customs of the Babylonians.

"But they afterwards made a law, which prohibited the inhabitants of different towns to intermarry, and by which husbands were punished for treating their wives ill. When they had become poor by the ruin of their metropolis, fathers used to prostitute their daughters for gain. There was a sensible custom among the Babylonians, worthy to be related. They brought their sick into the forum, to consult those who passed, on their diseases; for they had no physicians. They asked those who approached the sick, if they ever had the same distemper? if they knew any one who had had it? and how he was cured? Hence, in this country, every one who saw a sick person was obliged to go to him, and enquire into his distemper.

"They embalmed their dead with honey; and their mourning was like that of the Egyptians.

"There were three Babylonian tribes, who lived only upon fish, and who prepared them in the following manner: they dried them in the sun, and then beat them in a mortar to a kind of flour, which after they had sifted through linen, they baked it in rolls.

"The Babylonians at first worshipped only the sun and the moon; but they soon multiplied their divinities. They deified Baal, Bel, or Belus, one of their kings, and Merodach-Baladar. They also worshipped Venus; under the name of *Mylita*. She and Belus were the principal deities of the Babylonians. They counted their day from sun-rise to sun-rise. They solemnized five days of the year with great magnificence, and almost the same ceremonies with which the Romans celebrated their Saturnalia.

"The Babylonians were very much addicted to judicial

astrology. Their priests, who openly professed that art, were obliged to commit to writing all the events of the lives of their illustrious men; and on a fancied connection between them and the motions of the heavenly bodies, the principles of their art were founded. They pretended that some of their books, in which their historical transactions and revolutions were accurately compared with the courses of the stars, were thousands of years old. This assertion of their judicial astrologers we may reasonably dispute; but that their astronomers had made a long series of observations is incontestably true. It is certain that some of those observations were extant in the days of Aristotle, and that they were older than the empire of the Babylonians.

BACACUM, a town of the Nervii in Gallia Belgica; now *Baray*, in Hainault. E. long. 3. 40. N. lat. 19. 0.

BACANO, a village of Italy, in the patrimony of St. Peter; on a small lake, near a river of the same name, well known on account of the defeat of the Fabii, in the 277th year of Rome.

BACCHINI (Benedict), a Benedictine monk, and one of the most learned men in his time, was born at Borgo San Domino, in 1651; and wrote a great number of books, in Latin and Italian, the most considerable of which is a Literary Journal. He died at Bologna, in 1721, aged 70.

BACCHIUS, a follower of Aristoxenus, supposed by Fabricius to have been tutor to the Emperor Marcus Antoninus, and consequently to have lived about A. C. 140. He wrote in Greek a very short introduction to music in dialogue, which, with a Latin translation thereof, Meibomius has published. It seems it was first published in the original by Mericenus, in his Commentary on the first six chapters of Genesis; and that afterwards he published a translation of it in French, which Meibomius, in the preface to his edition of the ancient musical authors, censures as being grossly erroneous.

BACCHUS (*Encycl.*). This personage is seldom named in modern times but as a sensual encourager of feast and jollity; but he was regarded in a more respectable light by the ancients, who worshipped him in different countries under the following appellations: in Egypt, he was called *Osiris*; in Mysia, *Panaces*; in India, *Dionysius*; *Liber*, throughout the Roman dominions; *Adoneus*, in Arabia; and *Pentheus*, by the Lucanians. Mythologists furnish reasons for all these different names given to the same God, which may be seen in the second volume of Banier's Mythology.

It is natural to suppose that the Greeks and Romans, as usual, bestowed upon the one Bacchus which they worshipped, the several actions and attributes of the many divinities known by that name, and by other equivalent denominations in different countries. However, antiquity chiefly distinguished two gods under the title of *Bacchus*: that of Egypt, the son of Ammon, and the same as *Osiris*; and that of Thebes in Bœotia, the son of Jupiter and Semele.

The Egyptian Bacchus was brought up at Nyfa, a city of Arabia Felix, whence he acquired the name of *Dionysius*, or the God of Nyfa; and this was the conqueror of India. Though this Bacchus of the Egyptians was one of the elder gods of Egypt, yet the son of Semele was the youngest of the Grecian deities. Diodorus Siculus tells us, that Orpheus first deified the son of Semele by the name of Bacchus, and appointed his ceremonies in Greece, in order to render the family of Cadmus, the grandfather of the Grecian Bacchus, illustrious.

The great Bacchus, according to Sir Isaac Newton, flourished but one generation before the Argonautic expedition. This Bacchus, says Herimippus, was potent at sea, conquered caltivar as far as India, returned in triumph, brought his army over the Hellespont, conquered Thrace, and left music,

dancing, and poetry, there. And, according to Diodorus Siculus, it was the son of Semele who invented farces and theatres, and who first established a music-school, exempting from all military functions such musicians as discovered great abilities in their art; on which account, says the same author, musicians formed into companies have since frequently enjoyed great privileges.

Dr. Burney observes, that the dithyrambs which gave birth to dramatic representations, are as ancient as the worship of Bacchus in Greece; and there is little doubt but that the ceremonies of his mysteries gave rise to the pomp and illusions of the theatre. Many of the most splendid exhibitions upon the stage for the entertainment of the people of Athens and Rome, being performed upon the festivals of Bacchus, gave occasion to the calling all those that were employed in them, whether for singing, dancing, or reciting, *servants of Bacchus*.

BACCHYLIDES, a famous Greek poet, was the nephew of Simonides, and the contemporary and rival of Pindar. Both sung the victories of Hiero at the public games. Besides odes to athletic victors, he was author of *Love Verses*; *Prologues*; *Dithyrambs*; *Hymns*; *Pæans*; *Hypocæmæ*; *Parthenia*, or songs to be sung by a chorus of virgins at festivals. The chronology of Eusebius places the birth of Bacchylides in the 82d Olympiad, about 450 B.C.

BACCIO, or **BACCUS** (Andrew), a celebrated physician of the 16th century, born at St. Elpidio. He practised physic at Rome with great reputation, and was first physician to pope Sextus V. The most scarce and valuable of his works are, 1. *De iberis*. 2. *De naturali vinorum historia*. 3. *De venenis et antidotis*. 4. *De gemmis ac lapidibus pretiosis*.

BACON (Sir Nicholas), lord keeper of the great seal in the reign of Queen Elizabeth, was born at Chidehurst in Kent, in 1510, and educated at the university of Cambridge; after which he travelled into France, and made some stay at Paris. On his return, he settled in Gray's-Inn, and applied himself with such assiduity to the study of the law, that he quickly distinguished himself so, that on the dissolution of the monastery of St. Edmund's Bury, in Suffolk, he had a grant from King Henry VIII. in the 36th year of his reign, of several manors. In the 38th of the same king he was promoted to the office of attorney in the court of Wards, which was a place both of honour and profit. In this office he was continued by King Edward VI.; and in 1552 he was elected treasurer of Gray's-Inn. His great moderation and consummate prudence preserved him through the dangerous reign of Queen Mary. In the very dawn of that of Elizabeth he was knighted; and on the 22d of December, 1558, the great seal of England, being taken from Nicholas Heath, archbishop of York, was delivered to him with the title of *lord keeper*, and he was also made one of the Queen's privy-council. He had a considerable share in the settling of religion: as a statesman, he was remarkable for a clear head and deep counsels: but his great parts and high preference were far from raising him in his own opinion, as appears from the modest answer he gave Queen Elizabeth, when she told him his house at Redgrave was too little for him; "Not so, madam (returned he), but your majesty has made me too great for my house." After having had the great seal more than twenty years, this able statesman and faithful counsellor was suddenly removed from this life, as Mr. Mallet informs us, by the following accident: he was under the hands of the barber, and thinking the weather warm, had ordered a window before him to be thrown open, but fell asleep as the current of fresh air was blowing in upon him, and awaked some time after dispersed all over. He was immediately removed into his bed chamber, where he died a few days after, on the 26th of February, 1578-9, equally lamented by the queen and her subjects. He was

buried in St. Paul's, where a monument was erected to him, which was destroyed by the fire of London in 1666. Mr. Granger observes, that he was the first lord keeper that ranked as lord chancellor; and that he had much of that penetrating genius, solidity, and judgment, persuasive eloquence, and comprehensive knowledge of law and equity, which afterwards shone forth with so great a lustre in his son, who was as much inferior to his father in point of prudence and integrity as his father was to him in literary accomplishments.

Bacon (Sir Nathaniel), knight of the Bath, and an excellent painter, was a younger son of the lord keeper, and half brother to the great Sir Francis. He travelled into Italy, and studied painting there; but his manner and colouring approaches nearer to the style of the Flemish school. Mr. Walpole observes, that at Culford, where he lived, are preserved some of his works; and at Gorhambury, his father's seat, is a large picture by him in oil, of a cook-maid with a dead fowl, admirably painted, with great nature, neatness, and lustre of colouring. In the same house is a whole length of him, by himself, drawing on a paper, his sword and pallet hung up, and a half length of his mother by him.

Bacon (Anthony), elder brother to the chancellor, and eldest son to the lord keeper Bacon, by his second wife Anne, was born in the year 1558. He received his education at Trinity College in Cambridge. Mr. Anthony Bacon began his travels in 1579, at the age of twenty-one, and resided for some time at Paris, from whence he removed to Bourges, and thence to Geneva, where he lodged at the house of Theodore Beza. From Geneva he successively removed to Montpelier, to Marseilles, to Bourdeaux, to Montaubon, and again to Bourdeaux, where he resided the longest. During his stay abroad, he corresponded with several eminent persons in England, and sometimes communicated intelligence of importance to the public service. In the year 1585 he paid a visit to Henry king of Navarre, at Bearne, where he became acquainted with the learned Lambert Daneau, who had so high an esteem for him, that he dedicated to him several of his works. While Mr. Bacon was at Montaubon, in 1586, he contracted an intimacy with the famous Philip Pleiss du Mornay, and his family. He returned to England in a very ill state of health, in the beginning of February, 1591-2. It was not till the latter end of the year 1595, that he took up his residence in Essex-house; in which situation he carried on a most extensive correspondence. In 1596 Mr. Bacon received a letter from Henry the Fourth, king of France; in which that illustrious monarch assured him of his high esteem, and requested his interest with the Earl of Essex. In the same year he was visited by the Duke de Bouillon, then in England. He quitted Essex-house by the queen's command, in March 1599-1600. The time and place of his death cannot be ascertained. It is certain that he survived the Earl of Essex, and that he did not live till the accession of King James the First.

Bacon (Phanuel), rector of Balden in Oxfordshire, and vicar of Bramber in Sussex, was of Magdalen College, Oxford, where he took the degree of M.A. April 17th, 1722; B.D. April 29th, 1711; D.D. December 7, 1735. He possessed an exquisite fund of humour, was a famous punster, and wrote an admirable poem, called, *The Artificial Kite*. In the year 1757 he published no less than five dramatic performances; viz. 1. *The Taxes*. 2. *The Insignificant*. 3. *The Trial of the Twin-killers*. 4. *The Naval Quack*. 5. *The Oculist*. He died at Balden, January 2, 1783.

Bacon (Robert), an eminent divine, in the thirteenth century, was born about the year 1168. He studied in his youth at Oxford, where he distinguished himself by the quickness of his parts, and his assiduous application to his studies. Thence, according to the custom of that age, he removed to Paris,

where he perfected himself in all the branches of learning, which were in repute in those times. We are not told at what time he returned into England, but it appears clearly, that after his return he settled at Oxford, and read divinity lectures there. In 1233 he was made treasurer of the cathedral church of Salisbury. The same year he distinguished himself by a sermon before his royal master King Henry III. at Oxford, whither his majesty came, in order to have held a great council of his lords. In 1240 Bacon lost his great patron and intimate friend, Edmund archbishop of Canterbury; and very possibly this accident, joined to his fervent piety, and great love of a retired life, might induce Bacon, though he was very old, to enter into the order of Friars Preachers. In gratitude to the memory of the archbishop, Bacon wrote his life, notwithstanding that prelate had for some years lived, and was even so unfortunate as to die, under the king's displeasure: which work of his was highly esteemed. He wrote also many other learned pieces, sufficient to have established his reputation. At length, worn out with so long a course of studious application, he yielded to fate in the year 1248, and was interred at Oxford.

BACANTHORP (John), called *the resolute doctor*, a learned monk, was born towards the end of the 13th century, at Bacanthorp, a village in Norfolk. He spent the early part of his life in the convent of Blackney, near Walsingham, in the same country; whence he removed to Oxford, and from thence to Paris; where being distinguished for his learning, he obtained degrees in divinity and laws, and was esteemed the principal of Averroists. In 1329 he returned to England, and was immediately chosen twelfth provincial of the English Carmelites. In 1333 he was sent for to Rome; where, we are told, he first maintained the pope's sovereign authority in cases of divorce, but that he afterwards retracted his opinion. He died in London in the year 1346. Leland, Bale, and Pits, unanimously give him the character of a monk of genius and learning. He wrote, 1. *Commentaria seu questiones super quatuor libros sententiarum*, and, 2. *Compendium legis Christi, et quolibet*: both which underwent several editions at Paris, Milan, and Cremona. Leland, Bale, and Pits, mention a number of his works never published.

BACTRIA, or BACTRIANA, now *Chorassan* or *Khorasan*, an ancient kingdom of Asia, bounded on the west by Margiana, on the north by the river Oxus, on the south by Mount Paropisus, and on the east by the Asiatic Scythia and the country of the Massagetæ. It was a large, fruitful, and well-peopled country, containing according to Ammianus Marcellinus 1000 cities, though of these only a few are particularly mentioned by historians, of which that commonly called *Marcandæa*, now *Samarcandæ*, is the most considerable.

Of the history of this country we know but little. Authors agree that it was subdued first by the Assyrians, afterwards by Cyrus, and then by Alexander the Great. Afterwards it remained subject to Seleucus Nicator and his successors till the time of Antiochus Theos; when Theodotus, from governor of that province, became king, and strengthened himself so effectually in his kingdom, while Antiochus was engaged in a war with Ptolemy Philadelphus king of Egypt, that he could never afterwards dispossess him of his acquisitions. His posterity continued to enjoy the kingdom for some time, till they were driven out by the Scythians, who reigned in Bactria in the time of Adrian, Antoninus Pius, &c. The Scythians were in their turn driven out by the Huns or Turks, and these often conquered by the Saracens and Tartars; nevertheless they continued in possession of this country in the time of Ladislaus IV. king of Hungary.

In early times the B. &rians differed little in their manners from the Nomades; and being near neighbours of the

Serthians, who were a very warlike people, the Bactrian soldiers were reckoned the best in the world. Their appearance was very savage; being of an enormous stature, having a terrible aspect, rough beards, and long hair hanging down their shoulders. Some authors assert that they kept dogs on purpose to devour such as arrived at extreme old age, or who were exhausted by long sickness. They add, that for all their fierceness, the Bactrian husbands were such dupes to their wives, that they durst not complain of them even for conjugal infidelity, to which it seems the latter were very much addicted.

BACURIUS, or BATURUS, king of the Iberians, a people on the side of the Caspian sea. One day being a-bunting, he lost sight of his company, through a great storm and sudden darkness; upon which he vowed to the God of his Christian slave, that if he were delivered he would worship him alone: the day breaking up immediately, he made good his promise, and became the apostle of his country.

BADCOCK (Samuel), was the son of a creditable butcher at South Molton in Devonshire, where he was born about the year 1747. All his friends being dissenters, he was designed by them for the ministerial function, and after receiving the rudiments of education at his native town, was placed in an academy set apart for the training up candidates for the dissenting ministry, we believe at St. Mary's Ottery, in the same county; and from thence he was transplanted to an higher seminary, at Taunton. On leaving the academy, he preached occasionally as a probationer, and after some small time was ordained pastor to a congregation of dissenters of the Independent persuasion, at Bere Regis in Dorsetshire. From thence he was invited to Barnstaple in Devon, whither he removed about 1767, and continued there nine or ten years.

While at Barnstaple, he met with some of Dr. Priestley's theological productions, which so mightily charmed him, that he paid a visit to the doctor at Caln in Wiltshire, and established an intimacy and correspondence with him. Unfortunately, however, for the cause of Socinianism, Mr. Badcock had a mind too deep and penetrating to be long satisfied with mere empty sounds and shewy pretences. He read much, and he read with judgment; and as his reading was confined pretty much to ecclesiastical history, and the writings of the more ancient fathers, he soon discovered the source of Socinianism to be so far from commencing at the primitive ages of Christianity, that it was nothing more than a polished assemblage of almost every heresy that has peiiled the church. From Barnstaple he removed to South Molton, the dissenting congregation of which place readily accepted his ministry. This was about 1777. The number of dissenters there being but few, his stipend was consequently but very small; and had it not been for the kindness of friends, many of them persons of distinguished rank, who properly valued his great merit and eminent talents, his situation must have been exceedingly irksome. About 1780 he engaged as a writer in the Monthly Review, though he had before been a contributor to periodical publications. In the year 1780, when the great controversy concerning the materiality or immateriality of the human soul was warmly agitated by Dr. Priestley, Dr. Price, and other metaphysicians, Mr. Badcock also published a pamphlet upon the subject; one of the least, indeed, in size, though one of the first in merit. It was entitled, A slight Sketch of the Controversy between Dr. Priestley and his Opponents, &c. This tract was shrewd, and discovered the author to be deeply acquainted with his subject; and it was quoted by very respectable writers, with marks of high approbation.

In 1781 he distinguished himself as the reviewer and opponent of the late Mr. Martin Madan's weak but popular *Thelyphthora*. In this controversy Mr. Badcock evinced a

remarkable force of genius, skill of argument, and display of learning; and justly engaged the attention and admiration of the public upon his criticisms. In the same year he also wrote a poem entitled, *The Hermitage*.

In the Chattertonian controversy, or rather the controversy concerning the authenticity of Rowley's poems, Mr. Badcock took a considerable part in his capacity of reviewer. Whether he was on the right side of the question, he being an Anti-Rowleyian, is not for us to determine; certain it is, however, that his elucidations were ingenious, and that he was far from being the least of the formidable group who assailed the pretensions of the Bristol priest.

On the publication of Dr. Priestley's History of the Corruptions of Christianity, Mr. Badcock undertook the refutation of that part which was the most laboured and important of the whole work, viz. The History of Opinions relative to Jesus Christ. This he accordingly did in the Monthly Review for 1783. His critique was long, but smart, and shewed an uncommon extent of reading in the ancient fathers, ecclesiastical history, and the Socinian writers. Dr. Priestley felt this attack so severely, and especially as it was made from a quarter so unexpected as the Monthly Review, that with his usual celerity, in less than a month, he published, A Reply to the Animadversions, though the remainder of the critique upon his work had not yet appeared. When he published this Reply he did not know who his antagonist was, and therefore, unbiassed by prejudice, and untouched with resentment, he bestowed this eulogium on him: "The knowledge and ability of the present reviewer makes him a much more formidable, and therefore a more respectable, antagonist."

In the Review for September, 1783, Mr. Badcock gave a complete examination, and, as hath been generally thought, a complete refutation, both of the doctor's history, and the above-mentioned defence of it. This critique is, indeed, a masterly performance, and searches all the doctor's arguments for his favourite cause to the very bottom.

When Dr. White was appointed Bampton lecturer in Easter term, 1783, in order to complete the lectures on the plan he had formed, he found it expedient to avail himself of the best aid he could procure. This made him turn his attention to Mr. Badcock, and about November following he paid him a visit at South Molton, for the purpose of soliciting his assistance in the formation of a work that should be worthy the attention of the public. Mr. Badcock undertook his part with alacrity, executed it speedily, and in a manner that will immortalise his name. The parts allotted to, and written by Mr. Badcock, are, the greatest share of Lecture the First, the best part of Lecture the Third, about a fourth of Lecture the Fifth, almost the whole of Lecture the Seventh, and a small part of Lecture the Eight. Of the notes appended to the lectures, Mr. Badcock is acknowledged to have furnished about one fourth.

Mr. Badcock quitted the dissenting ministry some time toward the end of the year 1786, having an intention of conforming to the established church, to which he was reconciled, as he declared, by observing the parity between it and the primitive ages of Christianity.

In the spring of 1787 he was ordained in Exeter cathedral by Bishop Rotz; and it is certain that his ordination was distinguished by the following particulars:—He was not examined; he received the order of deacon one Sunday, and that of priest the Sunday following. When Mr. Badcock intimated that he neither expected nor desired such marks of distinction, the bishop's reply was, "I choose to distinguish you." The title upon which he was ordained was the curacy of Broad Clyst, near Exeter.

On account of his repeated and violent head-achs, he was

obliged shortly after to resign the curacy upon which he was ordained, and then engaged himself as assistant to Dr. Gabriel, of the Octagon Chapel, Bath. He there preached a charity sermon, which was afterwards printed, but not published. At the last office, 1788, he preached in the cathedral of Exeter, before the judges, a sermon which was much admired by those who heard it. May the 19th following he died of a bilious complaint, at the house of his affectionate and worthy friend, Sir John Chichester, baronet, in Queen-street, Mayfair.

His disposition was gentle, humane, and lively; his judgment acute and comprehensive. His school education was very confined, but his own attainments were wonderfully great and various. There was scarcely a subject but he was in some degree acquainted with, nor any branch of literature that he had entirely neglected. As a writer, the public have borne the most honourable testimony to his excellence; as a preacher, it was an unhappiness not to have heard him.

Besides the pieces already noticed of Mr. Badcock's composition, he was the author of some curious memoirs of the family of the celebrated Mr. John Wesley, and several other fugitive pieces. He had also engaged in, and began, the history of his native country; but did not live to complete it.

BADEN (*Encycl.*), the capital of the district of that name, is an agreeable city, moderately large, seated on the side of the Limmet, in a plain flanked by two high hills, between which the river runs. This city owes its rise to its baths, which were famous before the Christian æra. Several monuments of antiquity have been found here from time to time, particularly in 1420. When they were opening the large spring of the baths, they found statues of several heathen gods, made of alabaſter; Roman coins, made of bronze, of Augustus, Vespasian, Decius, &c.; and several medals of the Roman emperors, of gold, silver, copper, and bronze. There are two churches in Baden; one of which is collegiate, and makes a good appearance; the other is a monastery of the Capuchins, near the town-house. This last building serves not only for the assemblies of their own council, but also for those of the cantons. The diet assemblies there in a handsome room made for that purpose; the deputies of Zurich sit at the bottom behind a table, as the most honourable place; the ambassadors of foreign powers are seated on one side to the right, and the deputies of the other cantons are ranged on each side the room. The bailiff of Baden resides in a castle at the end of a handsome wooden bridge, which is covered in. Before this castle there is a stone pillar, erected in honour of the Emperor Trajan, who paved a road in this country eighty-five Italian miles in length. The inhabitants are rigid Roman-catholics, and formerly behaved in a most insolent manner to the Protestants, but they are now obliged by their masters to be more submissive. The baths which are on each side the river are a quarter of a league from the city. Joining to the small baths there is a village, and to the large a town which may pass for a second Baden. It is seated on a hill, whose ascent is steep. There the baths are brought into inns and private houses, by means of pipes, which are about sixty in all. There are also public baths in the middle of the town, from a spring which rises in the street, where the poor bathe gratis, but they are exposed quite naked to all that pass by. All the baths are hot, and one to so great a degree as to scald the hand; and they are impregnated with a great deal of sulphur, with some alum and nitre. They are useful for drinking as well as bathing; and are said to cure all diseases from a cold cause, head-achs, vertigos, &c. They strengthen the senses, cure diseases of the breast and bowels, asthma, and obstructions. They are peculiarly excellent for women's diseases. E. long. 8. 25. N. lat. 47. 27.

BADENOCH, the most northerly part of Invernesshire, in Scotland, extending about thirty-three miles in length from east to west, and twenty-seven from north-east to south-west where broadest. It has no considerable town, and is very barren and hilly, but abounds with deer, and other kinds of game.

BADREW (Richard de), the first and original founder of Clare-hall, in Cambridge, was descended from a knightly family seated at Great Badew, or Badow, near Chelmsford, in the county of Essex. From this place of their residence they took their surname; and here, probably, Richard de Badew was born. In 1326 he was chancellor of the university of Cambridge; and having purchased two tenements in Miln-street, of Nigel Thornton, a physician, he laid there, in the year above mentioned, the foundation of a building, to which was given the name of University-hall. In it he placed a principal, who was to take care of the pensioners that came to live there. It continued in this condition for the space of sixteen years, and then by an accidental fire was burnt down. Richard de Badew being unable to rebuild it, it lay for a few years in ruins; but one of the late pensioners having a great interest with Elizabeth, daughter of Sir Gilbert de Clare, earl of Gloucester, and third sister and coheir of Sir Gilbert de Clare, the last earl of Gloucester and Hertford, he prevailed upon her to undertake what de Badew was not able to perform. Whereupon this charitable lady, after the resignation of Walter Thaxted, the principal, and with the consent of Richard de Badew, new built that hall, and endowed it, in the year 1347, with revenues for one master, ten fellows, and ten scholars. At the same time she named it Clare-hall, from her own family surname.

BADGEWORTH, a village of Gloucestershire, noted for a spring of mineral water, called Cold Pool, nearly the same in property as those of Cheltenham. From the hill, above Crickley, is a very extensive prospect. It is three miles from Cheltenham.

BADIA, an ancient town of Bætica on the Anas; now supposed to be *Badajoz* on the Guadiana.

BADIUS (Conrad), and (Stephen Robert), his brother; French refugees; celebrated as printers at Geneva, and Conrad as an author. The latter died in 1566.

BÆCKEA (*Encycl.*). Correct a botanical error, by substituting the clais for the order, and vice versa.

BÆTERRÆ, an ancient town of the Tertifages in Gallia Narbonensis; now *Befers*, on the east bank of the Obrie, now *Orbis*, or *Orbe*, in Lower Languedoc.

BÆTICA, a province of ancient Spain, so called from the famed river Bætis, afterwards *Artessus*, now *Guadalquivir*, or the great river. It was bounded on the west by Lusitania; on the south, by the Mediterranean, and Sinus Gaditanus; on the north, by the Cantabricæ, now the Bay of Biscay. On the east and north-east, its limits cannot be so well ascertained, as they are very reasonably thought to have been in a continual state of fluctuation, as each petty monarch had an opportunity of encroaching upon his neighbour. The province was divided in two by the river Bætis already mentioned. On the one side of which, towards the Anas, were situated the Turdetani, from whence the kingdom was called *Turdetania*, though more generally known by the name of *Bæticia*. On the other side were situated the Bæfali, Bæfietani, and Contestani, along the Mediterranean coasts. The Bæfali were supposed to be of Phœnician extract, and dwelt along the coasts of the Mediterranean, till, driven from thence by the Moors, they fled into the mountainous parts of Galicia, which they then called from their own name *Bæfidia*. The Bæfietani were seated higher up, on the same coasts. The territories of both these made part of what has since become the kingdom

of *Granada*; in which there is a ridge of very high mountains, called, from the above-mentioned people, the *Baſſetanian mountains*. Mention is alſo made of their capital *Baſſetana*; a place of ſuch ſtrength, that King Ferdinand was fix months beſieging it before he could take it from the Moors.—The whole province of *Bætica*, according to the moſt probable account, contained what is now called *Andaluſia*, part of the kingdom of *Grenada*, and the outward boundaries of *Eſtrema-dura*.

BÆTIS. See *BÆTICA*.

BETULO, a town of ancient Spain, in the *Terraconenſis*; now *Badellona* in Catalonia.

BAGAMADER, or *BAGAMEDRI*, a province of the kingdom of *Abyſſinia* in *Africa*. It is ſaid to receive its name from the great number of ſheep bred in it; *meder* ſignifying land or earth, and *bag* a ſheep. Its length is eſtimated about ſixty leagues, and its breadth twenty; but formerly it was much more extenſive; ſeveral of its provinces having been diſmembered from it, and joined to that of *Tigre*. A great part of it, eſpecially towards the eaſt, is inhabited by wandering *Gallas* and *Caffres*.

BAGFORD (John), the antiquary, and great collector of old *English* books, prints, &c. was born in London. He had been in his younger days a ſhoemaker, afterwards a bookſeller; and laſtly, for the many curioſities wherewith he enriched the famous library of Dr. John Moore, biſhop of *Ely*, his lordſhip got him admitted into the Charter-houſe. He was ſeveral times in *Holland*, and in other foreign parts, where he procured many valuable old books, prints, &c. ſome of which he diſpoſed of to the late earl of *Oxford*, who, after his death, purchaſed all his collections, papers, &c. for his library. In 1707 were published, in the *Philophical Tranſactions*, his propoſals for a General Hiſtory of Printing. He died at *Illington*, a little before fix in the morning, May 15, 1716, aged ſixty-five years; and was buried the Monday following, in the cemetery belonging to the Charter-houſe. In 1728 a print was engraved of him, from a painting of Mr. Howard, by George Vertue. An account of his entries, which were deſigned for a General Hiſtory of Printing, is in the Catalogue of the *Harleian Collection* of MSS. vol. II. fol. London, 1759, from No. 5892 to No. 5910. His MSS. may be of uſe to ſuch as will take pains to extract good matter from a bad hand, and worſe orthography. This may be eaſily forgiven to his education, far from learned, and all his improvements owing to the ſtrength of genius, ſeconded by unuſual diligence and induſtry. A number of his letters to *Humphry Wanley* may be ſeen in the *British Muſeum*; and a large part of his collections is in the public library at *Cambridge*, where they are locked up in a large cubical deal box, and probably have never been opened ſince they were placed there.

BAHAR, a country of *Hindoſtan Proper*, bounded on the W. by *Allahabad* and *Oude*, on the N. by *Napanal*, on the E. by *Bengal*, and on the S. by *Oriffa*. It is ſubject to the *English Eaſt-India Company*; and moſt of the ſaltpetre they export is manufactured in this province, of which *Patna* is the capital.

BAJAZET I. Sultan of the *Turks*, a renowned warrior, but a tyrant, was conquered by *Tamerlane*, and expoſed by him in an iron cage; the fate he had deſigned for his adverſary if he had been the victor. He daſhed his head againſt the bars of this priſon, and killed himſelf, in 1413. See the article *TURKS*.

BAILLET (Adrian), a very learned French writer and critic, born in 1649, at the village of *Neuville* near *Beauvais* in *Picardy*. His parents were too poor to give him a proper education, which however he obtained by the favour of the

biſhop of *Beauvais*, who afterward preſented him with a ſmall vicarage. In 1680 he was appointed librarian to M. de *Lamoignon*, advocate general to the parliament of *Paris*; of whoſe library he made a copious index in 35 vols. folio, all written with his own hand. He died in 1706, after writing many works, the principal of which are, *A Hiſtory of Holland from 1609, to the Peace of Nimwegen in 1679*, 4 vols. 12mo; *Lives of the Saints*, 3 vols. folio, which he profeſſed to have purged from fables; *Judgements des Savans*, which he extended to 9 vols. 12mo; and *The Life of Des Cartes*, 2 vols. 4to, which he abridged, and reduced to 1 vol. 12mo.

BAILLIE (Robert), a preſbyterian divine in the church of Scotland during the laſt century, was born at *Glaſgow*, in the year 1599. He was educated in the univerſity of his native city, under the direction of Mr. Sharp, who was at that time the head of the college there. After Mr. Baillie had taken his degrees in arts, he turned his thoughts to the ſtudy of divinity, to which he applied with uncommon diligence. Having about the year 1622 received orders from Archbiſhop *Law*, he was choſen a regent of philoſophy in the univerſity of *Glaſgow*. While he was in this ſtation, he had, for ſome years, the care of the education of Lord *Montgomery*, who, at length, carried him with him to *Kilwinning*; to which church he was preſented by the Earl of *Eglinton*. Here he lived in the ſtriſteſt friendſhip with that noble family, and the people connected with it; as he did, alſo, with his ordinary the Archbiſhop of *Glaſgow*, with whom he kept up an epistolary correſpondence. In 1633 he declined, from a principle of modeſty, an offer which was made him of a church in *Edinburgh*. In 1638 he was choſen, by the preſbytery of *Irvine*, a member of the famous aſſembly at *Glaſgow*, which was a prelude to the civil war. Though Mr. Baillie is ſaid to have behaved in this aſſembly with great moderation, it is evident that he was by no means deficient in his zeal againſt prelacy and arminianiſm. He was a member of all the following general aſſemblies, till 1653, excepting the time in which he attended the *Westminster aſſembly*. In 1640 he was ſent by the covenanting lords to London, to draw up an accuſation againſt Dr. *Laud*, archbiſhop of *Canterbury*, for the innovations he had obtruded upon the church of Scotland, While Mr. Baillie was in England upon this occaſion, he wrote to the preſbytery of *Irvine* a regular account of the ſtate of public affairs; and ſent them, among other things, a large journal of the proceedings in the trial of the Earl of *Stafford*. Not long after his return to his own country (in 1642), he was appointed joint profeſſor of divinity, with Mr. *David Dickſon*, in the univerſity of *Glaſgow*. And his reputation was become ſo great, that he had before this received invitations from the other three univerſities, all of which he reſuſed. He continued in his profeſſorſhip till the *Reſtoration*; but his diſcharge of the duties of it was interrupted, for a conſiderable time, by his reſidence in England; for in 1643 he was choſen one of the commiſſioners of the church of Scotland to the aſſembly of divines at *Westminster*. Mr. Baillie returned again to his own country in the latter end of the year 1646. When, after the execution of *Charles the Firſt*, *Charles the Second* was proclaimed in Scotland, our profeſſor was one of the divines appointed by the general aſſembly to wait upon his majeſty at the *Hague*; upon which occaſion, on the 27th of March, 1649, he made a ſpeech in the royal preſence, wherein he expreſſed, in the ſtrongeſt terms, his abhorrence of the murder of the late king; and, in his ſentiments upon this event, it appears, that the preſbyterian divines of that period, both at home and abroad, almoſt univerſally agreed. After the reſtoration of King *Charles the Second*, Mr. Baillie, on the 23d of January, 1661, by the intereſt of the Earl of

Lauderdale, with whom he was a great favourite, was made principal of the university of Glasgow, upon the removal of Mr. Patrick Gallepie, who had been patronized by Cromwell. It is said, by several writers, that Mr. Baillie had the offer of a bishopric, which he absolutely refused. Though he was very loyal, and most sincerely rejoiced in his majesty's restoration, he began, a little before his death, to be extremely anxious for the fate of his beloved presbytery. His health failed him in the spring of the year 1662, and he died in July, the same year, aged sixty-three.

BAINBRIDGE (Dr. John), an eminent physician and astronomer, born at Athby de la Zouch in Leicestershire, in 1582. He taught a grammar-school for some years, and practised physic, employing his leisure hours in astronomy, which was his favourite study: at length he removed to London, was admitted a fellow of the college of physicians, and raised his character by his description of the comet in 1618. The next year Sir Henry Savile appointed him his first professor of astronomy at Oxford; and the masters and fellows of Merton College made him first junior, and then superior, reader of Linacre's lecture. He died in 1643, having written many works, some of which have never been published: but the MSS. are preserved in the library of Trinity College, Dublin.

BAIN GONGA, or BAIN RIVER, a large river of Hindoostan, which rises near the S. bank of the Nerbudda, runs fourthward through the heart of Berar, and, after a course of near 400 miles, unites with the Godavary, within the hills that bound the British Northern Circars.

BAKER (Thomas), an eminent mathematician, was born at Iton in Somersetshire, about the year 1625, and entered at Magdalen-hall, Oxon, in 1640; after which he was vicar of Bishop's-Nymmet in Devonshire, where he wrote *The Geometrical Key*, or *the Gate of Equations unlocked*; by which he gained a considerable reputation. A little before his death, the members of the Royal Society sent him some mathematical queries, to which he returned so satisfactory an answer, that they presented him a medal, with an inscription full of honour and respect. He died at Bishop's-Nymmet, on the 5th of June, 1690.

BAKER (Thomas), a dramatic writer, was the son of an eminent attorney in the city of London. His turn was entirely to comedy, and his plays are five in number, viz. 1. *Act at Oxford*. 2. *Fine Ladies' Airs*. 3. *Hampstead Heath*. 4. *Humours of the Age*. 5. *Tunbridge Walks*. All of them have a considerable share of merit; yet only one among the number stands on the present list of acting plays, viz. *Tunbridge Walks*. It is said that the character of Maiden in this play, which is perhaps the original of almost all the Fribbles, bear Mizens, &c. that have been drawn since, and in which effeminacy is carried to an height beyond what any one could conceive to exist in any man in real life, was absolutely, and without exaggeration, a portrait of the author's own former character; whose understanding having at length pointed out to him the folly he had so long been guilty of, he reformed it altogether in his subsequent behaviour, and wrote this character, in order to set it forth in the most ridiculous light, and warn others from that rock of contempt which he had himself for some time been wrecked upon. Whether this gentleman's attachment to the muffs drew him from any application to business, or from what other cause, is not known; but during the latter part of his life he stood on indifferent terms with his father, who allowing him a very scanty income, he was obliged to retire into Worcestershire, where he is reported to have died of that loathsome disorder the *morbis pediculofus*.

BAKER (Henry), an ingenious and diligent naturalist, was

born in Fleet-street, London, either near the end of the last, or very early in the beginning of the present, century. His father's profession is not known; but his mother was, in her time, a midwife of great practice. He was brought up, under an eminent bookeller who preceded the elder Dodley, to the business of a bookseller, in which, however, he appears not to have engaged at all after his apprenticeship; or, if he did, it was soon relinquished by him: for though it was in his power to have drawn away all his master's best customers, he would not set up against him. Mr. Baker being of a philosophical turn of mind, and having diligently attended to the methods which might be practicable and useful in the cure of stammering, and especially in teaching deaf and dumb persons to speak, he made this the employment of his life. In the prosecution of so valuable and difficult an undertaking, he was very successful; and several of his pupils, who are still living, bear testimony to the ability and good effect of his instructions. He married Sophia, youngest daughter of the famous Daniel Defoe, who brought him two sons, both of whom he survived. On the 29th of January, 1740, Mr. Baker was elected a fellow of the Society of Antiquaries; and, on the 12th of March following, the same honour was conferred upon him by the Royal Society. In 1744 Sir Godfrey Copley's gold medal was bestowed upon him, for having, by his microscopical experiments on the crystallizations and configurations of saline particles, produced the most extraordinary discovery during that year. This medal was presented to him by Sir Hans Sloane, late president of the Royal Society, and only surviving trustee of Sir Godfrey Copley's donation, at the recommendation of Sir Hans's worthy successor, Martin Folkes, esq. and of the council of the said society. Having led a very useful and honourable life, he died at his apartments in the Strand, on the 25th of November, 1774, being then about seventy years of age.

Several of Mr. Baker's communications are printed in the *Philosophical Transactions*; and, besides the papers written by himself, he was the means, by his extensive correspondence, of conveying to the society the intelligence and observations of other inquisitive and philosophical men. Mr. Baker was a poetical writer in the early part of his life. His *Invocation of Health* got abroad without his knowledge: but was reprinted by himself in his *Original Poems, Serious and Humorous*, part the first, 8vo. 1725. The second part came out in 1726. Among these poems are some tales as witty and as loose as Prior's. He was the author, likewise, of *The Universe*, a Poem, intended to refrain the *Pride of Man*; which has been several times reprinted. His account of the water polype, which was originally published in the *Philosophical Transactions*, was afterwards enlarged into a separate treatise, and hath gone through several editions. But his principal publications are, *The Microscope made Easy*, and *Employment for the Microscope*.

His eldest son, David Erskine Baker, was a young man of genius and learning. Having been adopted by an uncle, who was a silk-throwster in Spital-fields, he succeeded him in the business; but wanted the prudence and attention which are necessary to secure prosperity in trade. Like his father, he was both a philosopher and a poet; and wrote several occasional poems in the periodical collections. The public was indebted to him for *The Companion to the Playhouse*, in two volumes, 1764, 12mo; a work which, though imperfect, had considerable merit, and shewed that he possessed a very extensive knowledge of our dramatic authors.

BALAMIO (Ferdinand), of Sicily, was physician to Pope Leo X.; who greatly regarded him. He was no less skilled in the belles lettres than in medicine; and he cultivated poetry

and the Greek learning with much success. He translated from the Greek into Latin, several pieces of Galen; which were first printed separately, and afterwards inserted in the works of that ancient physician, published at Venice, 1586, in folio. He flourished at Rome about the year 1555.

BALARUC, a town of France, near the road from Montpellier to Toulouse; famous for its baths.

BALANUS, in zoology, the trivial name of a species of lepus. See *LEPUS*.

BALASORE, a seaport to the N.W. of the bay of Bengal, four miles from the sea by land, but by the rivers twenty. The inhabitants make stuffs of silk, cotton, and a sort of galls. It is 180 miles S.W. of Hoogly. Long. 87. 1. E. Lat. 21. 20. N.

BALBUS (Lucius Cornelius Theophanes), was born at Cadiz, and distinguished himself by his valour in the war carried on by the Romans in Spain against Sertorius and the Lusitanians, on which account Pompey gave him the privileges of a Roman citizen. He was consul in the 714th year of Rome, and was the first foreigner on whom that dignity was conferred. He was the friend of Pompey, Cæsar, Crassus, and Cicero.—There were many other illustrious Romans of the name of *Balbus*.

BALCH, a town of Ubec Tartary, in Asia, on the frontiers of Persia, 200 miles S. of Bokhara. Long. 69. 0. E. Lat. 37. 20. N.

BALDINUCCI (Philip), of Florence; a connoisseur in the polite arts, and the continuator of Vasar's lives of the painters. He died in 1696, aged seventy-two.

BALDOCK (Ralph de), bishop of London in the reigns of Edward I. and II. was educated at Moreton College, in Oxford; became dean of St. Paul's; was afterwards promoted to the see of London; and at last was made lord high-chancellor of England. He had a very amiable character both for morals and learning; and wrote *Historia Anglicæ*, or An History of the British Affairs down to his own Time; and A Collection of the Statutes and Constitutions of the church of St. Paul. Bishop Baldock died at Stepney, July 24th, 1313.

About the same time there was a **ROBERT DE BALDOCK**, a canon of London, and archdeacon of Middlesex, who, upon the vacancy of the see of London by the death of Bishop Baldock, was (together with John Colchester, another canon) presented by the chapter of London to the chapter of Canterbury, that see being likewise vacant, for the choice of one of them to be official for the diocese of London. This Robert Baldock was in great favour with King Edward II. who made him his chancellor, and nominated him to the bishopric of Norwich, into which he was elected about the middle of the year 1325, and confirmed by the archbishop in the month of August; but he could not obtain the fee, by reason of a papal provision in favour of William de Ayremin. Soon after, he lost his liberty and life by the national commotions, which deprived King Edward of his crown; for, being seized by the enraged populace, he was dragged to the prison of Newgate, where he died in a most wretched condition.

BALDWIN, archbishop of Canterbury, was born of obscure parents at Exeter, where, in the early part of his life, he taught a grammar-school; after which he took orders, and was made archdeacon of Exeter: but he resigned that dignity, and became a Cistercian monk in the monastery of Ford in Devonshire, of which in a few years he was made abbot. In the year 1180 he was consecrated bishop of Worcester. In 1184 he was promoted to the see of Canterbury by Pope Lucius III. and by his successor Urban III. was appointed legate for that diocese. He laid the foundation of a church and monastery in honour of Thomas Becket, at Hackington, near Canterbury, for secular priests; but, being opposed by the

monks of Canterbury and the pope, was obliged to desist. In 1190 he crowned King Richard I. at Westminster; and soon after followed that prince to the Holy Land, where he died at the siege of Ptolemais. Giraldus Cambrensis, who accompanied him in this expedition, says he was of a mild disposition, and of great abstinence. He wrote various tracts on religious subjects, which were collected and published by Bertrand Tiffier in 1662.

BALE (John), bishop of Ossory in Ireland, was born at Cove, near Dunwich, in Suffolk, in the year 1495. At twelve years of age he was entered in the monastery of Carmelites at Norwich, and was thence sent to Jesus College in Oxford. He was educated a Roman-catholic, but was converted to the Protestant religion by Thomas lord Wentworth. On the death of Lord Cromwell, favourite of Henry VIII. who protected him from the persecutions of the Romish clergy, he was obliged to retire into the Low-countries, where he continued eight years. Soon after the accession of Edward VI. he was recalled; and being first presented to the living of Bishop's-Stocke in Hampshire, in 1552, he was nominated to the see of Ossory. During his residence in Ireland he was remarkably assiduous in propagating the Protestant doctrines; but to very little purpose, and frequently at the hazard of his life. Once, in particular, they murdered five of his domestics, who were making hay in a meadow near his house; and would probably have done the same by him, if the sovereign of Kilkenny had not come to his assistance with 200 horse and 300 foot. On the accession of Queen Mary, the tide of opposition became so powerful, that, to avoid assassination, he embarked for Holland, but was very unfortunate in his escape. First he was taken by a Dutch man-of-war, and robbed by the captain of all his effects. Then, being forced by fires of weather into St. Ives in Cornwall, he was confined on suspicion of treason. Being however released after a few days' confinement, the ship anchored in Dover road, where he was again seized on a false accusation. After his arrival in Holland, he was kept prisoner for three weeks, and at length obtained his liberty on paying 30*l*. From Holland he travelled to Basil in Switzerland, where he continued till Queen Elizabeth ascended the throne. After his return to England, he was, in 1560, made prebendary of Canterbury, probably not choosing to return to his former flock of wolves. He died in November 1563, at Canterbury, in the 68th year of his age. He was so severe a writer against the church of Rome, that his books are particularly prohibited in the expurgatory index published at Madrid, in folio, in the year 1667. He is the earliest dramatic writer in the English language, or at least author of the first pieces of that kind that we find in print. Of his writings in that way, no fewer than twenty-one have been enumerated; only three of them, however, have been seen in print, *viz.* 1. God's Promises, an interlude; 2. St. John Baptist, an interlude; 3. Concerning the Laws of Nature corrupted: the first of which has been reprinted by Doddsley in the first volume of his collection of old plays, and the only copy extant of the last is preserved in St. Sepulchre's library in Dublin. As to the rest, they are mentioned by himself, as his own, in his account of the writers of Britain before mentioned.—He also translated the tragedies of Pammachius.—His other works are very numerous; but the chief is his Catalogue of British authors: a book of some merit, as it contains some information which is not elsewhere to be found; but he has destroyed his credit by his intemperate Billingsgate abuse of all those who differed from him in religion. The authentic part of his work is transcribed from Leland. The title of it is, *Illustratio Majoris Britannicæ scriptorum Catalogus, a Jupetro sanctissimi Noab filio ad an. Dom.* 1557.

BALEARIC ISLANDS, the ancient name of the islands Majorca, Minorca, and Ivica, in the Mediterranean. See MAJORCA, &c.

BALES (Peter), was a most famous master in the art of penmanship, or fair writing, and one of the first inventors of short-hand. He was born in 1547, and is styled by Anthony Wood "a most dexterous person in his profession, to the great wonder of scholars and others." He is recorded for his skill in micrography, or miniature writing, in Hollinshed's chronicle, anno 1575; and Mr. Evelyn also hath celebrated his wonderful skill in this delicate operation of the hand. "Hadrian Junius speaking as a miracle of somebody who wrote the Apollie's Creed, and the beginning of St. John's Gospel, within the compass of a farthing; what would he have said," says Mr. Evelyn, "of our famous Peter Bales, who, in the year 1575, wrote the Lord's Prayer, the Creed, Decalogue, with two short prayers in Latin, his own name, motto, day of the month, year of the Lord, and reign of the queen, to whom he presented it at Hampton Court, all of it written within the circle of a single penny, incased in a ring and borders of gold, and covered with a crystal so accurately wrought, as to be very plainly legible, to the great admiration of her majesty, the whole privy-council, and several ambassadors then at court?" He was farther very dexterous in imitating hand-writing, and about 1586 was employed by Secretary Walsingham in certain political manœuvres. We find him at the head of a school, near the Old Bailey, London, in 1590; in which year he published his Writing Schoolmaster, in three parts; the first teaching swift writing, the second true writing, the third fair writing. In 1595 he had a great trial of skill, in the Black Friars, with one Daniel Johnson, for a golden pen of 20 l. value, and won it; and a contemporary author farther relates, that he had also the arms of calligraphy given him, which are, Azure, a Pen, Or, as a prize, at a trial of skill in this art among the best penmen in London. In 1597 he republished his Writing Schoolmaster, which was in such high reputation, that no less than eighteen copies of commendatory verses, composed by learned and ingenious men of that time, were printed before it.

BALEY (Walter), the son of Henry Baley of Warnwell in Dorsetshire, was born at Pottham in the same county, and educated at Winchester-school. From thence he was sent to Oxford; and, after two years' probation, was admitted perpetual fellow of New College in the year 1550. Having taken his degrees in arts, he practised physic, and in 1558 was proctor of the university. About this time he obtained a prebend of Wells, which he resigned in 1579. In the year 1561 he was appointed queen's professor of physic, in 1563 proceeded doctor in that faculty, and afterwards became one of her majesty's physicians in ordinary. He was thought skilful in his profession, and had considerable practice. He died in 1592, aged sixty-three; and was buried in the inner chapel of New college. His works are, 1. *A Discourse of three Kinds of Pepper in common Use*, 1588, 8vo. 2. *Brief Treatise of the Preservation of the Eye sight*. First printed in the reign of Elizabeth, in 12mo; afterwards at Oxford in 1616, and 1654, 8vo. 3. *Directions for Health, natural and artificial; with Medicines for all Diseases of the Eyes*, 1626, 4to. 4. *Explicatio Galeni de potu convalescentium et Jejunii*, &c. Manuscript, formerly in Lord Aylebury's library.

BALGUY (John), an eminent divine of the church of England in the present century, was born on the 12th of August, 1686, at Sheffield in Yorkshire. His father, Thomas Balguy, was master of the free grammar-school in that place, and from him he received the first rudiments of his grammatical education. After his father's death, he was put under the instruction of Mr. Daubuz, who succeeded to the master-

ship of the same school, September 23, 1696, for whom he always professed a great respect. In 1702 he was admitted of St. John's College, Cambridge, under the care of Dr. Edmondson, and of Dr. Lambert, afterwards master of that college. He frequently lamented, in the succeeding part of his life, that he had wasted nearly two years of his residence there in reading romances; but at the end of that time he had the good fortune to meet with Livy, went through him with great delight, and from thence forward applied himself to serious studies. In 1705-6 he was admitted to the degree of bachelor of arts, and to that of master of arts in the year 1726. Soon after he had taken his bachelor's degree he quitted the university, and was engaged, for a while, in teaching the free-school at Sheffield; but whether he was ever chosen master, or only employed during a vacancy, does not appear. On the 15th of July, 1708, he was taken into the family of Mr. Banks, as private tutor to his son, Joseph Banks, esq. afterwards of Rereby, in the county of Lincoln, and grandfather of the celebrated Sir Joseph Banks, bart. so eminently distinguished for his skill in natural history, and the expences, labours, and voyages he has undergone to promote that part of science. Mr. Balguy, in 1710, was admitted to deacon's orders, by Dr. Sharp, archbishop of York; and in 1711 he was ordained a priest, by that prelate. By Mr. Banks's means he was introduced to the acquaintance of Mr. Bright of Badiworih, in the county of York; and was by him recommended to his father, Sir Henry Liddel, grandfather to the late Lord Ravensworth. In 1711 this gentleman, who lived at Ravensworth-castle, in the county of Durham, took Mr. Balguy into his family, and bestowed upon him the donative of Lamely and Tanfield, in that county. For the first four years after he had obtained this small preferment, he did not intermit one week without writing a new sermon; and all his sermons were of his own composition. Being desirous that so excellent an example should be followed by his son, he destroyed almost his whole flock, and committed, at one time, two hundred and fifty to the flames, most of which deserved to have been used in the best congregations. In July, 1715, he married Sarah, daughter of Christopher and Sarah Broomhead, of Sheffield. She was born in 1686, and by her he had only a son, Dr. Thomas Balguy, archdeacon of Winchester, who owed his archdeaconry, and all his other preferments, to the favour and friendship of Bishop Hoadly. In 1718 he published, without his name, *Silvius's Examination of certain Doctrines lately taught and defended by the Rev. Mr. Stebbing*; and in the following year, *Silvius's Letter to the Rev. Dr. Sherlock*. Both of these performances were written in vindication of Bishop Hoadly. Mr. Stebbing having written against these pamphlets, Mr. Balguy, in 1720, again appeared from the press, in the cause of the bishop, in a tract entitled, *Silvius's Defence of a Dialogue between a Papist and a Protestant, in Answer to the Rev. Mr. Stebbing*; to which are added, several Remarks and Observations upon that Author's Manner of Writing. This also being answered by Mr. Stebbing, Mr. Balguy had prepared a farther defence; but Dr. Hoadly prevailed upon him to suppress it, on account of the public having grown weary of the controversy. In 1726 he published *A Letter to a Deist, concerning the Beauty and Excellence of Moral Virtue, and the Support and Improvement which it receives from the Christian Revelation*. In this treatise he has attacked, with the greatest politeness, and with equal strength of reason, some of the principles advanced by the noble and celebrated writer of the *Characteristicks*, in his Enquiry concerning Virtue. On the 25th of January, 1727-8, Mr. Balguy was collated by Bishop Hoadly to a prebend in the church of Salisbury; among the advantages of which preferment, was the right of presenting to four livings,

and of presenting alternately to two others. The best of them did not fall in his life-time; but two small livings were disposed of by him; one to Mr. Robinson, who married his wife's sister, the other to his own son. In the year 1727, or 1728, he preached an assize sermon at Newcastle-upon-Tyne, the subject of which was party spirit. It was printed by order of the judges, and either inscribed or dedicated to Dr. Talbot, bishop of Durham. The Foundation of Moral Goodness; or a farther Enquiry into the Original of our Idea of Virtue, was published by him in 1728. In the same year he published The Second Part of the Foundation of Moral Goodness; illustrating and enforcing the Principles and Reasonings contained in the former: being an Answer to certain Remarks communicated by a Gentleman to the Author. His next publication was, Divine Rectitude; or, A brief Enquiry concerning the Moral Perfections of the Deity; particularly in respect of Creation and Providence. This was followed by A Second Letter to a Deist, concerning a late Book, entitled, Christianity as old as the Creation. To this succeeded The Law of Truth, &c. In 1741 appeared Mr. Balguy's Essay on Redemption. This, and his volume of sermons, including six, which he had published before, were the last pieces committed by him to the press. A posthumous volume was afterwards printed, which contained almost the whole of the sermons he left behind him. He died on the 21st of September, 1748, in the 63d year of his age.

BALLOL, BALIOL, or BOILLIOL (John), the brother of Alexander king of Scotland, and competitor with Robert Bruce for that crown.

BALL (John), a puritan divine in the seventeenth century, was born in the year 1585, of an obscure family, at Caington, or Cherington, near Woodstock in Oxfordshire. He was educated in grammar learning at a private school, under the vicar of Yarnon, a mile distant from Caington; and was admitted a student of Brasen-nose College in Oxford, in 1602. He continued there about five years, in the condition of a fervitor, and under the discipline of a severe tutor; and from thence he removed to St. Mary's Hall, and took the degree of bachelor of arts in 1608. Soon after, he was invited into Cheshire, to be tutor to the Lady Cholmondeley's children; and here he became acquainted with some rigid puritans, who gained so far upon his affections, that he went over to their party. About this time, having got a sum of money, he came up to London, and procured himself to be ordained by an Irish bishop, without subscription. Soon after, he removed into Staffordshire, and became curate of Whitmore, a chapel of ease to Stoke. He has, among the puritan writers, the character of an excellent school-divine, a painful preacher, and a learned and ingenious author; and, though he was not well affected to ceremonies and church discipline, yet he wrote against those who thought these matters a sufficient ground for separation. He died the 20th of October, 1640, aged about fifty-five.

BALLARD (George), one of those singular compositions which shoot forth without culture, was born at Camden in Gloucestershire. Being of a weakly constitution, his parents put him to a habit-maker; and in this situation he mastered the Saxon language. The time he employed in learning it was stolen from sleep, after the labour of the day was over. Lord Chedworth, and the gentlemen of his hunt, who used to spend about a month of the season at Camden, heard of his fame, and generously offered him an annuity of 100l.; but he modestly told them, that 60l. were fully sufficient to satisfy both his wants and his wishes. Upon this he retired to Oxford, for the benefit of the Bodleian library; and Dr. Jenner, president, made him one of the eight clerks of Magdalen college. He was

VOL. X.

afterwards one of the university beadles, but died in June, 1755, rather young; which is supposed to have been owing to too intense application. He left large collections behind him, but published only Memoirs of British Ladies, who have been celebrated for their Writings or Skill in the learned Languages, Arts, and Sciences, 1752, 4to. He drew up an account of Camden church, which was read at the Society of Antiquaries, November 27, 1771.

BALLENDEN (Sir John), a Scottish poet, in the reign of James V. of Scotland, was descended from an ancient family in that kingdom. His father, Mr. Thomas Ballenden, of Auchinoul, was director to the chancery in the year 1540, and clerk register in 1541. Where our poet was educated, we are not informed; but from one of his poems we learn, that in his youth he had some employment at the court of King James V. and that he was in great favour with that prince. Having taken orders, and being created doctor of divinity at the Sorbonne, he was made canon of Ross, and archdeacon of Murray. He likewise obtained the place of clerk register, but was afterwards deprived of that employment by the factions of the times; however, in the succeeding reign, of Mary, he recovered that office; and was one of the lords of session. Being a zealous papist, he, in conjunction with Dr. Laing, was extremely assiduous in retarding the progress of the reformation; till at last, finding the opposition too powerful, he quitted Scotland, and went to Rome, where he died in the year 1550. He is generally esteemed one of the best Scottish poets of that age. His works are, 1. *The History and Chronicles of Scotland of Hector Boëtius (Boethius), translated by Mr. John Ballenden.* Edinb. 1536. This is not a mere translation, Ballenden having corrected several mistakes of his author, and made large additions. It is in folio, and black letter. 2. *Cosmography to the History of Scotland, with a poetical Proem.* 3. *A Description of Albany.* 4. *Translation of Boethius's Description of Scotland.* 5. *Epistles to King James V.* Bale says he had seen these letters. 6. Several Poems in Carmichael's collection of Scottish Poems; besides many others in manuscript, in private libraries in Scotland. 7. *Virtue and Vice*, a poem, addressed to King James V.

BALLERUS, in ichthyology, the trivial name of a species of cyprinus. See BARBEL.

BALLOGISTAN, LITTLE, a country of Hindoostan Proper, bordering on the N. of Mewat, and approaching within twenty-four miles of Delhi. It is eighty or ninety miles long, and from thirty to forty broad. Within this century it was seized by the Balloges, or Balloches, whose country adjoins to the W. bank of the Indus, opposite Moultran. They are represented as a very savage and cruel race. Their territory is full of ravines, and of course difficult of access. It has, however, been successively tributary to the Rohillas, the Jats, and the late Nudjuff Cawn. Westward it borders on the country of the Seiks.

BALNAVES (Henry), a Scottish protestant divine, born in the shire of Fife, in the reign of James V. and educated at the university of St. Andrews. He went afterwards to France in order to finish his studies; and, returning to Scotland, was admitted into the family of the Earl of Arnauld, who at that time governed the kingdom: but in the year 1532 the earl dismissed him for having embraced the protestant religion. In 1564 he joined, says Mackenzie, the murderers of Cardinal Beaton; for which he was declared a traitor, and excommunicated: Whilst that party were besieged in the castle of St. Andrews's, they sent Balnaves to England, who returned with a considerable supply of provisions and money; but being at last obliged to surrender

4 X

to the French, he was sent with the rest of the garrison to France. He returned to Scotland about the year 1559; and, having joined the congregation, he was appointed one of the commissioners to treat with the Duke of Norfolk, on the part of Queen Elizabeth. In 1563 he was made one of the lords of session, and appointed by the general assembly, with other learned men, to revise the Book of Discipline. Knox, his contemporary and fellow-labourer, gives him the character of a very learned and pious divine. He died at Edinburgh in the year 1570. He wrote, 1. *A Treatise concerning Justification*. Edinb. 1550, 8vo. 2. *A Catechism, or Confession of Faith*. Edinb. 1584, 8vo.

BALSHAM (Hugh de), or DE BEDESALE, or BELESALE, the tenth bishop of Ely, and founder of St. Peter's College, otherwise Peter-house, in Cambridge, was in all probability born at Balsham in Cambridgeshire (from whence he took his surname), towards the beginning of the thirteenth century. He was at first a monk, and afterwards sub-prior of the Benedictine monastery at Ely. In 1247, November 13, he was chosen, by his convent, bishop of Ely, in the room of William de Kikenny, deceased. But King Henry III. who had recommended his Chancellor Henry de Wingham, being extremely angry at the disobedience of the monks, refused to confirm the election; and, moreover, he sacked the woods, spoiled the ponds, and otherwise wasted the manors and estates belonging to the bishopric. He endeavoured at last to persuade the monks to proceed to a new election; alleging, that it was not fit to strong a place as Ely should be intrusted with a man that had scarcely ever been out of his cloister, and who was utterly unacquainted with political affairs. Balsham, finding he was not likely to succeed at home, went to Rome, in order to be confirmed by the pope; who, through the plenitude of his apostolical power, pretended to dispose of all ecclesiastical preferments in Christendom. In the mean time, Boniface archbishop of Canterbury used his utmost interest at Rome to obstruct Hugh de Balsham's confirmation, though he could allege no one fault against him; and recommended Adam de Maris, a learned Minorite friar, as a fit person to be promoted to the bishopric: but all his endeavours proved unsuccessful. As to Wingham, having been recommended by the king without his own desire and knowledge, he did not stir in the least to get himself elected by the monks; but rather, out of an uncommon excess of modesty, declined the honour, alleging that the two others (Balsham and Maris) were more worthy of it, and more deserving than himself. This matter remained in suspense for above ten years. And was at length determined in favour of Hugh de Balsham. For Wingham being promoted to the bishopric of London, upon Fulk de Balles's decease, the pope confirmed Hugh de Balsham's election, on the 10th of March, 1257, and he was consecrated the 14th of October following. Being thus fixed in his see, he applied himself to works of charity, and particularly, in the year 1257, or 1259 according to some, put in execution what he had designed, if not begun, before; that is, he laid the foundation of St. Peter's College, the first college in the university of Cambridge. He built it without Trumpington gate, near the church of St. Peter (since demolished), from whence it took its name. He died at Doddington, June 16, 1286, and was buried in the cathedral church of Ely.

BALTZAR (Thomas), a native of Lubeck, was an eminent musical composer, and esteemed the finest performer on the violin of his time. He came into England in the year 1658, and lived about two years in the house of Sir Anthony Cope, of Hanwell in Oxfordshire. He was the great competitor of Davis Mell, who, though a clock-

maker by trade, was, till Baltzar came hither, allowed to be the finest performer on the violin in England; and after his arrival he divided with him the public applause, it being agreed that Mell excelled in the fineness of his tone and the sweetness of his manner, and Baltzar in the power of execution and command of the instrument.—Moreover, it is said of the latter, that he first taught the English the practice of shifting, and the use of the upper part of the finger-board. Baltzar was given to intemperance, and is said to have shortened his days by excessive drinking: he was buried in Westminster-abbey on the 27th day of July, 1663.

BALUZE (Stephen), a French writer, born in 1631, and some time librarian to M. Colbert. In 1693 he obtained a pension, with the post of director of the royal college, for writing the lives of the Popes of Avignon; both which advantages he soon lost in the fluctuation of court parties. M. Baluze is much more noted for collecting ancient MSS. and illustrating them by notes, than famed for his own compositions.

BALZAC (John Lewes Guez de), born at Angoulême in 1595. Voltaire allows him the merit of having given numbers and harmony to the French prose, but censures his style as somewhat bombastic. The critics of his own time gave him no little disquiet; and he gave them no little advantage over him by his fallies of vanity, and some particular propositions which were a little dangerous. Mr. Balzac, getting rid of these disputes by his moderation, settled at his country-seat; refined his style and genius; and got by his letters and other writings which he published from time to time, the reputation of being the first writer in France. He was at length drawn from his retirement by the hopes of making his fortune under Cardinal Richelieu, who had formerly courted his friendship; but in a few years he retired again, disgusted with the slavish dependence of a court life. All he obtained from the court was a pension of 2000 livres, with the titles of counsellor of state and historiographer of France. He died in 1654; and was buried in the hospital of Notre Dame des Anges, to which he bequeathed 12,000 livres. He left an estate of 100 franks per ann. for a gold medal to be bestowed every two years for the best discourse on some moral subject.—Besides his letters, he wrote a work called *Oeuvres Diverses*, i. e. on various subjects; The Prince; The Christian Socrates, &c. and many other pieces; all of which have been published in two volumes folio.

BAMBRIDGE or BAINBRIDGE (Christopher), archbishop of York, and cardinal-priest of the Roman church, was born at Hilton, near Appleby, in Westmoreland, and educated at Queen's College, in Oxford. Having taken holy orders, he became rector of Aller, in the diocese of Bath and Wells. He enjoyed three prebends successively in the cathedral church of Salisbury; and that of South Grantham, in 1485; that of Chardstock in the same year, and that of Horton in 1486. He was elected provost of Queen's College in 1495, and about the same time created doctor of laws. On September the 28th, 1503, he was admitted prebendary of Strenhall, in the cathedral church of York, void by the consecration of Geoffrey Blyth to the see of Lichfield and Coventry; and on the 21st of December following, he was installed in the deanery of that church, in the room of the said Blyth. In 1505 he was made dean of Windsor, and the same year master of the rolls, and one of the king's privy-council. In 1507 he was advanced to the see of Durham, and received the temporalities the 17th of November. The next year he was translated to the archbishopric of York, and received the

temporalities the 12th of December. Pits assures us, that Bambridge had been very intimate with Morton archbishop of Canterbury, and shared in that prelate's sufferings during the usurpation of Richard III. after whose death, his affairs took a more prosperous turn; for he was appointed almoner to King Henry VII. and employed by that prince on several embassies to the Emperor Maximilian, Charles VIII. king of France, and other potentates of Europe. But he distinguished himself chiefly by an embassy from King Henry VIII. to Pope Julius II. who created him a cardinal, with the title of St. Praxedes, in March 1511, and, eight days after, appointed him legate of the ecclesiastical army, which had been sent into the Ferrarese, and were then besieging the fort of Bassia. In return for which marks of honour, our new cardinal and legate prevailed with the king his master to take part with his holiness against the King of France. Nor was he less zealous in the service of that pontiff during his life, than in honouring and defending his memory after his death. There are extant in Rymer's *Fœdera*, &c. two letters, one from Cardinal Bambridge, during his residence at Rome, to King Henry VIII. concerning the pope's bull giving him the title of Most Christian King; and another from the Cardinal de Sinigallia to the king, acquainting his highness that he had delivered that instrument to Cardinal Bambridge. This prelate died at Rome, the 14th of July, 1514, being poisoned by one of his domestics, in revenge for some blows he had given him.

BAMPTON, a large town in Oxfordshire, with a small market on Monday. It is seated near the Thames, twelve miles W. of Oxford, and seventy W. by N. of London.—Long. 1. 25. W. Lat. 51. 46. N.

BANCROFT (Richard), archbishop of Canterbury, in the reign of King James I. was son of John Bancroft, gentleman, and Mary, daughter of Mr. John Curwyn, brother of Dr. Hugh Curwyn, archbishop of Dublin; and was born at Farnworth in Lancashire, in September 1544. After being severely trained up in grammatical learning, he was entered a student of Christ College, in Cambridge, where, in 1566-7, he took the degree of bachelor of arts; and from thence he removed to Jesus College, where, in 1570, he commenced master of arts. Soon after, he was made chaplain to Dr. Cox, bishop of Ely, who, in 1575, gave him the rectory of Teverham in Cambridgeshire. The year following, he was licensed one of the university preachers; and in 1580 was admitted bachelor of divinity. September the 14th, 1584, he was instituted to the rectory of St. Andrew, Holborn, at the presentation of the executors of Henry earl of Southampton. In 1585 he commenced doctor in divinity; and the same year was made treasurer of St. Paul's cathedral, in London. The year following he became rector of Cotingham in Northamptonshire, at the presentation of Sir Christopher Hatton, lord chancellor, whole chaplain he then was. February the 25th, 1589, he was made a prebendary of St. Paul's; in 1592, advanced to the same dignity in the collegiate church of Westminster; and, in 1594, promoted to a stall in the cathedral of Canterbury. Not long before, he had distinguished his zeal for the church of England by a learned and significant sermon, preached against the puritans at St. Paul's Cross. In 1597, Dr. Bancroft, being then chaplain to the archbishop of Canterbury, Whitgift, was advanced to the see of London, in the room of Dr. Richard Fletcher, and consecrated at Lambeth the 8th of May.—From this time he had, in effect, the archiepiscopal power; for the archbishop, being declined in years, and unfit for business, committed the sole management of ecclesiastical affairs to Bishop Bancroft. Soon after his being made bishop he expended 1000 marks in the repair of his house in London.

In the year 1600, he, with others, was sent by Queen Elizabeth to Embden, to put an end to a difference between the English and Danes: but the embassy had no effect. This prelate interposed in the disputes between the secular priests and the Jesuits, and furnished some of the former with materials to write against their adversaries. In the beginning of King James's reign, Bishop Bancroft was present at the conference held at Hampton-court, between the bishops and the presbyterian ministers. The same year, 1603, he was appointed one of the commissioners for regulating the affairs of the church, and for perusing and suppressing books, printed in England, or brought into the realm without public authority. A convocation being summoned to meet March 20, 1603-4, and Archbishop Whitgift dying in the mean time, Bishop Bancroft was, by the king's writ, appointed president of that assembly. October 19th, 1601, he was nominated to succeed the archbishop in that high dignity, to which he was elected by the dean and chapter, November 17, and confirmed in Lambeth chapel, December 10. September 5, 1605, he was sworn one of his majesty's most honourable privy-council. This year, in Michaelmas term, Archbishop Bancroft exhibited certain articles, to the lords of the council, against the judges. In 1608 he was declared chancellor of the university of Oxford, in the room of the Earl of Dorset, deceased. In 1610 this archbishop offered to the parliament a project for the better providing a maintenance for the clergy, but without success. One of our historians pretends, that Archbishop Bancroft set on foot the building a college near Chelsea, for the reception of students, who should answer all popish and other controversial writings against the church of England. This prelate died November 2, 1610, of the stone, in his palace of Lambeth.

BANCROFT (John), bishop of Oxford, in the reign of King Charles I. and nephew of the preceding Dr. Richard Bancroft, archbishop of Canterbury, was born at Astell, or Eftwell, a small village, between Whitney and Burford, in Oxfordshire, and admitted a student of Christ-church, in Oxford, in 1592, being then about eighteen years of age. Having taken the degrees in arts, and entered into holy orders, he became a preacher for some years in and near Oxford. In 1609, being newly admitted to proceed in divinity, he was, through the interest and endeavours of his uncle, elected head of the University College, in which station he continued above twenty years; during which time he was at great pains and expence in recovering and settling the ancient lands belonging to that foundation. In 1632 he was advanced to the see of Oxford, upon the translation of Dr. Corbet to that of Norwich, and consecrated about the 6th of June. This prelate died in 1640, and was buried at Cuddesden in Oxfordshire, the 12th of February.

BANGALORE, a strong fortress of Myfore, in the peninsula of Hindoostan. It is a place of great political importance, being, from its situation, the bulwark of the Myfore country, toward Arcot. It was taken by the English in 1791; but restored by the treaty of peace in 1792. It is seventy-four miles from Seringapatam, the capital of Myfore. Long. 77. 37. E. Lat. 13. 0. N.

BANGIUS (Thomas), a Danish divine, and an elegant Latin writer on the origin of languages, and a variety of other subjects. He died in 1661.

BANJAR, a river in the island of Borneo, in the Indian Ocean, in the mouth of which is a town where the English East-India Company have a factory.

BANIER (Anthony), licentiate in laws, member of the Academy of Inscriptions and Belles-lettres, and ecclesiastical affairs of the diocese of Clermont in Auvergne; died in November 1741, aged 69. He is principally celebrated for his transla-

tion of the *Metamorphoses* of Ovid, with historical remarks and explanations; which was published in 1732, at Amsterdam, in folio, finely ornamented with copper-plates, by Picart; and reprinted at Paris, 1738, in two vols. 4to.: and for his *Mythology*, or fables of the ancients explained by history; a work full of the most important information, which was translated into English, and printed at London in 1741, in 4 vols. 8vo.

BANISTER (John), a physician and surgeon in the reign of Queen Elizabeth, was educated at Oxford, where, says Anthony Wood, he studied logicals for a time; but afterwards applied himself solely to physic and surgery. In 1573 he took the degree of bachelor of physic; and, obtaining a licence from the university to practise, settled at Nottingham, where he lived many years in great repute. When or where he died, is not known. There was a long poetical memorial of him in the church of St. Olave, Silver-street, London, which is preserved by Stow. He was author of, 1. *A needful, new, and necessary Treatise of Chirurgery, briefly comprehending the general and particular Curation of Ulcers*. Lond. 1575, 8vo. 2. *Certain Experiments*, of his own invention. 3. *The History of Man, sucked from the Sappe of the most approved Anatomists*, &c. in nine books. Lond. 1578, thin fol. 4. *Compendious Chirurgery, gathered and translated especially out of Wecker, &c.* Lond. 1585, 12mo. 5. *Antidotary chyrurgical, containing variety of all Sorts of Medicines, &c.* Lond. 1589, 8vo. His works were collected and published in 1633, 4to.

BANSTEAD, a village of Surrey, noted for an abundance of walnut-trees; but more for its neighbouring downs, one of the most delightful spots in England, on account of its fine carpet ground, covered with short herbage, perfumed with thyme and juniper, which make the mutton of this spot very sweet, though small. It has several fens around it, and a prospect of several counties, including Windsor, Hampton-court, and London. These downs form a tract of thirty miles, extending, under different denominations, from Croydon to Farham. On that part of them near Banstead is a noted four-miles course. Banstead is thirteen miles S.S.W. of London.

BAPAUME, a town of France, in the department of the Straits of Calais, and late province of Artois, twelve miles S.E. of Arras. Long. 2. 35. E. Lat. 50. 8. N.

BARBARIUM (anc. geog.), a promontory of Lusitania, to the south of the mouth of the Tagus; now called *Cabo de Espichel*. W. long. 6. N. lat. 37.

BARBARUS (Francis), a noble Venetian, was a man of great fame in the 15th century, not only for learning, but likewise for a skillful address in the management of public affairs. He is author of a book *De Re Uxoribus*, and some *Specches*.

BARBARUS (Hermolaus), grandson of the preceding, one of the most learned men in the 15th century. The public employments he was entrusted with early, did not prevent him from cultivating polite learning with great application. As he was very skilful in the Greek, he undertook the most difficult translations, and began with a famous paraphrase upon Aristotle. He then attempted Dioctories, whose text he corrected, gave a translation of him, and added a commentary. But of all his works, there is none which has gained him so much reputation as that which he made upon Pliny; he corrected in him above 5000 passages, and occasionally restored 300 in Pomponius Mela. Pope Innocent VIII. to whom he was ambassador, conferred the patriarchate of Aquileia upon him. He was so imprudent as to accept of it without waiting for the consent of his superiors: though he could not be ignorant that the republic of Venice had

made laws to forbid all the ministers they sent to the court of Rome to accept any benefice. His superiors were inflexible; and not being able to gain any thing upon them, either by his flattery or his father's interest, the father died of grief, and the son soon followed him.

BARBARUS (Daniel), of the same family with the preceding, was patriarch of Aquileia, and famous for his learning. He was ambassador from Venice to England; and was one of the fathers of the council of Trent, where he acted with great zeal for the interest of the pope. He wrote, 1. A commentary upon Vitruvius. 2. *Catena Grecorum Patrum in quinquaginta Psalmos Latine versa*. 3. *La Prattica della Perspectiva*. He died in 1569, at 41 years of age.

BARBESUL (anc. geog.), a town and river of Bætica, and a colony in the resort of the Conventus Gaditanus in Spain; now *Marbella*, in Granada.

BARBEYRAC (John), was born in Bessiers, in Lower Languedoc, in 1674. He was made professor of law and history at Lausanne, in 1710; which he enjoyed for seven years, and during that time was three times rector: in 1717, he was professor of public and private law at Groningen. He translated into French the two celebrated works of Puffendorf, his *Law of Nature and Nations*, and his *Duties of a Man and a Citizen*; to both which he wrote excellent notes, and to the former an introductory preface. He translated also Grotius's treatise *De Jure Belli ac Pacis*, with large and excellent notes; and several of Tillotson's sermons. He wrote a work entitled *Traité de Jen*, two vols. 8vo.

BARBOUR (John), archdeacon of Aberdeen, was esteemed an elegant poet in the reign of David I. He wrote the history of Robert de Bruce, in an heroic poem, which is still extant, and which contains many facts and anecdotes omitted by other historians. The latest edition of this book is that of Glasgow, 8vo. printed in the year 1672. It is entitled, *The Acts and Life of the most victorious conqueror Robert Bruce, King of Scotland*; wherein also are contained the martial Deeds of the valliant Princes Edward Bruce, Sir James Dowglais, Earl Thomas Randal, Walter Steward, and sundry others. In one passage, he calls it a *romance*; but that word was then of good reputation: every body knows that the 'Romaunt of Romaunts' has been innocently applied to true history; as well as the 'Ballad of Ballads' to a sacred song.

BARCINO (anc. geog.), a town of the Terraconensis, in Spain, and capital of the Laetani. Now *Barcelona*. See that article.

BARCLAY (Alexander), a learned monk in the reign of Henry VIII. Where he was born, though of no great importance, was nevertheless a matter of virulent contention among his former biographers. Bale, who was his contemporary, is of opinion he was born in Somersetshire. There is indeed a village of his name, and a numerous family, in that county. Pitts thinks he was born in Devonshire.—Mackenzie is positive he was a Scotchman; but, without proof, unless we admit as such his name, *Alexander*. He was, however, educated in Oriel College, Oxford. After leaving the university, he went abroad, and continued some time in France, Italy, and Germany, where he acquired a competent knowledge of the languages of those countries, as appears from several translations of books, which he afterwards published. On his return to England, he was made chaplain to his patron the bishop of Tyne, who likewise appointed him a priest of St. Mary, at the college of Ottery, in Devonshire, founded by Grandison bishop of Exeter. After the death of his patron, he became a Benedictine monk of Ely. On the dissolution of that monastery, he first obtained the vicarage of St. Matthew, at Wokey in Somersetshire; and, in 1549,

being then doctor of divinity, was presented to the vicarage of Much Badew in Essex. In 1552 he was appointed rector of Allhallows, Lombard-street, which he lived to enjoy but a very short time. He died at Croydon in Surrey, in June 1552. He is generally allowed to have improved the English language, and to have been one of the politest writers of his time. He composed several original works; but was chiefly remarkable for his translations from the Latin, Italian, French, and German languages. His version from Sallust of the war of Jugurtha is accurate, and not without elegance. His lives of several faints, in heroic verse, are still unpublished. His *Stultifera Navis*, or *The Ship of Fools*, is the most singular of his performances. It was printed by Richard Pynson, at London, 1509, in folio; and contains a variety of wooden plates, which are worthy the inspection of the curious.

BARCLAY (William), a learned Civilian, was born in Aberdeenshire, in the year 1541. He spent the early part of his life, and much of his fortune, at the court of Mary queen of Scots, from whose favour he had reason to expect preferment. In 1573 he went over to France, and at Bourges commenced student of civil law under the famous Cujacius. He continued some years in that seminary; where he took a doctor's degree; and was soon after appointed professor of civil law in the university of Pont-à-Mousson, then first founded by the Duke of Lorraine. That prince afterwards made him counsellor of state, and master of requests. Barclay, in the year 1581, married Ann de Mallaville, a French lady, by whom he had a son, who became a celebrated author, and of whom the reader will find an account in the next article. This youth the Jesuits would gladly have received into their society. His father refused his consent, and for that reason these disciples of Jesus soon contrived to ruin him with the duke his patron. Barclay now embarked for Britain, where King James I. offered him considerable preferment, provided he would become a member of the church of England: but, not choosing to comply, he returned to France in 1604; and, soon after his arrival, was appointed professor of civil law in the university of Angers, where he died the year following, and was buried in the Franciscan church. He was esteemed a learned civilian; and wrote elaborately in defence of the divine right of kings, in answer to Buchanan and others. The titles of his works are, 1. *De regno et regali potestate*, &c. 2. *Commentarius in tit. pandectarum de rebus creditis, et de jurejurando*. 3. *De potestate papæ*, &c. 4. *Præmia in vitam Agricole*.

BARCLAY (John), son of the former, was, as we have above mentioned, so great a favourite of the Jesuits, that they used all their efforts to engage him in their society. His father would not consent, and carried his son with him into England, who was already an author, for he had published *A Commentary upon the Theatres of Statius*, and a Latin poem on the coronation of King James, and the first part of *Euphormio*, 1603. He returned to France with his father; and after his father's death went to Paris, and soon after came back to London: he was there in 1606. He published *The History of the Gunpowder Plot*, a pamphlet of six leaves, printed at Amsterdam. He published at London, in 1610, *An Apology for the Euphormio*, and his father's treatise *De potestate papæ*. And at Paris, 1612; he published a book entitled *Pielas*, in answer to Cardinal Bellarmine, who had written against William Barclay's book concerning the power of the pope. Two years after, he published *Icon Animorum*. He was invited to Rome by Pope Paul-V. and received a great deal of civility from Cardinal Bellarmine, though he had written against him. He died at Rome in 1621, while his *Argenis* was printing at Paris. This celebrated work has since gone through a great number of editions, and has

VOL. X.

been translated into most languages. M. de Peirese, who had the care of the first edition, caused the effigies of the author to be placed before the book; and the following distich, written by Grotius, was put under it:

*Gente Caledonia, Galles rotundus, hic est,
Romæ Romanus qui doctus ore loquitur.*

BARDON HILLS, in Leicestershire: these hills, which are to the N.W. part of the county, rise to a considerable height.

BAREGES, a village of France, in the department of the Upper Pyrenæes and late province of Bigorre. It is much frequented on account of its mineral baths. It is seated in a valley of the same name (which contains the little town of Luz and 17 villages), twelve miles S. of Bagneres.

BARUM (anc. geog.), a town of Apulia on the Adriatic; so called from the founders, who being expelled from the island Bora, built this town. It is now called Bari; see that article.

BARK (*Encycl.*). The bark of the oak has been long used in tanning leather, and even thought essential to that operation (see TANNING); but a different substance has been discovered, which answers the purpose full as well, and may be procured at a much cheaper rate; we mean oak saw-dust, or the chips of oak reduced to powder. This valuable secret was purchased by the Society for the Encouragement of Arts, &c. Much facility in the preparation of bark for the purposes of tanning has lately been occasioned by different patent inventions, of which we shall here give an account, in the words of the several specifications.

Mr. Weldon, of Lichfield, states his improvements on a machine or mill for grinding bark, and various other articles, for which he obtained a former patent, in the following way: "My former method of constructing mills for grinding bark (says he), is chiefly of cast-iron, the teeth or cutters thereof cast with them; and the method of keeping them sharp, or renewing their teeth, is to chip or cut them with a hammer and chisel; and the method of making and constructing what are commonly called steel-mills, for the purpose of grinding malt, &c. are chiefly made of malleable iron case-hardened, the teeth of which are cut or raised out of the solid by means of chisels and files, and are kept sharp by the same method. But in order to avoid these difficulties, and make them (the teeth) more durable and lasting, and that the user of such mills or machines may be able to sharpen his own mill or machine, and keep the same in repair without sending them to the maker, I have constructed them with loose or moveable teeth, which may be taken out at any time, and by grinding them on a common grinding-stone, may be sharpened and kept in order, or by replacing the teeth should they wear out, the machine will then be as good as new; and to shew the nature of my invention, I have added drawings on the opposite side thereof; but as the principle of the machine or mill for grinding bark is the same as that of my former patent, it is not necessary to describe any more of it than the manner in which the loose teeth are to be fixed, which may be the same as that described in the drawing for a corn mill, or by any other method I may think most proper. Fig. 1. (Plate 15) represents the different parts of a mill for grinding bark, corn, &c. and the manner in which it is constructed. A, is a hopper made of wood, tin, or sheet-iron, which receives the corn or any thing that is to be ground. B, is the axis of the ball or inner part of the mill, which may be made of wrought or cast iron. C, is a conical covering, which prevents the materials, to be ground, from lodging on the cap, which may be made of wood, tin, or sheet-iron. D, D, is a loose cap, which fastens and secures the loose teeth of the ball or inner part of the mill, by means of four screws represented by E.

E, represents one side of the ball or inner part of the mill filled with teeth. **G**, shows one half of the inner part of the mill without teeth, wherein may be seen the manner in which the teeth are kept in their places. **d d**, shews the substance of the metal, which is of cast-iron. **HH**, shews the bottom flanch that holds the teeth, and is cast with the body part of the cone. **a a a**, shews the outer cylinder, which is cast altogether, and shews in what manner the loose teeth **F, F**, are fixed in it. **I I**, is a flanch which fastens or holds the loose teeth of the outer part of the mill by means of fix screws, as shewn by fig. 3. **KK**, is the bridge which carries the inner part of the mill, and is fastened to the outer cylinder by means of two screws, **c, c**. **L**, is the lower part of an axis. **M**, the brads step on which the axis works. **N**, is a plate in which the regulating screw works, and is made of wrought iron. **O**, the regulating screw. Fig. 2. represents the under side of the outer cylinder, with the bridge **K**, and the box which contains the brads step **M**. Fig. 4. represents one of the loose teeth on the outer part of the mill. Fig. 5. represents one of the teeth on the inner part of the mill: these teeth may be made of cast-iron, wrought-iron, or steel, or any metal or materials that may be thought most proper. These mills or machines are not confined to any precise form or shape, and may be made of any metal or materials I may think most suitable. They may be worked either as hand-mills or horse-mills, or by any other power that can be applied to them."

Mr. Bagnall, of Wordley in Lancashire, has invented a mill or machine to chop bark, and grind, and riddle, and pound it; to beam or work green hides and skins out of the mauling or drench, and make them ready and fitting for the oufe or bark liquor; to beam sheep skins, and other skins, for the skinner's use; and for scouring and taking the bloom off or from tanned leather when in the currying state. See Plate 15.

Fig. 1. is a horizontal plan of the mill. Fig. 2. longitudinal section of it. Fig. 3. transverse section of it.

A, The water-wheel, by which the whole machinery is worked.

B, The shafts.

C, The pit-wheel, which is fixed on the water-wheel shaft **B**, and turns the upright shaft **E**, by the wheel **F**, and works the cutters and hammer by tapets.

D, The spur and bevil-wheel at the top of upright shafts.

E, The upright shaft.

F, The crown-wheel, which works in the pit-wheel **C**.

G, The spur-nut to turn the stones **I**.

P, The beam, with knives or cutters fixed at the end to chop or cut the bark, which said bark is to be put upon the cutters or grating **i**, on which said beam is to fall.

Q, The tryal that receives the bark from the cutters **i**, and conveys it into the hopper **H**, by which it descends through the shoe **J** to the stones **I**, where it is ground.

K, The spout, which receives the bark from the stones, and conveys it into the tryal **L**, which tryal is wired to sift or dress the bark, as it descends from the stones **I**.

M, The trough to receive the bark that passes through the tryal **L**.

R, The hammer, to crush or bruise the bark that falls into the dish **S**, which said dish is on the incline, so that the hammer keeps forcing it out of the lower side of the said dish, when bruised.

i, A trough to receive the dust and mofs that passes through the tryal **Q**.

T, The bevil-wheel, that works in the wheel **D**, which works the beam-knife by a crank **V** at the end of the shaft **n**.

W, The penetrating rod, which leads from the crank **V** to the start **x**.

x, The start, which has several holes in it to lengthen or shorten the stroke of the beam-knife.

y, The shaft, to which the slide rods **b, b**, are fixed by the starts **n, n**.

b, The slide rod, on which the knife **f** is fixed; which said knife is to work the hides, &c. On the knife are two springs **a, a**, to let it have a little play as it makes its stroke backwards and forwards, so that it may not scratch or damage the hides, &c.

z, Is a catch in slide-rod **b**, which catches on the arch-head **c**; and the said arch-head conveys the knife back without touching the hide, and then falls back to receive the catch again.

l, The roller to take up the slide-rod **b**, while the hides are shifting on the beam **b** by pulling at the handle **m**.

b, The beam to work the hides, &c. on. Each beam has four wheels **p, p**, working in a trough road **g, g**, and removed by the levers **c, c**. When the knife has worked the hide, &c. sufficiently in one part, the beam is then shifted by the lever **c** as far as is wanted.

d, A press, at the upper end of the beam, to hold the hide fast on the beam while working.

e, An arch-head, on which the slide-rod **b** catches.

f, The knife fixed on the slide-rod **b**, to work the hides, &c.

i, Cutters or grating to receive the bark for chopping.

The beam **P**, with knives or cutters, may either be worked by tapets, as described, or by the bevil-wheel **T**, with a crank, as **V**, to cut the same as shears.

The knife **f** is fixed at the bottom of the start, which is fixed on the slide rod **b**; the bottom of the start is split open to admit the knife, the width of one foot; the knife should have a gudgeon at each end, to fix in the open part of the start; and the two springs **a, a**, prevent the knife from giving too much way when working; the knife should be one foot long and four or five inches broad.

The arch-head **c** will shift nearer to, or farther from, the beam **b**, and will be fixed so as to carry the knife back as far as is wanted, or it may be taken away till wanted.

The roller **l** is taken up by pulling at the handle **m**, which takes up the slide-rod so high as to give head-room under the beam-knife. The handle may be hung upon a hook for that purpose. The slide-rod will keep running upon the roller all the time the hide is shifting; and when the hide is fixed the knife is put on the beam again by letting it down by the handle **m**. There may be two or more knives at work on one beam at the same time, by having different slide-rods. There should be two beams, so that the workman could be shifting one hide, &c. while the other was working. The beam must be flat, and a little on the incline. As to the breadth it does not matter, the broader it is the less shifting of the hides will be wanted, as the lever **c** will shift them as far as the width of the hide, if required. Mr. Bagnall has formed a kind of press **d**, to let down, by a lever, to hold the hide fast on each side of the knife if required, so that it will suffer the knife to make its back stroke without pulling the hide up as it comes back. The slide-rod may be weighted, to cause the knife to lay stress on the hide, &c. according to the kind and condition of the goods to be worked.

Hides and skins for the skinner's use are worked in the same way as for the tanners.

Scouring of tanned leather for the currier's use will be done on the beam the same as working green hides. It is only taking the knife away, and fixing a stone in the same manner as the knife by the said joint, and to have a brush fixed to go either before or after the stone. The leather will be better secured this way than by hand, and much sooner.

The whole machinery may be worked by water, wind, steam, or any other power. And that part of the machinery

Mr Weldon's improved Bark Mill.

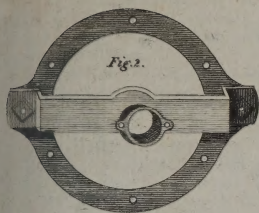


Fig. 2.

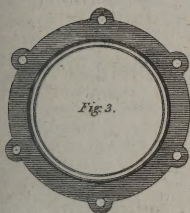


Fig. 3.

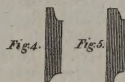


Fig. 4.



Fig. 5.

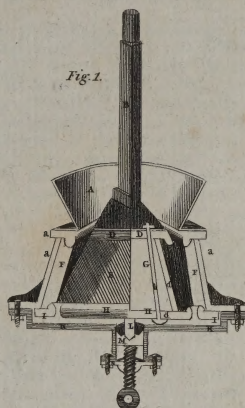


Fig. 1.

Mr Bagnall's Machine for grinding Bark &c.

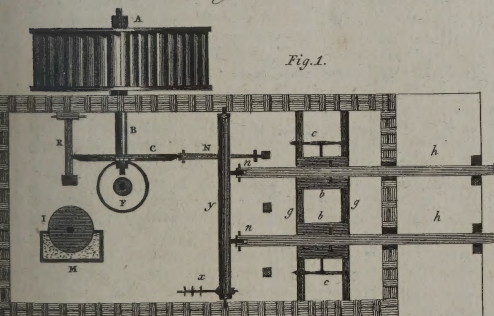


Fig. 1.

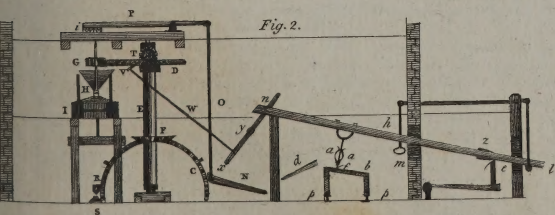


Fig. 2.

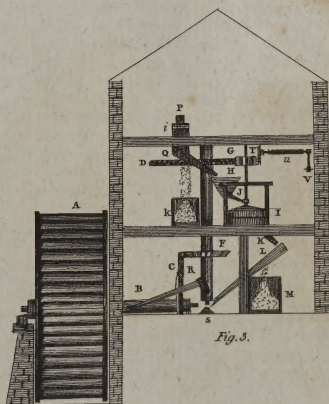


Fig. 3.

which relates to the beaming part of the hides, may be fixed to any horse bark-mill, or may be worked by a horse or other power separately.

The intention of working hides and skins upon the beam is to clean, and get out of them all the lime and dirt that can be got out, which is the principal part of the business for making good leather; the dirt will be got out much better, and the hides be made cleaner, this way than they can by hand, and at much less expence.

BARCKHAM (Dr. John), a learned divine and antiquary, born at Exeter about 1572, bred at Oxford, possessed successively of several preferments, and dying at Bocking in Essex, of which he was rector and dean, 1642. Though not very distinguished, he was yet a very accomplished man; an exact historian, a good herald, a great antiquary, and had an excellent collection of coins and medals, which he gave to Archbishop Laud, and which Laud gave to the university of Oxford. He was concerned in several works, though he never published his name. The historian Speed, at the conclusion of his work, makes his acknowledgments for the assistance he had from Barkham; whom he styles "a gentleman, composed of learning, virtue, and courtesy." The reigns of John and Henry II. are reckoned to be chiefly of his writing. He had also the chief hand in "Guillam's Display of Heraldry," published in 1610, folio.

BARLÆUS (Gasper), professor of philosophy at Amsterdam, and one of the best Latin poets of the 17th century. There was scarce any thing great that happened in the world while he lived, but he made a pompous elegy upon it, when reasons of state were no obstacle to it. He was a great defender of Arminius; and shewed his abilities in history by his relation of what passed in Brazil during the government of Count Maurice of Nassau, published 1647. He died the year after.

BARLOW (William), bishop of Chichester, descended of an ancient family in Wales, was born in the county of Essex. In his youth he favoured the reformation; and travelled to Germany to be instructed by Luther, and other preachers of the new doctrine. How long he continued a Protestant is uncertain: but from his letter to King Henry VIII. quoted below, it appears that he wrote several books against the church of Rome. However, he was a regular canon in the Augustine monastery of St. Osith in the county of Essex, and studied some time at Oxford with the brothers of that order, where he took the degree of doctor in divinity. He was then made prior of the convent of Bisham in Berkshire; and afterwards succeeded to the several priories of Blackmore, Typtree, Lega, Bromhole, and Havertwest. On the dissolution of abbeyes, he resigned not only with a good grace, but persuaded several other abbots to follow his example. King Henry was so pleased with his ready obedience on this occasion, that he sent him, in 1535, on an embassy to Scotland; in the same year, made him bishop of St. Asaph; in two months after, translated him to the see of St. David's, and in 1547 to that of Bath and Wells. During this time, our good bishop, as appears from a letter of his to the king, was, or pretended to be, a staunch Papist: it was written in 1533. However, when Edward VI. came to the crown, he was again a Protestant, and for that reason, on Queen Mary's accession, was deprived of his bishopric, and sent prisoner to the Fleet, where he continued some time. At length he found means to escape, and immediately joined the other English Protestants in Germany. When Queen Elizabeth ascended the throne, our prelate was raised to the see of Chichester, and soon after made first prebendary of the collegiate church of Westminster. He died in 1568, and was buried in the cathedral at Chichester. He had

five daughters, each of whom married a bishop. He wrote, 1. *The Buryal of the Masse*. 2. *The climbing up of Fryers and religious Persons ported with Figures*. 3. *Christian Homilies*. 4. *A book upon Cosmography*. 5. *The godly and pious Institution of a Christian Man, commonly called the Bishop's Book*; and several other works. He is said to be the translator of the apocrypha as far as the book of Wisdom. His letters to M. Parker are in manuscript in Corpus Christi College, Cambridge, Misc. l. 445.

BARLOW (William), a mathematician and divine, the son of the bishop of Chichester, was born in Pembrokeshire whilst his father was bishop of St. David's. In 1560 he was entered commoner of Balliol College in Oxford; and in 1564, took a degree in arts, which having completed by determination, he left the university and went to sea; but in what capacity is uncertain: however, he acquired considerable knowledge in the art of navigation. About the year 1573 he entered into orders; and became prebendary of Winchester and rector of Easton near that city. In 1588 he was made prebendary of Lichfield, which he exchanged for the place of treasurer of that church. Some years after he was made chaplain to Prince Henry, the son of King James I.; and in 1614, archdeacon of Salisbury. He was the first writer on the nature and properties of the magnet. Barlow died in the year 1625, and was buried in the church at Easton. His works are, 1. *The Navigator's Supply, containing many Things of principal Importance belonging to Navigation, and Use of divers Instruments framed chiefly for that Purpose*. 1597, 4to. Dedicated to Robert earl of Essex. 2. *Magnetical Advertisements, or diverse pertinent Observations and approved Experiments concerning the Nature and Properties of the Loadstone*. Lond. 1616, 4to. 3. *A brief Discovery of the idle Animadversions of Mark Ridley, M. D. upon a Treatise entitled Magnetical Advertisements*. 1618, 4to.

BARLOW (Thomas), born in 1607, was appointed fellow of Queen's College in Oxford in 1633; and two years after was chosen reader of metaphysics to the university. He was keeper of the Bodleian library, and in 1657 was chosen provost of Queen's College. After the restoration of King Charles II. he was nominated one of the commissioners for restoring the members unjustly expelled in 1648. He wrote at that time *The Case of Toleration in Matters of Religion*, to Mr. R. Boyle. In 1675, he was made bishop of Lincoln. After the popish plot, he published several tracts against the Roman-catholic religion; in which he shews an uncommon extent of learning, and skill in polemical divinity. Nevertheless, when the Duke of York was proclaimed king, he took all opportunities of expressing his affection toward him; but after the revolution he as readily voted that the king had abdicated his kingdom; and was very vigorous in excluding those of the clergy who refused the oaths from their benefices.

Mr. Granger observes, that "this learned prelate, whose nature designed for a scholar, and who acted in conformity with the bent of nature, was perhaps as great a master of the learned languages, and of the works of the celebrated authors who have written in those languages, as any man of his age. The greatest part of his writings, of which Mr. Wood has given us a catalogue, are against Popery; and his conduct for some time, like that of other Calvinists, appeared to be in direct opposition to the church of Rome. But after James ascended the throne, he seemed to approach much nearer to Popery than he ever did before. He sent the king an address of thanks for his declaration for liberty of conscience, and is said to have written reasons for reading that declaration. His compliances were much the same after the revolution. His moderation, to call it by the softest name, was very great;

indeed to great, as to bring the firmness of his character in question. But casuistry, which was his most distinguished talent, not only reconciles seeming contradictions, but has also been known to admit contradictions themselves. He was, abstracted from this laxity of principles, a very great and worthy man." He died at Buckden in Huntingdonshire, in the 85th year of his age.

BARLOW (Francis), an eminent English painter, was born in Lincolnshire. On his coming to London he was placed with one Shepherd, a limner; but his genius led him chiefly to drawing of birds, fish, and other animals. There are six books of animals from his drawings, and he painted some ceilings with birds for noblemen and gentlemen in the country. His etchings are numerous; his illustration of *Elop* is his greatest work. He died in 1702.—There is something pleasing in the composition and manner of this master, though neither is excellent. His drawing too is very indifferent; nor does he characterise any animal justly. His birds in general are better than his beasts.

BARNARD (Sir John). His first appearance on the public stage, on which he afterwards made such a distinguished figure, was in the year 1722, when he was chosen one of the representatives in parliament for the city of London; a trust which he continued to enjoy during six succeeding parliaments, and which he always discharged with equal integrity and ability. In 1725 he received the thanks of the common-council, for opposing a bill introducing a change in the method of conducting elections in the city of London. In 1727 he was chosen alderman of Dewgate-ward; and the next year prepared and presented to the Commons a bill for the better regulation and government of seamen in the merchant service.

In 1730 the court of Vienna having begun a negotiation in England for a loan of 400,000 pounds, a bill was proposed and enacted, prohibiting all his majesty's subjects from lending any sum of money to any foreign prince whatever, without licence obtained from his majesty, under his privy seal, or some greater authority. Violent opposition was made to this bill by a great number of members; among whom Mr. John Barnard (for the dignity of knighthood he obtained afterwards by his own merit) made no inconsiderable figure. He observed, that if the bill should pass in its present form, it would, in his opinion, open a channel for the Dutch to carry on a very lucrative branch of business to the prejudice of England: that the bill ought absolutely to name the emperor as the power prohibited to borrow; for that otherwise, all the other states of Europe would think themselves equally affected by this act, which would give it the air as if England was at war with all the world: that he was by no means for making the Exchequer a court of inquisition: he conceived it to be equally odious and unconstitutional, that subjects should be obliged to accuse themselves, and thereby incur the most severe penalties.

In the debate upon the famous excise scheme, projected by Sir Robert Walpole in 1733, Sir John shewed himself not more zealous for the trade of his country, than for the honour of those by whom it was principally conducted. While this affair was depending in parliament, the merchants of London, having been convened by circular letters, repaired to the lobby of the House of Commons, in order to solicit their friends to vote against the bill. Sir Robert Walpole, piqued at the impertinence of these gentlemen, threw out some reflections against the conduct of those whom he supposed to have been the means of bringing them thither; and at the same time insinuated, that the merchants themselves could be considered in no other light than that of *STURDY BEGGARS*. This expression was highly resented by all those in the opposition, and particularly by Sir John Barnard. In a word, he made so strenuous an op-

position to this unpopular and unconstitutional scheme, that, in conjunction with other members, he obliged the ministry entirely to lay it aside.

In 1735 he moved for leave to bring in a bill to limit the number of play-houses, and restrain the licentiousness of players, which was now increased to an amazing degree; and though the bill miscarried at that time, it was yet, about two years after, enacted into a law, which still continues in force. In 1736 he served with his brother-in-law, Sir Robert Goddichall, knight, alderman of Bishopsgate-ward, the office of sheriff of the city of London and county of Middlesex. In 1737 he formed a scheme for reducing the interest on the national debt; a project which, though it did not at that time succeed, was nevertheless afterwards carried into execution, to the great emolument of the trading part of the nation. In 1738 he served the high office of lord-mayor of London; and during his mayoralty had the misfortune to lose his lady, who was buried in a very grand manner at Clapham church. Upon the death of Sir John Thompson, knt, in 1749, he removed pursuant to an act of common-council, and took upon him the office of alderman of Bridgewater-without, and then became in name, as he might already be considered in reality, the father of the city; and in July 1758, to the inexpressible regret of his brother aldermen, and of all his fellow-citizens, he resigned his gown.

The same year, upon the motion of Sir Robert Ladbroke, then father of the city, the thanks of the court of aldermen were given to Sir John Barnard.

Upon his resigning the office of alderman, he retired in a great measure from public business, and having again received the thanks of the court of aldermen, continued to live chiefly in a private manner at Clapham; where, after having attained near the age of eighty, he died the 29th of August, 1766.

BARNAVELDT, an island of America, to the S. of *Tierra del Fuego*. Long 66, 58; W. Lat. 55, 49. S.

BARNES (Joshua), professor of the Greek language at Cambridge in the beginning of the 18th century. He was chosen queen's professor of Greek in 1695, a language he wrote and spoke with the utmost facility. His first publication was a whimsical tract, entitled *Cerania, or a new Discovery of the little Sort of People called Pygmies*. After that appeared his *Life of Edward III.* in which he introduces his hero making long and elaborate speeches.—In the year 1700, when he published many of his works, Mrs. Mason, of Hemmingford in Huntingdonshire, a widow lady of between 40 and 50, with a jointure of 200l. *per annum*, who had been for some time a great admirer of him, came to Cambridge, and desired leave to settle 100l. a-year upon him after her death; which he politely refused, unless she would likewise condescend to make him happy with her person, which was not very engaging. The lady was too obliging to refuse any thing to Joshua, for whom, she said, "the sun stood still," and they were accordingly married. Mr. Barnes wrote several other books besides those above mentioned, particularly, *Sacred Poems; The Life of Oliver Cromwell, the Tyrant; several dramatic pieces; A poetical Paraphrase on the History of Esther, in Greek Verse*, with a Latin translation, &c. &c. and he published editions of *Enripides, Anacreon, and Homer's Iliad and Odyssey*, with notes, and a Latin translation. He wrote with greater ease in Greek than even in English, and yet is generally allowed not to have understood the delicacies of that language. He was of such a humane disposition, and so unacquainted with the world, that he gave his only coat to a vagrant begging at his door. This excellent man died on the 3d of August, 1712, in the 58th year of his age.

BARNEVELDT (John d' Olden), the celebrated Dutch statesman, and one of the founders of the civil liberty of Holland. His patriotic zeal induced him to limit the autho-

nity of Maurice prince of Orange the second stadtholder of Holland, the partisans of that prince falsely accused him of a design to deliver his country into the hands of the Spanish monarch. On this absurd charge he was tried by 26 commissaries deputed from the seven provinces, condemned, and beheaded in 1619. His sons William and René, with a view of revenging their father's death, formed a conspiracy against the stadtholder, which was discovered. William fled: but René was taken and condemned to die; which fatal circumstance has immortalized the memory of his mother, of whom the following anecdote is recorded. She solicited a pardon for René; upon which Maurice expressed his surprise that she should do that for her son, which he had refused for her husband. To this remark, she replied with indignation, "I would not ask a pardon for my husband, because he was innocent. I solicit it for my son, because he is guilty."

BARNSELEY, a village of Gloucestershire, noted for large quarries of excellent free stone. It is four miles from Cirencester.

BARO, or BARON (Peter), professor of divinity in the university of Cambridge, in the 16th century, was born at Etampes in France, and educated in the university of Bourges, where he was admitted a licentiate in the law: but being of the Protestant religion, he was obliged to leave his native country to avoid persecution; and, withdrawing into England, was kindly entertained by Lord Burleigh. He afterwards settled at Cambridge; and, by the recommendation of his noble patron, was, in 1574, chosen Lady Margaret's professor there. For some years he quietly enjoyed his professorship: but there was at last raised a restless faction against him, by his opposing the doctrine of absolute predestination; which rendered his place so uneasy to him, that he chose to leave the university and to settle in London. He wrote, 1. *In Jonam Prophetam Prælectiones* xxxix. 2. *De Præstantia & Dignitate Divina Legis*; and other pieces. He died in London, about the year 1600.

BAROACH, a town in Hindoostan, in the N. W. of the Deccan, and on the S. bank of the river Nerbudda, 40 miles N. of Surat. Long. 72. 55. E. Lat. 21. 25. N.

BARON (Robert), a dramatic author, who lived during the reign of Charles I. and the protectorship of Oliver Cromwell. He received the earlier parts of his education at Cambridge, after which he became a member of the honourable society of Gray's-Inn. During his residence at the university, he wrote a novel called the *Cyprian Academy*, in which he introduced the two first of the dramatic pieces mentioned below. The third of them is a much more regular and perfect play, and was probably written when the author had attained a ripper age. The names of them are, 1. *Deorum Dona*, a masque. 2. *Gripius et Hegio*, a pastoral. 3. *Mirza*, a tragedy. Mr. Baron had a great intimacy with the celebrated Mr. James Howell, the great traveller, in whose collections of letters there is one to this gentleman, who was at that time at Paris. To Mr. Howell, in particular, and to all the ladies and gentlewomen in England in general, he has dedicated his romance.

BARON (Michael), an excellent comedian of Paris, was the son of Michael Baron, another comedian, who was a native of Ibbudun. He wrote some poems, and several theatrical pieces, which are printed together in two vols. 12mo. He died at Paris in 1729, aged 77.

BARON (Bonaventure) whose true name was Fitz-Gerald, was descended from a branch of the Fitz-Geralds, of Burnchurch, in the county of Kilkenny. He has been more remarkable in the learned world for his maternal genealogy, being the son of a sister of Luke Wadding, that eminent Franciscan friar, who, in the last century, demonstrated his

great abilities and industry, by many voluminous treatises of genius and labour. His uncle Wadding took great care of his education in his youth, which he saw rewarded by an uncommon diligence; and when he was of a proper age procured his admission into the Franciscan order, and sent for him to Rome; where he lived under his own eye, in the college of St. Isidore, a society of that order founded by himself in 1625, for the education of Irish students in the study of the liberal arts, divinity, and controversy, to serve as a seminary, out of which the mission into England, Scotland, and Ireland, might be supplied. Baron, after some time, grew into high reputation, and became especially remarkable for the purity of his Latin style, which first fell under the notice of the public, by means of the ignorance of a Roman cardinal; from which time his fame increased, and he became the author of many books both in prose and verse. He was for a considerable time prelector of divinity in the college aforesaid, and in all resided at Rome about sixty years, where he died on the 18th of March, 1696.

BARONI (Leonora), a celebrated singer and composer, was born at Naples, but spent the greatest part of her life at Rome. She was daughter of Adriana Baroni, of Mantua, baroness of Pian-carella; a lady also distinguished for her musical talents, and for her beauty furnished the fair.—Leonora had less beauty than her mother; but excelled her in her profound skill in music, the fineness of her voice, and the charmingness of her manner. She is said by Mr. Bayle to have been one of the finest singers in the world. She was, as well as her mother, celebrated by the wits, who strove to excel each other in recording her praises; and in 1639, there was published, at Bracciano, a collection of Latin, Greek, Italian, Spanish, and French poems, made up on her, under this title, *Applausi Poetici alle Glorie della Signora Leonora Baroni*. Among the Latin poems of Milton are no fewer than three entitled "Ad Leonoram Romæ canentum," wherein this lady is celebrated for her singing, with an allusion to her mother's exquisite performance on the lute. A fine eulogium on this accomplished woman is contained in a discourse on the Music of the Italians, printed with the life of Malherbe, and some other treatises, at Paris, 1672, in 12mo. This discourse was composed by Mr. Maugars, prior of St. Peter de Mac, the king's interpreter of the English language, and besides so famous a performer on the viol, that the king of Spain and several other sovereign princes of Europe desired to hear him. The character given by this person of Leonora Baroni is as follows: "She is endowed with fine parts; she has a very good judgment to distinguish good from bad music; she understands it perfectly well; and even composes, which makes her absolute mistress of what she sings, and gives her the most exact pronunciation and expression of the sense of her words. She does not pretend to beauty, neither is she disagreeable, or a coquet. She sings with a bold and generous modesty, and an agreeable gravity; her voice reaches a large compass of notes, and is exact, loud, and harmonious; she softens and raises it without straining or making grimaces. Her raptures and sighs are not lascivious; her looks have nothing impudent, nor does she transgress a virgin modesty in her gestures. In passing from one key to another, she shews sometimes the divisions of the enharmonic and chromatic kind with so much art and sweetness, that every body is ravished with that fine and difficult method of singing. She has no need of any person to assist her with a theorbo or viol, one of which is necessary to make her singing complete; for she plays perfectly well herself on both these instruments. In short, I have had the good fortune to hear her sing several times above thirty different airs, with second and third stanzas composed by

herself. I must not forget to tell you, that one day she did me the particular favour to sing with her mother and her sister. Her mother played upon the lute, her sister upon the harp, and herself upon the theorbo. This concert, composed of three fine voices, and of three different instruments, so powerfully transported my senses, and threw me into such raptures, that I forgot my mortality, and thought myself already among the angels enjoying the felicity of the blessed."

BARONIUS (Cæsar), a pious and learned cardinal, was born at Sore in 1538. He studied at Rome, and put himself under the discipline of St. Philip de Neri. In 1593 he was made general of the congregation of the Oratory by the resignation of the founder Philip de Neri. Pope Clement VIII. made him his confessor, and created him a cardinal in 1596. He was afterwards made librarian to the Vatican; and died in 1605, at 68 years of age. He wrote several works, the principal of which is his *Annales Ecclesiastici*, from A.D. 1 to 1198, in twelve vols. folio; which has been abridged by several persons, particularly by Henry Spondæus, Bezovius, and Ludovico Aurelio.

BARRATIERE (Philip), a most extraordinary instance of the early and rapid exertion of mental faculties. This surprising genius was the son of Francis Barratiere, minister of the French church at Schwobach, near Nuremberg, where he was born January 10, 1721. The French was his mother tongue, together with some words of High Dutch; but by means of his father insensibly talking Latin to him, it became as familiar to him as the rest; so that, without knowing the rules of grammar, he, at four years of age, talked French to his mother, Latin to his father, High Dutch to the maid or neighbouring children; and all this without mixing or confounding the respective languages. About the middle of his fifth year he acquired Greek in like manner; so that in fifteen months he perfectly understood all the Greek books in the Old and New Testament, which he readily translated into Latin. When he was five years and eight months old, he entered upon Hebrew; and in three years' time was so expert in the Hebrew text, that from a Bible without points, he could give the sense of the original in Latin or French; or translate extempore the Latin or French versions into Hebrew, almost word for word; and had all the Hebrew psalms by heart. He composed at this time a dictionary of rare and difficult Hebrew words, with critical remarks and philological observations, in about 400 pages, in 4to; and, about his tenth year, amused himself for twelve months with the rabbinical writers. With these he intermixed a knowledge of the Chaldaic, Syriac, and Arabic; and acquired a taste for divinity and ecclesiastical antiquity, by studying the Greek fathers, and councils of the first four ages of the church. In the midst of these occupations, a pair of globes coming into his possession, he could in eight or ten days' time resolve all the problems on them; and in about three months, in Jan. 1735, devised his project for the discovery of the longitude, which he communicated to the Royal Society at London and the Royal Academy of Sciences at Berlin. In June 1737 he was matriculated in the university of Altorf; and at the close of the year 1732 he was presented by his father at the meeting of the reformed churches of the circle of Franconia; who, astonished at his wonderful talents, admitted him to assist in the deliberations of the synod; and to preserve the memory of so singular an event, it was ordered to be registered in their acts. In 1734 the Margrave of Brandenburg Anspach granted this young scholar the use of whatever books he wanted from the Anspach library, together with a pension of fifty florins, which he enjoyed three years; and his father receiving a call to the French church at Stetin in Pomerania, young Barratiere was, on the journey, admitted master of

arts, with universal applause, at the university of Hall: at Berlin, he was honoured with several conversations with the King of Prussia, and was received into the royal academy. Towards the close of his life he acquired a taste for medals, inscriptions, and antiquities; metaphysical enquiries, and experimental philosophy, intervening occasionally between these studies. He wrote several essays and dissertations; made astronomical remarks, and laborious calculations; took great pains toward a history of the heresies of the anti-trinitarians, and of the thirty-years' war in Germany: his last publication, which appeared in 1740, was on the succession of the bishops of Rome. The final work he engaged in, for which he had gathered large materials, was *Enquiries concerning the Egyptian Antiquities*. But the subsistence of this blazing meteor was now almost exhausted: he was always weak and sickly; and died October 5, 1740, aged nineteen years eight months and sixteen days. He published eleven different pieces, and left twenty-six MSS. on various subjects, the contents of which may be seen in his life written by M. Forney, professor of philosophy at Berlin.

BARRE (Louis François Joseph de la), of Tournay, author of several works printed at Paris. Amongst others, *Imper. Orientale, Recueil des Médailles des Empereurs, Mémoires* for the history of France, &c. He died in 1738.

BARRINGTON (John Shute), lord viscount, a nobleman of considerable learning, and author of several books, was the youngest son of Benjamin Shute, merchant, youngest son of Francis Shute, of Upton, in the county of Leicester, esq. He was born at Theobalds in Hertfordshire, in 1678, and received part of his education at Utrecht, as appears from a Latin oration which he delivered at that university, and published there in 1698, in 4to. After his return to England, he applied himself to the study of the law in the Inner Temple. In 1701 he published, but without his name, *An Essay upon the Interest of England, in Respect to Protestants dissenting from the established Church*, 4to. This was reprinted two years after, with considerable alterations and enlargements. Some time after this he published another piece, in 4to. entitled *The Rights of Protestant Dissenters*, in two parts. During the prosecution of his studies in the law, he was applied to by Queen Anne's whig ministry, at the instigation of Lord Somers, to engage the Presbyterians in Scotland to favour the important measure, then in agitation, of an union of the two kingdoms. Flattered, at the age of twenty four, by an application which shewed the opinion entertained of his abilities and influence by the greatest lawyer and statesman of the age, he readily sacrificed the opening prospects of his profession, and undertook the arduous employment. The happy execution of it was rewarded, in 1708, by the place of commissioner of the customs; from which he was removed by the Tory administration, in 1711, for his avowed opposition to their principles and conduct. How high Mr. Shute's character stood in the estimation even of those who differed most widely from him in religious and political sentiments, appears from the testimony borne to it by Dr. Swift. In the reign of Queen Anne, John Wildman, of Becket, in the county of Berks, esq. adopted him for his son, after the Roman custom, and settled his large estate upon him, though he was no relation, and is said to have been but slightly acquainted with him. Some years after he had another considerable estate left him by Francis Barrington, of Tofts, esq. who had married his first cousin, and died without issue. This occasioned him to procure an act of parliament, pursuant to the deed of settlement, to assume the name and bear the arms of Barrington. On the accession of King George, he was chosen member of

parliament for the town of Berwick-upon-Tweed, July 5, 1717, he had a reversionary grant of the office of master of the rolls, in Ireland, which he surrendered December 10, 1731. King George was also pleased, by privy seal, dated at St. James's, June 10, and by patent at Dublin, July 1, 1720, to create him Baron Barrington, of Newcastle, and Viscount Barrington, of Ardglass. In 1722 he was again returned to parliament as member for the town of Berwick; but in 1723, the House of Commons taking into consideration the affair of the Harburgh lottery, a very severe and unmerited censure of expulsion was passed upon his lordship, as sub-governor of the Harburgh company, under the Prince of Wales. In 1725 he published, in two volumes 8vo, his *Miscellanea Sacra*; or a new method of considering so much of the history of the Apostles, as is contained in Scripture; and in an abstract of their history, an abstract of that abstract, and four critical essays. In 1725 he published, in 8vo, *An Essay on the several Dispensations of God to Mankind*. He sometimes spoke in parliament, but appears not to have been a frequent speaker. He died at his seat in Berkshire, after a short illness, December 4, 1734, in the 66th year of his age.

He married Anne, eldest daughter of Sir William Daines, by whom he left six sons and three daughters. William, his eldest son, succeeded to his father's honours; was elected, soon after he came of age, member for the town of Berwick, and afterwards for Plymouth; and, in the late and present reigns, has passed through the successive offices of lord of the admiralty, master of the wardrobe, chancellor of the exchequer, treasurer of the navy, and secretary at war. Francis, the second, died young. John, the third, was a major-general in the army, commanded the land forces at the reduction of the island of Guadaloupe, in 1758, and died in 1764. Daines, the fourth, king's counsel, and one of the justices of the grand session for the counties of Chester, &c. is author of, 1. *Observations upon the Ancient Statutes*, 1766; a valuable work, reprinted in the same year, and again in 1769 and 1775. 2. *The Naturalist's Journal*, 1767, 4to. 3. *Directions for collecting Specimens of Natural History*, 1772, 4to. 4. *The Anglo-Saxon Version of Orosius, with an English Translation and Notes*, 1773, 8vo. 5. *Several Tracts relative to the Probability of reaching the North Pole*, 4to. 1775, &c. which are collected and enlarged in a volume of *Miscellanies*, 1780, 4to. 6. *Proposed Forms of Registers for Baptisms and Burials*, 1781, 4to. He is also author of many curious papers in the philosophical transactions, and *Archæologia*; some of which are likewise incorporated in the volume of *Miscellanies*.—Samuel, the fifth, was vice admiral of the white, and greatly distinguished himself in the three last wars. Shute, the sixth, had his education at Eton school, and the university of Oxford; took orders in 1756, the degree of LL.D. in 1762, was promoted to the bishopric of Llandaff in 1769, and translated to Salisbury in 1782.

BARRINGTON (Samuel), a British admiral, was fifth son of John the first Lord Viscount Barrington, by Anne, daughter and coheir of Sir William Daines. The family was originally Norman, and of great antiquity and respect; their name was Shute, and many honourable memorials of their eminence, both in arms and letters, are preserved in Normandy, as well as in England: one of the ancestors of Admiral Barrington was a judge in the reign of Queen Elizabeth. The admiral's father, being adopted by Francis Barrington, esq. of Tots in the county of Essex, who married his cousin, on succeeding to the estate, assumed, in compliance with the terms of the settlement, the name and arms of Barrington: this too was a family of great honour

and distinction, united in blood with the Plantagenets, by a marriage with the great grand-daughter of the Duke of Clarence, brother to Edward IV. Besides the Barrington estate, he inherited the property of John Wildman, esq. of Beckett in the county of Berks, and was raised to the peerage in 1720. The Honourable Samuel Barrington was born in the year 1720; electing the naval profession, he was in 1747 appointed a post captain, and colonel of the Chatham division of marines in 1770. In the room of Lord Howe, who was then made an admiral. On the 23d of January, 1778, he was created rear-admiral of the white, and on the 20th of the same month, rear-admiral of the red. He was immediately sent to the West Indies, where his valour, prudence, and good conduct, gained him the highest reputation: he distinguished himself particularly in the arduous and important exploit of taking St. Lucia in 1778, an enterprise so difficult, and exposed to such opposition, as would have rendered a failure perfectly excusable. While on this station he was, in the month of February, 1779, appointed vice-admiral of the blue, and in September, 1780, vice-admiral of the white. The ferment of parties during the last war occasioned many unexpected refusals of promotion, and as Admiral Barrington was intimately connected with Lord Shelburne, Colonel Barry, and several other leading men in opposition, it may possibly be attributed to this circumstance that he refused the command of the Channel fleet, which was offered to him after the resignation of Admiral Geary in August, 1783, and on his declining to accept it, conferred on Admiral Darby. In 1782 he served under Lord Howe, and distinguished himself in the memorable relief of Gibraltar. The termination of the war put a period to Admiral Barrington's active services. In February, 1786, he was made lieutenant-general of marines; and on the 24th of September, 1787, admiral of the blue. During the last ten years, his ill state of health obliged him to decline all naval command; but as he was in the strictest habits of intimacy with the then illustrious commander of the Channel fleet, it is to be supposed that the benefit of his talents and experience was not entirely lost to the country. Admiral Barrington was never married: he died the 16th of August, 1801. Few families have displayed so much of talent and success as that of Barrington, during the last generation. John, the first viscount, was a man of great abilities, and an elegant writer: his second son died young; his third attained the rank of major-general, and was lieutenant-governor of Berwick; his fourth, Daines, was an author of great eminence, king's counsel, a Welsh judge, and judge of Chester; his sixth son, Shute, was successively bishop of Llandaff, Salisbury, and Durham, which see he now fills.

BARROW (Isaac), bishop of St. Asaph, in the reign of Charles II. was son of Isaac Barrow, of Spiney-abbey in Cambridgeshire, and uncle of the famous Dr. Isaac Barrow, master of Trinity College, in Cambridge. He had his education in Peter-house, in Cambridge, and became fellow of that college; but was ejected by the Presbyterians, about the year 1643; whereupon going to Oxford, he was appointed one of the chaplains of New College, by the Warden Dr. Pink. It is said he was created bachelor of divinity in that university, the 23d of June, 1646; but his name is not to be found in the register. He continued at Oxford till the garriſon of that place surrendered to the parliament, after which time he shifted from place to place, and suffered with the rest of the royal and orthodox clergy till the restoration of King Charles II. when he was not only restored to his fellowship in Peter-house, but elected likewise one of the fellows of Eton College, near Windsor: July the 5th, 1663, he was consecrated bishop of the Isle of Man, in Henry VIII's chapel,

at Westminster; and the year following he was appointed, by Charles earl of Derby, governor of the Isle of Man; which office he discharged with great reputation all the time he held that see, and some time after his translation to that of St. Asaph. He held his fellowship of Eton in commendam with the bishopric of Man, and was a considerable benefactor to that island, and especially the clergy thereof. Afterwards going into England for the sake of his health, and lodging in a house belonging to the Countess of Derby, in Lancashire, called Cross-hall, he there received the news of his majesty's conferring on him the bishopric of St. Asaph, to which he was translated March 21st, 1660, and to which diocese he was no inconsiderable benefactor. This worthy prelate died in the 67th year of his age, at Shrewsbury, the 24th of June, 1680.

BARRY (Girald), commonly called *Giraldus Cambrensis*, i. e. *Girald of Wales*, an historian and ecclesiastic in the reigns of Henry II. and Richard I. was born at the castle of Mainarper, near Pembroke, A. D. 1146. By his mother he was descended from the princes of South Wales; and his father, William Barry, was one of the chief men of that principality. Being a younger brother, and intended for the church, he was sent to St. David's, and educated in the family of his uncle, who was bishop of that see. He acknowledges, in his history of his own life and actions, that in his early youth he was too playful; but being severely reproached for it by his preceptors, he became a very hard student, and greatly excelled all his school-fellows in learning. When he was about 20 years of age, he was sent, A. D. 1166, for his further improvement, to the university of Paris; where he continued three years, and became, according to his own account, a most excellent rhetorician; which rendered him very famous. On his return into Britain, he entered into holy orders, and obtained several benefices both in England and Wales. Observing, with much concern, that his countrymen, the Welsh, were very backward in paying the tithes of wool and cheese, which he was afraid would involve them in eternal damnation, he applied to Richard archbishop of Canterbury, and was appointed his legate in Wales for rectifying that disorder, and for other purposes. He executed this commission with great spirit; excommunicating all, without distinction, who refused to save their souls by surrendering the tithes of their cheese and wool. Not fastidious with enriching, he also attempted to reform the clergy; and dilated the Archdeacon of Brechin to the archbishop, for the unpardonable crime of matrimony; and the poor old man, refusing to put away his wife, was deprived of his archdeaconry; which was bestowed upon our zealous legate. In discharging the duties of this new office, he acted with great vigour, which involved him in many quarrels; but, if we may believe himself, he was always in the right, and always victorious. His uncle, the bishop of St. David's, dying, A. D. 1176, he was elected his successor by the chapter; but this election having been made without the permission, and contrary to the inclination of Henry II. our author prudently declined to insist upon it, and went again to Paris to prosecute his studies, particularly in the civil and canon law, and theology. He speaks with great raptures of the prodigious fame he acquired by his eloquent declamations in the schools, and of the crowded audiences who attended them, who were at a loss to know whether the sweetness of his voice, the beauty of his language, or the irresistible force of his arguments, were most to be admired. Having spent about four years at Paris, he returned to St. David's; where he found every thing in confusion; and the bishop being expelled by the people, he was appointed administrator by the Archbishop of Canterbury, and governed the diocese in that capacity to A. D. 1184, when the bishop was restored. About the same time he was called to court by Henry II. appointed one of his chap-

lains, and sent into Ireland, A. D. 1185, with Prince John. By this prince he was offered the united bishoprics of Fernes and Leighlin; but declined them, and employed his time in collecting materials for his Topography of Ireland, and his History of the conquest of that island. Having finished his Topography, which consisted of three books, he published it at Oxford, A. D. 1187, in the following manner, in three days. On the first day he read the first book to a great concourse of people, and afterwards entertained all the poor of the town; on the second day he read the second book, and entertained all the doctors and chief scholars; and, on the third day, he read the third book, and entertained the younger scholars, soldiers, and burghers. "A most glorious spectacle!" (says he), which revived the ancient times of the poets, and of which no example had been seen in England." He attended Baldwin archbishop of Canterbury in his progress through Wales, A. D. 1186, in preaching a crusade for the recovery of the Holy Land; in which, he tells us, he was far more successful than the primate; and particularly, that the people were prodigiously affected with his Latin sermons, which they did not understand, melting into tears, and coming in crowds to take the cross. Although Henry II. as our author assures us, entertained the highest opinion of his virtues and abilities, yet he never would advance him to any higher dignity in the church, on account of his relation to the princes and great men of Wales. But on the accession of Richard I. A. D. 1189, his prospects of preferment became better; for he was sent for by that prince into Wales to preserve the peace of that country, and was even joined in commission with William Longchamp, bishop of Ely, as one of the regents of the kingdom. He did not, however, improve this favourable opportunity; refusing the bishopric of Bangor in A. D. 1190, and that of Landaff the year after, having fixed his heart on the see of St. David's, the bishop of which was very old and infirm. In A. D. 1192, the state of public affairs, and the course of interest at court, became so unfavourable to our author's views, that he determined to retire. At first he resolved to return to Paris to prosecute his studies; but meeting with some difficulties in this, he went to Lincoln, where William de Monte read lectures in theology with great applause. Here he spent about six years in the study of divinity, and in composing several works. The see of St. David's, which had long been the great object of his ambition, became vacant, A. D. 1198, and brought him again upon the stage. He was unanimously elected by the chapter; but met with so powerful an adversary in Hubert archbishop of Canterbury (who opposed his promotion with great violence), that it involved him in a litigation, which lasted five years, cost him three journeys to Rome, at a great expence, and in which he was at last defeated, A. D. 1203. Soon after this he retired from the world, and spent the last 17 years of his life in a studious privacy, composing many books, of which we have a very correct catalogue in the Biographia Britannica. That Girald of Wales was a man of uncommon activity, genius, and learning, is undeniable; but these and his other good qualities were much tarnished by his insufferable vanity, which must have been very offensive to his contemporaries, as it is highly disgusting to his readers.

BARSANTI (Francisco), an eminent musical performer and composer, was born at Lucca about the year 1690. He studied the civil law in the university of Padua; but, after a short stay there, chose music for his profession. Accordingly he put himself under the tuition of some of the ablest masters in Italy; and having attained to a considerable degree of proficiency in the science of practical composition, took a resolution to settle in England, and came thither with Geminiani, who was also a Lucesse, in the year 1714. He was a good

performer on the hautboy, and also on the flute; in the former capacity he found employment in the opera band, and in the latter derived considerable advantages by teaching. He published, with a dedication to the Earl of Burlington, six solos for a flute with a thorough-bass, and afterwards six solos for a German flute and a bass. He also made into sonatas, for two violins and a bass, the first six solos of Geminiani. He continued many years a performer at the opera-house; at length, reflecting that there was a prospect of advantage for one of his profession in Scotland, he went thither; and, with greater truth than the fame is ascribed of David Rizzio, may be said to have meliorated the music of this country, by collecting and making basses to a great number of the most popular Scots tunes. About the year 1750 Barfanti returned to England; but, being advanced in years, he was glad to be taken into the opera band as a performer on the tenor violin; and in the summer season into that of Vauxhall. At this time he published twelve concertos for violins; and shortly after, *Sei Antifone*, in which he endeavoured to imitate the style of Palestrina, and the old composers of motets; but from these publications so little profit resulted, that, towards the end of his life, the industry and economy of an excellent wife, whom he had married in Scotland, and the studies and labours of a daughter, whom he had qualified for the profession of a singer, but who became an actress at Covent-Garden, were his chief support.

BARTAS (William de Saluste du), a French poet, who lived in the 16th century. He was employed by Henry IV. of France in England, Denmark, and Scotland; and commanded a troop of horse in Gascony, under the Marechal de Montignan. He was a Calvinist; and died in 1590, aged 46. He wrote a great number of poems; the most famous of which are, 1. *The Week*, or the Creation of the World, in seven books. 2. *The Poem of Judith*; and, 3. *The Battle of Ivry*, gained by Henry IV. in 1590. Du Bartas wrote in a bombast style.

BARTH, or BART (John), a brave fisherman of Dunkirk, who rose to the rank of an admiral; and is celebrated for his signal valour and naval exploits, in the annals of France. He died in 1702, aged 51.

BARTHIUS (Caspar), a very learned and copious writer, born at Custrin in Brandenburg, the 22d of June, 1576. Mr. Baillet has inserted him in his *Enfens Célèbres*; where he tells us, that at 12 years of age he translated David's Psalms into Latin verse of every measure, and published several Latin poems. Upon the death of his father (who was professor of civil law at Francfort, counsellor to the Elestor of Brandenburg, and his chancellor at Custrin) he was sent to Gotha, then to Eisenach, and afterwards, according to custom, through all the different universities in Germany. When he had finished his studies, he began his travels; he visited Italy, France, Spain, England, and Holland, improving himself by the conversation and works of the learned in every country. He studied the modern as well as ancient languages, and his translations from the Spanish and French shew that he was not content with a superficial knowledge. Upon his return to Germany, he took up his residence at Leipzig, where he led a retired life, his passion for study having made him renounce all sort of employment. He wrote a vast number of books; the principal of which are, 1. His *Adversaria*, a large volume in folio; the second and third volumes of which he left in manuscript. 2. A Translation of *Æneas* Gæzæus. 3. A large volume of Notes upon Claudian, in 4to. 4. Three large volumes upon Statius, &c. He died at Leipzig in 1658, aged 71.

BARTHOLINUS (Caspar), a learned physician and anatomist in the 17th century, was born at Malmoe, a town in the Vol. X.

province of Schonen, which then belonged to Denmark. At three years of age he had such a quick capacity, that in 14 days he learned to read; and in his 13th year he composed Greek and Latin orations, and pronounced them in public. When he was about 18, he went to the university of Copenhagen, and afterwards studied at Rostock and Wirtenberg. He next set out upon his travels; during which he neglected no opportunity of improving himself at the different universities to which he came, and every-where receiving marks of respect. He was in 1613 chosen professor of physic in that university, which he enjoyed 11 years; when, falling into a dangerous illness, he made a vow, that if it should please God to restore him, he would solely apply himself to the study of divinity. He recovered, and kept his word; and soon after obtained the professorship of divinity, and the canonry of Rostock. He died July 13, 1629, after having written several small works, chiefly on metaphysics, logic, and rhetoric.

BARTHOLINUS (Thomas), a celebrated physician, son of the former, was born at Copenhagen in 1616. After studying some years in his own country, he in 1637 went to Leyden, where he studied physic during three years. He then travelled into France; and resided two years at Paris and Montpellier, in order to improve himself under the famous physicians of those universities. Afterwards going to Italy, he continued three years at Padua; and at length went to Basil, where he obtained the degree of doctor of philosophy. Soon after he returned to Copenhagen; where, in 1647, he was appointed professor of the mathematics; and next year was nominated to the anatomical chair, an employment better suited to his genius and inclination; which he discharged with great assiduity for 13 years, and distinguished himself by making several discoveries with respect to the lacteal veins and lymphatic vessels. His close application, however, having rendered his constitution very infirm, he, in 1661, resigned his chair; but the king of Denmark allowed him the title of *honorary professor*. He now retired to a little estate he had purchased at Hagested, near Copenhagen, where he hoped to have spent the remainder of his days in peace and tranquillity; but his house being burnt in 1650, his library, with all his books and manuscripts, was destroyed. In consideration of this loss, the king appointed him his physician, with a handsome salary, and exempted his land from all taxes; the university of Copenhagen also appointed him their librarian; and in 1675 the king did him the honour to give him a seat in the grand council of Denmark. He wrote, 1. *Anatomia Caspari Bartholini Parentis novis Observationibus primum locupletata*, 8vo. 2. *De Monstris in Natura et Medicina*, 4to. 3. *De Armillis Veterum, præsertim Danorum Schedium*, 8vo.; and several other works. This great man died on the 4th of December, 1680.

BARTHOLOMEW ISLE, a small island, one of the New Hebrides, lying in Bougainville's Passage, between Mallicolo and the Tierra del Espíritu Santo of Quiros. Long. 167. 24. E. Lat. 15. 42. S.

BARTOLOCCI (Julius), a learned monk, and professor of Hebrew at Rome, was born at Celeno in 1613; and distinguished himself by writing an excellent Hebrew and Latin catalogue of the Hebrew writers and writings, in four volumes, a continuation of which was performed by Imbonati his disciple. He died in 1687.

BARTON (Elizabeth), commonly called The Holy Maid of Kent, was a religious impostor in the reign of Henry VIII. whose history may be very edifying. She was a servant at Aldington in Kent, and had long been troubled with convulsions, which distorted her limbs and countenance in the strangest manner, and threw her body into the most violent agitations; and the effect of the disorder was such, that even after the recovered she counterfeited the same appearance.

Masters, the minister of Aldington, with other ecclesiastics, thinking her a proper instrument for their purpose, persuaded her to pretend that what she said and did was by a supernatural impulse, and taught her to act her part in the most perfect manner. Thus she would lie as it were in a trance for some time; then, coming to herself, after many strange contortions, would break out into pious ejaculations, hymns, and prayers; sometimes delivering herself in set speeches, sometimes in uncouth monkish rhymes. She pretended to be honoured with visions and revelations, to hear heavenly voices, and the most ravishing melody. She declaimed against the wickedness of the times, against heresy and innovations; exhorting the people to frequent the church, to hear masses, to use frequent confessions, and to pray to our lady, and all the saints. All this artful management, together with great exterior piety, virtue, and austerity of life, not only deceived the vulgar, but many far above the vulgar, such as Sir Thomas More, Bishop Fisher, Archbishop Warkam; the last of whom appointed commissioners to examine her. She was now instructed to say, in her counterfeit trances, that the blessed Virgin had appeared to her, and assured her that she should never recover till she went to visit her image, in a chapel dedicated to her in the parish of Aldington. Thither the accordingly repaired, processional, and in pilgrimage, as it were, attended by above three thousand people, and many persons of quality of both sexes. There she fell into one of her trances, and uttered many things in honour of the saints, and the Popish religion: for herself she said, that, by the inspiration of God, she was called to be a nun, and that Dr. Bocking was to be her ghostly father. Dr. Bocking was a canon of Christchurch, in Canterbury, and an associate in carrying on the imposture. Meanwhile, the archbishop was so satisfied with the reports made to him about her, as to order her to be put into the nunnery of St. Sepulchre, Canterbury; where she pretended to have frequent inspirations and visions, and also to work miracles for all such as would make a profitable vow to our Lady, at the aforesaid chapel, in the parish of Aldington.

The priests, her managers, having thus succeeded in the imposture, now proceeded to the great object of it; and Elizabeth Barton was directed publicly to announce, how God had revealed to her, that, "in case the king should divorce Queen Catherine of Arragon, and take another wife during her life, his royalty would not be of a month's duration, but he should die the death of a villain." Bishop Fisher, and others, in the interest of the queen, and of the Romish religion, hearing of this, held frequent meetings with the nun and her accomplices, and at the same time seduced many persons from their allegiance, particularly the fathers and nuns of Sion, the Charterhouse, and Sheen, and some of the observants at Richmond, Greenwich, and Canterbury. One Peto, preaching before the king at Greenwich, denounced heavy judgments against him to his face; telling him, that "he had been deceived by many lying prophets, while himself, as a true Micaiah, warned him, that the dogs should lick his blood, as they had licked the blood of Ahab." Henry bore this outrageous insult with a moderation very remarkable for him: but, to undeceive the people, he appointed Dr. Curwin to preach before him the Sunday following, who justified the king's proceedings, and branded Peto with the epithets of "rebel, slanderer, dog, and traitor." Curwin, however, was interrupted by a friar, and called "a lying prophet, who sought to establish the succession to the crown upon adultery;" and he proceeded with such virulence, that the king was obliged to interpose, and command him to be silent: yet, though Peto and the friar were afterwards summoned before the council, they were only reprimanded for their insolence.

Encouraged by this lenity of the government, the ecclesi-

astics in this conspiracy resolved to publish the revelations of the nun, in their sermons, throughout the kingdom: they had communicated them to the pope's ambassadors, to whom also they introduced the maid of Kent; and they exhorted Queen Catharine to persist in her resolutions. At length this confederacy began to be a very serious affair, and Henry ordered the maid and her accomplices to be examined in the star-chamber. Here they confessed all the particulars of the imposture, and afterwards appeared upon a scaffold erected at St. Paul's Cross, where the articles of their confession were publicly read in their hearing. Thence they were conveyed to the Tower, until the meeting of parliament; who, having considered the affair, pronounced it a conspiracy against the king's life and crown. The nun, with her confederates, Masters, Bocking, Deering, &c. were attainted of high treason, and executed at Tyburn, April 20, 1534; where the confessed the imposture, laying the blame on her accomplices the priests, and craving pardon of God and the king.

BARWICK (John), an eminent English divine in the seventeenth century, and dean of St. Paul's, was born at Wetherlack, a little village in Westmoreland, the 20th of April, 1612. He was sent to Sedberg school in Yorkshire, where, under the care of a tolerable master, he gave early marks both of genius and piety. In the year 1631, and the eighteenth of his own age, he was admitted of St. John's College at Cambridge, under the tuition of Mr. Thomas Fothergill, who proved at once a guardian and a preceptor, supplying his necessities as well as instructing him in learning. In 1635 he became bachelor of arts, and April the 5th, 1636, he was created fellow. In 1638 he took the degree of master of arts. When the civil war broke out, and the king wrote a letter to the university, acquainting them that he was in extreme want, Mr. Barwick concurred with those loyal persons who first sent him a small supply in money, and afterwards their college plate; and upon information had, that Mr. Cromwell, afterwards the Protector, lay with a party of foot at a place called Lower Hedges, between Cambridge and Huntingdon, in order to make himself master of this small treasure, Mr. Barwick made one of the party of horse which conveyed it through by-roads safely to Nottingham, where his majesty had set up his standard. By this act of loyalty, the parliament was so provoked, that they sent Cromwell with a body of troops to quarter in the university, where they committed such outrages, as would scarcely have been credible in succeeding times, if Mr. Barwick, in conjunction with many other learned members of that celebrated society, had not transmitted an authentic account of them to posterity. Mr. Barwick also published a piece against the Covenant, and having thereby provoked such as were then in power, he thought proper to retire to London, there to render all the service that he was able to the royal cause. Soon after he settled there, he was intrusted with the management of the king's most private concerns, and carried on with great secrecy a constant correspondence between London and Oxford, where the king's head-quarters then were: a nice and arduous employment, and for which there never was a man better fitted than he. When his majesty came to be confined in Carisbrook castle, in the isle of Wight, so closely, that guards were posted at all the avenues to his chamber, and even at his windows, to prevent his having any correspondence, Mr. Cresset, who was placed about him through the dexterous management of Mr. Barwick, defeated all their diligence, and preserved his majesty a free intercourse with his friends: for this purpose he first deposited with Mr. Barwick a cypher, and then hid a copy of it in a crack of the wall in the king's chamber. By the help of this cypher, the king both wrote and read many letters every week, all of which passed through the hands of Mr. Barwick. He lived

was concerned in a very well-laid design for procuring the king's escape, which however was unluckily disappointed.

When the king was murdered, and the royal cause seemed to be desperate, Mr. Barwick still kept up his spirits, and though harassed with a continual cough, followed by a spitting of blood, and afterwards by a consumption of his lungs, yet would not interrupt the daily correspondence he maintained with the ministers of King Charles II. He was afterwards committed to the Tower, and put in a dungeon, where he was not only kept from pen, ink, and paper, and all books but the bible, with restraint from seeing any person except his keepers, but, as an additional punishment, had boards nailed before his window to prevent the coming in of the fresh air. In this melancholy situation he remained many months, during which time the diet he used was herbs or fruit, or thin water-gruel made of oat-meal or barley, with currants boiled in it, and sweetened with a little sugar, by which he recovered beyond all expectation, and grew plump and fat. A cure so perfect, and withal so strange, that many physicians have taken notice of it in their writings, as a most pregnant instance of the power of temperance, even in the most inveterate diseases. While he was thus shut up, his friends laboured incessantly for his service and relief, and his majesty King Charles II. for whom he thus suffered, gave the highest testimonies of his royal concern for so faithful a subject. After fifteen months passed in this strict confinement, Mr. Otway, and some other friends, procured a warrant from President Bradshaw to visit him, who were not a little surprised to find him so luffy, and in so good health, whom they had seen brought so low, as to engage this very Mr. Otway to take care of his burial. Through the friendly intercession of Mr. West, the lieutenant of the Tower, he was discharged on the 7th of August, 1652. When the church of England was restored in all its beauty by King Charles II. the deans and chapters revived, Dr. Barwick, according to his usual modesty, contented himself with recommending his tutor, old Mr. Fothergill, to a prebend in the cathedral church of York: but as to himself, he would have rested content with the provision made for him by his late patron the Bishop of Durham, who had given him the fourth stall in his cathedral, and the rectories of Wolsingham and Houghton in le Spring. Being made dean of St. Paul's, he took possession of the deanery about the middle of October, 1661, and found, as he expected, all in very great disorder with respect to the church itself, and every thing that concerned it. He set about reforming these abuses with a truly primitive spirit, and prosecuted with great vigour the recovery of such revenues, as in the late times of distraction had been alienated from the church; though with respect to his own particular concerns, he was never rigid to any body, but frequently gave up things to which he had a clear title. He was appointed one of the nine assistants to the twelve bishops, commissioned to hold a conference with the like number of presbyterian ministers upon the review of the liturgy; which conference was held at the Bishop of London's lodgings in the Savoy. He was also by the unanimous suffrage of all the clergy of the province of Canterbury, assembled in convocation, chosen prolocutor on the 18th of February, 1661: in which high office he behaved himself in such a manner, as added even to the great reputation he had before acquired. His application, however, to the discharge of so many and so great duties, brought upon him his old distemper, so that in November, 1662, he was confined to his chamber: he heightened his disease by officiating at the sacrament the Christmas-day following, after which he was seized with such a violent vomiting of blood, that he brought up whole basins full. Upon this he was advised to a change of air, for the enjoyment of which he retired to Therfield in Hertfordshire, of which he

was rector, but finding himself there too far from London, he returned to Chitwick, where he in some measure recovered his health. As soon as he found he had a little strength, he applied himself there to the putting in order the archives of St. Paul's church, and so threw himself down again. This was followed by an extraordinary flux of blood, which rendered him very weak, and defeated his favourite design of retiring to Therfield. When he first found his health declining, he made choice of and procured this living, intending to have resigned his deanery and office of prolocutor, to those who had vigour enough to discharge them, and to spend the remainder of his days in the discharge of his pastoral office, to which he thought himself bound by his taking orders. But Providence prepared for him a still more quiet mansion; for coming upon some extraordinary occasion to London, he was seized with a pleurisy, which carried him off in three days. He was attended in his last moments by Dr. Peter Gunning, afterwards bishop of Ely, and as he lived, so he died, with all the marks of an exemplary piety, on the 22d of October, 1664.

BARWICK (Peter), physician in ordinary to King Charles the Second. He was brother to John before mentioned, and was born some time in the year 1619, at Wetherlack in Westmoreland. He went to the same grammar school with his elder brother, till such time as he was fitted for the university, when he removed to St. John's College in Cambridge. This was about the year 1637, and he continued there about six years, being much farthered in his studies by the care taken of him by his brother. In 1642, being then in the twenty-fourth of his age, he took his degree of bachelor of arts. In 1644 he was nominated by the Bishop of Ely to a fellowship of St. John's, in his gift. In 1647 he took his degree of master of arts, applying himself then assiduously to the study of physic. In 1655 he was created doctor of physic, and two years afterwards, being then near forty, he took a house in St. Paul's Church-yard, and much about the same time married the widow of an eminent merchant, who was a near relation of Archbishop Laud's. Being thus settled, he soon gained a very great repute in the city, for his skill in his profession, as amongst the learned, by his judicious Defence of Dr. Harvey's Discovery of the Circulation of the Blood, which was then, and is still, admired as one of the best pieces written upon that subject. After the Restoration, in 1660, he was made one of the king's physicians in ordinary, and in the year following received a still stronger proof of his majesty's kind favour of his own and his brother's services. On the eighth of May, 1661, Dr. Gilbert Sheldon, then bishop of London, with several other bishops, deans, archdeacons, &c. met in the morning at our author's house, and proceeded thence to the cathedral of St. Paul's, in order to open the convocation. In 1666, being compelled by the dreadful fire to remove from St. Paul's Church-yard, where he had remained all the time of the plague, and been very active and serviceable in his profession, he thought proper to take another house near Westminster-abbey, for the sake of being near that cathedral, to which he constantly resorted every morning at six o'clock prayers. He was a very diligent physician, and remarkably successful in the small-pox, and in most kinds of fevers. Yet he was far from making money the main object of his care; for during the many years that he practised, he not only gave advice and medicines gratis to the poor, but likewise charitably administered to their wants in other respects. He was very kind to all who had suffered for the royal cause, to which he was a constant votary all his life; and with a view to its service, in 1671 he drew up in Latin, which he wrote with unusual elegance and purity, the Life of the Dean his brother, and took care to deposit it, and the original papers serving to support the facts therein mentioned, in the library in St. John's College at Cambridge.

Twenty years after this, when our author was in the seventy-fourth year of his age, and his eye-sight so much decayed, that he was forced to make use of the hand of a friend, he added an appendix in defence of the *Eikon Basilike*, against Dr. Walker, who was very well known to him, and of whom in that treatise he has given a very copious account. This piece of his is written with a good deal of asperity, occasioned chiefly by the frequency of scurrilous libels against the memory of Charles I. To this appendix, our author, as well as he could, subscribed his name. In 1694, growing quite dark, and being besides frequently afflicted with fits of the stone, he gave over practice, and dedicated the remainder of his life to the service of God, and the conversation of a few intimate friends, amongst whom Dr. Busby, the ever-famous master of Westminster school, was one. From this sedentary course of life, his old distemper, the stone, grew very much upon him, and toward the end of August, 1705, being seized with a vomiting and looseness, followed with an intermitting fever, and in a few days, with a great and sudden evacuation of blood, he exchanged this life for a better, the fourth of September, the same year, in the eighty-sixth year of his age.

BASAN (anc. geog.), a territory beyond Jordan, mentioned in scripture. By Josephus, Eusebius, and Jerom, it is called *Batanea*. On the entering of the Israelites into the land of Canaan, the whole of the country beyond Jordan, from that of the Moabites, or Arabia, as far as mount Hermon and Lebanon, was divided into two kingdoms, viz. that of Sihon King of the Amorites, and of Og king of Bashan or *Bashan*; the former to the south, and the latter to the north. The kingdom of Sihon extended from the river Arnon and the country of Moab, to the river Jabbok; which, running in an oblique course from the east, was at the same time the boundary of the Ammonites, as appears from Numb. xxi. 24. and Deuteron. ii. 37. and iii. 16. The kingdom of Sihon fell to the lot of the Reubenites and Gadites, and Bashan to the half-tribe of Manasseh. To this was annexed a part of the hilly country of Gilead, and the district of Argob; yet so that Bashan continued to be the principal and greatest part: but, after the Babylonish captivity, Bashan was subdivided; so that only a part was called *Batanea*, or *Bashan*, another *Trachonitis*, a third *Auramitis*, or *Iturea*, and some part also *Gaulonitis*; but to settle the limits of each of these parts is a thing now impossible.—Bashan was a country famous for its pastures and breed of large cattle.

BASIER, or **BASIRE** (Isaac), a learned and active divine in the seventeenth century, was born in the isle of Jersey in the year 1607. For some time he was master of the college or free-school at Guernsey; but, at length, became chaplain to Thomas Morton, bishop of Durham, who gave him the rectory of Stanhope, and the vicarage of Egglecliffe, both in the county of Durham. In July 1640 he had the degree of doctor of divinity conferred upon him at Cambridge, by mandate; and was incorporated in the same at Oxford the November following. About that time he was made chaplain in ordinary to King Charles I. On the 12th of December, 1643, he was installed into the seventh prebend in the church of Durham, to which he was collated by his generous patron Bishop Morton. The next year, on the 24th of August, he was also collated to the archdeaconry of Northumberland, with the rectory of Howick annexed. But he did not long enjoy these great preferments: for, in the beginning of the civil wars, being sequestered, persecuted, plundered, and forced to fly, he repaired to King Charles at Oxford, before whom, and his parliament, he frequently preached. In 1646 he had a licence granted him under the public seal of the university, to preach the word of God throughout England. Upon the surrender of the Oxford garrison to parliament, not

caring to stay any longer within the British dominions, he resolved to make a virtue of necessity, and to go and propagate the doctrine of the English church in the East, among the Greeks, Arabians, &c. Leaving therefore his family in England, he went first to Zante, an island near the Morea, where he made some stay; and had good success in spreading among the Greek inhabitants the doctrine of the English church, the sum whereof he imparted to several of them, in a vulgar Greek translation of our Church Catechism. The effect of it was so remarkable, that it drew envy, and consequently persecution, upon him from the Latins. This occasioned his voluntary retreat into the Morea, where the Metropolitan of Achaia prevailed upon him to preach twice in Greek, at a meeting of some of his bishops and clergy, which was well taken. At his departure he left him a copy of the catechism above mentioned. From thence, after he had passed through Apulia, Naples, and Sicily again (in which last, at Messina, he officiated for some weeks aboard a ship), he embarked for Syria; and after some months' stay at Aleppo, where he had frequent conversation with the patriarch of Antioch, then resident there, he left a copy of our Church Catechism, translated into Arabic, the native language of that place. From Aleppo he went in 1652 to Jerusalem, and so travelled over all Palestine. At Jerusalem he received much honour, both from the Greeks and Latins. Returning to Aleppo, he passed over the Euphrates, and went into Mesopotamia. Abraham's country, where he intended to send the Church Catechism in Turkish, to some of their bishops, who were mostly Armenians. This Turkish translation was procured by the care of Sir Thomas Bendish, the English ambassador at Constantinople. After his return from Mesopotamia, he wintered at Aleppo, where he received several courtesies from the consul, Mr. Henry Riley. In the beginning of 1653 he departed from Aleppo, and came to Constantinople by land, being six hundred miles, without either servant or christian, or any man with him, that could so much as speak the Frank language: yet, by the help of some Arabic he had picked up at Aleppo, he performed that journey in the company of 20 Turks, who used him courteously; the rather, because he was by the way physician to them and their friends. After his arrival at Constantinople, the French Protestants there desired him to be their minister. And, though he declared to them his resolution to officiate according to the English liturgy, yet they orderly submitted to it, and promised to settle on him, in three responsible men's hands, a competent stipend. Upon the restoration of King Charles II. Dr. Basier was recalled by his majesty to England, in a letter written to Prince Ragotzi. But this unfortunate prince dying soon after, of the wounds he received in a battle with the Turks at Gyala, the care of his solemn obsequies was committed to the doctor by his relict, Princess Sophia, whereby he was kept a year longer out of England. At length, returning in the year 1661, he was restored to his preferments and dignities; and made chaplain in ordinary to King Charles II. He wrote several books on divinity. Having for many years after the Restoration quietly enjoyed his large revenues, he died on the 12th of October, in the year 1676, and in the sixty-ninth year of his age.

BASILIPOTAMO, a river of Turkey in Europe, in the Morea, which falls into the gulf of Calochina. It was called *Eurotes* by the ancients.

BASILISCUS (*Encycl.*), in zoology, the trivial name of a species of lacerta: erroneously spelt **BASILICUS** in our original article.

BASILUZZO, one of the Lipari islands, in the Mediterranean, two miles in circumference, and uninhabited.

BASINGE (John), more commonly known by the name of Basingstochius, or de Basingstoke, was born at Basingstoke, a

town in the north part of Hampshire, and from thence took his surname. He was a person highly eminent for virtue and learning. For having very good natural parts, he so improved them by study, that he became a perfect master of the Latin and Greek languages, and also an eminent orator, a complete mathematician, a subtil philosopher, and a sound divine. The foundation of his great learning he laid in the university of Oxford, and, for his farther improvement, went to Paris, where he resided some years. Not satisfied with that, he travelled to Athens, that agreeable seat of the muses, and the mother of all polite literature, where he made many curious observations, and perfected himself in his studies, particularly in the knowledge of the Greek tongue. At his return from thence to England he brought over with him several curious Greek manuscripts, and introduced the use of the Greek numeral figures into this kingdom: He became also a very great promoter and encourager of the study of that language, which was much neglected in these western parts of the world: and to facilitate it, he translated from Greek into Latin a grammar, which he entitled, *The Donatus of the Greeks*. He died in the year 1252.

BASKERVILLE (Sir Simon), knight (of the ancient family of the Baskervilles in Herefordshire), an excellent scholar and eminent physician, famous for his skill in anatomy, and happy practice in the time of King James the First and King Charles the First, born at Exeter, 1573, was the son of Thomas Baskerville, an apothecary in that city, who observing an early love of knowledge and thirst after learning in his son, gave him a proper education for the university, to which he was sent at about eighteen years old, entering him in Exeter College in Oxford, on the 10th of March, 1591, putting him under the care of Mr. William Helm, a man no less famous for his piety than learning, under whose tutorship he gave such early proofs of his love of virtue and knowledge, that he was on the first vacancy elected fellow of that house, before he had taken his bachelor's degree in arts, which delayed his taking it till July the 8th, 1596, to which he soon after added that of arts-matter; and when he was admitted had particular notice taken of him (according to our author's own words) for his admirable knowledge in humanity and philosophy. After this, viz. 1606, he was chosen senior professor of the university; when he bent his study wholly to physic, in the knowledge of which useful faculty he became a most eminent proficient, and was then in as great esteem at the university for his admirable knowledge in medicine, as he had been before for other parts of learning, taking at once by accumulation (on the 20th of June, 1611) both his degrees therein, viz. that of bachelor and doctor. After many years' study and industry, leaving the university, he came to London, where he became of great eminency in his profession; being a member of the College of Physicians, and for some time also president thereof. His high reputation for learning, great skill and good success in physic, soon brought him in vogue at court, where he was sworn physician to King James the First, and afterwards to King Charles the First; with whom he was in such esteem for his learning and accomplishments, that he conferred the honour of knighthood upon him. He died July the 5th, 1641, aged sixty-eight years.

BASNAGE (James), a learned and accomplished author, and pastor of the Walloon church at the Hague, was born at Rouen in Normandy, August 8, 1653. He was the son of Henry Basnage, one of the ablest advocates in the parliament of Normandy. At 17 years of age, after he had made himself master of the Greek and Latin authors, as well as the English, Spanish, and Italian languages, he went to Geneva, where he began his divinity studies under Mestrezat, Turretin, and Tronchin; and finished them at Sedan, under the professors Jurieu and

Le Blanc de Beaulieu. He then returned to Roan, where he was received as minister, September 1676; in which capacity he remained till the year 1685, when the exercise of the Protestant religion being suppressed at Rouen, he obtained leave of the king to retire to Holland. He settled at Rotterdam; and was a minister pensionary there till 1691, when he was chosen pastor of the Walloon church of that city. In 1709 pensionary Heinſius got him chosen one of the pastors of the Walloon church at the Hague, intending not only to employ him in religious but in state affairs. He was employed in a secret negotiation with marshal d'Uxelles, plenipotentiary of France at the congress of Utrecht; and he executed it with so much success, that he was afterwards entrusted with several important commissions, all which he discharged in such a manner as to gain a great character for his abilities and address; a celebrated modern writer has therefore said of him, that he was fitter to be minister of state than of a parish. The abbé du Bois, who was at the Hague in 1716, as ambassador plenipotentiary from his most Christian majesty, to negotiate a defensive alliance between France, England, and the States General, was ordered by the duke of Orleans, regent of France, to apply himself to M. Basnage, and to follow his advice: they accordingly acted in concert, and the alliance was concluded in January 1717. He kept an epistolary correspondence with several princes, noblemen of high rank, and ministers of state, both Catholic and Protestant, and with a great many learned men in France, Italy, Germany, and England. The Catholics esteemed him no less than the Protestants; and the works he wrote, which are mostly in French, spread his reputation almost all over Europe: among these are, 1. *The History of the Religion of the Reformed Churches*; 2. *Jewish Antiquities*; 3. *The History of the Old and New Testament*; and many others. He died Sept. 22, 1723.

BASNAGE (Henry), sieur de Beaulieu, second son to Henry Basnage, and brother to James mentioned in the last article. He applied himself to the study of the law, and was admitted advocate in the parliament of Rouen in the year 1679. He did not follow the bar immediately upon his admission; but went to Valencia, where he studied under M. de Marville. Upon his return from thence he practised with great reputation till the year 1687, when the revocation of the edict of Nantz obliged him to fly to Holland, where he composed the greatest part of his works, and died there the 29th of March, 1710. His chief work is *Histoire des Ouvrages des Savans*. Rotterdam, 24 vols. in duodecimo. This work was begun in the month of September 1687, and continued till June 1709. When he arrived in Holland, Mr. Bayle, through indisposition, had been obliged to drop his *Nouvelles de la République des Lettres*, which induced Mr. Basnage to undertake a work of the same kind under a different title.

BASNET (Edward), dean of St. Patrick's, Dublin, was an active man at the time of the Reformation, and a privy-councillor to King Henry VIII. and King Edward VI. He was descended of an esquire's family, long seated at Eaton, in the county of Denbigh, in Wales, and had some relations in Ireland, who probably came over with him; for we find no such names in history or records planted in Ireland before his time. He was presented by King Henry VIII. to the vicarage of Swords, in the diocese of Dublin, on the 11th of May, 1535, during the vacancy of that see, by the murder of Archbishop Allen, and this is the first promotion we find he had in Ireland; so that in all probability he came over the year before, in the retinue and under the countenance of Sir William Skeffington, lord deputy. About the latter end of April 1537, he was elected by the chapter dean of the cathedral of St. Patrick's, Dublin, that dignity being void on the 8th of the same month by the death of Geoffrey Fitche, his predecessor;

and this promotion gave him a rank almost equal to the episcopal. He was styled Sir Edward Basset, and is so named in an act of parliament of that time; not that he had been created a knight, but was called so in the same sense as those that are called Sirs, who have taken the first degree in an university. In 1544 a report was made by the lord deputy about the singular merit of Dean Basset for the crown. For this the king was pleased to reward him with a grant, to him and his heirs, of the castle, town, lands, and rectory of Kilterman, in the marches of the county of Dublin, to hold in capite by the service of one knight's fee, for ever, and three shillings, Irish money, per annum, rent. In 1545, August the 20th, the king, as a mark of his royal indulgence, granted the dean a particular favour, in which his chapter, under his countenance, was concerned, which is registered among the records of the deanery. He died in the first year of Queen Mary's reign.

BASSANO, a town of Italy, in the territory of Venice, on the river Brante, in a country productive of excellent wine. Long. 11. 24. E. Lat. 45. 51. N.

BASSANTIN (James), a Scotch astronomer, son of the laird of Bassantin in Mers, was born in the reign of James IV. He was educated at the university of Glasgow, travelled through Germany and Italy, and then fixed his abode in the university of Paris, where he taught mathematics with great applause. Having acquired some fortune in this occupation in 1562, he returned to Scotland, where he died in the year 1568. From his writings, he appears to have been no contemptible astronomer, considering the times; but, like most of the mathematicians of that age, he was not a little addicted to judicial astronomy. Sir James Melvil, in his Memoirs, says that his brother Sir Robert, when he was exerting his abilities to reconcile the two queens, Elizabeth and Mary, met with one Bassantin, a man learned in the high sciences, who told him, "that all his travel would be in vain; for said he, they will never meet together; and next there will never be any thing but dissembling and secret hatred for a while, and at length captivity and utter wreck to our queen from England." He added, "that the kingdom of England at length shall fall, of right, to the crown of Scotland; but it will cost many bloody battles; and the Spaniards shall be helpers, and take a part to themselves for their labour." Sir James Melvil is an author of credit; therefore it is probable that our astrologer ventured to utter his prediction: but, as it proved true only in part, either he misunderstood the stars, or they deceived the astrologer—His works are, 1. *Astronomia Jacobi Bassantini Scoti, opus apologeticum, &c. ter editum Latine & Gallice*. Bassan, 1599, fol. This is the title given it by Tornæus, who translated it into Latin from the French, in which language it was first published. 2. *L'arabesque de l'Astrolabe, avec une Amplification de l'Usage de l'Astrolabe*. Lyons, 1555. Paris, 1677, 8vo. 3. *Mathematicæ Cœnebiacæ*. 4. *Arithmetica*. 5. *Musica secundum Platonem*. 6. *De Mathefi in genere*.

BASSETTHWAITE WATER, a fine lake in Cumberland, 3 miles N.W. of Kewick. It is 4 miles long, bounded on one side by high hills, wooded, in many places, to their bases; on the other by the fields, and the skirts of Skiddaw.

BASSETTERE, the capital of St. Christopher, a fine town, built by the French when this part of the island was in their possession, before it was ceded to the English in 1713. The houses are of brick, freestone, and timber; and among other buildings are a townhouse, an hospital, and a large church.

BASSETTERE, the principal town of Guadaloupe, in a district of the same name, in the W. part of the island. It is defended by a citadel and other fortifications.

BASSET (Peter), a gentleman of a good family, was chamberlain, or gentleman of the privy-chamber, to King Henry V.

a constant attendant on that brave prince, and an eye-witness of his most glorious actions both at home and abroad; all which he particularly described in a volume entitled, *The Acts of King Henry V.* which remains in MS. in the college of heralds.

BASSETT (Fulk), bishop of London in the reign of Henry III. was brother of Gilbert Bassett, one of the barons, who died by a fall from his horse, leaving behind him only one son, an infant, by whose death soon after the inheritance devolved to Fulk. In the year 1225 he was made provost of the collegiate church of St. John of Beverly, and in 1230 dean of York. In December 1241 he was elected by the chapter of London bishop of that see, in the room of Roger Niger, both in regard of his family and his great virtues, and notwithstanding the king's recommendation of Peter de Egueblanche, bishop of Hereford. The see of Canterbury being vacant at the time of this prelate's election, he was not consecrated till the 9th of October, 1244, at which time the solemnity was performed at London, in the church of the Holy Trinity. In the year 1250 Bishop Bassett began to have a warm dispute with Archbishop Boniface, concerning the right of metropolitan visitation; in the course of which he met with very rough treatment from the archbishop, and at last, after a long contest, thought it best to submit, and acknowledge his jurisdiction; but he succeeded better in the opposition he made to Rufus, the pope's legate, in 1255. In 1256 this prelate began to build the church of St. Faith, near that of St. Paul, on the spot which King John had formerly given to the bishops and chapter of London for a market. In the latter part of his life he is said to have inclined to the cause of the barons. He died of the plague in 1259, having sat near fifteen years from the time of his consecration.

BASTARD (Thomas), was born at Blandford in Dorsetshire, and educated at Winchester school, from whence he removed to New College, in Oxford, where he was chosen perpetual fellow in the year 1588, and two years after took the degree of bachelor of arts: but indulging too much his talent for satire, he was expelled the college for a libel. Not long after, being then in holy orders, he was made chaplain to Thomas earl of Suffolk, lord treasurer of England; through whose favour and interest he became vicar of Bere Regis, and rector of Amour, or Hamer, in his native county, having some time before taken the degree of master of arts. He was a person of great natural endowments, well skilled in the learned languages, a celebrated poet, and in his later years an excellent preacher. His conversation was witty and facetious, which made his company courted by all ingenious men. Towards the latter end of his life, being disordered in his senses, and thereby brought into debt, he was confined in the prison of All-Hallows parish, in Dorchester, where he died in April, 1618.

BASTERIA, ALL-SPICE; a genus of plants not described by Linnæus, but to which Mr. Miller has given the name of *Basteria* from Dr. Job Baster, F.R.S. a learned botanist of Holland. Of this there is only one species known, viz. with oval leaves placed opposite, flowers coming from the sides of the stalks, and a branched shrubby stalk. It is a native of Carolina in America. The flowers appear in May, are of a dull purple colour, and have a disagreeable scent. The bark is brown; and has a very strong aromatic flavour, from whence the plant takes its name of *All-spice*.

BASTIOGNE, a small town of the duchy of Luxemburg, 25 miles N.W. of Luxemburg, subject to the house of Austria. Long 6. 0. E. Lat. 50. 0. N.

BASTITANI (anc. geog.), a people of the province of Bætica in Spain. See BÆTICA.

BASTON (Robert), a Carmelite monk, afterwards prior of the convent of that order at Scarborough, and also poet laureat and public orator at Oxford, flourished in the fourteenth

century. King Edward I. in his expedition into Scotland in 1304, took Robert Bafton with him, in order to celebrate his victories over the Scots; but our poet being taken prisoner, was obliged to change his note, and fing the successes of Robert Bruce. He wrote several books in Latin, on the Wars of Scotland, the Luxury of Priests, Synodical Sermons, &c.; and also a volume of tragedies and comedies, in English. He died about the year 1310.

BASTWICK (Dr. John), born at Writtle in Essex, in 1593, practised physic at Colchester; but being a man of warm imagination, and a good Latin scholar, applied himself to writing books against popery. About the year 1633 he printed in Holland a Latin treatise entitled *Elenchus Religionis Papistice*, with *Flagellum Pontificis et episcoporum Latialium*, in which the English prelates thinking themselves also aimed at, he was fined 1000*l.* in the high commission court, excommunicated, prohibited practising physic, his books ordered to be burnt, and himself to remain in prison until he made a recantation. Instead of recanting, he wrote in prison, *Apologeticus ad persequens Anglicanæ*; and another book called, *The Litany*; wherein he severely exclaimed against the proceedings of that court, and taxed the bishops with an inclination towards popery. Prynne and Burton coming under the lash of the star chamber-court at the same time, they were all censured as scandalous seditious persons, condemned to a fine of 5000*l.* each, to be pillored, to lose their ears, and to perpetual imprisonment in three remote parts of the kingdom. The parliament in 1640 reversed these proceedings; and ordered Dr. Bastwick a reparation of 5000*l.* out of the estates of the commissioners and lords who had prosecuted him, which the ensuing confusions prevented his receiving: however, his wife had, in 1644, an allowance ordered for her and her husband's maintenance. What became of him afterward is not known.

BATACOLA, a sea-port on the coast of Malabar, between Onore and Barcelore. Here are the remains of a once considerable city, on the banks of a small river, four miles from the sea. The country round it produces a great quantity of pepper; and the English had a factory here till 1670, when a bull-dog belonging to the factory having unfortunately seized and killed a sacred cow, the natives rose and massacred them all.

BATAVORUM INSULA, the island of the Batavians (anc. geog.). Of this island Tacitus gives the following description. "The Rhine flowing in one channel, or only broken by small islands, is divided at its entering Batavia, as it were, into two rivers. One continues its course through Germany, retaining the same name, and violent current, till it falls into the ocean. The other washing the coast of Gaul, with a broader and more gentle stream, is called by the inhabitants *Vahalis*; which name it soon changes for that of *Mosa*, by the immense mouth of which river it discharges itself into the same ocean." According to Tacitus, therefore, the island of the Batavians was bounded by the ocean, the Rhine, and the *Vahalis*, now the *Wale*. Cæsar extends it to the *Mosa*, or *Meuse*; but Pliny agrees with Tacitus. However, this island was of greater extent in Tacitus's time than in Cæsar's; Drusus, the father of Germanicus, having by a new canal conveyed the waters of the Rhine into the ocean a considerable way north of the former mouth of that river. The Batavi were a branch of the Catti, who, in a domestic sedition, being expelled their country, occupied the extremity of the coast of Gaul, at that time uninhabited, together with this island situated among shoals. Their name *Batavi* they carried with them from Germany; there being some towns in the territory of the Catti called *Battenberg*, and *Battenhausen*. The bravery of the Batavi, especially the horse, procured them not only great honour from the Romans, being called their *brothers* and *friends*; but an exemption from taxes, being obliged only to

furnish men and arms. The modern name of this island is *Betu*, or *Betaw*. See BETUE and BATTÆ.

BATE (George), an eminent physician, born at Maid's Morton, near Buckingham, in the year 1608. In 1629 he obtained a licence, and for some years practised in and about Oxford: his practice was chiefly amongst the paritans, who at that time considered him as one of their party. In 1637 he took his degree of doctor in physic, and became very eminent in his profession, so that when King Charles kept his court at Oxford, he was his principal physician. When the king's affairs declined, Dr. Bate removed to London, where he accommodated himself so well to the times, that he became physician to the Charter-house, fellow of the college of physicians, and afterwards principal physician to Oliver Cromwell. Upon the restoration, he got into favour with the royal party, was made principal physician to the king, and fellow of the Royal Society; and this, we are told, was owing to a report raised on purpose by his friends, according to Mr. Wood, that he gave the protector a dose which hastened his death. Dr. Bate wrote in Latin an account of the late commotions in England, and some other pieces. He died at his house in Hatton-garden, and was buried at Kingston-upon-Thames in Surrey.—There was another George BATE, who wrote a work entitled *The Lives, Actions, and Execution, of the prime Actors and principal Contrivers of that horrid Murder of our late pious and sacred King Charles I.*

BATE (John), prior of the monastery of Carmelites, at York, in the 15th century, was born in Northumberland, and educated at York in the study of the liberal arts; in which he was greatly encouraged by the favour of some persons, his patrons, who were at the expence of sending him to Oxford, to finish his studies in that university. Bate abundantly answered the hopes conceived of him, and became an eminent philosopher and divine, and particularly remarkable for his skill in the Greek tongue. He took the degree of doctor in divinity at Oxford, and afterwards distinguished himself as an author. The Carmelites of York were so sensible of his merit, that upon a vacancy they offered him the government of their house; which he accepted, and discharged that office with great prudence and success. He died the 26th of January, 1420, in the beginning of the reign of Henry VI.

BATECUMBE, or BADECOMBE (William), an eminent mathematician, is supposed to have flourished about the year 1420, in the reign of Henry V. He studied at Oxford, where he applied himself to natural philosophy in general, but chiefly to the mathematics, in which he made a very great proficiency, as is evident by his writings in that science, which introduced him to the acquaintance and intimacy of the greatest men of those times. His mathematical writings consist of, 1. Of the Formation and Use of the Concave Sphere. 2. Of the Solid Sphere. 3. Of the Use of the Astrolabe. 4. Philosophical Conclusions.

BATEMAN (William), bishop of Norwich in the fourteenth century, and founder of Trinity-hall in Cambridge, was born at Norwich, being the son of a citizen of good repute in that place. He was from his tenderest years of a docile and ingenious disposition: having therefore made a good proficiency in learning, wherein he surpassed all his equals, he was sent to the university of Cambridge. After having gone through the usual circle of the sciences, he applied himself to the study of the civil law, in which he took the degree of doctor, before he was thirty years of age, a thing then uncommon. On the 8th of December, 1328, he was collated to the archdeaconry of Norwich: soon after this he went and studied at Rome, for his further improvement; and so distinguished himself by his knowledge and exemplary behaviour, that he was promoted by the pope to the place of auditor of his palace. He was likewise advanced by him to

the deanery of Lincoln; and so great an opinion had he of his prudence and capacity, that he sent him twice as his nuncio, to endeavour to procure a peace between Edward III. king of England, and the king of France. Upon the death of Anthony de Beck, bishop of Norwich, the pope died, by his usurped provisional authority, confer that bishopric upon our William Bateman, on the 23d of January, 1343, and consecrated him with his own hands. He was confirmed the 23d of June, 1344. Being invested with that great dignity, he returned into his native country after many years' absence, and lived in a regular, and withal in a generous and hospitable manner. Of Pope Clement VI. he obtained for himself and successors the first fruits of all vacant livings within his diocese; which occasioned frequent disputes between himself and his clergy. In the year 1347 he founded Trinity-hall in Cambridge, for the study of the civil and canon laws; and another hall dedicated to the Annunciation of the Virgin Mary, for the study of philosophy and divinity.

Being a person of great wisdom, eloquent, and of a fine address, he was often employed by the king, and parliament in affairs of the highest importance; and particularly was at the head of several embassies, sent on purpose to determine the great differences between the crowns of England and France. In 1354 he was by order of parliament dispatched to the court of Rome, with Henry duke of Lancaster, and others; to treat (in the pope's presence) of a peace, then in agitation between the two crowns above mentioned. This journey proved fatal to him; for he died at Avignon, where the pope then resided, on the 6th of January, 1354-5, and was buried with great solemnity in the cathedral church of that city. With regard to his person, he was of an agreeable countenance, tall, handsome, and well made. He was likewise a man of strict justice and piety, punctual in the discharge of his duty, and of a friendly and compassionate disposition.

BATES (William), D. D. an eminent Presbyterian divine, born in November 1625. He was admitted in Emanuel College, Cambridge, and from thence removed to King's College in 1644. He was one of the commissioners, at the conference in the Savoy, for reviewing the public liturgy, and was concerned in drawing up the exceptions against the Common Prayer: however, soon after the restoration, he was appointed chaplain to King Charles II. and became minister of St. Dunstan's in the West, but was deprived of that benefice for nonconformity. Dr. Bates bore a good and amiable character; and was honoured with the friendship of the lord keeper Bridgman, the lord chancellor Finch, the Earl of Nottingham, and Archbishop Tillotson. He was offered, at the restoration, the deanery of Litchfield; which he refused. He published *Select Lives* of illustrious and pious persons, in Latin; and since his death all his works, except his *Select Lives*, have been printed in one volume in folio. He died on July 14, 1699, in the 74th year of his age.

BATHE (Henry de), a learned knight, an eminent and skillful judiciary of the 13th century, was born at that ancient seat of this family, called Bathe-house, in the county of Devon. Being a younger brother, it is not unnatural to imagine he might, upon that account, apply himself to the study and profession of the laws of his country, in the knowledge of which he grew so eminent, that he was advanced by King Henry III. in 1238, to be one of the justices of the Common Pleas, and in 1246 was constituted one of the justices itinerant (as they were then called) for the county of Hertford, and in 1248 he was appointed the same for Essex and Surrey, in 1249 for Kent, Berks, Southampton, and Middlesex, and in 1250 for Lincolnshire; at which time he had allowed him out of the Exchequer, by a peculiar favour, an hundred pounds a year for his sustentation in the discharge of his office. But the year following he fell from the king's grace and favour,

the occasion of which were certain crimes laid to his charge; viz. that he had not exercised his office uprightly, but to his own private gain, having perverted justice through bribes; upon an occasion of a suit betwixt him and one Everard Trumpington, which was chiefly supported against him by one Philip d'Arcis, Knight, who also added treason to that of infidelity in his office. The accused was attached in the king's court; but one Manfel, who was now become a great favourite at court, offered bail for his appearance. King Henry refused this; the case, as he alleged, not being bailable, he terming him guilty of high treason. Fulk Basset, however, then bishop of London, and a great many of De Bathe's friends, interceding, the king at last gave orders that he should be bailed, twenty-four knights becoming sureties for his appearing, and standing to the judgment of the court. But De Bathe seems to have been conscious of his own demerits, or the prepossession of his judges against him; for he was no sooner left at liberty, than he wrote to all his relations either by blood or marriage, desiring that they would apply to the king in his favour, at first by fair speeches and presents, and that if these did not prevail, they should appear in a more warlike manner, thereby to intimidate the court. This they faithfully and unanimously promised to do, upon the encouragement given them by a bold knight, one Nicholas de Sandford: but the king, imagining that his own power, and the interest of De Bathe's accusers, infinitely outweighed all the preparations of the others, appeared the more inexorable upon the intimation of these proceedings; he rejected all presents from the friends of the accused, and put on an air as if nothing but his punishment should satisfy his and the nation's justice. De Bathe knew well to what all this outward inflexibility tended; but was certain, that if Henry persisted in his resolution, he himself must perish. He therefore had recourse to a more prudent measure; he applied himself to the Bishop of London, and other his special friends, and with a great posse of these goes to Richard earl of Cornwall (afterwards king of the Romans), whom by prayer and fine promises he won over to his interest. The king continued deaf to all his remonstrances, and about the end of February, De Bathe was summoned, and obliged to appear to answer what should be laid to his charge. This he accordingly did, but strongly defended by a great retinue of armed knights, gentlemen, and others, viz. his own and his wife's friends and relations; among whom was the family of the Bassets and Sandfords, a band as undaunted as his persecutors were violent. We may, from what our historian has delivered upon this occasion, conclude that the assembly was divided between those who depended upon the king for their posts and preferments, and those who, though a great majority, were so thoroughly exasperated at the measures of the court, that they were resolved not to find De Bathe guilty. It was not long before the king perceived this, and upon that occasion he made an unjust and impolitic stretch of his prerogative, in an unheard-of proclamation. A new charge was now brought against De Bathe, and perhaps the chief and only one, at least that had exasperated King Henry, viz. he was impeached not only on the former articles, but particularly for alienating the affections of the barons from his majesty, and creating such a ferment all over the kingdom, that a general sedition was now on the point of breaking out. This speech was enforced from Bathe's brother judiciary, who declared to the assembly, that he knew the accused to have dismissed without any censure, for the sake of lucre, a convicted criminal. Many other complaints were urged against De Bathe; but they seem to have been disregarded by all but the king and his party, who was so much exasperated to see De Bathe likely to be acquitted, that he mounted his throne, and with his own mouth made proclamation, That whosoever should kill Henry de Bathe, should have the royal pardon for

him and his heirs; after which speech he flung out of the room in a great passion. Many of the royal party, who were exceedingly keen upon this occasion, would readily have executed the king's terrible doom, and were for dispatching De Bathe in court; but his friend Mantel, one of the king's council, and Fulco Basset, bishop of London, interposed to effectually, that he was saved; and afterwards, by the powerful mediation of his friends (among whom was the Earl of Cornwall, the king's brother, and the Bishop of London), and the application of a sum of money; viz. two thousand marks to the king, he obtained not only a pardon, but all his former places and favour with the king, who re-established him in the same seat of judicature as he was in before; and rather advanced him higher, for he was made chief-justice of the King's Bench, after about three years' discontinuance from his office of a judge, in which honourable post he continued for eight years after, till the time of his death; which happened in 1261.

BATTIE (William), was born in Dublin, in 1564. We have it by tradition, that he was of a fullen, saturnine temper, and disturbed in his mind; that his family was reduced from its ancient splendour. His parents, who were Protestants, had a greater regard to the learning of their child, than his religion; and therefore put him, in his green years, under the tuition of an eminent Popish schoolmaster, who thoroughly corrupted his principles, and fitted him for that station of life which he afterwards embraced. He removed to Oxford, where he studied several years with indefatigable industry; but the inquisitive Anthony Wood could not discover in what college or hall he sojourned, or whether he took any university degree. The same writer alleges, that growing weary of the heresy professed in England (as he usually called the Protestant faith), he quitted the nation and his religion together, and in the year 1596 was initiated among the Jesuits, being then between thirty and forty years of age; though one of his own order says he was but twenty-five, which certainly is erroneous. Having spent some time among the Jesuits in Flanders, he travelled into Italy, and completed his studies at Padua; from whence he passed into Spain, being appointed to govern the Irish seminary at Salamanca. He is said to have had a most ardent zeal for the gaining of souls, and was much esteemed among the people of his persuasion for his extraordinary virtues and good qualities, though he was of a temper not very sociable. At length, taking a journey to Madrid to transact some business of his order, he died there June 17, 1614.

BATHURST (Ralph), M.D. an eminent physician, poet, and divine, born in the year 1620. He studied divinity in Trinity College, Oxford; but the times of confusion coming on, he changed the course of his studies, and applied himself to physic. He took a doctor's degree in that faculty; in which he rose to such eminence, that he was, in the time of the usurpation, appointed physician to the state. Upon the restoration, he quitted his profession of physic; was elected a fellow of the Royal Society, and president of his college; and having entered into holy orders, he was made chaplain to the king, and afterwards dean of Wells. Soon after, he served the office of vice-chancellor of Oxford, and was nominated by King William and Queen Mary to the see of Bristol; which he refused to accept. His learning and talents were various. He was an orator, a philosopher, and a poet: he possessed an inexhaustible fund of wit, and was a facetious companion at 80 years of age. Ridicule was the weapon with which he used to correct the delinquents of his college; and he was so absolute a master of it, that he had it always at hand. His poetical pieces in the *Musa Anglicana* are excellent in their kind. He wrote several poems, both in English and Latin; and died June 14, 1704, in the 84th year of his age.

BATSFORD, a village of Gloucestershire, through which

passes the great Roman road from the north in its way to Cirencester, and there is a small entrenchment almost entire, supposed to have been thrown up by the Romans. It is four miles from Campden.

BATECOLA, a fortified town on the east coast of Ceylon, subject to the Dutch. Long. 81. 3. E. Lat. 5. 55. N.

BATTIE (Dr. William), an English physician, was born in Devonshire, 1704. He received his education at Eton; and, in 1722, was sent to King's College, Cambridge. His own inclination prompted him to the profession of the law; but his finances would not support him at one of the inns of court. He had two cousins of the name of Coleman, old bachelors and wealthy citizens, to whom, upon this occasion, he applied for assistance; but they declined interfering in his concerns. Upon this he turned to physic, and first entered upon the practice of it at Cambridge; where, in 1729, he gave a specimen of an edition of *Hiocrates*, which he afterwards, 1749, completed in two vols. 8vo.

He afterwards removed to Uxbridge, and then to London; where, meeting with success and flourishing, his relations the Colemans, who had now left off business and retired, grew fond, or rather proud of him, and behaved to him with cordiality and friendship. In 1738, or 1739, he fulfilled by marriage a long engagement to a daughter of Barnham Goode, the under-master of Eton school, who is honoured with a place in the Dunciad, for having abused Pope in a piece called *The Mock Æsop*. Against Goode, it seems, the Colemans had a political antipathy: however, they behaved well to Mrs. Battie, and the survivor of them left the doctor 30,000*l*. In the dispute which the college of physicians had with Dr. Schomberg, about 1750, Dr. Battie, who was at that time one of the censors, took a very active part against that gentleman. In 1751, he published *De Principiis Animalibus Exercitationes* in Coll. Reg. Medicorum, in three parts; which were followed, the year after, by a fourth. In 1757, being then physician to St. Luke's Hospital, and master of a private mad-house near Wood's-clofe in the road to Illington, he published, in 4to. *A Treatise on Madnets*; in which, having thrown out some censures on the medical practice formerly used in Bethlem Hospital, he was replied to, and severely animadverted on, by Dr. John Monro, whose father had been lightly spoken of in the fore-mentioned treatise. In 1762 he published *Aphorismi de cognoscendis et curandis morbis nonnullis ad principia accommodati*. February 1763 he was examined before a committee of the House of Commons, on the state of the private mad-houses in this kingdom; and received in their printed report a testimony very honourable to his abilities.

In 1776 Dr. Battie was seized with a paralytic stroke, of which he died, June the 13th, in his seventy-fifth year.

BATTING MACHINE, a machine for batting or beating and cleaning cotton from the huffs and foulnesses contained in it. In Pl. 16. we have given a view of this curious engine, the invention of Mr. Bowden of Mellor in Derbyshire. Fig. 1. is a perspective view of the whole machine. A A A A, the frame of the machine. B, the flake, made of cords, upon which the cotton is battet, moving perpetually over the rollers c, C, which are moved by a pinion on the end of the axle of the cranks D, which drives a large bevel-wheel, fixed on the bottom of the upright shaft E, upon the top of which is a bevel pinion, which drives a large bevel-wheel upon the end of the axle of the roller C. F F, two boards fixed to the cross-frames, on each side of the flake B, to prevent the cotton from falling off, the which are notched, in order that the batting-sticks may strike the cotton upon the flake B. G, a loose rod, crossing the flake close to the cords under the cotton, which, by the vibration of the cords, loosens the cotton therefrom before it falls over the roller C. Fig. 2. the ground-plan of the

machine, drawn by the scale T. D, an axle, having ten cranks, standing upon ten different squares or sides of ditto; the first and second of which are opposite, as are all the rest, upon different squares, alternately to the end, with a support in the middle, with a brads foot for the axle to move in, to keep the same from vibrating. Fig. 3. a plan of four of the arms, shewing their different movements, drawn by the scale U. H, H, H, H, the arms, fixed to the bottom cross frame by an axle working in iron slides, which are moveable, if necessary, at a a.—I, I, rails, worked by two opposite cranks at c, c, and fixed to the lower ends of the arms by swivel pins at i, i. J, J, iron slides, fixed by screws to the ends of the rails I, I, in order to lengthen or contract them, as may be found necessary. K, K, rails fixed to the upper parts of the arms at b, b, by swivel pins, which work the opposite arms at d, d. L, L, L, L, wood rollers upon the tops of the arms, moving an axle in iron frames, to which axles are fixed the sockets e, e, e, e, which hold the batting sticks fastened therein by hoops and screws. M, M, M, M, leather straps fixed to the rollers L, L, L, L, and to the upper cross frame at k k k k, as in Fig. 1, which straps, when drawn tight by the arms moving forwards towards the flake B, as in fig. 1, strike the blows upon the cotton. N, N, two catches or hooks, which are drawn by the springs l, l, that fall into square holes, made for the purpose into iron hoops, on the ends of the rollers L, L, to prevent the sticks from rising after the blow is struck before the sticks are clearly drawn out of the cotton by the return of the arms. O, O, iron slides, fastened by screws to one side of the ends of the rails K, K, with studs fixed thereto, on which the bottom part of the catches move; which studs, when placed at a proper distance from the swivel pins, draw down the catches gradually as the arms move backwards, and prevent the sticks from rising, which they would naturally do, notwithstanding the catches, owing to the circular motions of the arms. P, a long spring, with a small leather strap fastened to the top part of the roller L, on the top of the arm, which throws back the stick to a bolster put on the upper cross-frame, as at f, in fig. 1. Q, a snick or catch fastened on the end of the upper rail K, which fixes the catch g from the roller when the arm returns to the back cross-frame, as at L, fig. 3. R, R, two sticks, which strike upon the cotton at the same time, as do all the rest in their turns, as the cranks move round. W, a small screw, in the bottom of the hook or catch Q, which binds on the top of the slide O, to be altered as may be necessary, to keep such slide in its proper place. X, X, two screws, moveable in two nuts, fixed in the ends of the cross-frames on each side the flake B, as in fig. 2, by means of which the cords of the flake may be tightened or slackened, as may be necessary. S, a pulley, fixed upon the end of the axle of the cranks at h, in fig. 2, by which the whole of the machine is moved.

The following are observations made by the Patentee.

"Though many attempts," says he, "have been made, no operation has been found out to clear the cotton, to expand its fibres, and bring it into that open and pulpy state essential to good carding, save batting, which is a laborious employment, and having been chiefly confined to females, who are inadequate to the task, the work has been very imperfectly performed; besides the disagreeable necessity of either confining a great number of them in a room for that purpose, or of sending the cotton out to as many different houses—circumstances which have long occasioned the trade to lament the want of some invention to remove them, and which I flatter myself is accomplished by the above-described batting machine.

"In a department, hitherto confessedly the most perplexing of any attending the business of cotton spinning, a very considerable abridgment of labour is effected, inasmuch that, at most, two-thirds of the number of girls will now do the

same quantity of work, and much better, than was done before by the strongest women."

BATTLEFIELD, a large village in Shropshire, five miles N. of Shrewsbury, where a victory was gained by Henry IV. over Henry Percy, furnished Hotspur. It has a large church, and one long broad street paved. Long. 2. 42. W. Lat. 52. 22. N.

BAUCONICA (anc. geog.), a town of the Vangiones in Gallia Belgica; nine miles from Mongontiacum, and eleven from Borbitomagus; and therefore supposed to be *Oopenheim*, a town in the Palatinate of the Rhine, and situated on that river.

BAUDELOT (Charles César), a learned advocate in the parliament of Paris, distinguished himself by his skill in ancient monuments, and was received into the academy of Belles-Lettres in 1705. He wrote a Treatise on the Advantages of Travelling; many Letters and Dissertations on Medals, &c.; and died in 1722, aged seventy-four.

BAUDIER (Michael), a gentleman of Languedoc, lived in the reign of Lewis XIII. and published several books, which procured him the character of a copious and laborious author; among which are, 1. An Inventory of the General History of the Turks. 2. The History of the Seraglio. 3. That of the Religion of the Turks. 4. That of the Court of the King of China. 5. The Life of Cardinal Ximenes, &c.

BAUDOBIRGA (anc. geog.), a town of the Treviri in Germany; now *Boppard*, in the electorate of Triers. See BOPPART.

BAUBRAND (Michael Anthony), a celebrated geographer, born at Paris, July 18, 1633. He travelled into several countries; and then applied himself to the revision of Ferrarius's Geographical Dictionary, which he enlarged by one-half. He wrote, 1. Notes to Papius Maslo's Description of the Rivers of France. 2. A Geographical and Historical Dictionary. 3. Christian Geography, or an Account of the Archbishops and Bishops of the whole World: and made several maps. He died at Paris, May 29th, 1700.

BAUHIN (John), a great botanist, was born about the middle of the 16th century. He took his doctor's degree in physic, in 1602; and afterwards became principal physician to Frederick duke of Wirtemberg. The most considerable of his works is his Universal History of Plants.

BAUHIN (Caspar, or Gaspar), younger brother to the preceding, was born at Basil, 1550; and distinguished himself by his skill in anatomy and botany. In 1580 he was chosen first professor of these sciences at Basil; and in 1614 was made first professor of physic, and first physician of that city, which he held till his death, which happened in 1623, at the age of sixty-three. He wrote, 1. Anatomical Institutions; 2. Prodromus Theatri Botanicæ; and other works.

BAUTRU, a celebrated wit, and one of the first members of the French academy, was born at Paris in 1588, and died there in 1665. He was the delight of all the ministers at court, of all the favourites, and of all the great in general. He was indeed a kind of a fool among them; who, while he played the buffoon, took the usual privilege of saying what he pleased. Many of his bons mots are preserved. Once, when he was in Spain, having been to see the famous library of the Escorial, where he found a very ignorant librarian, the king of Spain asked him what he had remarked? To whom Bautru replied, that "the library was a very fine one; but your majesty," adds he, "should make your librarian treasurer of your finances." "Why so?" "Because," says Bautru, "he never touches what he is entrusted with."

BAXTER (William), nephew and heir to Richard (see *Encyc.*), was an eminent schoolmaster and critic. He was born at Lanugany in Shropshire, in the year 1650; and it is

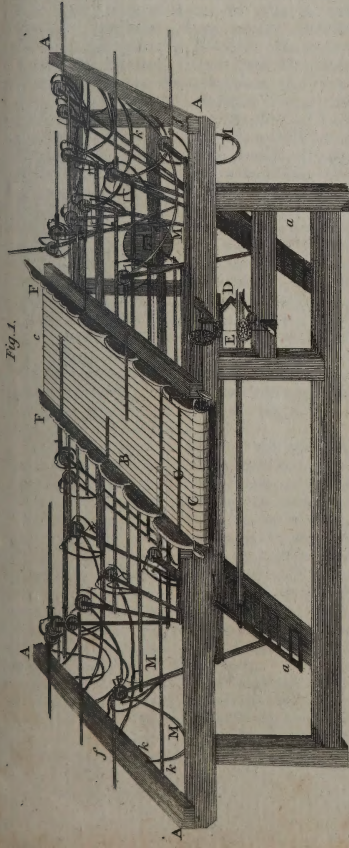


Fig. 2.

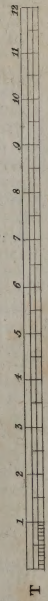
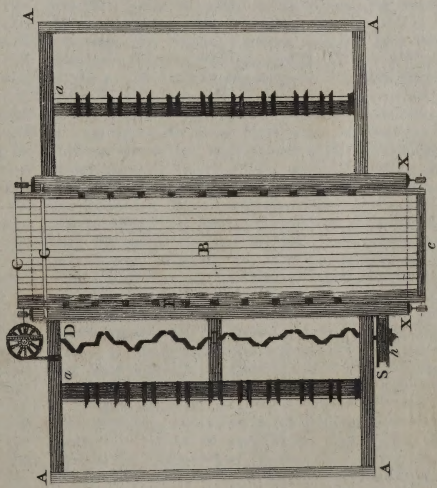
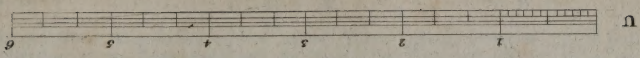
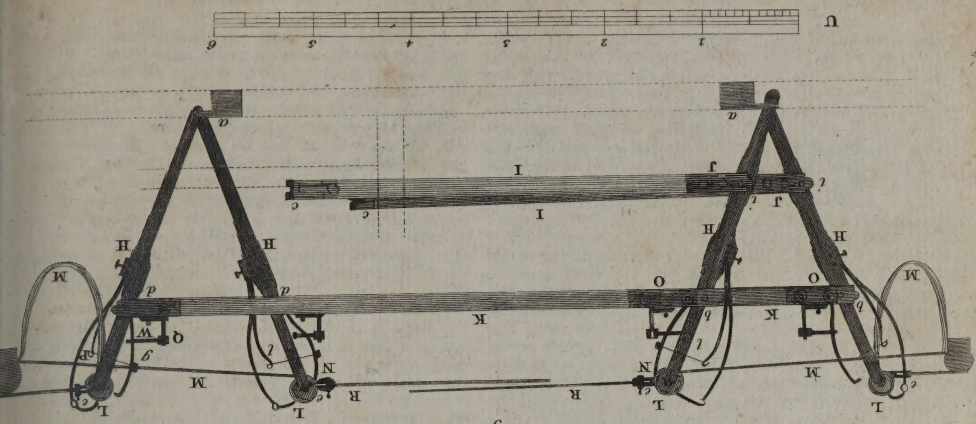


Fig. 3.





remarkable, that at the age of eighteen, when he first went to school, he knew not one letter nor understood one word of any language but Welsh; but he so well improved his time, that he became a person of great and extensive knowledge. His genius led him chiefly to the study of antiquities and philology, in which he composed several books. The first he published was a Grammar, in 1679, entitled *De Analogia seu Arte Latine Lingue Commentariolus*. He also published a new and correct edition of Anacreon, with notes; an edition of Horace; a Dictionary of the British Antiquities, in Latin; and several other books. He was a great master of the ancient British and Irish tongues, was particularly skilled in the Latin and Greek, and in the northern and eastern languages. He died May 31st, 1723, after being above twenty years master of Mercers' School in London.

BAXTER (Andrew), a very ingenious writer of Scotland, was born in 1686, or 1687, at Old Aberdeen, of which city his father was a merchant, and educated in King's College there. His principal employment was that of a private tutor to young gentlemen; and among others of his pupils were Lord Grey, Lord Blantyre, and Mr. Hay of Drummelzier. About 1724 he married the daughter of a clergyman in the shire of Berwick. A few years after he published in 4to. *An Enquiry into the Nature of the Human Soul*, wherein its Immateriality is evinced from the Principles of Reason and Philosophy; without date. In 1741 he went abroad with Mr. Hay, and resided some years at Utrecht; having there also Lord Blantyre under his care. He made excursions from thence into Flanders, France, and Germany; his wife and family residing, in the mean time, chiefly at Berwick-upon-Tweed. He returned to Scotland in 1747, and resided till his death at Whittingham, in the shire of East Lothian. He drew up, for the use of his pupils and his son, a piece, entitled, *Matho; five, Cosmotheoria puerilis, Dialogus*. This was afterwards greatly enlarged, and published in English, in two volumes 8vo. In 1750 was published, *An Appendix to his Enquiry into the Nature of the Human Soul*; wherein he endeavours to remove some difficulties which had been started against his notions of the vis inertiae of matter, by MacLaurin, in his Account of Sir Isaac Newton's Philosophical Discoveries. To this piece Mr. Baxter prefixed a dedication to Mr. John Wilkes, with whom he had commenced an acquaintance abroad. He died this year, April the 23d, after suffering for some months under a complication of disorders. He was a very ingenious and knowing man: the French, German, and Dutch languages were spoken by him with much ease, the Italian tolerably; and he wrote and read them all, together with the Spanish. He was a man also of great integrity, humanity, and candour.

BAYLY (Lewis), author of that most memorable book entitled *The Practice of Piety*, was born at Caermarthen in Wales, educated at Oxford, made minister of Evesham in Worcestershire about 1611, became chaplain to King James, and promoted to the see of Bangor in 1616. His book is dedicated "to the high and mighty prince, Charles Prince of Wales;" and the author tells his highness, that "he had endeavoured to extract out of the chaos of endless controversies the old practice of true piety, which flourished before these controversies were hatched." The design was good; and the reception this book has met with may be known from the number of its editions, that in 8vo. 1734, being the fifty-ninth. This prelate died in 1634.

BAYLY (Thomas), son of the preceding, was educated at Cambridge, and having commenced bachelor of arts, was presented to the subdeanery of Wells by Charles I. in 1638. In 1644 he retired, with other loyalists, to Oxford; and two years after we find him, with the Marquis of Worcester, in Ragland

castle. When this was surrendered to the parliament army, he travelled into France and other countries; but returned the year after the king's death, and published at London, in 8vo. a book, entitled *Certamen Religiosum*; or, a Conference between King Charles I. and Henry late Marquis of Worcester, concerning Religion, in Ragland Castle, Anno 1646. But this conference was believed to have no real foundation; and considered as nothing else than a prologue to the declaring of himself a Papist. The same year, 1649, he published *The Royal Charter granted unto Kings by God himself, &c.* to which he added, *A Treatise*, wherein is proved that Episcopacy is *Jure divino*, 8vo. These writings giving offence, occasioned him to be searched out, and committed to Newgate; whence escaping, he retired into Holland, and became a flaming Roman-catholic. During his confinement in Newgate, he wrote a piece entitled *Herba Parietis*; or, the Wall-Flower, as it grows out of the Stone Chamber belonging to the Metropolitan Prison. Some time after he left Holland, and settled at Douay; where he published another book, entitled, *The End to Controversy between the Roman-catholic and Protestant Religions*. At last this singular person went to Italy, where he lived and died extremely poor.

BAYNES (Sir Thomas), an eminent physician, and professor of music at Gresham College, in London, was born about the year 1622, and educated at Christ's College, in Cambridge, under the tuition of the learned Dr. Henry More, where he took the degree of bachelor of arts about the year 1642. In 1649 he took the degree of master of arts, after which time he applied himself to the study of physic. He went into Italy in company with Mr. Finch (afterwards Sir John), with whom he had contracted the greatest friendship; and at Padua they were both created doctors of physic. Upon the restoration of King Charles II. in 1660, Mr. Baynes and Mr. Finch returned into England, and the same year their grace was passed at Cambridge, for creating them doctors of physic in that university. On the 26th of February following, Mr. Baynes, together with Sir John Finch, was admitted a fellow-extraordinary of the College of Physicians of London. Dr. Petty having resigned his professorship of music in Gresham College, Dr. Baynes was chosen to succeed him, the 8th of March, 1660; and the 26th of June following, he and his friend Sir John Finch were admitted graduates in physic at Cambridge, in pursuance of the grace passed in their favour the year before. The winter following, this inseparable pair of friends designed to have made a second tour into Italy, but did not execute their design. The 20th of March, 1663, they were elected fellows of the Royal Society, upon the first choice made by the council, after the grant of their charter, of which they had been members before; and May 13, 1661, had, with several others, been nominated a committee for a library (at Gresham College), and for examining of the generation of insects. In March, 1664, Dr. Baynes accompanied Sir John Finch to Florence, where that gentleman was appointed his majesty's resident, and returned back with him into England in 1670. Towards the end of the year 1672, Sir John being appointed the king's ambassador to the grand-seignior, Dr. Baynes was ordered to attend him as his physician, and before he left England received from his majesty the honour of knighthood. Nine years after, Sir Thomas still continuing in Turkey, the Gresham committee, taking into consideration his long absence without supplying the duty of his place, thought fit to dismiss him from his professorship, and on the 9th of August, 1681, chose Mr. William Perry in his room. The news of this dismissal could not reach Sir Thomas Baynes; for he died at Constantinople the 5th of the following month.

BEAVER (John), a Benedictine monk in Westminster

abbey, flourished about the beginning of the fourteenth century. He was a man of quick parts, and of great diligence and ingenuity; but he applied himself particularly to the study of the history and antiquities of England, and became a great master of both. Among other things, he wrote, *A Chronicle of the British and English Affairs, from the coming in of Brute to his own time*. He also wrote a book, *De Rebus Canonicis Westmonasteriensibus*;—Of Westminster-abbey, and the several Transactions relating thereto. Leland commends him as a historian of good credit; and he is also cited with respect by J. Stow, in his *Survey of London and Westminster*.

BEAUCHAMP (Richard de), earl of Warwick, and one of the most considerable persons in this kingdom in the fifteenth century, was born January 28; 1381, at the manor-house Salwarpe in the county of Worcester, and had for his god-fathers, King Richard II. and Richard Scroope, then bishop of Coventry and Lichfield, and afterwards archbishop of York. He was made Knight of the Bath at the coronation of King Henry IV. in the year 1399, and in the fourth year of the same reign he had livery of his lands, and was retained to serve the king one whole year, with one hundred men at arms, and three hundred archers. The next year, which was 1402, on the coronation of the queen, he kept, according to the custom of those times, jousts, in which he behaved himself very gallantly. He was called the same year to do the crown more serious service, in that dangerous rebellion raised by Owen Glendower, against whom he behaved bravely, and took his standard in open battle. He was, likewise, in the famous battle at Shrewsbury, against the Percies, where he gained great honour, and was, not long after, made Knight of the Garter. In 1408 he obtained a licence from King Henry IV. to visit the holy sepulchre at Jerusalem, in pursuance of a vow he had made. From Jerusalem he came back to Venice, and was there nobly received. Thence he travelled into Russia, into Lithuania, Poland, Westphalia, and some countries of Germany, shewing great valour in divers tournaments whilst he was in those parts. No sooner was he returned into England, than he was, by indenture, dated 2d October, 12 Henry IV. retained with Henry prince of Wales, afterwards king by the name of Henry V. to serve him as well in times of peace as war, both in this realm, upon, and beyond the seas. At the ceremony of the new king's coronation, he was constituted lord high-steward. In the same year, 1413, we find him one of the king's commissioners into France, to treat of a solid peace between the two kingdoms, to be strengthened and cemented by a marriage between the king his master and the Princess Catherine, daughter to the king of France. In the year 1415 he was declared captain of Calais, an office of great trust and honour in those days, and never conferred but upon a man of known abilities as a soldier, and of a clear unquestionable character in point of fidelity. In May 1417, King Henry sent him to the king of France, attended by a thousand men at arms, to treat of a marriage between him and that king's daughter, the Lady Catherine: but the dauphin knowing that this marriage was intended to defeat his succession, he sent a body of five thousand men, under the command of the earls of Vendome and Lymotin, to obstruct his passage, to whom the earl gave battle, in which both those noblemen were killed, and one of them fell by the earl of Warwick's own hand, and about two thousand of their troops were either slain or taken. He then proceeded on his embassy, in which, notwithstanding the difficulties he had to struggle with, he very happily succeeded, to the king's great satisfaction. In the first of Henry VI. he was by indenture retained to be captain of Calais for two years; which fortress being besieged by Philip duke of Bur-

gundy, now reconciled to the French, this noble earl, assisted by Humphrey duke of Gloucester, and Humphrey earl of Stafford, so gallantly defended it, that, after a long siege and great loss, the Duke of Burgundy was forced to retire from before it. Upon the death of the Duke of Bedford, who was regent of France for King Henry, the Earl of Warwick was constituted lieutenant-general of the realm of France and duchy of Normandy, the highest honour a subject of England could receive. He executed this great and difficult employment with his usual wisdom and diligence, for the four last years of his life, and died in possession thereof in the castle of Rouen, April the 30th, 1439.

BEAUCHAMP (Henry de), son to Richard earl of Warwick, was born at Hanley castle in Worcestershire, on the 22d of March, 1424. Being a young nobleman of great spirit and courage, he offered his service before he was full nineteen for the defence of Normandy, with which the king was so well pleased, that, by his charter, bearing date the second of April, in the twenty-second year of his reign, he created him Premier Earl of England, and for a distinction between him and all other earls, he farther granted him, and the heirs male of his body, leave to wear a gold coronet upon his head, as well in his own presence as elsewhere, in all such assemblies, and upon all feasts in which the like ornaments were worn. Within three days after this he advanced him to the rank of Duke of Warwick, in consideration of the many virtues and great services of his father, granting him place in parliament and at all other meetings, next after the Duke of Norfolk, before the Duke of Buckingham; bestowing likewise a pension of forty pounds per annum, to be paid by the sheriffs of Warwickshire and Leicestershire out of the revenues of those counties, towards the better support of that honour. But this extraordinary mark of the royal favour was not more kindly and gratefully received by the young Duke of Warwick, than it was hatefully and enviously looked upon by the Duke of Buckingham, who thought himself extremely injured thereby. In that reign every thing was apprehended from the feuds and disputes of the nobility; and therefore, to prevent any ill consequences that might arise from the differences between these two noblemen, this point was settled by an act of parliament; which declared, that from the second of December then next ensuing, they should take place of each other by turns, one that year, and the other the next, and so on as long as they should live together; the Duke of Warwick to have the first year's precedence, and he which should survive, to take place of the other's heir male as long as he lived; and from that time the heir male of each was to take place of the other, according as it should happen, that he had livery of his lands before him. Besides these additional titles and marks of honour, the king gave Henry duke of Warwick more substantial proofs of his affection and gratitude, by granting him the reversion after the death of the Duke of Gloucester, of the islands of Guernsey, Jersey, Sark, Erm, and Alderney, for the yearly tribute of a rosette, to be paid at the feast of St. John the Baptist, as also of the manor and hundred of Bristol in Gloucestershire, for the yearly farm of sixty pounds, as also the castles and manors of the king within the forest of Dean, yielding and paying the yearly rent of one hundred pounds. But, as if all these honours and grants had been still insufficient to express the king's affection for this young nobleman, and his remembrance and respect for his father's services, Henry VI. went still farther, even to the utmost verge and extent of his prerogative, by declaring the said Henry duke of Warwick king of the island of Wight, and placing the crown upon his head with his own hands. As this was the highest honour the king could bestow, so it proved the last favour the

duke could receive; since he was taken off in the flower of his age, at the castle of Hanley, where he was born, on the 17th of June, 1445, in the twenty-second year of his age.

BEAUCHAMP (John de), baron of Kidderminster, in the reign of Richard II. and the first baron created by patent in this kingdom. He was the son of Sir Richard Beauchamp of Holt, who was the grandson of William de Beauchamp of Elmley, and brother to William de Beauchamp, the first earl of Warwick of that family. He was born in the year 1320, and by the death of his father inherited the lands of Holt in Worcestershire, & Edward III. He was early in the service of his prince; for 12 Edward III. when he was not more than twenty, he was in the expedition to Flanders, and in 20 Edward III. in France, and acquired reputation in both. In 1353, he was in Gascoigne, in the retinue of Thomas earl of Warwick, and continued there all the next year. In the thirty-third of the same reign he served again in France with much honour. In the forty-second of that king, he went over into that realm on the same account; and in 46 Edward III. he attended the king's son, John duke of Lancaster, in his expedition into Spain. By these long and faithful services to the crown, he so raised his credit at court, that in the sixth of Richard II. being then one of the esquires of the king's chamber, he had a grant of twenty marks per annum, out of the manor of Sutton, in the forest of Macclesfield in Cheshire. But growing more and more into the king's favour, he, in the ninth of the same reign, from the like considerations, and because he had received the honour of knighthood, under the king's banner displayed against Scotland, had an annuity granted him of one hundred marks, out of the king's rents and revenue in North Wales. But soon after he made a surrender of this annuity, and, instead thereof, had a considerable grant made him in Caermarthenhire, and was also appointed chief-justice of North Wales, both for term of his life. He had also a special charter of divers liberties and privileges, as well in vert and venison, as other things, in his lordship of Kidderminster, in the county of Worcester; granted him much about the same time. By these repeated testimonies of royal kindness, Sir John Beauchamp, who was now advanced to be steward of the king's household, and one of his chief favourites, was encouraged to procure new gifts from the crown; and, therefore, in the eleventh year of King Richard, laying hold of the breaking out of a French war, Sir John Beauchamp obtained for himself a grant of all the manors and lands belonging to the priory of Deerhurst in the county of Gloucester, then seized into the king's hands; as all other priories-alien were. By such grants he acquired a good estate; and to add an augmentation of honour to those of fortune, he procured himself to be created Baron Kidderminster by patent, limiting that honour to his heirs male; which became the precedent for future creations. It was thought that the king intended him farther honours, had not a sudden reverse of fortune put a stop to his master's power, and to his prosperity. This happened in the year 1388, when the Duke of Gloucester, and other powerful lords, having first defeated the army raised by the king's favourite, whom he had created Duke of Ireland, marched on to London, and forced him to call a parliament. Amongst other noble persons then called to account for their past behaviour, our Lord Beauchamp was one, who was first removed from his office of treasurer of the king's household, then sent prisoner to Dover-castle, and lastly condemned and executed for high treason upon Tower-hill.

BEAUCHAMP (John de), son to Sir William de Beauchamp, constable of the castle of Gloucester, was, on the death of Richard de Beauchamp, earl of Warwick, constituted one of the guardians of his son Henry. He purchased from Thomas de Botreux the moiety of the manor of Alcester, and obtained

from King Henry VI. a charter for various privileges and immunities to that place, as also the grant of another fair to be held there on the eve of St. Dunstan, and to continue for two days following. He was in so great credit with that monarch, that in the twenty-fifth year of his reign, he was advanced by him to the dignity of Lord Beauchamp of Powyke, and had an annuity of sixty pounds out of the fee-farm of the city of Gloucester. He was also constituted justice of South Wales, with power to execute that office by himself, or his sufficient deputy. About three years after this, by the kindness of the same prince, he was promoted to the office of lord high-treasurer of England, which he did not hold full two years, but retiring to a private life, died at a good old age, in the year 1475.

BEAUCHAMP (William de), Lord Bergavenny, was the younger son of Thomas de Beauchamp, earl of Warwick. He seems to have made his first campaign in 1366, under the famous John of Gaunt, duke of Lancaster, in his expedition into Castile. He served continually after this through that whole reign, sometimes in Spain, sometimes in France, by land sometimes, and sometimes by sea. For these great services and others expected from him, we find that in the first of Richard II. he was appointed governor of the castle and county of Pembroke, and in the fourth of the same king, lord chamberlain, with an annual pension of two hundred pounds for life. The same year he was retained to serve by indenture with two hundred men at arms, and two hundred archers, under Edmund de Langley, earl of Cambridge, in Spain. In the ninth of King Richard, he attended the Duke of Lancaster into Spain, to support his pretensions to the crown of Castile. He was the next year constituted captain of the castles of Pembroke and Kilgaran in Wales, and holding still his command of Calais, was appointed the king's commissioner to treat with the Earl of Flanders. It was at this juncture he distinguished himself in a manner so particular, that it deserves to be for ever remembered. Amongst other base schemes put into the head of King Richard II. by his favourites, one was, to retire, when the Duke of Gloucester and the other lords were near London with an army, to France, and there purchase the assistance of that monarch, by giving up to him most of the fortresses he then held in that realm. If it be some scandal to our country, that it produced men base enough to betray a young and inconsiderate prince into so foul a contrivance; we must allow that it is no less honourable for us, that this gallant Lord Bergavenny had the courage to stand in the gap to secure our possessions from being so shamefully given up, and at the hazard of his life, to serve the king against his will, and merit his confidence by a noble act of disobedience. For when all things were ready at home for carrying this dark design into execution, and the king sent orders to this lord to quit his command, and transmit certain letters to the court of France, he stoutly refused both. He declared with respect to the former, that he was intrusted with this important fortress with the advice and consent of the nobility, and without their consent he would not render up his command. As for the letters (guessing at their tenor), instead of sending them to Paris, he transmitted them to the Duke of Gloucester in England. He went still farther than this: for when John de la Pole, brother to the great favourite Suffolk, came with the king's orders to take from him the command of Calais, he not only refused to yield it into his hands, but seized him and carried him over prisoner to England, which at that time incensed the king to such a degree, as it entirely ruined the scheme of his ministers, that he caused the Lord Bergavenny, immediately after his arrival, to be arrested and committed to close custody; but soon after, either through fear or choice, caused him to be set at liberty again. In the first of Henry IV.

we find him constituted justice of South Wales for life, and restored to the government of the town and castle of Pembroke and lordship of Tineby, with the addition of the castle and lordship of Kilgaran, and county of Overlowe also for life, paying into the Exchequer seventy marks per annum. He died about the year 1411.

BEAUFORT (John), eldest son of John of Gaunt, duke of Lancaster, was born in Beaufort-castle in Anjou. In 1394, being then a knight, he accompanied his father into Gascony. He was advanced to the honour of Earl of Somerset, in a parliament held at Westminster, by creation, bearing date 1396-7; and on September 29th, in a parliament held at the same place, was created marquis of Dorset; but this last honour being vacated, he was created the same day, September 29th, Marquis of Somerset; notwithstanding which, he was summoned to parliament by the title only of Marquis of Dorset; and by that denomination was made constable of Wallingford-castle, and steward of the honour of Wallingford, November 22, 1397; as also constable of Dover-castle, and warden of the Cinque-ports, on the 6th of February following; and not long after, King Richard the Second's lieutenant in Aquitaine. He was likewise, on the 2d of February the same year, constituted admiral of all the king's fleet, both to the north and west. In 1397 he was one of those lords who, at the great council at Nottingham, impeached Thomas duke of Gloucester, &c. of treason; for which he and the rest of them were adjudged, in the first parliament of King Henry IV. to lose their titles, and the estates that had been given them, at or since the last parliament, belonging to any of those persons they had impeached, or such as they enjoyed at the time of the Duke of Gloucester's imprisonment. By this means, John Beaufort lost the title of Marquis of Dorset, and retained only that of Earl of Somerset; but soon ingratiating himself with the new king, who was his brother by the father's side, he was constituted by him chamberlain of England for life, February 9, 1399-1400. In 1401 he was retained by indenture to serve the king as governor of the town of Caermardyn, and had his estate restored to him. He was also made captain of Calais, with his marches. In 1401, or 1402, he was commissioned with others, to treat of a league of amity between the king of England and the Duke of Gueldres. In 1402 the commons in parliament petitioned for his restitution to the dignity of marquis; which he seemed unwilling to refuse, because that title was new in this kingdom, he being the second on whom it was conferred; however, he accepted of it at last. In the year 1404 he had an assignation of the Isle of Thanet, for the support of himself, and the garrison of Calais, which consisted of his soldiers; and was appointed ambassador to treat of a peace with the French. He also was one of the commissioners empowered to receive such sums of money as then remained unpaid for the ransom of John king of France, taken prisoner at the battle of Crécy. And finally, in the eighth year of King Henry IV. was constituted admiral of the king's whole fleet, as well for the north as west. Having thus passed through many honourable employments, he departed this life on the 21st of April, 1410.

BEAUFORT (Henry), bishop of Winchester, and cardinal priest of the Roman church, was the son of John of Gaunt, duke of Lancaster, by his third wife, Catherine Swinford. He studied for some years at Oxford, but had his education chiefly at Aix la Chapelle, where he applied himself to the civil and common law. Being of royal extraction, he was advanced very young to the prelacy, and was elected bishop of Lincoln in 1397, in the room of John Buckingham, who resigned. In 1399 he was chancellor of the university of Oxford, and at the same time dean of Wells. He was lord high-chancellor of England in 1404, the fifth of his brother Henry IV. The

next year he succeeded William of Wickham, by papal provision, in the see of Winchester, and received the spiritualities from the Archbishop of Canterbury, in the Bishop of London's palace, the 18th of March. He was again lord chancellor in 1414, the second of his nephew Henry V. This prelate was one of King Henry the Sixth's guardians during his minority; and in 1424, the third of the young king's reign, he was a fourth time lord chancellor of England. There were perpetual jealousies and quarrels between the Bishop of Winchester and the protector, Humphrey duke of Gloucester, which ended in the ruin and death of the latter. About two years after, the Bishop of Winchester received with great solemnity, in the church of Our Lady at Calais, a cardinal's hat, with the title of St. Eusebius, sent him by Pope Martin V. In September 1428 the new cardinal returned into England, with the character of the Pope's Legate lately conferred on him; and in his way to London, he was met by the lord mayor, aldermen, and the principal citizens on horseback, who conducted him with great honour to his lodgings in Southwark. He died June 11, 1447.

BEAUFORT (Joan), queen of Scotland, was the eldest daughter of John Beaufort, earl of Somerset, son of John of Gaunt, by Margaret, daughter of Thomas Holland, earl of Kent, and niece to the famous Henry Beaufort, cardinal of St. Eusebius, and Bishop of Winchester. In February 1423 she was married, with great solemnity, in the church of St. Mary Overrey in Southwark, to James the First, king of Scotland, who had been prisoner in England ever since the 30th of March, 1404. Her portion was forty thousand marks. This match was procured by her uncle, the Bishop of Winchester above mentioned, in order to strengthen and support his family by an alliance with the kingdom of Scotland. She set out, with the king her husband, for Scotland, in March 1423, being attended as far as Berwick by her father, and her uncle the cardinal; and on the 20th of that month arrived at Edinburgh. She was crowned with him the 22d of May, 1424. Through her merciful intercession with the king in 1427, he saved the life of Alexander lord of the Isles, who had committed some acts of hostility; and in 1431 that of Archibald earl of Douglas, who was suspected of treason. The 16th of October, 1430, she was delivered at Stirling of two sons at one birth, which were baptized by the names of Alexander and James. Alexander died young, but James lived to succeed his father. In the year 1437 he received an information of a conspiracy forming against the king, her husband's life; upon which he went post to him to Roxburgh, and informed him thereof; but notwithstanding her precaution, the king was most cruelly murdered in the Dominicans abbey at Perth, by the faction of Walter earl of Athol, his uncle, on the 21st of February, 1436-7, in the thirteenth year of his reign. When the ruins entered the room, the queen, to her everlasting honour, so long shrouded the king from the assassins with her own body, that she received two wounds before she could be drawn off him. She married to her second husband, James Stewart, called the Black Knight, son to the lord of Lorne; and dying in the year 1446, was buried at Perth, near the king her first husband.

BEERYCIA (anc. geog.), an ancient name of Bithynia, so called from the Bebrices its inhabitants. The Bebrices were afterwards driven out by the Thracians, viz. the Bithyni and Thyni; from whom, in process of time, the country took the name of *Bithynia*. See *BITHYNIA*.

BEDDINGTON, a village near Croydon in Surrey. Here is Beddington Park, the ancient seat of the Carews, one of the many said to have been the residence of Queen Elizabeth. In the park, which is famous for walnuts, is an avenue of trees, called Queen Elizabeth's Walk. The church

is a Gothic pile, with stalls in the aisles, after the manner of cathedrals.

BEDEN, or **BEDING**, a village in Suffex, thirteen miles from Lewes, near a river of its own name, which runs into the English Channel at New Shoreham, and produces very good mullets, pilks, eels, &c.

BEDERICK (Henry), a celebrated preacher in the fourteenth century, was a monk of the order of St. Angustin at Clare; and furnished by Bury, because he was born at St. Edmund's Bury in Suffolk. Having from his youth shewn a quick wit, and a great inclination to learning, his superiors took care to improve these excellent faculties, by sending him not only to our English, but also to foreign universities: where closely applying himself to his studies, and being a constant disputant, he arrived to such fame, that at Paris he became a doctor of the Sorbonne. Not long after he returned to England, where he was much followed, and extremely admired for his eloquent way of preaching. This eminent qualification, joined to his remarkable integrity, uprightness, decent behaviour, prudence, and dexterity in the management of affairs, so recommended him to the esteem of the world, that he was chosen provincial of his order throughout England; in which station he behaved in a very commendable manner. He flourished about the year 1380, in the reign of King Richard II. He wrote several things, namely, 1. Lectures upon the Master of the Sentences, i. e. Peter Lombard, in four books. 2. Theological Questions, in one book. 3. Sermons upon the Blessed Virgin. 4. A Course of Sermons for the whole year.

BEDFORD (Hilkiah), of Sibsey in Lincolnshire, a quaker, came to London, and settled there as a stationer, between the years 1600 and 1625. He married a daughter of Mr. William Plat of Highgate, by whom he had a son Hilkiah, a mathematical instrument-maker in Hoher-lane, near West Smithfield. In this house (which was afterwards burnt in the great fire of London 1666) was born the famous Hilkiah, July 23, 1663; who in 1679 was admitted of St. John's College, Cambridge, the first scholar on the foundation of his maternal grandfather William Plat. Hilkiah was afterwards elected fellow of his college, and patronized by Heneage Finch earl of Winchelsea, but deprived of his preferment (which was in Lincolnshire) for refusing to take the oaths at the revolution, and afterwards kept a boarding-house for the Westminster scholars. In 1714, being tried in the court of King's Bench, he was fined 1000 marks, and imprisoned three years for writing, printing, and publishing, *The Hereditary Right of the Crown of England asserted*, 1713, folio; the real author of which was George Harbin, a nonjuring clergyman, whom his friendship thus increased, and on account of his sufferings he received 100l. from the late Lord Weymouth, who knew not the real author. His other publications were, a translation of *An Answer to Fontenelle's History of Oracles*, and a Latin Life of Dr. Barwick, which he afterwards translated into English. He died November 26, 1724.

BEDFORD (Thomas), second son of Hilkiah, was educated at Westminster school; and was afterwards admitted of St. John's College, Cambridge; became master's sizar to Dr. Robert Jenkin, the master; and was matriculated December 9, 1730. Being a nonjuror, he never took a degree; but going into orders in that party, officiated amongst the people of that mode of thinking in Derbyshire, fixing his residence at Compton near Ashbourne, where he became much acquainted with Ellis Farnsworth, and was indeed a good scholar. Having some original fortune, and withal being a very frugal man, and making also the most of his money for a length of years, Mr. Bedford died rich at Compton, in February 1773, where he was well respected. As soon as he took orders, he went

chaplain into the family of Sir John Cotton, bart. then at Angiers in France. From thence, having a sister married to George Smith, esq. near Durham (who published his father Dr. John Smith's fine edition of Bede), Mr. Bedford went into the North, and there prepared his edition of Symeonis monachi Dunhelmensis libellus de exordio atque procurfu Dunhelmensis ecclesie; with a continuation to 1154, and an account of the hard usage Bishop William received from Rufus; which was printed by subscription in 1732, 8vo. from a very valuable and beautiful MS. in the cathedral library, which he supposes to be either the original, or copied in the author's life-time. He was living at Ashbourne, 1742, and about that time published an Historical Catechism, containing, in brief, the sacred history and doctrines of christianity, and an explanation of the feasts and fasts of the church, the second edition, corrected and enlarged.

BEDNORE, or **BEDDANORE**, a town in the peninsula of Hindootan, and in the dominions of Tippoo Sultan, regent of Myfore. It was taken by General Mathews in January 1783; but it was surrendered to Tippoo in May following. The capitulation was perfunctorily violated, and the general, it is supposed, was poisoned. Bednore is 42 miles S.E. of Bombay, and 187 N.W. of Seringapatam. Long. 75. 30. E. Lat. 14. 0. N.

BEDRIACUM (anc. geog.), a village of Italy, situated, according to Tacitus, between Verona and Cremona, but nearer the latter than the former. From the account given by that historian, Cluverius conjectures that the ancient Bedriacum stood in the place where the city of Caneto now stands. This village was remarkable for the defeat of the emperor Galba by Otho, and afterwards of Otho by Vitellius.

BEDSTEAD, a frame for supporting a bed. Among the various materials used for bedsteads, iron is not only the most durable, but also the most beneficial, with respect to health. Oak is excellent for this purpose, being almost impervious to worms; if felled in the proper season, and allowed to become dry; but cedar, were it not for its strong odour, would be still more efficacious in preventing the inroads of bugs, or other vermin. Hence, the beams and posts of a bedstead, made of any hard wood, might be inlaid with cedar.

On this occasion, we cannot, in justice to Mr. Lambert, of Berwick-street, Soho, omit to give a concise description of his newly-invented *bedstead for the sick and wounded*, which he terms the *Royal Patent Fracture Bed*, and which is ably calculated to alleviate the painful situation of the aged, the infirm, or diseased. This ingenious contrivance, therefore, affords a comfortable accommodation to persons confined by fractures, gout, palsy, &c.: it is particularly adapted to lying in women. The bed may be made, and the linen changed, without in the slightest manner disturbing the patient, which renders it highly serviceable in camps and hospitals.

We have given a plate of this useful invention, of which the following is an explanation: *A*, Pl. 17. the bedstead; *B*, the feather-bed; *C*, the straining-frame; *D*, the fracture-frame; *S, S, S, S*, four rings in the fracture-frame; *E*, the sleeping-desk; *R, R*, two rings in the sleeping desk; *F, F, F, F*, pulleys put in motion by the machinery; *G, G, G, G*, receiving-hooks of the fracture-frame; 3333, four rings in the straining-frame; *H, H, H, H*, receiving-hooks to ditto; *I*, the plate of the machinery; *K*, the great wheel; *L*, a pinion, with a winch turning the great wheel; *O*, a pall or stop; *M*, a pinion with a fly, to prevent a too sudden descent; *N*, the rollers.

The subjoined directions should be attended to in making and using the bed. Lay the straining-frame *C*, covered with ticking, on the feather-bed *B*, then the under-blanket and sheet: above these, place the fracture-frame *D* (on which

the patient is supported); then the bolster, pillows, and upper clothes, in the usual manner. When the feather-bed is to be made, wind up the two frames, *C* and *D*, by the winch, till the patient is supported above the bed, which may then be made, or, if necessary, another placed in its stead, and the two frames let down upon it.

In changing the linen, the two frames *C* and *D* must be wound up till they reach the four hooks *G, G, G, G*; secure the hooks in the four rings *S, S, S, S*, and wrap the sheet you intend to remove round the upper clothes, to exclude cold; let down the under-frame *C*; replace the blanket, and put on the clean sheet; draw away the other, and again wind up the frame to the fracture-frame, and unhook it at the four corners. Thus resting on the under frame, the patient safely descends to the comforts of a new-made bed and clean linen.

As in the early stages of consumptive, or asthmatic disorders, it is material to avoid the heat of a feather-bed, particularly if the patient be liable to night-sweats, and if he be able to rise and have the linen changed, the fracture-frame may not be necessary: in this case, the lower frame may be wound a little above the feather-bed; at the top of the frame *C*, there is a sleeping-desk, *E*, by which the head and shoulders may be raised at pleasure, by fixing the two hooks at the end of the frame to the two rings *R, R*, and freeing those at the feet: after which, by the use of the winch, it may be lowered or raised at pleasure.

The whole apparatus may be attached to any four-post bedstead by a common carpenter.

It is needless to expatiate upon the utility of such a bedstead to families at a distance from the metropolis: and as we have no personal acquaintance with this ingenious artisan, we cannot be suspected of partiality: indeed, the first account of his invention, together with a plate, was communicated to us by means of a foreign journal lately imported.

It deserves to be noticed, that the prevailing custom of providing the bedsteads of children with curtains is liable to strong and serious objections: 1. Because they prevent a free access of air for the renewal of that miasm which has been rendered unfit for respiration; 2. They endanger the lives of infants by candle-light, from which fatal accidents have frequently happened; and, 3. They are pernicious receptacles for the finest particles of dust, which, as we have already observed, are apt to be inhaled by the person confined within such curtains on the least motion of the bedstead: and thence, perhaps, many young and blooming innocents may date the first period of their consumptive attack. We do not, however, mean to insinuate, that curtains ought to be universally abandoned, as there may occur a variety of instances in which the laws of propriety and decorum might render them useful and necessary.

BEEMAH, a river of Hindoostan, in the Decan. It is a principal branch of the Kistna, coming from the N.W. and joining it near Edghir. It rises in the mountains to the N. of Poonth, and passes within 30 miles of the E. side of that city.

BEGIA, or BGGIA, a town of Africa, in the kingdom of Tunis, with a strong castle, on the declivity of a mountain, 65 miles W. of Tunis. Long. 11. 30. E. Lat. 36. 42. N.

BEK (David), a famous Dutch portrait painter, and disciple of Vandyck; whose skill in his profession, and politeness of address, acquired him high esteem in most courts of Europe. He was in great favour with Charles I. king of England, and taught the principles of drawing to his sons Charles and James. He went afterwards into the service of the kings of France, Denmark, and of Christina queen of Sweden, who made him first gentleman of her bedchamber. His manner

of painting was so quick, that our king Charles told him he believed he could paint if he was riding post. It is said, that in travelling through Germany he fell sick at an inn, and was laid out for dead. His servants drinking for consolation by his bed-side, one of them in a drunken freak said, "Our master was fond of a glass while he was alive, and out of gratitude let us give him a glass now when he is dead." The proposal proving agreeable, he raised up his master's head, and endeavouring to pour some wine into his mouth, Bek opened his eyes; and being compelled, nevertheless, to drink the glass full, gradually revived. He lived some years after, though he died at 35 years old, in 1656.

BEKINSAU (John), author of a book entitled *De Supremo et Absoluto Regis Imperio*, was born at Broadchalke in Wiltshire. He had his education in grammar learning at Wykeham's school, near Winchester, from whence he was sent very early to New College in Oxford; where, having served two years of probation, he was admitted perpetual fellow in the year 1520. In 1526 he took the degree of master of arts. In his college he distinguished himself by his extraordinary skill in the Greek language. In 1538 he resigned his fellowship, and married. What preferment or employment he had afterwards is uncertain. He was familiarly acquainted with, and highly esteemed by, the most learned men of the nation, particularly the famous antiquary and historian John Leland. He was in good esteem with King Henry VIII. and King Edward VI. When Queen Mary came to the crown, and endeavoured to destroy all that her father and brother had done towards the reformation of the church, Bekinsau wheeled about with the times, and became a zealous Roman-catholic. After Queen Elizabeth's accession, when Protestantism again took place, he retired to an obscure village in Hampshire, called Shourborne, where he spent the remainder of his life in great discontent, and was buried in the church of that place, the 20th of December, 1559, aged about sixty-three years.

BELAY (*Engel.*). For the word "bevel" in that article, read "kevel."

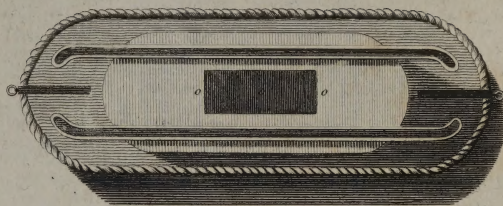
BELCHIER (John), was born in the year 1706, at Kington in Surrey. He received his education at Eaton; and, discovering an inclination for surgery, was bound apprentice to Mr. Chelfeld, by far the most eminent man of his profession. Under this great master he soon became an accurate anatomist. His preparations were next esteemed to Dr. Nicholls's, and allowed to exceed all others of that time.

Thus qualified, his practice soon became extensive; and, in the year 1736 he succeeded his fellow-apprentice, Mr. Craddock, as surgeon to Guy's hospital. In this situation, which afforded such ample opportunity of displaying his abilities, he, by his remarkably tender and kind attention to his poorer patients, became as eminent for his humanity as his superior skill in his profession. Like his master Chelfeld, he was very reluctant before an operation, yet quite as successful as that great operator. He was particularly expert in the reduction of the humerus, which, though a very simple operation, is frequently productive of great trouble to the surgeon, as well as excruciating pain to the patient.

He was elected fellow of the Royal Society, to which learned body he communicated several curious cases that fell within his cognizance; particularly a remarkable case of an hydrops ovarii, published in the *Philosophical Transactions*, No. 423; an account of a miller whose arm was torn off by a mill, August 15, 1737, No. 449; and a remarkable instance of the bones of animals being turned red by aliment only, 442. The greatest discoveries frequently are owing to trifling and accidental causes. Such was the case in the last-mentioned circumstance, Mr. Belchier being led to make his

Perspective View.

Fig. 1.

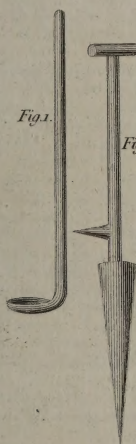
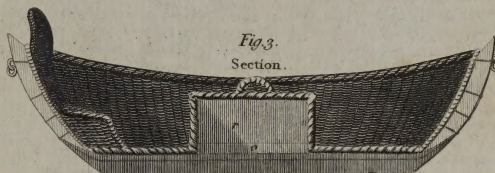
Fig. 2.
Plan

Boat Hook.

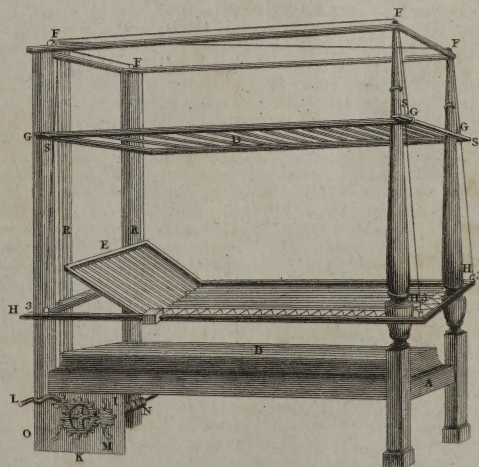
Draining Instruments.

Fig. 1.

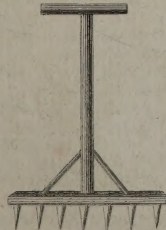
Fig. 2.

Fig. 3.
Section.

Bedstead for the Wounded.



Dibble



enquiries on that subject by the bone of a boiled leg of pork being discovered to be perfectly red, though the meat was well-flavoured, and of the usual colour.

On his resignation as surgeon of Guy's, he was made governor both of that and St. Thomas's hospital, to which he was particularly serviceable, having recommended not less than 140 governors.

Mr. Belchier, in private life, was a man of strict integrity, warm and zealous in his attachments, sparing neither labour nor time to serve those for whom he professed a friendship. He was a great admirer of the fine arts, and lived in habits of intimacy with the principal artists of his time. He enjoyed a great share of health, though far advanced in years when he died. His body was interred in the chapel at Guy's hospital.

BELERIUM (anc. geog.), a promontory of the Dumnonii, or Damnonii, the westernmost Britons. Now called the *Land's End*, in Cornwall.

BELESTAT, a town of France, in the department of Arriege and late county of Foix, remarkable for a spring, which, it is said, ebbs and flows 12 times in 24 hours, as exactly as a clock.

BELGRADE, a small town of Romania, in European Turkey, on the front of Constantinople, 20 miles N. of that city. Long. 29. o. E. Lat. 41. 22. N.

BELGRAVE (Richard), a writer of the 14th century, of the ancient family of the Belgraves in Leicesterhire, was born at the town of Belgrave, about a mile from Leicester, and educated in the university of Cambridge, where he applied himself with great diligence, and like success, to his studies, and afterwards took the degree of doctor of divinity. He entered himself into the order of Carmelite friars, and distinguished himself by his great skill in the Aristotelian philosophy, and school divinity. However, he was more remarkable for the strength and subtilty of his lectures, than the elegance of his style, the study of polite literature being generally neglected in that age. Pits gives him the character of a man of eminent integrity and piety. He flourished in the year 1320, under the reign of King Edward II. and wrote, among other works, Theological Determinations, in one book; the subject of which was, Whether the Divine Essence could be seen? and Ordinary Questions, in one book.

BELING (Richard), was born in the year 1613, at Belingstown, in the barony of Balrothery, and county of Dublin, the ancient seat of his family, which was of considerable rank in the English pale. He was the son of Sir Henry Beling, knight, and was educated in his younger years at a grammar school in the city of Dublin, but afterwards put under the tuition of some priests of his own religion, which was Popish; who so well cultivated his good genius, that they taught him to write in a fluent and elegant Latin style, as appears by several of his pieces hereafter mentioned. Thus grounded in the polite parts of literature, his father removed him to Lincoln's Inn, to study the municipal laws of his country, where he abode some years, and returned home a very accomplished gentleman; but it does not appear that he ever made the law a profession. His natural inclination turning to arms, he early engaged in the rebellion of 1641, and, though not above twenty-eight years of age, was then an officer of considerable rank: for in February that year he appeared at the head of a strong body of the Irish before Lismore, and summoned the castle to surrender; but the lord Broghill, who commanded in it a small body of one hundred near-raised forces, slighted the summons, and another party coming to his aid, Mr. Beling thought fit to draw off, and quitted the siege. He afterwards became a leading member in the supreme council of

the confederate Roman-catholics at Kilkenny, to which he was principal secretary; by whom he was sent ambassador to the pope, and other Italian princes, in 1645, to crave aid for the support of their cause. He brought back with him a fatal present in the person of the nuncio, John Baptist Rinuccini, archbishop and prince of Fermo, who was the occasion of reviving the distinctions between the old Irish of blood, and the old English of Irish birth, which split that party into factions, prevented all peace with the marquis of Ormond, and ruined the country which he was sent to save. When Mr. Beling had fathomed the mischievous schemes of the nuncio and his faction, and perceived that they had other views than merely to obtain a toleration for the free exercise of their religion, as in the beginning they pretended, nobody was more zealous than he in opposing and agitating their measures, or in promoting the peace then in negotiation, and submitting to the king's authority, which he did with such heartiness and sincerity, that he became very acceptable to the marquis of Ormond, who entrusted him with many negotiations, both before and after the Restoration, which he executed with great fidelity and sufficiency. When the parliament army had subdued the Irish, Mr. Beling retired to France, where he continued several years, and in that time employed himself in writing several books in Latin, in opposition to such writers of the Romish party as had endeavoured to clear themselves from being the instruments of the rebellion, and to lay the blame thereof on the severity of the English government. His account of the transactions of Ireland, during the period of the rebellion, is esteemed by judicious men as being more worthy of credit than any written by the Romish party; and yet he is not free from a partiality to the cause he was at first embarked in, and his credulity has been taxed in the case of Father Finachty. He returned home upon the Restoration, and was repossessed of his estate, by the favour and interest of the duke of Ormond. He died in Dublin, in September 1675, and was buried in the churchyard of Malahide, about five miles from that city.

BELL (Beaupré), son of Beaupré Bell, esq. of Beaupré-hall, in Upwell and Outwell, in Chaceclose hundred, Norfolk, where the Beaupré family had settled early in the fourteenth century, and enjoyed the estate by the name of Beaupré (or de Bello prato) till Sir Robert Bell intermarried with them about the middle of the sixteenth. Sir Robert was speaker of the House of Commons 14 Eliz. and chief baron of the Exchequer, and caught his death at the black assize at Oxford, 1577. Beaupré Bell, his fourth lineal descendant, married Margaret, daughter of Sir Anthony Oldfield, of Spalding, bart. who died 1720, and by whom he had issue his namesake, the subject of this article, and two daughters, of whom the youngest married William Graves, esq. of Fulborn in Cambridgeshire, who thereby inherited the family estate near Spalding, with the site of the abbey, and has a striking likeness of his brother-in-law. Mr. Bell, junior, was educated at Westminster school, admitted of Trinity College, Cambridge, 1723, and soon commenced a genuine and able antiquary. He made considerable collections of church notes in his own and the neighbouring counties, all which he bequeathed to the college where he received his education. Mr. Bloomfield acknowledges his obligations to him for collecting many evidences, seals, and drawings, of great use to him in his History of Norfolk. The old gentleman led a miserable life, hardly allowed his son necessities, and delapidated his house. He had five hundred horses of his own breeding, many above thirty years old unbroken. He took home his son from college, where his library was left to mould. On his death, his son succeeded to his estate, of about 1500l. a-year, which he enjoyed not long, and dying of a consumption unmarried, on the road

to Bath, left the reversion, after the death of his sister (who was then unmarried, and not likely to have issue), with his books and medals, to Trinity College, under the direction of the late vice-master, Dr. Walker. But his sister marrying (as above), it is said the entail was cut off. He was buried in the family burying-place, in St. Mary's chapel, in Outwell church, for the paying of which, and for a monument, he left 150*l*. The registers of the society abound with proofs of Mr. Bell's taste and knowledge in ancient coins, both Greek and Roman, besides many other interesting discoveries.

BELLENDE, or **BALLANTINE** (William), a celebrated author, was, in 1602, professor of humanity, or belles lettres, at Edinburgh, and master of the requests to James I. who had so high an esteem for him, that he enabled him to live in easy circumstances at Paris, where he wrote these three books; the first entitled, *De Statu prisci Orbis in Religione, Re politica, et Literis*; or, the State of Religion, Politics, and Literature, in the old World, both before and after the Flood. The second and third contain the opinions of Cicero on matters of the highest importance, delivered in his own words. They were dedicated to Charles prince of Scotland and Wales, afterwards King Charles I. and to his brother Henry. In a late edition, the Rev. Dr. Parr thought proper to inscribe them to Mr. Burke, Lord North, and Mr. Fox, whose respective portraits are prefixed to each dedication, and whose talents and virtues he celebrates and defends in a preface of seventy-six pages, containing a very free and bold discussion of our public men and measures in very classical language, and a strong and satirical representation, under borrowed names of antiquity, of the chiefs of the other party, or the present ministry.

Bellenden wrote another work, published after his death, "*De tribus Luminibus Romanorum*," whom he conceives to be Cicero, Seneca, and the elder Pliny. The editor gives an account of this work, from whence he took the idea of drawing his characters of the three luminaries of Great Britain. He marks the proficiency in Greek and Roman literature which once distinguished the Scotch, before the civil dissensions drove their brightest geniuses abroad, and celebrates the ardour for philosophy and literature so prevalent in North Britain at present. Dr. Middleton has been charged with borrowing not only the matter, but the arrangement, of his "*Life of Cicero*," from Bellenden, without the least acknowledgment, and the editor confesses himself of this opinion.

BELLESME, a town of France, in the department of Orne, and late province of Perche, with an ancient castle, 75 miles S. W. of Paris. Long. o. 42. E. Lat. 48. 23. N.

BELLOVACI (anc. geog.), a people of Gallia Belgica, reckoned the bravest of the Belgæ; now the *Beauvaisis*, in the Isle of France.

BELMEIS, or **BRAUMES** (Richard de), I. bishop of London in the reign of Henry I. was advanced to that see through the interest of Roger Montgomery, earl of Shropshire, and consecrated 26th July, 1108. Immediately after his consecration, he was appointed by the king warden of the marches between England and Wales, and lieutenant of the county of Salop; which offices he held about three years, residing for the most part of the time at Shrewsbury. This prelate expended the whole revenues of his bishopric on the structure of St. Paul's cathedral in London; but despairing ever to finish it, and growing tired of so much labour and expence, he turned the stream of his liberality another way; and, exchanging the manor of Landworth for a place in the diocese of London called St. Oith de Chich, he built there a convent of regular canons. Being seized with a dead palsy, and thereby disqualified for the exercise of his episcopal functions, he in-

tended to have resigned his bishopric, and to have spent the remainder of his life in the monastery of his own foundation: but whilst he delayed his purpose from day to day, he was prevented by death, which took him out of this life January 16, 1127.

BELMEIS, or **BRAUMES** (Richard de), II. bishop of London, in the reign of King Stephen, was nephew of Richard de Belmeis, bishop of London in the preceding reign, by that prelate's brother, Walter de Belmeis. Before he came to age, he was appointed by his uncle archdeacon of Middlesex; but the bishop was prevailed upon by William dean of London, his nephew by his sister Adelina, and by the Prior of Chich, to commit the administration of the archdeaconry, during Richard's minority, to Hugh, one of his chaplains. It was with no small difficulty that Richard afterwards recovered his archdeaconry out of the hands of this faithless guardian. In the beginning of October 1151 he was advanced to the see of London, in the room of Robert de Sigillo, and consecrated at Canterbury by Archbishop Theobald, in the presence of all the bishops of England, excepting Henry of Winchester, who excused his absence, and approved the choice of Richard, in a letter to the archbishop. This prelate died May 4, 1162.

BELUNUM (anc. geog.), a town of Rhetia, above Feltria, in the territory of the Veneti; now *Belluno*, capital of the Belluncine in the territory of Venice.

BELVOIR-CASTLE, in Lincolnshire, four miles from Grantham, the ancient seat of the dukes of Rutland, supposed to have been a Roman station, as many of their antiquities have been dug up here. Its foundation was laid soon after the Norman conquest. It affords a delightful prospect into the counties of Nottingham, Derby, Leicester, Rutland, and Northampton, as well as over the fruitful valley under it.

BELUS (anc. geog.), a small river of Galilee, at the distance of two stadia from Ptolemais, running from the foot of mount Carmel out of the lake Cendevis. Near this place, according to Josephus, was a round hollow or valley, where was a kind of sand fit for making glass; which, though exported in great quantities, was found to be inexhaustible. Strabo says, the whole of the coast from Tyre to Ptolemais has a sand fit for making glass; but that the sand of the rivulet Belus and its neighbourhood is a better sort: and here, according to Pliny, the making of glass was first discovered.

BENBECULA, an island of Scotland, one of the Hebrides, lying between N. and S. Uist. See *BARA*.

BENBOW (John), vice-admiral of the blue squadron, and one of the most eminent English seamen mentioned in our histories, was born about the year 1650, and was descended of a very ancient, worthy, and honourable family in Shropshire. His father dying when he was very young, left his son John no other provision than that of the profession to which he was bred, viz. the sea, a profession to which he had naturally a great propensity, and in which he succeeded so happily, that before he was thirty he became master, and in a good measure owner, of a ship called the *Bembow* frigate, employed in the Mediterranean trade, in which he would probably have acquired a good estate, if an accident that happened to him in the last voyage he made had not given a new turn to his fortunes, and brought him to serve in the British navy, with equal reputation to himself, and good fortune to his country, to which he rendered many, and those very important, services. In the year 1686, Captain Benbow, in his own vessel, was attacked in his passage to Cadiz by a Saltee rover, against whom he defended himself, though very unequal in the number of men, with the utmost bravery, till at last the Moors boarded him, but were quickly beat out of the ship again, with the loss of thirteen men, whose heads Cap-

tain Benbow ordered to be cut off, and thrown into a tub of pork pickle. When he arrived at Cadiz, he went ashore, and ordered a negro servant to follow him, with the Moors' heads in a sack. He had scarcely landed before the officers of the revenue enquired of his servants what he had in his sack? The captain answered, salt provisions for his own use. "That may be," replied the officers, "but we must insist upon seeing them." Captain Benbow alleged, that he was no stranger there, that he did not use to run goods, and pretended to take it ill that he was suspected. The officers told him, that the magistrates were sitting not far off, and that if they were satisfied with his word, his servants might carry the provisions where he pleased, but that otherwise it was not in their power to grant any such dispensation. The captain consented to the proposal, and away they marched to the custom-house, Mr. Benbow in the front, his man in the centre, and the officers in the rear. The magistrates, when he came before them, treated Captain Benbow with great civility, told him they were sorry to make a point of such a trifle, but that since he had refused to shew the contents of his sack to their officers, the nature of their employments obliged them to demand a sight of them; and that as they doubted not they were salt provisions, the shewing them could be of no great consequence one way or the other. "I told you," said the captain, sternly, "they were salt provisions for my own use. Caesar, throw them down upon the table; and, gentlemen, if you like them, they are at your service." The Spaniards were exceedingly struck at the sight of the Moors' heads, and no less astonished at the account of the captain's adventure, who with so small a force had been able to defeat such a number of barbarians. They sent an account of the whole matter to the court of Madrid, and Charles II. then king of Spain, was so much pleased with it, that he would needs fee the English captain, who made a journey to court, where he was received with great testimonies of respect, and not only dismissed with a handsome present, but his Catholic majesty was also pleased to write a letter in his behalf to King James, who, upon the captain's return, gave him a ship, which was his introduction to the royal navy. After the Revolution, he was constantly employed, and frequently, at the request of the merchants, was appointed to cruise in the channel, where he did very great service, as well in protecting our own trade, as in annoying and distressing that of the enemy. He was likewise generally made choice of for bombarding the French ports, in which he shewed the most intrepid courage, by going in person in his boat to encourage and protect the engineers, who, for that reason, were very solicitous that he should command the efforts whenever they went upon those hazardous enterprises, in which they knew he would not expose them more than was absolutely necessary, and that he would put them upon running no sort of danger, in which he did not willingly take his share. The vigour and activity of Captain Benbow, in every service on which he was employed, recommended him so effectually to his royal master King William, who was both a good judge of men, and always willing to reward merit, that he was very early promoted to a flag, and intrusted with the care of blockading Dunkirk; the privateers from thence proving extremely detrimental to our trade during all that war. In 1695 we find him thus employed with a few English and Dutch ships, when the famous Du Bart had the good luck to escape him, with nine sail of clean ships, with which he did a great deal of mischief, both to our trade and to that of the Dutch. In 1697, he sailed the 10th of April, from Spithead, with seven third-rates and two fire-ships, and after some time returned to Portsmouth for provisions; after which he had the good fortune to join the Virginia and West-India fleets, and saw them safe into port.

After the concluding of the peace of Ryfwick, and even while the partition treaties were negotiating, King William formed a design of doing something very considerable in the West-Indies, in case his pacific views should be disappointed, or Charles II. of Spain should die suddenly, as was daily expected. There were, indeed, many reasons, which rendered the sending a squadron at that time into those parts highly useful and requisite. Our colonies were in a very weak and defenceless condition, the seas swarmed with pirates, the Soots had established a colony at Darien, which, very unluckily for them, gave the English little satisfaction, at the same time that it provoked the Spaniards very much. King William himself fixed upon Rear-Admiral Benbow to command this squadron, which proved but a very small one, as consisting only of three fourth-rates; and when he went to take upon him his command, he received private instructions from the king to make the best observations he could on the Spanish ports and settlements, but to keep as fair as possible with the governors, and to afford them any assistance he could, if they desired it. He was likewise instructed to watch the galleons; for the king of Spain, Charles II. was then thought to be in a dying condition. Rear-Admiral Benbow sailed in the month of November 1698, and did not arrive in the West-Indies till the February following, where he found things in a very indifferent situation. Most of our colonies were in a bad condition, many of them engaged in warm disputes with their governors, the forces that should have been kept up in them for their defence so reduced by sickness, desertion, and other accidents, that little or nothing was to be expected from them: but the admiral carried with him Colonel Collingwood's regiment, which he disposed of to the best advantage in the Leeward Islands. This part of his charge being executed, he began to think of performing the other part of his commission, and of looking into the state of the Spanish affairs, as it had been recommended to him by the king; and a proper occasion of doing this very speedily offering, he effected it. On his return to Jamaica, towards the latter end of the year, he received a supply of provisions from England, and, soon after, orders to return home, which he did with six men-of-war, taking New England in his way, and arrived safe, bringing with him from the plantations sufficient testimonies of his having discharged his duty, which secured him from all danger of censure, though the House of Commons expressed very high resentment at some circumstance that attended the sending this fleet. But in regard to the admiral, the greatest compliments were paid to his courage, capacity, and integrity, by all parties; and the king, as a signal mark of his kind acceptance of all his services, granted him an augmentation of arms, which consisted in adding to the three Bent Bows, he already bore, as many Arrows; which singular act of royal favour sufficiently destroys the foolish report of his being of mean extraction. His conduct in this expedition raised him so much in the king's esteem, that he consulted him as much or more than any man of his rank, and yet without making the admiral himself vain, or exposing him in any degree to the dislike of the ministers. It may be easily imagined, that, in the time the rear-admiral spent in the West-Indies, the face of affairs was much changed: indeed, so much they were changed, that the king was forced to think of a new war, though he was sensible the nation suffered severely from the old one. His first care therefore was, to put his fleet into the best order possible, and to distribute the commands therein to officers that he could depend upon; and to this it was that Mr. Benbow owed his being promoted to the rank of vice-admiral of the blue. After this, the command of a West-India squadron was conferred on him; and in an engagement with the French, he had the misfortune to lose

his leg. During all the time of his illness he behaved with great calmness and preference of mind, having never flattered himself, from the time his leg was cut off, with any hopes of recovery, but shewed an earnest desire to be as useful as he could while he was yet living. He continued thus discharging his duty till the last moment; for dying of a short consumption, his spirits did not fail him till very near his end, and his senses were very found to the day he expired, which was on the 4th of November, 1702.

BENBOW (John), son to the vice-admiral before mentioned. He was intended by his father for a seaman, and educated accordingly. His misfortunes began very early, viz. in the same year his father died in the West-Indies, by being shipwrecked on the coast of Madagascar, where, after many dismal and dangerous adventures, he was induced to live with, and in the manner of, the natives, for many years, and at last, when he least expected it, he was taken on board by a Dutch captain, out of respect to the memory of his father, and brought safe to England, when his relations thought him long since dead. He was a young gentleman naturally of a very brisk and lively temper; but by a long series of untoward events, came to alter his disposition entirely, to as to appear, after his return, very serious, or rather melancholy, and did not much affect speaking, except among a few intimate friends. But the noise of his remaining so long, and in such a condition, upon the island of Madagascar, induced many to visit him, and to enquire into the circumstances of the life he led there, whom he civilly received, and readily satisfied their curiosity, though otherwise distinguished, as has been said, by his taciturnity; but he always looked upon his preservation there, and his escape from thence, as such signal instances of the favour of Providence, that he did not judge himself at liberty to conceal them. But notwithstanding his freedom in communicating this part of his history, very few particulars relating to it can now be recovered. He lived several years after his return to England, but in a very private manner.

BENDLOWES (Edward), author of some poetical pieces, was son and heir of Andrew Bendlowes, esq. and born in the year 1613. This gentleman was carefully educated in grammar learning, and at sixteen years of age admitted a fellow-commoner of St. John's College, in Cambridge, to which he was afterwards a benefactor. From thence he went with a tutor to travel, and having gone through several countries, and visited seven courts of princes, he returned home a most accomplished gentleman both in behaviour and conversation, but a little tinctured with the principles of Popery. Being very imprudent in the management of his worldly concerns, he made a shift, though he was never married, to squander away his estate (which amounted to seven hundred or a thousand pounds a year) on poets, musicians, buffoons and flatterers, and in buying curiosities. He gave a handsome fortune with a niece named Philippa, who was married to Mr. Blount, of Maple Durham, in Oxfordshire; and having besides engaged himself for the payment of other men's debts, which he was not able to discharge, he was put into prison at Oxford; but being soon after released, he spent the remainder of his life, which was eight years, in that city. He was esteemed in his younger days a great patron of the poets, especially Quarles, Davenant, Payne, Fisher, &c. who either dedicated books to him, or wrote epigrams and poems on him. His flatterers used to style him Benevolus, by way of anagram on his name, in return for his generosity towards them. Towards the latter end of his life, he was drawn off from his inclination to Popery, and would often take occasion to dispute against the Papists and their opinions, and particularly disliked the favourers of Arminius and Socinus. This gentleman, reduced through his own indiscretion to great

want, died at Oxford the 18th of December, 1686, aged seventy-three years.

BENEFIELD (Sebastian), an eminent divine of the 17th century, was born in 1559 at Prestonbury in Gloucestershire, and educated at Corpus Christi College in Oxford. In 1608 he took the degree of doctor in divinity; and five years after, was chosen Margaret professor in that university. He had been presented several years before to the rectory of Meysey-Hampton in Gloucestershire. He published Commentaries upon the first, second, and third chapters of Amos; a considerable number of sermons; and some Latin treatises. He died in 1630.

BENEVENTUM (anc. geog.), a town of the Samnites, formerly called *Maleventum* from the unwholesomeness of the wind, and under that appellation it is mentioned by Livy; but after a Roman colony was led thither in the 485th year of the city, it came to have the name of *Beneventum*, as a more auspicious title. It is mentioned by Horace as an ancient city said to have been built by Diomedes before the Trojan war. Now *Benevento*.

BENGUELA, the capital of the kingdom of the same name, where the Portuguese have a fort. It lies to the north of the bay of Benguela. Long. 12. 30. E. Lat. 10. 30. S.

BENI (Paul), professor of eloquence in the university of Padua. He was a Greek by nation, according to Bayle; but other authors affirm that he was born at Eugubio, in the duchy of Urbino. He was in the society of Jesuits for some time, but quitted them upon their refusing him permission to publish a commentary on the feast of Plato. He was a great critic, and maintained a dispute with the Academy de la Crusca of Florence. He published a treatise against their Italian dictionary, under the title of *Anti-Crusca*, at *Paragone della Lingua Italiana*. He had likewise another contest with the same academy in regard to Tasso, whose defence he undertook, and published two pieces on this subject. In one of these he compares Tasso to Virgil, and Ariosto to Homer, in some particulars giving Tasso the preference to these two ancients; in the other he answers the critical censures which had been made against this author. He published also some discourses upon the Pastor Fido of Guarini. These pieces which we have mentioned were in Italian; but he left a great number of works in Latin. He died the 12th of February, 1625.

BENIGNUS (St.), archbishop of Armagh in Ireland, was the immediate successor of St. Patrick in that see, anno 455. He was the son of Seignen, a man of wealth and power in Meath, who, in the war in 453, hospitably entertained St. Patrick in his journey from the port of Colp, where he landed, to the court of King Leogair at Tara, and with his whole family embraced Christianity, and received baptism. The youth grew so fond of his father's guest, that he could not be separated from his company. St. Patrick took him away with him at his departure, and taught him his first rudiments of learning and religion. Benin profited greatly under such a master, and became afterwards a man eminent for piety and virtue, whom St. Patrick thought worthy to fill the see of Armagh, which he resigned to him in 455. Benin died in 458, on the 9th of November, having also resigned his see three years before his death.

BENNEVIS, a mountain of Scotland, near Fort-William, in the shire of Inverness. It is esteemed the highest in Britain, rising more than 4300 feet above the level of the sea, its pointed summit capped with snow.

BENNINGTON, the principal town of the state of Vermont in New England, in the south-west corner of the state, near the foot of the Green Mountain. Its public buildings are a church, a court-house, and a gaol; but the assembly commonly hold the sessions at Windsor. It has many elegant houses, and is a flourishing town. Near the centre of the

town is Mount Anthony, which rises very high in the form of a sugar-loaf. Bennington is 30 miles east by north of Albany. Long. 73. 10. W. Lat. 43. 0. N.

BENTHAM (Edward), canon of Christ-church, Oxford, and king's professor of divinity in that university, was born in the college at Ely, July 23, 1707. His father, Mr. Samuel Bentham, was a very worthy clergyman, and vicar of Witchesford, a small living near that city; who having a numerous family, his son Edward, on the recommendation of Dr. Smalridge, dean of Christ-church, was sent in 1717 to the school of that college. Having there received the rudiments of classical education, he was in Lent-term, 1723, when nearly sixteen years of age, admitted of the university of Oxford, and placed at Corpus-Christi College, under his relation, Dr. John Burton. In this situation his serious and regular deportment, and his great proficiency in all kinds of academical learning, recommended him to the notice of several eminent men; and, among others, to the favour of Dr. Tanner, canon of Christ-church, by whose death he was disappointed of a nomination to a studentship in that society. At Corpus-Christi College he formed a strict friendship with Robert Hoblyn, esq. of Nanfawden in Cornwall, afterwards representative for the city of Bristol, whose character, as a scholar and a member of parliament, rendered him deservedly esteemed by the lovers of literature and of their country. In company with this gentleman and another intimate friend, Dr. Ratcliff, afterwards master of Pembroke College, Mr. Bentham made, at different times, the tour of part of France, and other places. Having taken the degree of bachelor of arts, he was invited by Dr. Cotes, principal of Magdalen-hall, to be his vice-principal; and was accordingly admitted to that society, March 6, 1729-30. Here he continued only a short time; for, on the 23d of April, in the year following, he was elected fellow of Oriel College. In act term, 1732, he proceeded to the degree of master of arts, and, about the same time, was appointed tutor in the college; in which capacity he discharged his duty in the most laborious and conscientious manner for more than twenty years. March 26, 1743, Mr. Bentham took the degree of bachelor in divinity; and April 22, in the same year, was collated to the prebend of Hunderton, in the cathedral-church of Hereford. July 8, 1749, he proceeded to the degree of doctor in divinity; and in April, 1754, was promoted to the fifth stall in that cathedral. Here he continued the same active and useful course of life for which he had always been distinguished. He served the offices of sub-dean and treasurer, for himself and others, for above twelve years. The affairs of the treasury, which Dr. Bentham found in great confusion, he entirely new-modelled, and put into a train of business in which they have continued ever since, to the great ease of his successors, and benefit of the society. So intent was he upon the regulation and management of the concerns of the college, that he refused several preferments which were offered to him, from a conscientious persuasion, that the avocations they would produce were incompatible with the proper discharge of the offices he had voluntarily undertaken. Being appointed by the king to fill the divinity chair, vacant by the death of Dr. Panhawe, Dr. Bentham was, with much reluctance, and after having repeatedly declined, persuaded by Archbishop Secker and his other learned friends to accept of it; and, on the 9th of May, 1763, he was removed to the eighth stall in the cathedral. His unwillingness to appear in this station was increased by the business he had to transact in his former situation, and which he was afraid would be impeded by the accession of new duties; not to say that a life spent in his laborious and sedentary manner had produced some unfavourable effects on his constitution, and rendered a greater attention than he had hitherto shewn to private ease and health absolutely necessary. Besides, as the duties, when properly discharged, were great and interesting, so the station itself was of that elevated and public na-

ture to which his ambition never inclined him: he preferred a humble situation. The diffidence he had of his abilities had ever taught him to suspect his own sufficiency; and his inaugural lecture breathed the same spirit; the text of which was, "Who is sufficient for these things?" But whatever objections Dr. Bentham might have to the professorship before he entered upon it, when once he had accepted of it, they never discouraged him in the least from exerting his most sincere endeavours to render it both useful and honourable to the university. He set himself immediately to draw out a course of lectures for the benefit of young students in divinity, which he constantly read at his house at Christ-church, gratis, three times a-week during term time, till his decease. The course took up a year; and he not only exhibited in it a complete system of divinity, but recommended proper books, some of which he generously distributed to his auditors. His intense application to the pursuit of the plan he had laid down, together with those concerns in which his affection for his friends, and his zeal for the public good in every shape, involved him, proved more than a counterbalance for all the advantages of health and vigour that a strict and uniform temperance could procure. It is certain that he sunk under the rigorous exercise of that conduct he had proposed to himself: for though sixty-eight years are a considerable proportion in the strongest men's lives, yet his remarkable abstemiousness and self-denial, added to a disposition of body naturally strong, promised in the ordinary course of things a longer period. Dr. Bentham was a very early riser, and had transacted half a day's business before many others began their day. His countenance was uncommonly mild and engaging, being strongly characteristic of the piety and benevolence of his mind; and at the same time it by no means wanted expression, but, upon proper occasions, could assume a very becoming and affecting authority. In his attendance upon the public duties of religion, he was exceedingly strict and constant; not suffering himself ever to be diverted from it by any motives, either of interest or pleasure. Whilst he was thus diligent in the discharge of his own duty, he was not severe upon those who were not equally diligent. He could scarcely ever be prevailed upon to deliver his opinion on subjects that were to the disadvantage of other men; when he could not avoid doing it, his sentiments were expressed with the utmost delicacy and candour. No one was more ready to discover, commend, and reward every meritorious endeavour. Of himself he never was heard to speak; and if his own merits were touched upon in the slightest manner he felt a real uneasiness. Though he was not fond of the formalities of visiting, he entered into the spirit of friendly society intercourse with great pleasure. His constant engagements, indeed, of one kind or other, left him not much time to be devoted to company; and the greater part of his leisure hours he spent in the enjoyment of domestic pleasures, for which his amiable and peaceable disposition seemed most calculated. Till within the last half-year of his life, in which he declined very fast, Dr. Bentham was scarcely ever out of order; and he was never prevented from discharging his duty, excepting by a weakness that occasionally attacked his eyes, and which had been brought on by too free an use of them when he was young. That part of his last illness which confined him, was only from the 23d of July to the 1st of August. Even death itself found him engaged in the same laborious application which he had always directed to the glory of the Supreme Being, and the benefit of mankind; and it was not till he was absolutely forbidden by his physicians, that he gave over a particular course of reading that had been undertaken by him with a view of answering Mr. Gibbon's Roman History. Thus he died at his post, like a faithful soldier, in the exercise of his arms, and the defence of his religion. That serenity of mind and meekness of disposition, which he had manifested on every former occasion, shone forth in a more epi-

cial manner in his latter moments; and, together with the consciousness of a whole life spent in the divine service, exhibited a scene of true Christian triumph. After a few days' illness, in which he suffered a considerable degree of pain without repining, a quiet sigh put a period to his existence below, on the 11th of August, 1776, when he had entered into the sixty-ninth year of his age.

BENTHEIM, a town of Germany, in the circle of Westphalia, capital of a county of the same name, seated on the Vecht, 32 miles north-west of Munster. Long. 7. 25. E. Lat. 52. 23. N.

BENTINCK, or **BENTINCK** (William), earl of Portland, &c. one of the greatest statesmen of his time, and the first that advanced his family to the dignity of the English peerage. M. Bentinck was a native of Holland, being descended of an ancient and noble family of that name in the province of Guelderland. After a liberal education, he was, by the interest of his friends, promoted to be page of honour to William, then Prince of Orange (afterwards King William III. of England), in which station, his good behaviour and address so recommended him to the favour of his master, that he preferred him to the more honourable post of gentleman of his bed-chamber. In this capacity he accompanied the prince into England in the year 1670, where, going to visit the university of Oxford, he was, together with the prince, created doctor of civil-law. In 1672, the Prince of Orange being made captain-general of the Dutch forces, and soon after stadtholder, M. Bentinck was promoted, and had a share in his good fortune, being made colonel and captain of the Dutch regiment of guards, afterwards esteemed one of the finest in King William's service, and which behaved with the greatest gallantry in the wars both in Flanders and Ireland. In 1675, the prince falling ill of the small-pox, M. Bentinck had an opportunity of signaling his love and affection for his master in an extraordinary manner, and thereby of obtaining his esteem and friendship, by one of the most generous actions imaginable: for the small-pox, not rising kindly upon the prince, his physicians judged it necessary that some young person should lie in the same bed with him, imagining that the natural heat of another would drive out the disease, and expel it from the nobler parts. Nobody of quality could be found in all the court to make this experiment: at last, M. Bentinck, though he had never had the small-pox, resolved to run the risk, and accordingly attended the prince during the whole course of his illness, both day and night. Nothing was given him, nor was he ever removed in his bed, by any other hand. In the year 1677, M. Bentinck was sent by the Prince of Orange into England, to solicit a match with the Princess Mary, eldest daughter of James, at that time duke of York (afterwards King James II), which was soon after concluded. And in 1685, upon the Duke of Monmouth's invasion of this kingdom, he was sent over to King James to offer him his master's assistance, both of his troops and person, to head them against the rebels, but, through a misconception put on his message, his highness's offer was rejected by the king. In the year 1688, when the Prince of Orange intended an expedition to England, he sent M. Bentinck, on the Elector of Brandenburg's death, with his compliments to the new elector, and also to lay before him the state of affairs, to communicate to him his design upon England, and to solicit his assistance to put it in execution, &c. In this negotiation M. Bentinck was so successful, that he carried to his master a more favourable and satisfactory answer than the prince had expected; the elector having generously granted even more than was asked. M. Bentinck had also a great share in the glorious revolution on which our present happy establishment is founded; in which difficult and important affair, he shewed all the prudence and sagacity of the most consummate and able statesman. M. Bentinck ac-

companied the prince in his expedition to England; and after King James's abdication, during the interregnum, he held the first place among those who composed the prince's cabinet at that critical time, and that in such a degree of super-eminence, as scarcely left room for a second; and we may be sure that he was not wanting, as far as his services could avail, in endeavouring to procure the crown for the prince his master; who, when he had obtained it, was as forward on his part in rewarding the faithful and signal services of M. Bentinck. Immediately upon the prince's accession to the British crown, M. Bentinck was made groom of the stole, privy purse, first gentleman of the royal bed-chamber, and was the first commoner upon the list of privy-counsellors; and, to fit him for greater honours, was soon after naturalized by act of parliament; and, by letters patent bearing date the 9th of April, 1690, two days before the king and queen's coronation, he was created Baron of Cirencester, Viscount Woodstock, and Earl of Portland. In the year 1690, the Earl of Portland, with many others of the English nobility, attended King William to Holland, where the earl acted as envoy for his majesty, at the grand congress held at the Hague the same year; an assembly the most honourable to the English nation that is any-where to be read of. In the year 1695 King William made this nobleman a grant of the lordships of Denbigh, Bromfield, Yale, and other lands, containing many thousand acres, in the principality of Wales, which being part of the demaine thereof, the grant was opposed, and the House of Commons addressed the king to put a stop to the passing it, which his majesty accordingly complied with, and recalled the grant, promising, however, to find some other way of shewing his favour to Lord Portland, who, he said, had deserved it by long and faithful services; and this promise the king ever after made good. It was to this nobleman, that the horrid plot for assassinating King William, in the year 1695, was first discovered; and his lordship, by his wise counsel and indefatigable zeal, was very instrumental in bringing to light the whole of that execrable scheme. The same year another affair happened, in which this noble lord gave such a shining proof of the strictest honour and integrity, as has done immortal honour to his memory. The parliament having taken into consideration the affairs of the East-India Company, who, through mismanagement and corrupt dealings, were in danger of losing their charter; strong interest was made with the members of both houses, and large sums properly distributed, to procure a new establishment of their company by act of parliament. Among those noblemen whose interest was necessary to bring about this affair, Lord Portland was particularly courted, and an extraordinary value put upon it, much beyond that of any other peer; for he was offered no less than the sum of 50,000 pounds for his vote, and to use his endeavours with the king to favour the design. But his lordship, possessed of a greatness of soul that placed him above corruption, treated this injurious offer with all the contempt and indignation it deserved, telling the person employed in it, that if he ever so much as mentioned such a thing to him again, he would for ever be the company's enemy, and give them all the opposition in his power. This is an instance of public spirit not often met with, and did not pass unregarded; for we find it recorded in an eloquent speech of a worthy member of parliament, who took occasion to relate this noble action to the House of Commons, much to the honour of Lord Portland. It was owing to this nobleman, that the Banqueting-house at Whitehall was saved, when the rest of the palace was destroyed by fire. Going on thus in a course of honour and prosperity, his lordship, in February 1696, was created a knight of the most noble order of the Garter, at a chapter held at Kensington, the sovereign and ten knights being present, and was installed at Windsor on the 25th of March, 1697, at which time he was also lieutenant-general of his majesty's forces; for his lordship's services were

not confined to the cabinet; he likewise distinguished himself in the field on several occasions, particularly at the battle of the Boyne, battle of Landen, where he was wounded, siege of Limerick, Namur, &c. As his lordship thus attended his royal master in his wars both in Ireland and Flanders, and bore a principal command there, so he was honoured by his majesty with the chief management of the famous peace of Ryfwick.

The king had for a long time given the Earl of Portland the entire and absolute government of Scotland; and his lordship was also employed, in the year 1698, in the new negotiation set on foot for the succession of the crown of Spain, called by the name of the Partition Treaty, the intention of which being frustrated by the treachery of the French king, the treaty itself fell under severe censure, and was looked upon as a fatal slip in the politics of that reign; and Lord Portland was impeached by the House of Commons, in the year 1700, for advising and transacting it, as were also the lords concerned with him in it. The Partition Treaty was the last public transaction we find Lord Portland engaged in; the next year, 1701, having put a period to the life of his royal and munificent master King William III. but not without having shewn, even in his last moments, that his esteem and affection for Lord Portland ended but with his life; for when his majesty was just expiring, he asked, though with a faint voice, for the Earl of Portland, but before his lordship could come, the king's voice quite failed him. The earl, however, placing his ear as near his majesty's mouth as could be, his lips were observed to move, but without strength to express his mind to his lordship; but, as the last testimony of the cordial affection he bore him, he took him by the hand, and carried it to his heart with great tenderness, and expired soon after. His lordship had before been a witness to, and signed, his majesty's last will and testament, made at the Hague in 1695; and it is told, that King William, the winter before he died, told Lord Portland, - as they were walking together in the garden at Hampton-Court, that he found his health declining very fast, and that he could not live another summer, but charged his lordship not to mention this till after his majesty's death. We are told, that at the time of the king's death, Lord Portland was keeper of Windsor Great Park, and was displaced upon Queen Anne's accession to the throne: we are not, however, made acquainted with the time when his lordship became first possessed of that post. After King William's death, the earl did not, at least openly, concern himself with public affairs, but betook himself to a retired life, in a most exemplary way, at his seat at Bulstrode in the county of Bucks, where he erected and plentifully endowed a free-school, and did many other charities. His lordship had an admirable taste for gardening, and took great delight in improving and beautifying his own gardens, which he made very elegant and curious. At length, being taken ill of a pleurisy and malignant fever, after about a week's illness he died, November 23, 1709, in the sixty-first year of his age, leaving behind him a very plentiful fortune, being at that time reputed one of the richest subjects in Europe.

BENTINCK (Henry), second son of William earl of Portland, whilst he was a commoner was elected in two parliaments in the reign of Queen Anne one of the knights of the shire for the county of Southampton; and on the 21st of July, 1710, was made captain of the first troop of horse-guards, in the room of the Earl of Albemarle. He was created by King George the First, marquis of Tichfield in Hampshire, and duke of Portland, by letters patent, bearing date the 16th of July, 1706.

When the king went to Cambridge in 1717, and the ceremony of admitting and creating several degrees was, accord-

ing to custom, performed in his royal presence, his Grace the Duke of Portland was created doctor of laws. His grace was also one of the gentlemen of King George the First's bed-chamber; and on the 9th of September, 1721, was appointed captain-general and governor of the island of Jamaica, where his grace departed this life, of a fever, on the 4th of July, 1726, in the forty-fifth year of his age.

BERCHTOSGABEN, a town of Germany in Saltzburg, which serves all the neighbourhood with salt; seated on the river Aa, 10 miles south-west of Saltzburg. Long. 13. o. E. Lat. 47. 30. N.

BERDOA, a town of Persia, in a fertile plain, 10 miles west of the river Cour, and 62 south-east of Grandga. Long. 48. o. E. Lat. 41. o. N.

BERELLY, a small city of Hindoostan Proper, capital of Rohilcund, or country of the Rohillas, which was conquered by the Nabob of Oude in 1774. It lies half way between Lucknow and Delhi, 120 miles from each. Long. 79. 40. E. Lat. 28. 30. N.

BERING (Sinus), of Copenhagen, a Latin lyric poet, flourished about 1660.

BERGMAN (*Encycl.*). In our original article, vol. I. we have inadvertently said, that Professor Bergman's Essays were collected and translated by Dr. Ed. Cullen, and published in two vols. 8vo. They were collected and published in six octavo volumes. The 1st and 2d at Upsal, by himself; the 3d at Leipzig, after his death, by Lefke; the 4th, 5th, and 6th, at Leipzig also, under the inspection of Professor Hebenfreit. Three of these volumes (viz. 1. 2. 4.) have been translated by Dr. Cullen. The last of them was published at Edinburgh in 1791. Besides these six volumes of Essays, Professor Bergman published several other works in the Swedish and other Transactions, which are not yet added to the collection of his pieces; to say nothing of a very valuable work on Physical Geography in Swedish, in two quarto volumes, which, we have heard, has been translated into English. Its value is such, that Professor Hebenfreit is said to have intended a translation of it into Latin; and that he proposed publishing it in that language for the promotion of rational geology. In the six volumes are contained 72 essays; but the catalogue of his works given at the end of Peter James Hjelms Gedachtnisrede contains one hundred and six.

BERGMANNIAN SOCIETY. This society was instituted for the promotion of those sciences in which Bergman chiefly excelled; namely, Chemistry, Geology, Natural History, Mineralogy, and Electricity. It consists of about 150 members, of whom one third may be foreigners, distinguished by their skillful and fortunate researches in these departments of science. No person can be admitted a member or fellow (F. B. S. or S. B. S.) unless of just celebrity in them. The present of a flint will not secure an election into it, as a fortunate *Leontodon Taraxacum* has done into another society formerly more respectable. Of the Bergmannian Society, Henry Hodgson, M.D. of Market Rasen, Lincolnshire, was chosen president on the 16th September, 1795. At the same time J. Atzelius Arvidsson (Bergman's successor in the chemical chair at Upsal), Charles William Nöfe, M.D. of Elberfeld, Professor Pentland, of Dublin, Dr. Priestley, and several other illustrious philosophers, were elected fellows. It is usual to address communications on the immediate objects of the society to the president.

BERGUES, St. Vinox, a town of France, in the department of the North, and late county of Flanders, fortified by Vauban. It is seated on the river Colme, at the foot of a mountain, five miles south of Dunkirk. Long. 2. 28. E. Lat. 50. 57. N.

BERKELEY, a town of Gloucestershire, with a market on Wednesday. It is governed by a mayor and aldermen. Here

is a castle begun in the reign of Henry I. and finished in that of Stephen. It stands on a rising ground, commanding a delightful view of the surrounding country and the Severn. In the civil wars it suffered considerably, as it did a few years ago by an accidental fire. The room in which Edward II. was imprisoned is still to be seen. In the church are some elegant monuments of the Berkeleys. It is 18 miles from Gloucester, and 113 north-west of London.

BERKHAMSTEAD, a town of Herts, with a market on Monday. It was anciently a Roman town; and Roman coins have been often dug up here. On the north side of the town are the remains of a castle, the residence of the kings of Mercia. In 697 a parliament was held here, and Ina's laws published. Here William the Conqueror swore to his nobility to maintain the laws made by his predecessors. Henry II. kept his court in this town, and granted to it many privileges; and James I. whose children were nursed here, made it a corporation; but this government was dropped in the civil wars. Here are two hospitals, a handsome Gothic church, and a free-school. It is 26 miles north-west of London. Long. o. 31. W. Lat. 51. 46. N.

BERNARD, a town of Germany in the electorate of Brandenburg, five miles from Berlin, noted for excellent beer.

BERNARDI (John), was the son of Count Francis Bernardi, resident in England from the republic of Genoa, and was descended from a very ancient and honourable family, created for their services to the House of Austria, counts of the holy Roman empire. He was born in 1657, and was very early insured to misfortunes and imprisonment; for his father being disgusted at some ill usage he received from the government of Genoa, refused to return thither, and being himself a native of England, retired into Worcestershire, where he settled; and being a great lover of gardening, spent a considerable fortune in improvements of that kind, which, however, did not so far amuse or divert him, as to extinguish his sense of the injuries he had received, which fanned his temper to such a degree, that he frequently confined his son John, for very slight causes, to a dark room, where he allowed him only bread and small-beer for several days, which hard usage so wrought upon his disposition, that he resolved, at all events, to leave his father's house, and to throw himself into the world, though a perfect child. Accordingly, in 1670 he quitted his father's seat, with a full resolution never to return thither while the old man lived. He travelled that night sixteen miles in the road to Coventry, and as day-light began to appear, he took shelter in the house of a wheelwright, who, upon hearing his melancholy story, promised to conceal him, which he performed, and put him into a little room from whence he could look upon the road, and in which he had not been long before he saw his father on horseback, who enquired of the wheelwright if he had seen such a boy as he described, which being answered in the negative, prevented the young man from being carried back to confinement. When the second night came on, he set out again for Packington-hall, the seat of Sir Clement Eddier, who married the famous Mrs. Jane Lane, very instrumental in preserving King Charles II. after the famous battle at Worcester. But on his coming thither, being informed that Sir Clement and his lady were in London, he followed them up to town, and was very hospitably received, the lady having been very kind to him at his father's, and often intreated the old gentleman to deal more indulgently with his son, and to afford him a liberal education. He was by her recommended to a near relation, Captain Littleton Clent, who was then in garrison at Portsmouth, who took him into his company, and caused him to be taught his exercise as a soldier, which gave him the first taste for a military life. While he was under the protection of this gentle-

man, he very narrowly escaped a misfortune, which would have put an early end to his troubles and his life. On the conclusion of the Dutch war, Captain Clent being broke, was no other way in a condition of expelling his kindness for Mr. Bernardi, than by making him a present of twenty pounds. But the loss of his patron was not the only mischief which befell him in the year 1673; for he had the small-pox soon after, which reduced him very low both in constitution and fortune. In this distress he addressed himself to his godfather, Colonel Anselme, who proposed to him going over to Holland, with which he readily complied, and soon after his arrival entered as a private soldier into the service of the States, and then lifted in one of the English independent companies. He was in the famous action of Senef, in which the Prince of Condé fell on the rear of the Prince of Orange's army, and took part of his baggage, but after an obstinate engagement was obliged to retire. He was also present at the siege of Oudenarde, and afterwards at that of Grave, where he served in the company of Captain Philip Savage, and had his share in a very dangerous attack on the counterescarp, in which he was wounded. The place surrendered on the 29th of October, 1674. Soon after this, the English troops in the service of the States being reformed, Mr. Bernardi obtained an ensign's commission from the Prince of Orange, dated the 2d of February, 1675, in the company of his godfather, who was appointed lieutenant-colonel of Disney's regiment. In June following he was removed, with his godfather, to another regiment, commanded by Sir John Fenwick, and at the close of the year had the misfortune to be wounded in endeavouring to part two gentlemen in a duel. He was present the succeeding year at the siege of Maestricht, where he had the misfortune to lose the sight of one of his eyes, and to be shot through one of his arms, the bones of which were shivered to splinters; when, taking his arm in the lap of his coat, he crowded back to the breach, and fell down to the bottom among the dead. A soldier of his seeing him fall, jumped after him, took him up in his arms, and carried him to the surgeons in the trenches, where he was dressed. The Prince of Orange being informed of his behaviour, and that the lieutenant of the major's company of that regiment was killed in the attack, gave his commission to Mr. Bernardi: but it appearing afterwards that the lieutenant was only taken prisoner, he missed of this preferment. In April 1677 he married a Dutch lady of a good family, with whom he lived comfortably eleven years. He had a share the next campaign in the battle of St. Omers, at the close of which he was appointed lieutenant in Captain Philip Savage's company, in which he first served by a commission from the Prince of Orange, dated September 6, 1677. He was present the next year in the battle of Mons, which was the last action in the war. After the peace his godfather, Colonel Anselme, was so reduced as to be obliged to serve as a private man under Mr. Bernardi, who allowed him double pay, and excused him from duty. In 1683 Mr. Bernardi was made captain-lieutenant in Colonel Monk's company; and at this time he was in so great favour with the Prince of Orange, that upon the death of Captain Jasper Paston, brother to the Earl of Yarmouth, he had his company given him by a commission from the prince, dated the 17th of November, 1685, which was confirmed by a commission from the States, dated the 3d of December following. At this time his circumstances were very easy, and he had just reason to be thankful to Providence for the condition he was in, having obtained by his merit a company at the age of twenty-seven, the profits of which, together with his wife's fortune, brought him in a clear revenue of 500*l.* a-year. But it was not long that he continued in this easy and happy situation: for King James II. in the year 1687, having conceived some displeasure against the States-

General, demanded the six regiments of British troops that were in their service, and which had been so for fifteen years. This the States refused; but, at the same time, did not constrain the officers to serve them against their will, though care was taken to represent to them, in very strong terms, the difference between remaining upon a fettered establishment, and returning home upon an uncertainty. This had such an effect, that out of two hundred and forty officers that were in the whole brigade, no more than sixty thought proper to obey the king's commands, amongst whom was Captain Bernardi. King James was no sooner informed of this, than he ordered a yacht to sail for Holland to bring those gentlemen over, to whom he sent allo three months' pay; and upon their arrival in England, immediately raised three new regiments, in order to replace those officers in their commands; and, at the same time, issued a proclamation, declaring all officers that remained in the service of the States of Holland rebels. But the scene was very soon changed: his serene highness proceeded soon after on his expedition to England, which brought about the Revolution. One of the first steps taken by his highness after the king was withdrawn, was to send an association to every one of the regiments then in being, which all the officers were required to sign, importing, that they were determined to defend the prince against all persons whatever, and such officers as refused it, were ordered to quit their commands. Amongst these was Captain Bernardi, who having obtained a pass for himself and his family, he transported them to Calais, where, finding many persons of his own principles in great distress, the captain pledged his effects for fifty pounds for their relief, though they were worth double as much, and the consequence was, that he lost both effects and money. He proceeded from thence to St. Germain's, where he was very kindly received, and after a short repose, made a long and fatiguing march to Breff, to wait the return of the French fleet, which carried King James to Ireland, and speedily transported 2300 of his adherents to the same kingdom. This was in the month of April, 1689, and it was with great difficulty they landed these people in Bantry Bay on the 11th of May, and the next day engaged the English fleet under Admiral Herbert. The Earl of Dover, who was appointed by King James to receive these recruits, conducted them directly to Dublin, where they were formed into separate corps, and all the officers had commissions given them. Amongst the rest, Mr. Bernardi was appointed major of an Irish regiment, which was soon disbanded for mutiny; and then he had the like command in the regiment of McCarthy Moor, a great Irish chief, under whom he served for some time. After Marshal Schomberg landed in that kingdom with twenty thousand men from England, King James found his affairs in a very declining condition; however, as he had still a superior army, he marched to Ardee, which he fortified, and thereby kept the marshal in his camp near Dundalk, which being a marish unwholesome place, half his troops soon died of fluxes. While King James was at Ardee, he formed a design of sending the Earl of Seaforth into Scotland, in hopes that the presence of that nobleman might supply the loss of the famous Viscount Dundee, then lately killed in his service. To assist the earl in this enterprise, the king directed Major Bernardi and another field officer to attend him, which they did, and embarking on board a man-of-war at Galway, in the west of Ireland, steered their course for Scotland; but before they got clear of the Irish coast, they met with a storm, by which their bowsprit and fore-mast were both broke to pieces; upon which the captain with much difficulty and danger worked the ship into Broad-haven, in the province of Connaught, from whence the earl sent Major Bernardi to King James, then in his camp at Ardee, to acquaint him with this unlucky accident, which hindered his intended voyage.

King James thereupon ordered the ship back again to Galway, and put off the earl's voyage to the next spring, when he proceeded with Sir Thomas Southwell and Major Bernardi for Scotland, where he speedily raised a great body of men for King James's service, and made the necessary dispositions for joining Major-general Buchan, who commanded the remains of Lord Dundee's forces, in order to form the siege of Inverness. But the earl was disappointed in this design by the speedy march of Major-general Mackay, with a considerable body of regular troops into those parts; and while things were in this situation, the news came of the total defeat of King James's army at the Boyne, upon which Sir Thomas Southwell prevailed upon the earl to dismiss his forces, and to surrender himself prisoner to Major-general Mackay upon honourable terms. The earl taking this step without the consent of his uncle, Mr. Colin Mackenzie, and the rest of his friends; it provoked them to such a degree, that they would have cut Sir Thomas Southwell to pieces, if Major Bernardi had not interposed and prevented it. This Mr. Colin Mackenzie took Major Bernardi, and the rest of the officers that came with him from Ireland, under his protection, and conducted them safely to Major-general Buchan, who was then a hundred miles distance, and who, upon hearing of the Earl of Seaforth's conduct, had dismissed most of his forces. Major Bernardi had now nothing more to transact in the Highlands; and, therefore, as his presence there could be of no service, he desired to go to England, and Major-general Buchan approved of it, and sent for the Laird of Glenco to come with forty of his vassals to receive Bernardi at Invergary, and to conduct and guard him to the Braes of Monteth, being near a hundred miles, and very difficult travelling over rocks and mountains in that season of the year, near the end of October. A great part of the journey was to be performed in the night-time, several detachments of King William's forces lying in their way, particularly at Inverlochry, or Fort-William, a place where was a garrison of twelve hundred men, and there was no way to climb up an high mountain, but near the gate of the said fortrefs, so that it was impossible to pass them but when asleep and their gate locked. The Laird of Glenco's country lying within 20 miles of that garrison, Major Bernardi arrived safe at that gentleman's house, and remained there some days to rest himself and recover his strength. After having reposited himself there six days, he desired to proceed on his journey, and the laird appointed forty of his best men, under the command of a relation of his own, to conduct him to the Braes of Monteth, places as dangerous and difficult to pass as any of the way he had come before. The many inconveniences, of small garrisons of the government, were in their way, and their parties were continually about the country in the day-time. This made the second part of Major Bernardi's journey to be mostly night-work: however, he arrived safe at the Braes, at which place he was recommended by Major-general Buchan, to one Colonel Duncan Graham, to be then farther directed by him. Major Bernardi proceeded on his journey from the Braes of Monteth, under the conduct of a guide appointed him by Colonel Graham, and having no more need of guards, he arrived at Edinburgh in the month of November, in the year 1691. The magistrates of that city having heard some gentlemen were come from the Highlands, ordered their gates to be shut, and a general search to be made for them. Bernardi's landlord getting notice of it, conducted him out of town but half an hour before the order was put in execution, otherwise his journey at that time had terminated in some prison at Edinburgh: but escaping that, and some other dangers, he travelled on from thence to London, meeting with no more difficulties than those of a long winter's journey. Having finished his affairs in London, by disposing of some effects he had

left with a friend when he went out of England, and by selling his Scots horses, he purposed to go over to Flanders, and meeting with two gentlemen of his acquaintance ready to make the same voyage, he went with them to Colchester, where they were recommended to the master of a ship, who was in a short time to carry over a lady of great quality to Ostend; but the wind happening to be fixed in the east, the lady ordered her trunks to be put on board, and then went to a gentleman's house about five miles off, charging the master to send for her as soon as the wind came fair. Bernardi and his friends met with two other gentlemen who were strangers to them, and also unknown in the town, who were come thither to get a passage over in the same ship. They joined company, and lodged all together for some nights at Mr. Cook's, then post-master in Colchester; but having notice of some people's inquisitiveness about them, Bernardi and his two friends went to a gentleman's house about a mile out of the town, and the other two gentlemen went to the master of the ship's house. The second night after Bernardi and his friends went into the country, intimation was given, that Sir Isaac Rebow, a justice of the peace, had issued out his warrant to apprehend them, and bring them before him; and the wind coming fair the same night, they went directly to the master of the ship's house to go on board. The master of the ship told them, that he had sent a messenger to the lady, and expected her in an hour more, and sent one of his men to conduct them on board a ship, and said he would follow them, with the other two gentlemen at his house, as soon as the lady came. A messenger came from the lady, that she could not possibly come before the next day in the afternoon. Bernardi and his two friends continued on ship-board to avoid the justice's warrant. The next day, towards the evening, came a company of trained bands, with five hundred country people, to the key, where the ship then lay dry at low water, about two miles from the town, and Bernardi and the two gentlemen with him were seized, and carried directly to Colchester gaol, where the other two gentlemen, and the master of the ship, had before been made prisoners. The lady who occasioned all this stir was the Countess of Errol, with whom Mr. Bernardi was not at all acquainted; however, it cost him a great deal of trouble, and hindered him from pursuing any settled course of life till a year and a half afterwards, that a bill being preferred against him and his friends in Essex for high-treason was rejected; by which he escaped, indeed, any further suffering on this head, but at the expence of several hundred pounds, a loss almost insupportable to a man already of a broken fortune. He went afterwards over to Holland with the Earl of Nottingham's pails, who was then secretary of state, and returning within the time prescribed, merited thereby some farther indulgences from his lordship. The times being now dangerous for a man of Major Bernardi's sentiments, who could scarcely live so cautiously as not to give some offence, he resolved to retire into the country, where he lived peaceably, and without seeing much company, for some months, at a house near Brentford. But being obliged to quit this house, on accounts of its changing its owner, he came to London again about Christmas 1695, which proved his ruin by a series of very unfortunate accidents, supposing what he constantly professed to be true, that he was in no respect privy to the base and barbarous conspiracy for assassinating King William. For being unhappily at a tavern on Tower-hill, with one Captain Rookwood, who was his old acquaintance, and who was involved in that affair, they were seized together, and sent to the Compter, and afterwards committed to prison, where he died, September 20,

1736.

BERN-CASTEL, a town of Germany, in the electorate of Treves, with a castle, built in 1277. It is remarkable for its

good wine, and is seated on the river Moselle, between Trarbach and Welden.

BERNERS (Juliana), was born at Roding in Essex, about the beginning of the fifteenth century, being the daughter of Sir James Berners, of Berners Roding, and sister of Richard Lord Berners. The education of Juliana seems to have been the very best which that age could afford; and her attainments were such, that she is celebrated by various authors for her uncommon learning, and her other fine accomplishments. Her extraordinary qualifications rendered her every way capable and deserving of the office she bore, which was that of prioress of Sopewell nunnery. This was a cell to, and very near, St. Alban's; and a good part of the shell of it is still standing. Here she lived in high esteem, and flourished, according to Bale, Tanner, and Ballard, about the year 1460; but if what we have said concerning her birth be the true account, she must have flourished somewhat earlier. She was a very beautiful lady, of great spirit, and loved masculine exercises, such as hawking, hunting, &c. With these sports she used frequently to recreate herself; and so thoroughly was she skilled in them, that she wrote treatises of hawking, hunting, and heraldry. So well esteemed were Juliana Berners's treatises, and indeed so popular were the subjects on which they were written, that they were published in the very infancy of the art of printing. That part of our abbe's work which relates to hunting is written in rhyme. It is spoken in her own person; in which, being otherwise a woman of authority, she assumes the title of dame. The barbarism of the times strongly appears in the indelicate expressions which Juliana Berners often uses; and which are equally incompatible with her sex and profession. The book on Armory begins with the following curious piece of sacred heraldry: "Of the offspring of the gentelman Jafeth, come Habraham, Moyles, Aron, and the priestetts; and also the kyngde of the right lyne of Mary, of whom that gentelman Jhesus was borne, very God and man; after his manhode kyngde of the land of Jude and of Jues, gentelman by his modre Mary, prince of cote armure, &c." The most diligent enquirers have not been able to determine the exact period of Juliana Berners's decease.

BEROEIA (anc. geog.), a noble city of Macedonia, to the south of Edessa, or *Ægæ*, and south-east of Certus. The people are commended in Scripture for their reception of the Gospel on a fair and impartial examination: now supposed to be *Allepo*. See that Article.

BERQUIN (Lewis de), a gentleman of Artois, who was burnt for being a Protestant, at Paris, in 1529. He was lord of a village, whence he took his name, and for some time made a considerable figure at the court of France, where he was honoured with the title of King's counsellor. Erasmus says, his great crime was openly professing to hate the monks; and that from hence arose his warm contest with William Quernus, one of the most violent inquisitors of his time. A charge of heresy was mustered up against him, and the articles of his accusation were drawn out of a book which he had published: he was thereupon committed to prison; but, when his affair came to a trial, he was acquitted by the judges. His accusers pretended that he would not have escaped, had not the king interposed his authority; but BERQUIN himself ascribed it entirely to the justice of his cause, and was no more cautious than before. Some time after Noel Beda and his emissaries made extracts from some of his books, and accused him of pernicious errors, whereupon he was again sent to prison, and the cause being tried, sentence was pronounced against him; viz. that his books be committed to the flames, that he retract his errors, and make a proper submission, and if he refuse to comply, that he be burnt. Being a man of an undaunted, inflexible spirit,

he would submit to nothing; and in all probability would at this time have suffered death, had not some of the judges, who perceived the violence of his accusers, got the affair to be again heard and examined. It is thought this was owing to the intercession of madame the Regent. In the mean time, Francis I. returning from Spain, and finding the danger of his counsellor from Beda and his faction, wrote to the parliament, telling them to be cautious how they proceeded, for that he himself would take cognizance of the affair. Soon after Berguin was set at liberty, which gave him such courage, that he turned accuser against his accusers: he prosecuted them for irreligion; though, if he had taken the advice of Erasmus, he would have esteemed it a sufficient triumph that he had got free from the persecution of such people. But not content, says Mr. Bayle, with escaping from his accusers, he must needs have the honour of a victory, as a reward of his labour. Is not this like the crane (continues Bayle), who asked for a reward after he had got his neck safe and found out of the wolf's throat? He was sent a third time to prison and condemned to a public recantation, and perpetual imprisonment. He would not acquiesce in this judgment; and being therefore condemned as an obstinate heretic, he was strangled on the Greve, and afterwards burnt. He suffered death with great constancy and resolution, being then about forty years of age.

BERRIMAN (Dr. William), was the son of Mr. John Berriman, apothecary, in Bishopsgate-street, London, where he was born on the 24th of September, 1688. He studied at Oriel College, Oxford, where he took his several degrees, and became curate and lecturer of Allhallows in Thames-street, and lecturer of St. Michael's, Queenhithe. In 1720 he was appointed domestic chaplain to Dr. Robinson, bishop of London, who soon after collated him to the living of St. Andrew's Underhaft; and in 1727 he was elected fellow of Eton College. He died on the 5th of February, 1750, in the 62d year of his age. He wrote, 1. A reasonable Review of Mr. Whiston's Account of primitive Doxologies, 2. An historical Account of the Trinitarian Controversy, in eight Sermons, at Lady Moyer's Lecture. 3. Brief Remarks on Mr. Chandler's Introduction to the History of the Inquisition. 4. Sermons at Boyle's Lectures, 2 vols. 8vo. 5. Christian Doctrines and Duties explained and recommended, in 2 vols. 8vo.; and other works.

BERTHEAU (Charles), an eminent French Protestant divine, long resident in the city of London, was born in the year 1666, at Montpellier, where his father, whose name also was Charles, was minister. He studied philosophy and divinity, partly in France, and partly in Holland, and was admitted a minister in the synod held at Vigan in 1681, being then only twenty-one years of age. He was, however, the next year chosen pastor to the church of Montpellier; but he did not make any long stay in that city, for he was soon after promoted to be one of the ministers of the church of Paris, which met at Charenton. He continued in that station about two years, and though he was yet in very early life, he discharged the pastoral duties to which he was called in a manner greatly to his reputation. But when Lewis the Fourteenth thought proper, by the revocation of the edict of Nantz, to drive his Protestant subjects out of France, an act equally repugnant to justice, humanity, and the dictates of sound policy, Mr. Bertheau found himself obliged to quit his native country. He accordingly came to England in 1685, and the following year was chosen one of the ministers of the Walloon church, in Threadneedle-street, London, where he discharged the duties of the pastoral office for about forty-four years, in such a manner as procured very general applause. He died on the 25th of December, 1732, in the 73d year of his age,

exceedingly regretted by his congregation, and by all who had the pleasure of being acquainted with him. He was the author of two volumes of sermons, and Discourses upon the Catechism.

BERTIUS (Peter), a man distinguished by religious adventures as well as letters, was born in a small town of Flanders, 1565. He became professor of philosophy at Leyden, but lost his professorship for taking part with the Arminians. He went to Paris, where he abjured the Protestant religion in 1620, was made cosmographer to the king, and royal professor-extraordinary of mathematics. He died in 1629, aged 64, and left some better things behind him than he had written about the Gomarists and Arminians. 1. *Commentaria Rerum Germanicarum*, 12mo. 2. A good edition of Ptolemy's Geography, in Greek and Latin, folio. 3. *De Aggeribus et Pontibus*. 4. *Introductio in Universam Geographiam*.

BERTON (William), an eminent divine of the fourteenth century, and doctor in that faculty, flourished about the year 1381, in the reign of Richard II. and was some time chancellor of the university of Oxford. He is chiefly remarkable for his opposition to the doctrines of Wickliff; for by virtue of his office as governor of the university, he appointed twelve censors, six of the order of mendicants, and six seculars, consisting of divines and lawyers, to examine Wickliff's opinions, who accordingly declared him an heretic. He wrote likewise against that pretended heresiarch; and for this reason it is that his character is so differently represented by different authors.

BERWICK, a shire in Scotland, bounded by the river Tweed, on the south; by Lothian, on the north; by the German Ocean, on the east; and by Tiviotdale on the west. It abounds with corn and grails, and has in it several seats of persons of quality. The principal rivers are the Tweed, the Whitecar, Blackadder, Eye, and Ednel. The principal place is the town and castle of Dunfermline, which is the best place for trade in the country. It sends two members to parliament.

BERWYN HILLS, lofty hills at the N. E. angle of Merionethshire, beneath which spreads the fine vale, in which flows the infant river Dee.

BERY, or BURY, the villa or seat of habitation of a nobleman, a dwelling or mansion-house, being the chief of a manor: from the Saxon *beorg*, which signifies a *hill* or *castle*; for heretofore noblemen's seats were castles situated on hills, of which we have still some remains; as in Herefordshire, there are the *beries* of Stockton, Hope, &c. It was anciently taken for a sanctuary.

BERYTUS (anc. geog.), a sea-port town of Phœnicia on the Mediterranean, so ancient as to be thought to have been built by Saturn. It was destroyed by Tryphon, but rebuilt by the Romans. Agrippa placed here two legions, whence it became a colony. It enjoyed the *jus italicum*, and had an excellent school for the study of the law in Justinian's time. Now *Beroet*; which see.

BESSICA (anc. geog.), a district of Thrace towards mount Hæmus to the south of the Hebrus. It was inhabited by a fierce and barbarous people noted for their robberies. Their chief city Uscudama is now known by the name of *Adrianople*. They lived under their own kings till the consulate of M. Licinius Lucullus and C. Cassius Varus; when the consul Lucullus invaded their country, and having gained a great victory over them, took their metropolis, and subjected the whole nation to the Roman laws. The Romans, notwithstanding they had subdued them by force of arms, still suffered them to live under their own kings; for Piso, while he governed Macedon in quality of proconsul, having treacherously seized Rabecentus, whom Suetonius calls *prince of the Bessi*,

caused him to be publicly beheaded. This affront so exasperated the whole nation, that they revolted; but were overthrown in a great battle by Octavius the father of Augustus. During the civil wars of Rome they attempted anew to recover their liberty, but were again defeated by the famous M. Brutus. In the reign of Augustus one Vologeses, a native of the country, and priest of Bacchus, having, under pretence of religion, drawn together great crowds of people, made himself master of the whole country, and, entering the Chersonesus, committed there the most dreadful ravages. He was at last, however, overcome by L. Pilo; who obliged the savage inhabitants to lay down their arms, and submit to such conditions as he was pleased to impose upon them. From this time the Bessi continued subject to the Romans without attempting any more to regain their liberty.

BESSIS (*Encycl.*) mispelt BESIS.

BETA, the BÊTE (*Encycl.*). The following account is given of the extraction of sugar from the beet-root, by Lampadius, professor of chemistry at the mineral academy of Freybourg. He took a hundred pounds of the yellow beet, called, in Germany, *runkel-ruben*, by Linneus *Beta ciclaris*, from which he obtained four pounds of sugar. He peeled his beets, and removed all the sticky parts, then raised them, and squeezed out the juice: by this process he obtained forty-four pounds of liquid. This he placed in a stew-pan, and then, after heating some charcoal thoroughly, broke it into grains of the size of a pea, of which he threw forty-four ounces into the liquor, taking care not to throw in any of the dust, which would have discoloured the sugar: he then boiled the whole for a quarter of an hour, after which he filtered it through flannel, and then replaced the liquor thus filtered on the fire, to gain the consistency of syrup. On this operation the crystallization principally depends. When the juice had attained the consistency required, he put it in a cool place, and left it there a fortnight; the crystallization took place, and at the end of that period it appeared like a kind of pap of a dark brown colour, and when he took up a small quantity in his fingers, he could easily feel the crystallized particles in small grains. Lampadius then passed the whole contents through a linen cloth, pressing it strongly. The crystals which remained in the cloth were put in lime-water, in which was mixed a pound of ox's blood; the whole was then placed on the fire, and great care taken during the boiling to keep it well skimmed: it was then filtered through flannel, and put in a cool place to crystallize: after remaining eight-and-forty hours, it was turned out in a linen cloth, and the crystals found to be whiter and larger than at first: it was again boiled in lime-water, with a pound of skimmed milk, still taking care as it boiled to keep it free from scum; the crystals obtained this time were blue; they were reduced to powder, which, being placed in a mould properly wetted, turned out a sugar loaf of four pounds weight, pretty white, and in flavour exactly similar to the sugar in general use. In February Professor Lampadius repeated his experiments: the juice he obtained was not quite so white as the first, and produced him but three pounds and a half of sugar. From the different residues and syrups obtained by filtration, he acquired each time seven pounds of a kind of rum or arrack, which was very strong. Encouraged by this success, Professor Lampadius, and a rich citizen and farmer, named Kanitzki, established an extensive sugar manufactory, of the success of which Lampadius has published an account.

BETHAM (Edward, B.D.), received his education at Eton, of which seminary he was a distinguished ornament; was elected from thence to King's College, Cambridge, in 1728, of which he became a fellow in 1731; was some time bursar, and by the provost and fellows, when senior fellow,

was presented to the living of Greenford in Middlesex. In 1771 the provost and fellows of Eton elected him to the vacant fellowship in that society. So unexceptionable was his life, that he may truly be said to have made no enemy in the progress of it. Of manners gentle, of friendship most susceptible, of knowledge extensive, he acquired the praise and commendation of all men. His fortune was not extensive, yet his liberality kept more than equal pace with it, and pointed out objects and things to which it was impossible for his nature to resist lending his assistance. In his life-time he gave two thousand pounds for the better maintaining a botanical garden at Cambridge, thereby encouraging a study which did peculiar honour to his taste, and materially benefited mankind. So humane was his disposition, that he founded and endowed a charity-school in his own parish; and this most nobly in his life-time, when avarice might have forbid it, or the fear of want might have excepted against it. As in his life he indicated the most extensive liberality, so at his death he exhibited a lasting record of his gratitude. Impressed with the highest sense of the munificence of the royal founder of Eton, within whose walls he had imbibed the first seeds of education, he, by his will, directed a statue of marble, in honour of Henry VI. to be erected at the expence of six hundred pounds.

BETHLEHEM, a town of North America, in the State of Pennsylvania, on the river Lehigh, a western branch of the Delaware. The town being partly on an eminence, and partly on the lower banks of the Manakes (a fine creek, affording trout and other fish), has a very pleasant and healthy situation, and is frequently visited, in summer, by the gentry from different parts. It is the principal settlement of the Moravians in America. They were fixed here by Count Zinzendorf in 1741. They have a church; a public meeting-hall; the single brethren's or young men's house, where the single tradesmen, journeymen, and apprentices, are boarded at a moderate rate, and have morning and evening prayers; the single sisters' or young women's house, where they live, and are employed, under the care of female inspectors, at liberty, however, to go about their business in the town, or to take a walk for recreation, and every year some of them are married; and a house for widows. The houses are 60 in number, mostly built of free-stone; and the inhabitants are between 500 and 600. The German language is more in use here than the English: the latter, however, is taught in the schools; and divine service is performed in both languages. Bethlehem is 53 miles north of Philadelphia. Long. 75. 8. W. Lat. 40. 37. N.

BETON, a kind of water-cement. The name of *Beton* is applied in France to every composition of mortar that is intended to keep out water, or to be used in works under water, and which is susceptible of becoming almost instantaneously solid.

Beton may be prepared in various ways. 1. The mortar of Lorient, when well prepared, holds water very well; I have used it for plastering the interfaces between the slabs of a terrace, and not the smallest filtration took place. I keep a mass of this mortar formed into the shape of a vase, which, when filled with water, and placed upon a sheet of paper, does not leave upon it any perceptible traces of humidity.

2. The mortar of Lafayette does not harden with equal rapidity; but when once it has become solid, it holds water very well without growing soft.

3. The mortar, of which Mr. Smeaton speaks, made with equal parts of lime and terras, is a real beton, or water cement, as it may be used in the water without becoming soft.

4. The mortars composed with Pozzolana may also be used in the water, and when once they have become hard, they are superior to all others in durability and resistance to the motions of the water.

The most common kind of water cement is that which is made with pure lime. It is formed into prisms of hard paste, which are sunk into the water to form a wall; or it is poured into a space, 21 or 22 centimeters in breadth, between two walls, in the manner of coffer-work, intended to confine the water in those parts of canals that are elevated above the ground.

BETTS (John), an eminent physician in the seventeenth century, was son of Mr. Edward Betts by his wife Dorothy, daughter of Mr. John Venables, of Rapley in Hampshire. He was born at Winchester, and educated there in grammar learning. From thence he was elected a scholar of Corpus Christi College in Oxford, in February, 1642. He took the degree of bachelor of arts, February 9, 1646. Being ejected by the visitors appointed by the parliament in 1648, he applied himself to the study of physic, and commenced doctor in that faculty, April 11, 1654, having accumulated the degrees. He practised with great success at London, but chiefly among the Roman-catholics, being himself of that persuasion. He was afterwards appointed physician in ordinary to King Charles II. The time of his death is not certainly known. Dr. Betts wrote the two following physical treatises, viz. 1. Of the Origin and Nature of the Blood. 2. The Anatomy of Thomas Parr, who died in the 152d year and ninth month of his age, with the observations of the celebrated Dr. William Harvey, and others of the king's physicians who were present.

BEVERGERN, a town of Germany, in the circle of Westphalia and diocese of Munster, 22 miles from that city.

BEVERIDGE (*Encycl.*). Bishop Beveridge has had a high character given him by several writers. The author of a letter published in the Guardian, having made an extract of the bishop's first sermon, in the second volume, relating to the Deity, tells us, that it may, for acuteness of judgment, ornament of speech, and true sublime, be compared with any of the choicest writings of the ancient fathers, or doctors of the church, who lived nearest to the apostles' times.

Bishop Beveridge left many learned works. Those published by himself are as follow: 1. De Linguarum Orientalium Prasentia. 2. Institutionum Chronologicarum Libri Duo. 3. Synodikon, five Pandectæ S.S. apotolorum et conciliorum. 4. Codex Canonum Ecclesiæ Primitivæ vindicatus et illustratus. 5. The Church Catechism explained. Besides the above-mentioned works of this prelate, we have the following, published after his death. 6. Private Thoughts upon Religion. 7. Private Thoughts upon a Christian Life. 8. The great Necessity and Advantage of public Prayer and frequent Communion. 9. One hundred and fifty Sermons and Discourses on several Subjects. 10. Theaurus Theologicus; or, a complete System of Divinity. 11. A Defence of the Book of Psalms, collected into English Metre, by Thomas Sternhold, John Hopkins, and others. 12. Exposition of the Thirty-nine Articles.

BEWCASTLE, a village in Cumberland on the river Leven, said to have been built about the time of the Norman conquest. The church is in ruins; and in the church-yard is an ancient cross, five yards high, on the sides of which are several sculptures, but the inscriptions are not legible.

BEWLEY, or **BEAULIEU**, a river in Scotland, which rises in the N. of Invernesshire, and flowing along the S. border of Ross-shire, forms the fine estuary on which stands Inverness, and Fort St. George, and which terminates in the frith of Murray. At the mouth of this river is the ferry of Kiskoff, near which is a good salmon fishery.

BEX, a village in the district of Aigle and canton of Bern, in Switzerland, near the little town of St. Maurice, which guards the entrance from that canton into the Lower

Valais. It is remarkable for its delightful situation, and the salt-works near it. The largest saline is entered by a passage cut out of the solid rock. Travellers, who have the curiosity to explore these gloomy abodes, are furnished with lighted torches, and dressed in a coarse habit, to defend them from the drippings that fall from the roof and sides of the passage.

BEZIERS, a town of France, in the department of Hérault and late province of Languedoc. It is an ancient, large, and handsome town, in a delightful situation, and was lately an episcopal see. The inhabitants are above 17,000 in number. The remains of a circus, and some inscriptions, bespeak its ancient grandeur. It has an academy of sciences and two hospitals; is seated near the Royal Canal, on a hill, at the foot of which flows the Obre; and is 8 miles N. of the Mediterranean, and 12 N.E. of Narbonne. Long. 3. 18. E. Lat. 21. 0. N.

BIBRACTE (anc. geog.), a citadel of the Ædii, according to Strabo; but Cæsar describes it as a town well fortified, very large and populous, and of the greatest authority among that nation. Now *Beauvèz*, or *Bevray*; a desolate place four miles to the north-west of Aulun.

BIBROCI (anc. geog.), an ancient people of Britain, now the *Hundred of Bray* in Berks.

BICETRE, a castle, two miles from Paris, where lunatics, beggars, vagabonds, pilferers, and dissolute young men, were imprisoned.

BIDASSOA, a river of Spain on the frontiers of France, which has its source in the Pyrenean mountains, and falls into the sea between Andaye and Fontarabia.

BIDIS (anc. geog.), a small city of Sicily not far from Syracuse, whose ruins are still to be seen in the territory of Syracuse, about fifteen miles to the south-west, with a church called S. GIOVANNI DI BIDINI.

BIGGAR, a town of Lanarkshire, in Scotland, ten miles S.E. of Carnwath. Here are the ruins of a collegiate church, founded in 1545.

BIJORE, a small province of Hindoostan Proper, lying between the rivers Indus and Attock, having Cabul on the W. the Bokharian mountains on the N. Calthmere on the E. and Pishour or Peshore on the S. Its dimensions are not more than fifty miles by twenty. It is full of mountains and wilds, inhabited by a savage and turbulent race. In this province is the famous mountain Aornus, the taking of which was one of the most splendid exploits of Alexander in these parts. Arrian describes it to be eighteen or twenty miles in circuit at the base, to be of vast elevation, and accessible by one narrow pass only, cut out of a rock. On the summit was a great extent of arable and pasture land, with springs of water, so that a garrison of 1000 men might subsist without any extraneous aid. This celebrated mountain lies about fifty-five miles N.N.E. from Pishour.

BILBILIS (anc. geog.), a town of Hispania Citerior, the birth-place of Martial; now supposed to be Calatayud in Arragon on the Xalon. See *CALATAYUD*.

BILMA, a vast burning desert of Africa, to the S.E. of Fezzan, between 21° and 25° N. lat. Surrounded by this dreary solitude, the traveller sees, with a dejected eye, the dead bodies of the birds that the violence of the wind has brought from happier regions; and listens, with horror, to the driving blast, the only sound that interrupts the awful repose of the desert.

BINGAZA, a sea-port of Africa in the kingdom of Tripoli, 140 miles W. of Derna. Long. 19. 10. E. Lat. 32. 20. N.

BINCHESTER, a village on the river Were, near the city of Durham. By several inscriptions and monuments,

it appears to have been a Roman town (Vinovium); many Roman coins are dug up here, which are called Binchester pennies; and two altars have been discovered, importing, that the twentieth legion was stationed in this place during the wars between the Picts and Caledonians.

BINGIUM (anc. geog.), a village or town of the Vangiones in Gallia Belgica, seated at the confluence of the Nave and Rhine. Now *Bingen*; which see.

BISCHOF'S WERDA, a town of Germany, in the circle of Upper Saxony, in Misnia, three miles from Dresden.

BISLEY, a village in Surrey, noted for a spring called St. John Baptist's Well, near the church of that name, whose water is said to be colder than any other in the summer, and warmer in the winter. It is three miles N. of Woking.

BISNAGUR, a town of the peninsula of Hindoostan, in the kingdom of Myfore, seated on the W. bank of the river Tungabadra. It was the capital of the ancient kingdom of Narsinga, and when visited by Cæsar Frederic in 1567, was a large city. It is 140 miles E. by S. of Goa. Long. 76. 10. E. Lat. 15. 30. N.

BLACK (Joseph), a physician very eminent in chemical science, was born at Bourdeaux, in France, of British parents, in 1728. He came at an early age to Great Britain, and was educated for the medical profession at the university of Glasgow. Dr. Cullen was at that time lecturer in chemistry there; and though his name does not rank high among the discoverers in that science, his methodical and investigating spirit rendered him a very useful teacher of it; and the popularity of chemical studies among the medical students of Scotland is greatly to be attributed to his mode of instruction. Mr. Black became one of his favourite pupils, enjoyed the free use of his laboratory, and assisted him in his experiments; whence he imbibed a decided taste for this branch of natural philosophy. In 1754 he took the degree of doctor of physic in the university of Edinburgh, where he had studied for some time; and the choice of a subject for his inaugural dissertation gave proof of his attachment to chemical topics. It was, *De humore acido a cibis orto, et Magnesia alba*. The germ of doctrine which he brought to light in his thesis, was fully developed in a paper read the next year before a society in Edinburgh, and published in the second volume of the *Essays Physical and Literary*, 1756, containing experiments on magnesia alba, quick-lime, and some other alkaline substances. In this, by the most ingenious and philosophical series of researches, he irrefragably proved the existence of an aerial fluid, which he denominated fixed air, the presence of which gave mildness, and its absence astringency, to alkalies and calcareous earths. This beautiful discovery is the undoubted parent of all those wonderful acquisitions in the knowledge of aerial bodies, which have immortalised the names of Cavendish, Priestley, Lavoisier, and others, and have given a new form to chemical philosophy. In 1756, on the removal of Dr. Cullen to Edinburgh, Dr. Black became professor of medicine, and lecturer in chemistry, at Glasgow. In the following year he enriched the science of chemistry with the curious and important doctrine of latent heat, in which he explained, in a most perspicuous and satisfactory manner, the connection of heat with fluidity, the phenomena that occur during the processes of freezing and boiling, and the manner in which they affect the thermometer. These discoveries, the result of his sagacity, and great experimental skill, have unquestionably led the way to all the subsequent facts relating to this part of chemistry, which have been added by several of the most eminent philosophers of the present day, and would alone have sufficed to confer celebrity on the name of Black. So high was his reputation, that on the

vacancy in the chemical chair of Edinburgh, in 1765, made by the removal of Dr. Cullen to another department, all eyes were turned on Dr. Black, as the only man adequate to sustain in his branch the superiority which that famed medical school had acquired in almost all others. He was accordingly elected, and for a long series of years discharged the duties of his office with universal applause, equally distinguishing himself by the ease, perspicuity, and elegance, with which he communicated instruction in his lectures, and his neatness and accuracy in performing experiments. Very complete manuscript copies of his lectures were taken by several of his students, especially in the earlier part of his teaching, when they contained a great variety of matter that was hardly yet known to the chemical world, and these copies, read with avidity by the lovers of this science, have highly contributed to secure to him the honour of those discoveries, and of that original mode of reasoning, which he scarcely made public in any other form.

He published nothing after his election to the chemical chair at Edinburgh, but a paper On the Effect of Boiling upon Water in disposing it to freeze more readily, printed in the sixty-fifth volume of the *London Philos. Trans.* for 1774; and *An Analysis of the Waters of some Hot-springs in Iceland*, in the third volume of the *Edinburgh Philos. Trans.* 1791. The latter contains matter very interesting to the chemist, concerning the formation of the siliceous stone, which is deposited by these wonderful springs; and has long been considered as a model of neatness and accuracy in the analysis of mineral waters. Two of his letters on chemical subjects have been published by Prof. Crell, and Lavoisier. It must, indeed, be confessed, that the active vigour of his mind seems to have undergone an early decline, and that, either through indolence, or a dislike of being taught by newer men, he suffered others to pass him in the very career of discovery which he had opened. He was long a strenuous opposer of the new theories in chemistry; and injured his character for candour and liberality, both by invisibly avoiding altogether the mention of some justly celebrated names, and by undervaluing the merits of others. At length, however, he became an avowed convert to the principles of the French chemists, and did not hesitate to make amends, by his applause, for his former opposition. Dr. Black never distinguished himself as a practical physician. His manners were simple; his temper cold and reserved; and his habits of life adapted to his own convenience. His health began to decline some years before his death, which at length took place suddenly in his sixty-second year, on December 6, 1799. He was never married. He was a member of the philosophical societies of London and Edinburgh; and obtained, at the solicitation of Lavoisier (a man superior to all envy), the distinguished honour of being one of the eight foreign members of the Academy of Sciences of Paris.

BLACKHEATH, a fine elevated plain, five miles S.E. of London, commanding beautiful prospects, and situated in the parishes of Greenwich, Lewisham, and Lee. It is adorned with handsome villas; and on the skirts of it, but in the parish of Charlton, is Morden College, for decayed merchants. On this plain Wat Tyler mustered 100,000 rebels. On the ascent to the heath, in the road to Dover, is a curious cavern, discovered in 1780.

BLACKLOCK (the Rev. Dr.), an ingenious divine and poet of Scotland, was born at Annan, in the county of Annandale, in Scotland, in the year 1721. His parents were natives of Cumberland, in which county his paternal ancestors had lived from time immemorial. Young Blacklock, before he was six years old, was totally deprived of his sight by the small-pox. His father had intended to bring him up to some trade; but as this misfortune rendered him incapable of any, all that this worthy parent could do, was to shew the utmost

attention to him, in this unhappy situation. This left such an indelible impression on the mind of his son, that he mentioned it, ever after, with the greatest warmth of gratitude and affection. Of this he has given a very striking proof in his poems. What was wanting to this poor youth, from the loss of his sight, and the narrowness of his fortune, seems to have been compensated to him by the goodness of his heart, and the capacities of his mind. It was very early that he shewed a strong inclination to poetry in particular. His father, and a few other friends, used often to read to divert him; and, among the rest, they read several passages out of some of our poets. These were his chief entertainment and delight. He heard them not only with uncommon pleasure, but with a sort of congenial enthusiasm; and, from loving and admiring them so much, he soon began to endeavour to imitate them. Among these early essays of his genius, there is one inserted in his works which was composed when he was only twelve years old, and has something very pretty in the turn of it, and very promising for one of such a tender age. Indeed, it is observable, that there have been few of our most eminent poets who have not given very early proofs of their genius this way; a quick and promising blossom pre-indicating, as it were, the abundance and excellence of the fruit which their maturity affords.

In 1749, Mr. Blacklock's father having been informed that a kiln, belonging to a son-in-law of his, was giving way, his solicitude for his interest made him venture in below the ribs, to see where the failure lay; when the principal beam coming down upon him, with eighty bushels of malt, he was instantly crushed to death.

When this melancholy event happened, Mr. Blacklock had just attained his nineteenth year; and as the loss of his good father occasioned his falling into more hands than he had been accustomed to before, he began by degrees to be more talked of, and his extraordinary talents to be better known. About a year after, he was sent for to Edinburgh by Dr. Stevenson, man of taste, and one of the physicians of that city, who had the goodness to supply him with every thing necessary for his living and studying in the university. Mr. Blacklock justly considered this gentleman as his Mæcenas; and the first poem in his works was a tribute of gratitude which he addressed to him, in imitation of the first Ode of Horace, by which the Roman bard has immortalized his illustrious patron.

Mr. Blacklock studied at Edinburgh ten years; in which time he not only acquired great knowledge in the Greek, Latin, and French languages, but made a considerable progress also in all the sciences. What was still more extraordinary, he attained great excellence in poetry, although the chief inlets to poetical ideas were closed up to him, and all the visible beauties of the creation had been long blotted from his memory. How far he contrived, by the uncommon force of his genius, to compensate for this vast defect; with what elegance and harmony he often wrote; with how much propriety, sense, and emotion, it is as easy to perceive, on reading his poems, as it is difficult to account for it. Considered in either of these lights, he must be allowed to have an extraordinary share of merit; but if thoroughly considered in all together, we may be allowed to say, with his friend the late celebrated Mr. Hume, that he must be regarded as a prodigy.

Mr. Hume, also, speaking of his moral character, observed, that "his modesty was equal to the goodness of his disposition, and the beauty of his genius;" and Mr. Spence, speaking of the pieces which Dr. Blacklock would not suffer to be printed, observes, that they abound with so many poetical beauties, that nothing could do him greater honour.

Mr. Spence's account of Mr. Blacklock having been first separately published in 1754, it was afterwards prefixed to a

quarto edition of his poems, published by subscription, under the patronage of that gentleman. By this publication a considerable sum of money was obtained, and, soon after, our poet was fixed in an eligible situation in the university of Edinburgh. In 1760 he contributed some poems to a Scotch collection, published at Edinburgh; and there being styled the Rev. Mr. Blacklock, it appeared that he had then entered into holy orders. In 1766 he obtained the degree of doctor of divinity; and in 1767 he published *Paraclesis, or Consolations deduced from natural and revealed Religion*, in two dissertations, 8vo. In 1768 he printed *Two Discourses on the Spirit and Evidences of Christianity*, translated from the French of M. Armand. These were his principal productions. At length, after a long life, devoid indeed of variety or adventure, but constantly devoted to the most laudable pursuits, this good and ingenious man terminated his mortal existence on the 14th of July, 1791, being then seventy years of age.

BLAIR (Dr. Hugh), an eminent Scots divine, was born in Edinburgh, on the 7th day of April, 1718. His father, Mr. John Blair, a respectable merchant in that city, was a descendant of the ancient family of Blair, in Ayrshire, and grandson of the famous Mr. Robert Blair, minister of St. Andrew's, chaplain to Charles I. and one of the most zealous and distinguished clergymen of that period. This worthy man, though firmly attached to the cause of freedom, and to the Presbyterian form of church government, by his steady, temperate conduct, commanded the respect even of his opponents; and in preference to all the other leaders of the covenanting party, he was selected by the king to fill an office which, from the circumstances of the time, gave frequent access to the royal person. His talents seem to have descended as an inheritance to his posterity. For, of the two sons who survived him, David, the eldest, was a clergyman of eminence in Edinburgh, father to Mr. Robert Blair, minister of Athelstonford, author of *The Grave* a poem; and grandfather to his majesty's solicitor general for Scotland. From his youngest son Hugh, who was a merchant, and filled a high station in the magistracy of Edinburgh, sprung the learned clergyman, who is the subject of this narrative.

After the usual grammatical course at school, Dr. Blair entered the Humanity Class in the University of Edinburgh, in October 1730, and spent eleven years there, assiduously employed in the literary and scientific studies prescribed by the church of Scotland. During this period he was distinguished among his companions both for diligence and proficiency; and obtained from the professors under whom he studied, repeated testimonies of approbation. One of them deserves to be mentioned particularly, because, in his own opinion, it determined the bent of his genius towards polite literature. An essay, *Περί του ωραίου*, or, *On the Beautiful*, written by him when a student of logic in the usual course of academical exercises, had the good fortune to attract the notice of Professor Stevenson, and, with circumstances honourable to the author, was appointed to be read in public at the conclusion of the session. This mark of distinction made a deep impression on his mind; and the essay which merited it, he ever after recollected with partial affection, and preserved to the day of his death as the first earnest of his literary reputation.

Dr. Blair now commenced a method of study which contributed much to the accuracy and extent of his knowledge, and which he continued to practise occasionally even after his reputation was fully established. It consisted in making abstracts of the most important works which he read, and in digesting them according to the train of his own thoughts. History, in particular, he resolved to study in this manner; and, in concert with some of his youthful associates, he constructed a very comprehensive scheme of *chronological tables*,

calculated to receive into its proper place every important fact that should occur. This scheme was afterwards improved, filled up, and given to the public by Dr. John Blair, prebendary of Westminster, in his well-known work on Chronology.

In 1739, Dr. Blair took the degree of A.M. on which occasion he defended a thesis *De Fundamentis et Obligatione Legis Nature*, which contains a short but masterly discussion of the subject, and exhibits, in elegant Latin, an outline of the moral principles which have been since more fully unfolded and illustrated in his discourses from the pulpit.

Edinburgh, about this period, numbered among her pupils many who were soon to make a distinguished figure in the civil, ecclesiastical, and literary history of their country. With most of them Dr. Blair entered into habits of intimate connection, which no future competition or jealousy occurred to interrupt, which held them united through life in their views of public good, and which had the most beneficial influence on their own improvement, on the progress of elegance and taste among their contemporaries, and on the general interests of the community to which they belonged.

After his academical course, he underwent the customary trials before the Presbytery of Edinburgh, and received a licence to preach the Gospel, on the 21st of October, 1741. His public life now commenced with very favourable prospects. The reputation which he brought from the university was fully justified by his first appearances in the pulpit; and, in a few months, the fame of his eloquence procured for him a presentation to the parish of Collieston in Fife, where he was ordained to the office of the holy ministry, on the 23d of September, 1742. But he was not permitted to remain long in this rural retreat. A vacancy in the second charge of the Canongate of Edinburgh furnished to his friends an opportunity of recalling him to a station more suited to his talents. And, though one of the most popular and eloquent clergymen in the church was placed in competition with him, a great majority of the electors decided in favour of this young orator, the choice of whom took place in July 1743.

In this station Dr. Blair, for eleven years, discharged with great fidelity the various duties of the pastoral office. His discourses from the pulpit in particular attracted universal admiration. They were composed with uncommon care; and, occupying a middle place between the dry metaphysical discussion of one class of preachers, and the loose incoherent declamation of another, they blended together, in the happiest manner, the light of argument with the warmth of exhortation, and exhibited captivating specimens of what had hitherto been rarely heard in Scotland, the polished, well-compacted, and regular didactic oration.

In consequence of a call from the town-council and general-session of Edinburgh, he was translated from the Canongate to Lady Yester's, one of the city churches, on the 11th of October, 1754; and on the 15th day of June, 1758, he was promoted to the High Church of Edinburgh. To this charge he was raised at the request of the lords of council and session, and of the other distinguished official characters who have their seats in that church. And the uniform prudence, ability, and success, which, for a period of more than forty years, accompanied all his ministerial labours in that conspicuous and difficult station, sufficiently evince the wisdom of their choice.

Hitherto his attention seems to have been devoted almost exclusively to the attainment of professional excellence; and to the regular discharge of his parochial duties. No production of his pen had yet been given to the world by himself, except two sermons preached on particular occasions, some translations, in verse, of passages of Scripture for the psalmody of the church, and a few articles in the *Edinburgh Review*; a publication begun in 1755, and conducted for a short time by some

of the ablest men in the kingdom. But standing as he now did at the head of his profession, and relieved by the labour of former years from the drudgery of weekly preparation for the pulpit, he began to think seriously on a plan for teaching to others that art which had contributed so much to the establishment of his own fame. With this view, he communicated to his friends a scheme of Lectures on Composition; and, having obtained the approbation of the university, he began to read them in the college on the 11th of December, 1759. To this undertaking he brought all the qualifications requisite for executing it well; and along with them a weight of reputation, which could not fail to give effect to the lessons he should deliver. For, besides the testimony given to his talents by his successive promotions in the church, the university of St. Andrew's, moved chiefly by the merit of his eloquence, had in June 1757 conferred on him the degree of D.D. a literary honour which, at that time, was very rare in Scotland. Accordingly his first Course of Lectures was well attended, and received with great applause. The patrons of the university, convinced that they would form a valuable addition to the system of education, agreed in the following summer to institute a rhetorical class, under his direction, as a permanent part of their academical establishment: and, on the 7th of April, 1762, his majesty was graciously pleased "To erect and endow a professorship of rhetoric and belles-lettres in the university of Edinburgh, and to appoint Dr. Blair, in consideration of his approved qualifications, regius professor thereof, with a salary of 70*l*." These Lectures he published in 1783, when he retired from the labours of the office; and the general voice of the public has pronounced them to be a most judicious, elegant, and comprehensive system of rules for forming the style and cultivating the taste of youth.

About the time in which he was occupied in laying the foundations of this useful institution, he had an opportunity of conferring another important obligation on the literary world, by the part which he acted in refusing from oblivion the poems of Ossian. It was by the solicitation of Dr. Blair and Mr. John Home that Mr. Macpherson was induced to publish his Fragments of Ancient Poetry; and their patronage was of essential service in procuring the subscription which enabled him to undertake his tour through the Highlands for collecting the materials of Fingal, and of those other delightful productions which bear the name of Ossian. To these productions Dr. Blair applied the test of genuine criticism, and soon after their publication gave an estimate of their merits in a dissertation, printed in 1763.

The great objects of his literary ambition being now attained, his talents were for many years consecrated solely to the important and peculiar employments of his station. It was not till the year 1777 that he could be induced to favour the world with a volume of the Sermons which had so long furnished instruction and delight to his own congregation. But this volume being well received, the public approbation encouraged him to proceed: three other volumes followed at different intervals; and all of them experienced a degree of success of which few publications can boast. They circulated rapidly and widely wherever the English tongue extends; they were soon translated into almost all the languages of Europe; and his present majesty, with that wise attention to the interests of religion and literature which distinguishes his reign, was graciously pleased to judge them worthy of a public reward. By a royal mandate to the exchequer in Scotland, dated July 25th, 1780, a pension of 200*l*. a-year was conferred on their author, which was continued till his death, which happened on the 27th of December 1800.

He left in the hands of the printer a fifth volume of Sermons, which, it seems, from the account of the Reverend Dr.

McLAYSON, who published them (together with the author's life from whence we draw this abridgment), were composed at very different periods of his life. They were however all written out anew in his own hand, and in many parts recomposed, during the course of the summer preceding his death, after he had completed his eighty-second year. The last of them which he composed, though not the last in the order adopted for publication, was the sermon on a Life of Diffipation and Pleasure—a sermon written with great dignity and eloquence, and which should be regarded as his solemn parting admonition to a class of men, whose conduct is highly important to the community, and whose reform and virtue he had long laboured most zealously to promote.

The sermons which he has given to the world are universally admitted to be *models in their kind*; and they will long remain durable monuments of the piety, genius, and sound judgment of their author. But they formed only a small part of his compositions in this way. These, however, sensible of the injury done to the fame of departed authors by the publication of their literary fragments, and too modest to attribute to them the degree of merit requisite for the press, he strictly forbade the publication of.

Dr. Blair, from a natural dislike to any situation which might expose him to the necessity of taking the smallest part in the contents of ecclesiastical politics, would never consent to become moderator of the general assembly of the church of Scotland. His opinions, however, were frequently resorted to; and the great reputation he had acquired in the discharge of his public duties, as well as the great respectability of his private character, always gave them considerable weight.

In April 1748, Dr. Blair married his cousin, Catharine, daughter of the Rev. James Bannaffine, one of the ministers of Edinburgh, by whom he had a son who died in his infancy, and a daughter, who lived to her 21st year. His domestic enjoyments were also fatally interrupted by the death of Mrs. Blair, which happened a few years before his own.

This inestimable man carried with him the truest regrets of all who knew him both in public and private life; a funeral sermon was preached at his burial, and the magistrates directed his church to be put in mourning.

BLAIR ATHOL, a village of Perthshire, in an angle formed by the rivers Tilt and Garry. Close by it is Blair Castle, a noble seat of the Duke of Athol's, on an eminence, amid a beautiful plain surrounded by hills, woods, and deep glens. In its vicinity are many fine waterfalls. Blair Athol is 28 miles N.W. of Perth. Long. 3. 41. W. Lat. 56. 46. N.

BLANCA, an uninhabited island to the N. of Margareta, near Terra Firma. Long. 64. 30. W. Lat. 41. 50. N.

BLANDA (anc. geog.), a Roman city in the territory of Barcelona in Hispania Citerior; now *Blanes*, a sea-port town of Catalonia, situated near the river Tordara. E. Long. 3. 40. N. lat. 41. 30.

BLANDONONA (anc. geog.), a small city of Liguria in Italy; now *Bron*, or *Broni*. See that article.

BLANES, a sea-port of Catalonia, in Spain, near the river Tordara, twenty miles S. of Gironne. Long. 2. 50. E. Lat. 41. 40. N.

BLEACHING (*Encycl.*). To the information already communicated on this important branch of the arts, we are induced to add, in the inventor's words, the following specification of the patent granted to Mr. Turnbull, junior, of Cordale Printfield, in Scotland, for certain new processes and apparatus applicable to the bleaching and purifying of cotton, flax, hemp, silk, and wool, or of mixtures of those materials, by which a considerable saving will be effected in fuel, alkali, &c. After the goods have been thoroughly washed, Mr. Turnbull says,

"When thus cleaned, they are put into a ley of vegetable or of mineral fixed alkali, or the volatile alkali, either mild or made caustic by quick-lime, or into a ley of quick-lime only, or into a soapy ley, or into a ley composed of all or any of these substances (with or without the addition of oxygenated muriatic acid), of a strength fit for the purpose of extracting the coloured or colourless gummy, resinous, or other impurities which may exist naturally in, or which may have been introduced (by accident or design) into the fibre or texture of the materials of goods under process, and which are too intimately united with them to admit of being removed by the first above-described washing or cleansing. The alkaline, soapy, or other ley, may be prepared by the method or methods usually followed by bleachers; my invention not consisting in the kind of alkaline leys, or other liquors employed, or in the way of preparing them, but in the mode of applying such alkaline, soapy, or other leys, and in the accompanying and subsequent manipulations; for, when the goods or articles to be bleached are immersed in the alkaline, soapy, or other ley or liquor, as before directed, instead of boiling or bucking them in it, as is the practice usually followed, I only steep them, or keep them long enough in the said ley to be thoroughly impregnated with it, which requires a shorter or longer time, according to the quantity and texture of the articles or goods. The goods are then drawn out of the rack over the vessel in which they were impregnated, and suffered to drain, that the superficially adhering ley or liquor may run from them back into the vessel. After this draining, the goods still hold a sufficient quantity of the ley or liquor employed to answer the end in view. They are then put into a vessel of sufficient strength and dimension, made of wood, stone, brick-work, earthen-ware, metal, or any proper material. This vessel, which I call a steaming-vat, may be almost of any form convenient for the premises or place where it is to be fixed, and is connected by means of a pipe, tube, hose, trunk, or hollow prism, made of wood, metal, or of any fit material, with a boiler, kettle, or cauldron, which I call the steaming-kettle, and which may be of any convenient form and dimensions. The tube above mentioned may pass from any part of the edge or of the side of the steaming-kettle, or even from its cover, which ought to fit steam-tight, into any part of the side or bottom of the steaming-vat, the intention and use of it being to convey steam from the aforesaid kettle to the aforesaid vat. The tube, pipe, hose, trunk, or hollow prism, is furnished with a stop-cock or valve, or any contrivance that will answer the purpose of shutting and opening at pleasure the communication between the said kettle and vat. The steaming-vat ought, for the convenience of lifting out the goods, to be furnished with a false bottom of some kind in the inside, as of wood or of net-work, for the goods to lie upon; and to this false bottom should be attached ropes, by means of which, and the assistance of a crane and pulley, or any other convenient mechanical power, the goods may be withdrawn from the vat after the operation of steaming them. The operation of steaming the goods is performed by opening the communication between the steaming-kettle and steaming-vat; the former, which contains some water or aqueous solution, being kept at a proper heat by means of a fire put under it, and the latter having previously its cover fitted on steam-tight. The steam is thus, as it were, pent up in the kettle and vat, and made to act with any pressure that may be desired, or that the strength of the vessels may be able to sustain. To secure the safety of the people employed, the apparatus ought always to be furnished with a safety-valve attached to any part of the steaming-kettle, or of the steaming-vat, or of the tube of communication, that when the elastic force of the enclosed steam reaches the determined point, the valve may open of itself,

and allow a portion of it to escape. By this process the goods can be heated considerably above the boiling point, a circumstance that adds so much to the dissolving power of the alkaline, or soapy, or other ley, that the quantity left in the goods, after draining, as before described, is found sufficient to dissolve and discharge, by one steaming, as much of the refinous, gummy, or other impurities, from the goods under process, as could have been discharged by a long boiling of the goods in the ley itself, as is the usual practice; and by this means a great saving is made in the alkalis or other ingredients employed for whitening the goods. For, in the common method, the colouring matter, as discharged from the fibre or texture of the goods, is diffused throughout the whole ley, which soon renders it so foul that it is obliged to be changed long before it has become saturated with the substances or matters on which it exercises its power. But by my process or processes there is no more ley employed for one steaming than what is sufficient merely to impregnate the goods thoroughly; and the alkali thus deposited in the texture or fibre of the goods under process is more or less disengaged from the said texture or fibre by the action of the steam, and is found at the bottom of the steaming-vat, of a dark colour, occasioned by the matters it has dissolved, and carried down with it. The steaming-vat may be very commodiously freed from this deposit by a common stop-cock, or even a plug at or near its bottom, to be opened as often as it may be necessary. I also effect the same end by using only a deep boiler, with a steam-tight cover, suspending the goods previously impregnated with the alkaline or other ley, as before directed, on frame or net-work, over boiling water, in the said boiler, and employing oxygenated muriatic acid, acidulated waters, mill washing, or exposure to the sun and air, when these are necessary: particular care must be taken to keep a supply of water, or some aqueous solution in the lower part of the boiler, below the frame or net-work on which the goods lie, or otherwise they may be singed, or actually burnt, and a loss be actually incurred. But I prefer putting the goods into steaming-vats, to putting them in a boiler, in the manner just described, and that on several accounts, but especially because, by means of one steaming-kettle, steam can be thrown into as many vats as can conveniently be ranged round it, which is a mean of making a considerable saving in the article of fuel. One steaming generally requires from four to eight hours, but the length of time will vary according to the kind or quality of the goods to be whitened, and the strength of the ley that has been employed for impregnating them. After the steaming has been continued a sufficient length of time, the cover of the steaming-vat is taken off. The communication with the steaming-kettle is cut off by means of the aforesaid cock or valve, provided for that purpose, and the goods are lifted out by means of a crane and pulley, or other fit mechanical power, as before mentioned. They are then well washed by milling, or by any of the processes followed by bleachers. After this they are again impregnated with ley, steamed, and then washed; and these manipulations are repeated in the manner that has already been described till the goods are brought to the required degree of whiteness and purity. The usual operations of steeping in acidulated waters, and exposure to the sun and air, or to the action of the oxygenated muriatic acid, in such stages of the process as the bleacher may think proper, may be employed with advantage in my method, as well as in the common and usual method of bleaching. I need hardly direct here, what every bleacher's own experience must point out to him, namely, that when acidulated waters, exposure to the sun and air, or the oxygenated muriatic acid, are to be employed after any steaming, the goods should first be washed. When silk, sheeps' wool, or goods containing sheeps'

wool or animal hair, or fur, of any kind, are wished to be cleaned, scoured, or whitened, by the above-described method, the ley employed ought to be much weaker than in the case of cotton, flax, or hemp, or of goods manufactured of these, or any of them; for a strong caustic ley would entirely destroy the former, and convert them into a saponaceous matter.

There has been discovered a method of preparing the oxygenated muriate of lime in a dry form, and applying it to the purposes of bleaching, or removing colours from cloth, cotton, &c.

Mr. Charles Tenant, of Darnley, near Glasgow, the patentee, having found that the oxygenated muriatic acid is capable of forming a compound with calcareous earth, and also with frontites, barytes, and magnesia, merely by bringing the oxygenated muriatic acid gas into contact with them either when in lumps or in a pulverised state, has very considerably improved upon his former discovery, namely, that these earths might be so impregnated when diffused in water, and might, in that state, be employed in bleaching.

Till the discovery of these processes, Mr. Tenant observes, pot-ash was used to serve the purpose now obtained by lime or the other earths; and its expence to the bleacher was very considerable. The bleaching liquor, indeed, when made with alkali, enabled the cotton-manufacturers to bring their goods to market in one-third of the time they formerly required, and also to carry on their business at all seasons of the year. Hence a more extensive trade was carried on by the manufacturers of cotton; but linen goods, requiring the liquor in a much more concentrated state, heretofore derived little or no benefit from the practice of bleaching by chemical means. By the introduction of lime, however, the liquor is made so cheap that linens are also bleached with it, and that so expeditiously, that the dealer can turn his stock over twice or thrice for once that he could when the practice prevailed of bleaching in the open air.

Mr. Tenant farther observes, that, by preparing the oxygenated muriates in the dry way, bleachers may be cheaply and conveniently supplied with it, and save much of the trouble and expence and hazard which attend the preparation of the bleaching liquor in the old way.

BLETERIE (John Philip René de la), born at Rennes, entered early into the congregation of the Oratory, and was there a distinguished professor. The order against wigs occasioned his quitting it; but he retained the friendship and esteem of his former brethren. He went to Paris, where his talents procured him a chair of eloquence in the College Royal, and a place in the Academy of Belles-Lettres. He published several works, which have been well received by the public. 1. *The Life of the Emperor Julian*, Paris, 1735, 1746, 12mo. a curious performance, well written, and distinguished at once by impartiality, precision, elegance, and judgment. 2. *The History of the Emperor Jovian, with Translations of some Works of the Emperor Julian*, Paris, 1748, two vols. 12mo. a book no less valuable than the former. 3. *A Translation of some Works of Tacitus*, Paris, 1755, two vols. 12mo. *The Manners of the Germans, and The Life of Agricola*, are the two pieces comprised in this version, which is equally elegant and faithful. Prefixed is a *Life of Tacitus*, which is also worthy of this writer, by the strength of its sentiments, and the animation of its style. 4. *Tiberius, or the six first Books of the Annals of Tacitus*, translated into French, Paris, 1768, three vols. 12mo. 5. Letters occasioned by the Account of Quietism given by M. Phelypeaux, 1733, 12mo. 6. *Some Dissertations in the Memoirs of the Academy of Belles-Lettres*. 7. *Most humble Remonstrances of M. de Montrempuis*. The Abbé de la Bletterie died at an advanced age, in 1772. He was a man of learning, attached to religion, and his morals did not belie his principles.

QUÆSTOR, see QUESTOR.

QUAGGA, or QUACHA. See BARR.

QUAIL, in zoology. See TETRAO.

Quails are to be taken by means of the call during their whole waking time, which lasts from April to August. The proper times for using the call are at sun-rising, at nine o'clock in the morning, at three in the afternoon, and at sun-set; for these are the natural times of the quail's calling. The notes of the cock and hen quail are very different; and the sportsman who expects to succeed in the taking them must be expert in both: for, when the cock calls, the answer is to be made in the hen's note; and, when the hen calls, the answer is to be made in the cock's. By this means they will come up to the person, so that he may, with great ease, throw the net over them and take them. If a cock quail be single, on hearing the hen's note he will immediately come; but if he has a hen already with him, he will not forsake her. Sometimes, though only one quail answers to the call, there will three or four come up; and then it is best to have patience, and not run to take up the first, but stay till they are all entangled, as they will soon be.

The quail is a neat cleanly bird, and will not run much into dirty or wet places: in dewy mornings, they will often fly instead of running to the call; and in this case, it is best to let them go over the net, if it so happens that they fly higher than its top; and the sportsman then changing sides, and calling again, the bird will come back, and then will probably be taken in the net.

The calls are to be made of a small leather purse, about two fingers wide, and four fingers long, and made in the shape of a pear; this is to be stuffed half full of horse-hair, and at the end of it is to be placed a small whistle, made of the bone of a rabbit's leg, or some such other bone: this is to be about two inches long, and the end formed like a flageolet, with a little soft wax. This is to be the end fastened into the purse; the other is to be closed up with the same wax, only that a hole is to be opened with a pin, to make it give a distinct and clear sound. To make this found, it is to be held full in the palm of the hand, with one of the fingers placed over the top of the wax; then the purse is to be pressed, and the finger is to shake over the middle of it, to modulate the sound it gives into a sort of shake. This is the most useful call; for it imitates the note of the hen quail, and seldom fails to bring a cock to the net if there be one near the place.

The call that imitates the note of the cock, and is used to bring the hen to him, is to be about four inches long, and above an inch thick; it is to be made of a piece of wire turned round and curled, and covered with leather; and one end of it must be closed up with a piece of flat wood, about the middle of which there must be a small thread or strap of leather, and at the other end is to be placed the same sort of pipe, made of bone, as is used in the other call. The noise is made by opening and closing the spiral, and gives the same found that the cock does when he gives the hen a signal that he is near her.

QUAKERS, a religious society which took its rise in England about the middle of the seventeenth century; spread rapidly there, and found its way into some other countries of Europe, and into the English settlements in North America. The first preacher was George Fox, an illiterate person, who made his first appearance in that character about the year 1648. The nation was then greatly agitated by religious controversies. Fox acquired several followers, and in the year 1650, being brought before two justices in Derby, for having interrupted a minister in the exercise of his function, one of them by way of jeer gave this people the name of *Quakers*; an appellation which has stuck to them ever since; though they themselves adopted, and still retain, the name of *Friends*.

Robert Barclay and William Penn are two of the principal writers of this society. The former wrote a masterly apology

VOL. VIII.

for their doctrines, to which he prefixed a remarkable address to King Charles II. Penn wrote several books, the chief of which that entitled, *No Cross, no Crown*, shewing that the way to obtain the heavenly crown is by being willing to bear the cross.

These were writers of considerable learning and abilities, to whom may be added Sewell, the historian, who wrote an account of this people, first in Dutch, and afterwards in English. It may also be proper to mention, of later time, Anthony Pruver, who having been brought up (like Fox) in the employment of a shepherd, and a shoemaker, afterwards acquired so much knowledge in the dead languages, as to translate the whole of the Scriptures into English. It must be admitted, however, that the quakers, as a body, have produced few learned or scientific authors; and this reason may be assigned, that they avoid sending their children to public schools, and train them principally to mechanical or commercial employments, preferring the useful to the ornamental in their education. In medicine, nevertheless, the only learned profession which is open to them in Great Britain, they have had many who have attained and adorned the degree of doctor, among whom the learned world will readily recognize the name of Fothergill.

It is somewhat difficult to give an accurate account of their tenets, as they have no standard confession of faith. They have however, so lately as 1790, published a summary view of their doctrines: from which we learn, in brief, that the Friends believe in one eternal God, and in Jesus Christ, his Son, the Messiah and Mediator of the new covenant. They acknowledge the divinity of Christ, who is the wisdom and power of God unto salvation. To Christ alone they give the title of the *word of God*, and not to the Scriptures, but they highly esteem those sacred writings, in subordination to the spirit, from which they were given forth. They believe that, in order to enable men to put in practice the most excellent precepts of the gospel, every man is endued with a measure of the light, grace, or good spirit, of Christ, by which he is enabled to distinguish good from evil, and to correct those corrupt propensities of his nature which mere reason is insufficient to overcome. They believe that the influence of the spirit of Christ is necessary to enable them acceptably to worship; and that to wait for it, when met, in silence, is their proper business. They ascribe all true ministry to the same source, the immediate influence of the Holy Spirit. They reject, or disuse, baptism with water and the supper: the former as pertaining, according to John the Baptist's avowal, to a decreasing dispensation, and having been merely typical of spiritual baptism: the latter rite they do not consider as maintaining communion between Christ and his church; which is only obtained by a real participation of his divine nature through faith. As this society lays so much stress on the inward persuasion of the mind, effected by the operation of the light of Christ; and as they believe that lively faith is not at man's command, but is the gift of God in Christ, although nourished by man's obedience to its discoveries; they are so far from requiring of such as request admission among them, or such as are employed in the service of their church, any of those articles or formulas of faith, which are too often the means of inducing an insincere compliance, that they make no use of such forms at all. They say, in their summary, "We prefer the judging of men by their fruits, and depending on the aid of him who, by his prophet, hath promised to be a spirit of judgment to him that sitteth in judgment. Without this, there is a danger of receiving numbers into outward communion, without any addition to that spiritual fellowship, whereof our blessed Lord hath declared himself to be both the door and the shepherd—that is, of such as know his voice, and follow him in the paths of obedience."

BLIND (*Encycl.*). By way of illustrating what has been already said under this article, we shall add one or two very singular histories; and shall begin with an account of some remarkable particulars that happened to a lady after having had the confluent small-pox. "In the course of this disease the lady was attended by the late Sir Hans Sloane, and several threatening symptoms appeared, which, however, were at length overcome; and the patient was thought out of danger. She was attacked afterwards with dreadful spasms, to remove or mitigate which many remedies were tried; and, among others, the cold bath: but either by the natural effect of the bath, or by some mismanagement in the bathing, the unhappy patient first became *blind*, and soon afterwards deaf and dumb. It is not easy to conceive what could increase the misery of deafness, dumbness, blindness, and frequent paroxysms of excruciating pain: yet a very considerable aggravation was added; for the loss of her sight, her hearing, and her speech, was followed by such a fricture of the muscles of her throat, that she could not swallow any kind of aliment either solid or liquid. It might reasonably be supposed that this circumstance, though it added to the degree of her misery, would have shortened its duration: yet in this condition she continued near three quarters of a year; and during that time was supported in a very uncommon manner, by chewing her food only; which having turned often, and kept long in her mouth, she was obliged at last to spit out. Liquors were likewise gargled about in her mouth for some time; and then returned in the same manner, no part of them having passed the throat by an act of deglutition: so that whatever was conveyed into the stomach, either of the juices of the solid food, or of liquids, was either gradually imbibed by the sponginess of the parts, which they moistened, or trickled down in a very small quantity along the sides of the vessels.

But there were other peculiarities in the case of this lady yet more extraordinary. During the privation of her *sight* and *hearing*, her *touch* and her *smell* became so exquisite, that she could distinguish the different colours of silk and flowers, and was sensible when any stranger was in the room with her.

After she became blind, and deaf, and dumb, it was not easy to contrive any method by which a question could be asked her, and an answer received. This, however, was at last effected by talking with the fingers, at which she was uncommonly ready. But those who conversed with her in this manner, were obliged to express themselves by touching her hand and fingers instead of their own.

A lady who was nearly related to her, having an apron on, that was embroidered with silk of different colours, asked her, in the manner which has been described, if she could tell what colour it was? and after applying her fingers attentively to the figures of the embroidery, she replied, that it was red, and blue, and green; which was true. The same lady having a pink coloured ribbon on her head, and being willing still further to satisfy her curiosity and her doubts, asked what colour that was? her cousin, after feeling some time, answered that it was pink colour: this answer was yet more astonishing, because it shewed not only a power of distinguishing different colours, but different kinds of the same colour; the ribbon was not only discovered to be red, but the red was discovered to be of the pale kind called a *pink*.

This unhappy lady, conscious of her own uncommon infirmities, was extremely unwilling to be seen by strangers, and therefore generally retired to her chamber, where none but those of the family were likely to come. The same relation, who had by the experiment of the apron and ribbon discovered the exquisite sensibility of her *touch*, was soon after convinced, by an accident, that her power of smelling was acute and refined in the same astonishing degree.

Being one day visiting the family, she went up to her cousin's chamber, and after making herself known, she intreated her to go down, and sit with her among the rest of the family, assuring her that there was no other person present: to this she at length consented, and went down to the parlour door; but the moment the door was opened she turned back, and retired to her own chamber much displeased; alleging, that there were strangers in the room, and that an attempt had been made to deceive her: it happened indeed that there were strangers in the room; but they had come in while the lady was above stairs, so that she did not know they were there. When she had satisfied her cousin of this particular she was pacified; and being afterwards asked how she knew there were strangers in the room, she answered, by the smell.

But though she could by this sense distinguish in general between persons with whom she was well acquainted, and strangers, yet she could not so easily distinguish one of her acquaintance from another without other assistance. She generally distinguished her friends by feeling their hands; and when they came in, they used to present their hands to her, as a mean of making themselves known: the make and warmth of the hand produced in general the differences that she distinguished; but sometimes she used to span the wrist, and measure the fingers. A lady, with whom she was very well acquainted, coming in one hot day, after having walked a mile, presented her hand as usual; she felt it longer than ordinary, and seemed to doubt whose it was; but after spanning the wrist, and measuring the fingers, she said, 'It is Mrs. M. but she is warmer to-day than ever I felt her before.'

To amuse herself in the mournful and perpetual solitude and darkness to which her disorder had reduced her, she used to work much at her needle; and it is remarkable, that her needle-work was uncommonly neat and exact: among many other pieces of her work that are preserved in the family is a pin-cushion, which can scarce be equalled. She used also sometimes to write; and her writing was yet more extraordinary than her needle-work: it was executed with the same regularity and exactness; the character was very pretty, the lines were all even, and the letters placed at equal distances from each other: but the most astonishing particular of all, with respect to her writing, is, that she could by some means discover when a letter had by some mistake been omitted, and would place it over that part of the word where it should have been inserted, with a caret under it. It was her custom to sit up in bed at any hour of the night, either to write or to work, when her pain or any other cause kept her awake.

These circumstances were so very extraordinary, that it was long doubted whether she had not some faint remains both of hearing and sight, and many experiments were made to ascertain the matter; some of these experiments she accidentally discovered, and the discovery always threw her into violent convulsions. The thought of being suspected of insincerity, or supposed capable of acting so wicked a part as to feign infirmities that were not inflicted, was an addition to her misery which she could not bear, and which never failed to produce an agony of mind not less visible than those of her body. A clergyman who found her one evening at work by a table with a candle upon it, put his hat between her eyes and the candle, in such a manner that it was impossible she could receive any benefit from the light of it if she had not been blind. She continued still at her work with great tranquillity; till, putting up her hand suddenly to rub her forehead, she struck it against the hat, and discovered what was doing; upon which she was thrown into violent convulsions, and was not without great difficulty recovered. The family were, by these experiments, and by several accidental

circumstances, fully convinced that she was totally deaf and blind; particularly by sitting unconcerned at her work, during a dreadful storm of thunder and lightning, though she was then facing the window, and always used to be much terrified in such circumstances. But Sir Hans Sloane, her physician, being still doubtful of the truth of facts which were scarce less than miraculous, he was permitted to satisfy himself by such experiments and observations as he thought proper; the issue of which was, that he pronounced her to be absolutely deaf and blind.

She was at length sent to Bath, where she was in some measure relieved; her convulsions being less frequent, and her pains less acute: but she never recovered her speech, her sight, or her hearing, in the least degree.

Many of the letters dated at Bath, in some of which there are instances of interlineations with a caret, the writer of this narrative hath seen; and they are now in the custody of the widow of one of her brothers, who, with many other persons, can support the facts here related, however wonderful, with such evidence as it would not only be injustice, but folly to disbelieve.

In the Annual Register for 1762, we have the following account of a French lady, blind from her infancy, who could read; write, and play at cards, &c. A young gentleman of a good family in France, then in her eighteenth year, lost her sight when only two years old, her mother having been advised to lay some pigeon's blood on her eyes to preserve them in the small-pox; whereas, so far from answering the end, it injured them. Nature, however, may be said to have compensated for this unhappy mistake, by the beauty of her person, sweetness of temper, vivacity of genius, quickness of conception, and many talents which certainly much alleviated her misfortune. The narrative continues thus:

"She plays at cards with the same readiness as others of the party. She first prepares the packs allotted to her, by pricking them in several parts; yet so imperceptibly, that the clearest inspection can scarce discern her indexes. She sorts the suits, and arranges the cards in their proper sequence, with the same precision, and nearly the same facility, as they who have their sight. All she requires of those who play with her is, to name every card as it is played; and these she retains so exactly, that she frequently performs some notable strokes such as shew a great combination and strong memory.

"The most wonderful circumstance is, that she should have learned to read and write; but even this is readily believed on knowing her method. In writing to her, no ink is used, but the letters are pricked down on the paper; and by the delicacy of her touch, feeling each letter, she follows them successively, and reads every word with her fingers' ends. She herself in writing makes use of a pencil, as she could not know when her pen was dry; her guide on the paper is a small thin ruler and of the breadth of her writing. On finishing a letter, she wets it, so as to fix the traces of her pencil, that they are not obliterated or effaced; then proceeds to fold and seal it, and write the direction: all by her own address, and without the assistance of any other person. Her writing is very straight, well cut, and the spelling no less correct. To reach this singular mechanism, the indefatigable cares of her affectionate mother were long employed, who accustomed her daughter to feel letters cut in cards or paste-board, brought her to distinguish an A from a B, and thus the whole alphabet, and after-

wards to spell words; then, by the remembrance of the shape of the letters, to delineate them on paper; and, lastly, to arrange them so as to form words and sentences.

"She has learned to play on the guitar, and has even contrived a way of pricking down the tunes as an assistance to her memory. So delicate are her organs, that in fingering a tune, though new to her, she is able to name the notes.

"In figured dances she acquires herself extremely well, and in a minute with inimitable ease and gracefulness. As for the works of her sex, she has a masterly hand; she sews and hems perfectly well; and in all her works she threads the needles for herself however small.

"By the watch her touch never fails telling her exactly the hour and minute."

From this account, however, it would appear, that, except reading and writing, the French lady has nothing to boast of in which she is not excelled by Mr. Stanley already mentioned, if we may credit all that is reported of him. The works peculiar to her sex are gained mechanically; but the *distinguishing colours*, telling the precise time by a watch, naming the notes in music, and many other things depending upon the ear and touch, are said to have been so familiar to him, that his friends cease to think them extraordinary. Attainments still more wonderful are ascribed to him; as, the naming the number of persons in a room on entering it; the directing his voice to each person in particular, even to strangers when they have once spoken; the missing any person absent, and telling who that person is; and lastly, his being able to form just conceptions of youth, beauty, symmetry, and shape.

To the foregoing particulars, which abundantly demonstrate what the blind, even when self-instructed, are capable of, we shall now add a cursory account of some of the public institutions set on foot in this country for their benefit, the methods practised there, and the degree of success which has attended them, as far as we have had the means of ascertaining the facts from printed documents which accident has thrown in our way. These, however short of the fullest information to be obtained, are at least sufficient to countenance any attempt to render general, throughout the united kingdom, similar institutions for the benefit of the most forlorn of our species. England seems to have been indebted to her late enemy and republican neighbour in this, as in some other material instances, for the example of schools for the blind*. The first established in Britain was undertaken at Liverpool, at the suggestion and under the management of a benevolent clergyman there, who, in his public communications on the subject, evinced an obvious design to imitate the French school, which had then been for some time established, and given public proofs of success. This institution was called the "*Asylum for the Blind*," and was, for near ten years, carried on in two very small adjoining houses, situated in an airy part of the town. Except one room, in which the manufactured goods were exposed to sale, and the apartments necessary for the superintendent and his wife, the rest of the premises were occupied with blind pupils, who pursued their several employments during the stated hours for work, and were allowed proper intervals for going home to their meals, and for relaxation. Their attendance was only *during the day*, as they were neither lodged nor boarded; nor were they received, unless the parishes to which they belonged (or their

* The following fact, however, will shew the possibility of the French having borrowed the *hint* from ourselves. The Rev. Dr. David Johnston, of Leith, describing the state of the school for the blind at Edinburgh, writes thus to a gentleman in London in 1801:—"I have seen a plan of the same kind," says he, "which was formed in your city (London) *thirty years ago*, and the first people in the kingdom seemed to have countenanced it, but how it miscarried I cannot tell."

friends, if able) contributed something weekly towards their maintenance. With this allowance, the amount of their earnings, and a small additional weekly payment from the institution, they were supported till they became sufficiently expert in their business to leave the asylum and maintain themselves, which the greater part of them have been enabled to do very decently. The average number of scholars from the commencement of the institution in December 1799 is about forty-five. The following extract from the committee's report, will shew at once the articles they manufactured, and the amount of the sales in the four successive years.

	1797	1798	1799	1800
	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Whips	92 16 10	33 6 0	18 6 6	5 5 0
White rope mats	2 5 0	7 14 2	11 18 9	4 3 4½
Tarred ditto	61 18 11½	70 6 0½	102 16 8½	139 14 2
Baggers, hampers, &c.	79 13 11½	90 17 2	97 17 10½	131 12 8½
Points, gaskets, &c.	64 13 9	39 2 8½	60 2 0½	49 14 3½
Sheeting	77 15 2½	84 8 6½	64 8 9	25 3 0½
Huckaback	27 18 2	33 16 3	27 6 2	35 10 6½
Passage cloths	29 10 10	39 16 2	28 18 0	31 10 8½
Tarred ditto	79 14 5	67 12 3½	93 19 2	93 14 1½
Oskum	7 15 2	6 15 3	10 8 5½	32 0 8
Sash and curtain line	38 12 6	55 11 1½	60 7 5	71 19 0
Worsted stockings	0 0 0	0 0 0	3 10 11	1 2 8

The same system is now pursued in a new building purposely erected for the accommodation of the pupils (see Pl. 18.) near the infirmary. — It was first opened in the year 1800, to about sixty scholars of both sexes, and of indiscriminate ages; and arrangements are now preparing for the boarding and lodging of some, whose poverty and want of friends to assist them distinguish them particularly as objects of charity.

This laudable example was soon followed by the inhabitants of Bristol, at which place a school for the blind, upon a small scale, has been successfully carried on for several years; the particulars of this need not be detailed, since the plan and good effects so nearly resemble those of its prototype.

In the Edinburgh institution, which is professedly calculated "for the relief of the indigent blind," the employments of the pupils are these:

They work four looms in the manufacture of a kind of callico, which they call "Glasgow blane." A superintendent, who is a regular workman, constantly attends to rectify the mistakes of those who are not yet perfect in this business. Upon an average each person weaves four ells per day, for which two pence per yard is paid by the proprietors of the goods. Boys are also employed in picking and untwisting old junk, which is afterwards made into door-mats; some tease horse-hair, which is used for the stuffing of mattresses or chair bottoms, others card wool with the carding-machine; some are employed in the manufacture of fishing-nets—an art which they practise very readily, merely with their fingers and a needle, no bar being employed to square the meshes. It is somewhat curious that even those who, previous to their becoming blind, were in the habit of netting with a bar, and could not work without one, afterwards have found it an obstacle. So accurate is their sense of touch, that one of them pointed out the irregularity of some meshes made by a bystander, and detected some imperfect knots, which he dexterously untied before he resumed his work. Their cabbage-nets are made by first working a square piece, then bringing the selvages together, and afterwards fastening the ends. All kinds of wicker-work are made; and when the twigs intended to be wrought are of different colours, the workman makes the distinction by keeping one kind on the right, the other on the left hand.

In the summer season the pupils begin their work at seven in the morning, and quit it at the same hour in the evening; in winter they begin at eight and quit at six. They breakfast at nine, and dine at two o'clock, and are allowed one hour for each meal. Their food is provided by themselves at their own homes, care being taken to fix their habitations as near as possible to the school—an arrangement which, in a town like Edinburgh, is not by any means difficult. Those who have no families, or live at a distance, bring their provisions for dinner with them, so that they only have to come in the morning and return in the evening. Many find the way without assistance; others are conducted by one of their children or friends, so that little of their time is lost. With a view of gratifying the curiosity of the inhabitants, and thereby inducing farther contributions, they have four public dinners in the year. The highest wages paid by the institution is six shillings per week, the lowest three and sixpence: this, however, does not so much depend on the quality or quantity of work they may perform, but on their domestic or personal exigencies; for a man shall receive six shillings a-week whose earnings may not amount, probably, to more than half that sum.

Besides the articles already mentioned, they manufacture a strong cloth for stairs and passages, which is sold for 3s. 6d. a-yard. They also make various kinds of mattresses for sale; and in the execution of these works, if the overseer, who is an intelligent man, is not able to instruct them, proper masters attend to give their assistance. Great attention, indeed, is found necessary in the different departments, to rectify any little mistakes, to keep good order, and induce the pupils to pay a diligent attention to their work: on this, indeed, in a great measure, does the happiness of these unfortunate persons depend; it is this that guards them from *ennui*, and at night they are seen returning to their houses with cheerful countenances.

The profits on their collective labours probably do not amount to more than 50*l.* annually, whereas about 250*l.* is distributed among them every year, the deficiency being made up by the funds of the institution.

We have heard of similar plans carrying on in some other towns in England, and also of one in Dublin; but as the sketches already given convey a sufficient idea of the nature of these undertakings, to enter into a minute description of them would only be useless repetition. The only school for the blind, therefore, on which it is farther necessary for us to dwell, as having some distinguishing features in its plan and extent, is that established in 1799, in the neighbourhood of London.

This institution, like that of Liverpool, owes its existence to the exertions of a single individual, who, relying on that benevolence and public spirit which on all occasions has distinguished the inhabitants of the British metropolis, brought a host of friends to the undertaking by the simple act of circulating, at his own expence, a few printed copies of an address tending to demonstrate, by the example of the Liverpool asylum, the importance and utility of such an institution in a place where the number of blind persons could not but be considerable, where their poverty and depravity rendered them doubly the objects of commiseration, and where the means of instruction and future employment were even more attainable than in remoter situations.

The plan of the London "School for the indigent Blind," embraces two distinct objects:—

1. To provide a place of permanent residence and instruction for those whose peculiar situation demands it, till they shall have learned what may be necessary for their future support.

2. To establishing, in various parts of the metropolis, day-schools to which the blind may resort for instruction.

The former of these only have been carried into effect, though steps are now taking to accomplish the latter; and it is intended to make the important and novel addition of a *cheap dinner* for such as *choose* to partake of it at the school; instead of going home and returning again to work, the inconvenience of which, to a blind person, in a crowded and busy metropolis, must be obvious.

The principal school (which also serves as a *day-school* to the neighbourhood) is situated in St. George's Fields, and contains, at present, twenty boys and ten girls; a preference having been given to those between thirteen and eighteen years of age, partly because their organs are more flexible at that early period of life, and partly because their term of existence has been little abridged. They are instructed, by proper teachers, in such manufactures as are found to answer best in other institutions of the same description; the chief are, basket-making, spinning, netting, the manufacture of fashion, clothes-line, clock-line, and of woollen-lift slippers.* The pupils are not confined to one single employment, but instructed in several, that they may have the better chance of maintaining themselves, at least with some little assistance from their parishes or friends, in one or other of them. Whilst some few are incapable of being taught, and are therefore dismissed, the occasional ingenuity displayed by others is exceedingly striking: there is now in the school a girl who threads a *fine* needle, by the assistance of her tongue, with the greatest readiness. Nor is this, though it demonstrates how accurate the remaining senses become in blind persons, an unusual accomplishment with them; two women, at the Liverpool school do the same thing, and one of them *cuts out* and *makes* her own caps and body linen, with a degree of perfection, and even neatness, that is truly surprising. The committee of the London school have relaxed (we think improperly) from the practice so beneficially exercised at Liverpool, of requiring some pecuniary aid from the *friends* of the pupils, only demanding a weekly payment from the *parishes*. We condemn only the *unifform* exercise of this ill-directed humanity, many of the friends of such objects being abundantly able, and even willing, to contribute to an expense which would, without the assistance of the charity, be wholly their own, and without any prospect of its termination; whilst the *entirely* *disburthening* the parents, instead of assisting them, in an *exact* *proportion* to *their efforts* to *assist themselves*, weakens that motive for exertion which is the life-spring of industry, of morality, and of happiness to the poor.

It is not the object of these remarks to cast any censure on the way in which these or other institutions for the same laudable purpose are supported or conducted; they are, undoubtedly, entitled to every degree of praise, and every possible assistance from the wealthy and benevolent; they demonstrate that human ingenuity may be made to triumph, in a variety of ways, over the most considerable of human privations; and that beggary and want, though they may be eventually, are not necessarily, the lot of the indigent blind. In search of principles, however, we may be allowed some freedom of remark; and, therefore, the following conclusions, supported at once by theory and experience, may be hazarded for the advantage of those who may attempt to form

schools for the blind, in parts of the country where they do not now exist.

This subject seems to demand the following considerations:

1. What are the most attainable and profitable trades or employments for the blind?

2. How is the instruction to be afforded them in the cheapest manner?

3. As they cannot be supposed in any instance capable of earning so much as those who have the benefit of sight, are there any means of rendering the produce of their labour equal to their subsistence?

On the first of these subjects we may observe, that many of the employments which have been chosen for the blind, though the result of circumstances, and apparently the best that their local situation admits of, are nevertheless better calculated to display their ingenuity, than to enable them speedily and effectually to provide for themselves.

The manufacture of some one article of general consumption, a knowledge of which is easily acquired by the pupil, which requires neither capital nor cumbrous machinery, and which will afford the workman a livelihood, are undoubtedly the objects to be attended to in these institutions. It may not, perhaps, in all cases, be expedient to qualify the blind man for a venter of his own wares; and in that case he may either manufacture the goods of his employer at home, or work out of doors on weekly wages, at trades which require the aid of machinery.

With regard to the second object of enquiry, it is of the utmost importance to avoid the expences of an establishment which, in general, are so considerable, as to leave the objects intended to be relieved a very scanty share of that which should be, if possible, wholly and exclusively applied to their advantage. Where a regular building is thought absolutely necessary, the plan of the school at Liverpool (see Pl. 18.) may very properly be adopted. There are some few institutions, however, conducted on more economical principles, and there is no doubt but one of that nature might easily be established in every considerable town. There would be no difficulty, for instance, in setting up a basket-maker, who should vend no other goods than those manufactured by blind persons *instructed by himself* on the recommendation of the inhabitants. His pupils, whilst learning their business, should attend to work in his shop till they became sufficiently perfect in their business to be entrusted with materials to work at their own homes, and for which they should then receive a fair remuneration when the goods were delivered. The only expence which the supporters of such a plan would have to sustain, would be the rent of an outhouse for the workshop, the price of a few twigs which would be spoiled by beginners, and an adequate salary to the master, who would, no doubt, derive farther encouragement by almost exclusively supplying the town with his goods at the usual profit.

With regard to the third enquiry, as to the means of rendering the little which the blind are capable of earning *adequate to their subsistence* (without which the object we have in view is, in fact, only half accomplished), it may be observed, that whilst it can be demonstrated, that a *penny* or *three halfpence per day* is sufficient, even in these dear times,

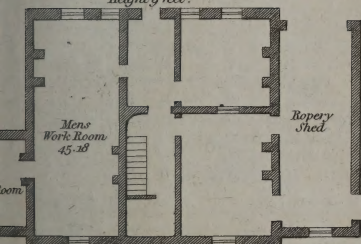
* As the manufactures which the blind are capable of conducting *entirely and without assistance*, and in their own confined dwellings, are very limited, the committee of the London school have given some consideration to the following question proposed to them, viz. *May not many of the simpler mechanic exercises, now too complex for the touch alone, be aided by machinery*, as is the case with the manufacture of horse-whips? It is even proposed to offer *premiums* to the ingenious for the discovery of means of this sort, which may lead to the most important consequences in the instruction of the blind, in these humane and highly useful seminaries throughout the country.



The School of Industry for the Indigent Blind at Liverpool.

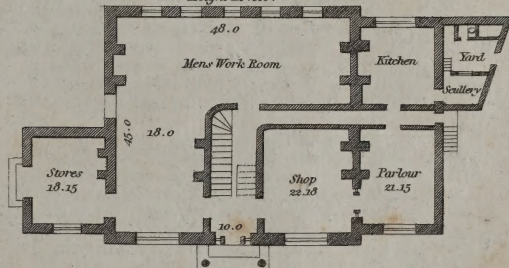
Plan of the Cellars.

Height 9 feet.



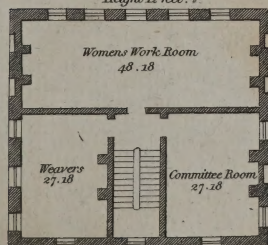
Ground Plan.

Height 12 feet.

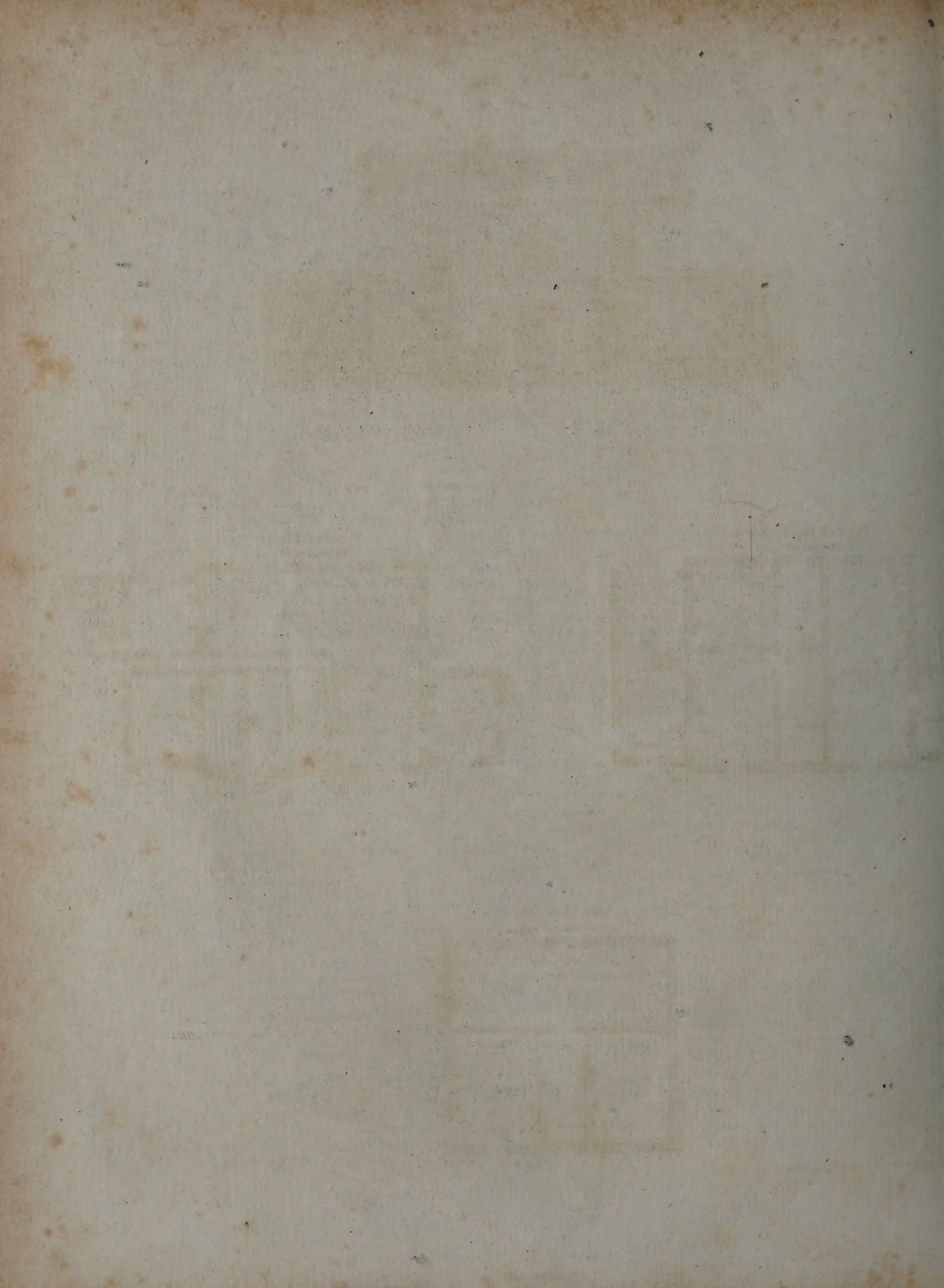


One pair Stairs.

Height 12 feet.



Music Rooms are in the Attic.



to provide a poor man with a *wholesome and nutritious dinner*, there can be no difficulty in this part of the undertaking. All that is necessary on this head may be found in the first volume of Reports of the Society, established in London, for increasing the Comforts and bettering the Condition of the Poor. The information in their account of a *cheap dinner* supplied for seventy-seven labouring children at Epping, is well worth the attention of those who propose to add to the number of these excellent seminaries. At the Liverpool school, and in some other institutions for procuring the means of subsistence to the blind, music has been taught—a heavenly science, and one in the practice of which the blind have been long known to make great attainments. It is this notoriety which has occasioned its omission in the foregoing remarks. Indeed, as it demands a long and persevering application on the part both of pupil and teacher, before the former is capable of practising it for a livelihood, it did not enter into the system here recommended, which has in view means of more extensive utility. There is no doubt, however, that a few of these unfortunate persons in every place might, with great propriety, be taught music, and fill the situation of organists in all our churches, to which even an indifferent player is known to be competent. It should by no means be forgotten, when the means of a livelihood are furnished for the blind, peremptorily to interdict their remaining idle, or becoming street beggars, or contributing to vice and immorality by fiddling in ale-houses. In great towns, the temptation to mendicancy is particularly strong, since more is to be gotten by standing at the corner of a street for two hours than perhaps can be procured by the industry of twenty-four. Those charitable persons, however, who really wish the happiness of the indigent blind, or indeed the poor of any other description, will *conscientiously withhold the wages of idleness*, and direct their bounty to flow in a more indisputable though circuitous course, namely, through the hands of those who will not fail to apply it judiciously and with effect.

BLOCKLEY, a village of Worcestershire, though inclosed by Gloucestershire, seven miles S.E. of Evesham. Long. 1. 53. W. Lat. 52. 0. N.

BLYTHBOROUGH, a decayed town in Suffolk, on the river Blyth. It has a stately church, and is 98 miles N.E. of London. Long. 1. 40. E. Lat. 52. 26. N.

BOAT (*Encycl.*). M. Bernieres invented a boat which is not liable to be overlet or sunk. Some trials were made with this vessel at Paris, in the year 1777, in the presence of a vast concourse of spectators. Eight men went into the boat, and rowed it till it filled with water, and afterwards towed it along the river in that state, without danger of sinking. M. Bernieres then ordered a mast to be erected in the same boat, when filled with water, and hauled down by a rope fastened to the top of the mast till it touched the surface of the river, so that the vessel heeled in a position to which neither winds nor waves could bring her; yet as soon as the rope was let go, the boat recovered her equipoise in less than a second. This experiment proved that the boat could neither be sunk nor overturned, and that it afforded the greatest possible security against accidents. Hence this invention is of the first importance to the inhabitants of maritime states.

In the year 1785, a patent was granted to Mr. Lukin for his improvement in the construction of boats and small vessels, so that they will neither overlet nor sink. This useful invention is described in the specification of the patent as follows: To the outides of boats and vessels, of the common or any other form, are projecting gunwales, sloping from the top of the common gunwale, in a feint curve, towards the water, so as not to interrupt the oars in rowing; and, from the extreme projection (which may be greater or less, accord-

ing to the size and use the boat or vessel is intended for), returning to the side in a slight curve, at a proper distance above the water-line. These projecting gunwales may be made solid, of any light materials, that will repel the water, or hollow and water-tight, or of cork, and covered with thin wood, canvas, leather, tin, or any other light metal, mixture, or composition. These projections are very small at the stem and stern, and increase gradually to the dimensions required; they will effectually prevent the boat or vessel from being overlet by sudden squalls, or violent gales of wind, either in failing or rowing, or by imprudent or unskillful management. In the inside, at the stem and stern, and at the sides (where the projecting gunwales are not necessary), and under the seats and thwarts, are inclosures or bulk-heads, made water-tight, or filled with cork, or other light materials that will repel the water: the spaces between the timbers may in like manner be filled up. By this means the boat or vessel will be so much lighter than the body of water it must displace in sinking, that it will with safety carry more than its common burthen, though the remaining space should by any accident be filled with water. Under the bottom, along the centre of the keel, is affixed a false one of cast-iron, or other metal; this will strengthen and protect the bottom from injury in many cases; and, by being placed so much below the surface of the water, will act as ballast with more power than a much greater weight in the common situation, and is much more safe, by being fixed in the proper place, and not liable to shift by any sudden motion of the boat or vessel.

Ice-Boat, a modern invention of Thomas Ritzler, of Hamburg, whose name deserves to be transmitted to posterity; as his ingenious and useful contrivance has already saved many valuable lives from a watery grave. We have given an accurate representation of such a boat in the annexed plate, and shall here furnish the reader with the description.

Fig. 1. Pl. 17. is a perspective view of the boat, the body of which consists of wicker-work covered with leather, to render it impermeable by water; and so remarkably light, that it may be easily managed by one person both on the ice and in the water. Its length, when measured on the outside, is $7\frac{1}{2}$ feet in the keel, and 12 feet above from end to end: its breadth 3 feet at the bottom, and 4 at the upper part.

Fig. 2. represents the plan of the boat, the bottom of which is shod with two small pieces of iron, marked *x*, *x*; by means of two hooks, one of which is delineated on the plate, the boat may with the greatest facility be slid over the ice. In the lower part, or body of the vessel, there is a large opening, 3 feet long and 15 inches wide, pointed out by *o*, *o*, *o*, fig. 2.; and *o*, fig. 3.; the four sides of which are secured by a frame-work, marked *r*, fig. 1. and 3. to prevent the water from entering the vessel. Through this opening, also, the boatman is enabled to step upon the ice in those places where it is too uneven to admit the sliding of the boat, and to carry it, by means of the handles, as represented in fig. 1. where the person standing is marked only with dotted lines, to shew that he has quitted his former station in the boat. Another advantage derived from this aperture, in the middle of the boat, is the counterpoise which a column of water in its centre produces, and thus prevents it from being overlet, while the man who carried it over the ice immediately raises himself above the level of the water, and fits down in the vessel. But, in order to approach nearer to the person whose life is endangered, there is also employed a ladder with a long jointed handle, which is pushed forward and held by another assistant standing on the firm ice. On this ladder (which will be delineated among the implements of restoration from drowning) the boatman places himself, and advances as near as possible to

the body immersed in the water. Having successfully extracted it, no time should be lost in laying it in a proper posture in the boat; for which purpose there is a kind of chair with an elevated back, on the stern of the boat, marked *n*, in fig. 1. and 3.; which last exhibits the longitudinal section of the vessel.

M. Gunther, one of the most active members of the Hamburg Society for the Encouragement of the Arts and useful Trades, informs us in the third volume of their Transactions, published in 1795, that he has often been present when unfortunate persons have been rescued from untimely death, by means of the ice-boat, and that the swiftness and dexterity with which this machine may be managed by expert assistants, is almost incredible. Hence the vessel is not intrusted to any other but skilful hands, and during summer it is deposited in an airy place, and the leather preserved from becoming either too dry or mouldy. The whole of this useful apparatus costs only 150 marks currency, or about 10*l*. sterling; a sum so insignificant, that, while the city of Hamburg has built five such ice-boats, the great city of London ought to be in possession of at least one hundred.

Life-Boat, at Shields, one of the most useful modern inventions, by which many lives and much property have already been saved. It was built by Mr. Greathcad, an eminent ship-builder, and generously presented to the inhabitants of South Shields by the present Duke of Northumberland, by whose beneficence North Shields has also been supplied with a boat of a similar construction.

Mr. Fairclough, who furnished some useful hints respecting the original plan, describes the vessel as measuring thirty feet by ten, resembling in form a common Greenland boat, but more flat in the bottom. The quantity of cork employed in the construction is about seven hundred weight, with which the boat is lined inside as well as outside of the gunwales, two feet in breadth; the seats being also filled with the same material. It is rowed by ten men, double banked, and steered by one at each end with oars, being alike in its form at both ends, and contrived so as not to sink in the sand.

This boat draws very little water, and can carry twenty persons even when full of water. Being water-proof, and rendered buoyant by cork, it always keeps afloat, preserving its equilibrium without danger of upsetting, and is able to contend against the most tremendous sea, having never failed, in a single instance, of conveying a distressed ship's crew in safety.

When taken out in the highest seas and broken water, the men testify no apprehension; and though cork-jackets were at first provided for them, yet their confidence in the boat is so great that they now refuse them.

A model of this useful boat is kept at Northumberland-house in the Strand. It might be improved, by providing it with wheels, for its more ready conveyance to the place where it is immediately wanted.

The vessel, when complete and copper-nailed, costs about 15*0*l**.—But in the moment of distress, what shipwrecked mariner would not think this article a cheap purchase, and pronounce the value of such a boat to be truly inestimable?

A patent has lately been granted to Mr. Edward Seers, of the Inner Temple, for a machine to be applied to boats and other vessels, for the purpose of moving them with ease and swiftness. This invention consists of two or more paddles, moving by means of machinery, in contrary and alternate directions. The paddles are so constructed, that when the machinery is set in motion, the broad surface of one or more of them will press against the water, while the broad surface of the other, or others, will give way to it, and by this means the vessel will be moved.

BOBENHAUSEN, a town of Germany, in Weteravia, with a castle; seated on the small river Gerfbrentz, three miles from Francfort on the Maine.

BOCAT, a fine valley of Syria, in Asia, in which are situated the magnificent ruins of Balbec. "It might be rendered," says Mr. Volney, "one of the richest and most beautiful spots in Syria, it being more fertile than the celebrated vale of Damascus, and better watered than the rich plains of Rama and Efracton."

BOCCALINI (*Encycl.*). From the last of this celebrated satirical virtual sovereign princes even did not escape. The cardinals Borghese and Gaetan having declared themselves his protectors, he published his *Ragguaglio di Parnasso*, and *La Secreteria di Apollo*, which is the continuation of the former. These two works were received by the public with uncommon applause. He there feigns, that Apollo, holding his court at Parnassus, heard the complaints of the whole world, and did justice according as the cases required. He at length printed his *Pietra di Parangone*; wherein he attacks the court of Spain, setting forth their designs against the liberty of Italy, and inveighing particularly against them for the tyranny they exercised in the kingdom of Naples. The Spaniards complained of him in form, and were determined at any rate to be revenged. Boccacini was frightened, and retired to Venice; but was there assassinated in a very strange manner. He lodged with one of his friends, who having got up early one morning, left Boccacini in bed; a minute after some armed men entered his chamber, and gave him so many blows with bags full of sand, that they left him for dead; so that his friend returning some time after, found him speechless. Great search was made at Venice for the authors of this murder; and though they were never discovered, it was universally believed that they were employed by the court of Spain.

BOCHIUS, or **Bocaur** (*Encycl.*), travelled into Italy, Germany, Poland, and Muscovy, and at his return became secretary to the duke of Parma. He died on the 13th of January, 1609. The critics in the Netherlands set so great a value on his poetry, that they gave him the name of the *Belgic Virgil*. He wrote, 1. *De Belgii Principatu*. 2. *Parodia Heronis Psalmodiarum Davidicarum*. 3. *Observationes Physicæ, Ethicæ, Politicæ, et Historicæ, in Psalmos*. 4. *Vita Davidis*. 5. *Orationes*. 6. *Pœmata*.

BOECLER (John Henry), historiographer of Sweden, and professor of history at Straßburg, was born in Franconia 1617, and died in 1686. He received pensions from several princes; among others, from Lewis XIV. and Christina, which latter invited him to Sweden. His principal works are, 1. *Commentationes Pliniane*. 2. *Timur, vulgo Tamerlanus*, 1657, 4to. 3. *Notitia Sancti Romani Imperii*, 1681, 4to. 4. *Historia, schola Principum*. 5. *Commentatio in Grotii librum de Jure Belli et Pacis*. With all the warmth and zeal, which commentators and biographers usually have for their principals, he lavishes panegyric upon Grotius. He swears, in a letter published after his death, that no man will ever approach him; and that whoever should attempt to equal this work of his, would only furnish matter for laughter to posterity.

BOETHIUS, **ROBCE**, or **BOEIS** (Hector), a famous Scottish historian, was born at Dundee, in the shire of Angus, about 1470. After having studied at Dundee and Aberdeen, he was sent to the university of Paris, where he applied to philosophy, and became a professor of it there. Here he contracted an acquaintance with several eminent persons, particularly with Erasmus, who kept a correspondence with him afterwards. Elphinston bishop of Aberdeen having founded the King's College in that city, about 1500, sent for Boeis from Paris, and appointed him principal: He took for his

colleague Mr. William Hay, and by their joint labour the kingdom was furnished with several eminent scholars. Upon the death of his patron he undertook to write his life, and those of his predecessors in that see. The work is in Latin, and entitled, *Vitæ Episcoporum Murrhacenensium et Aberdonensium*. Paris, 1522, quarto. He begins at Beatus, the first bishop, and ends at Gavin Dunbar, who was bishop when the book was published. A third part of the work is spent in the life of Elphinston, for whose sake it was undertaken. He next applied to write, in the same language, *The History of Scotland*; the first edition of which was printed at Paris, by Badius Ascensius, in 1526, which consisted of seventeen books, and ended with the death of James I. but the next, in 1574, was much enlarged, having the addition of the eighteenth book, and part of the nineteenth. The work was afterwards brought down to the reign of James III. by Ferrerius, a Piedmontese.

Mackenzie observes, that of all Scots historians, next to Buchanan, Boetius has been the most censured and commended by the learned men who have mentioned him. Nicolson tells us, that in the first six books there are a great many particulars not to be found in Fordun, or any other writer now extant; and that, "unless the authors which he pretends to have seen be hereafter discovered, he will continue to be shrewdly suspected for the contriver of almost as many tales as Geoffrey of Monmouth." His eighteenth book, however, is highly commended by Ferrerius, and other writers. He was a great master of polite learning, well skilled in divinity, philosophy, and history; but somewhat credulous, and much addicted to the belief of legendary stories.

BOFFRAND (Germain), a celebrated French architect, was the son of a sculptor, and of a sister of the famous Quinault; and born at Nantes, in Bretagne, 1667. He was trained under Harduin Mansard, who trusted him with conducting his greatest works. Boffrand was admitted into the French academy of architecture in 1709. Many princes of Germany chose him for their architect, and raised considerable edifices upon his plans. His manner of building approached that of Palladio, and there was much of grandeur in all his designs. As engineer and inspector-general of the bridges and highways, he caused to be constructed a number of canals, sluices, bridges, and other mechanical works. There is of this illustrious architect a curious and useful book, which contains the general principles of his art; to which is added, an account of the plans, profiles, and elevations, of the principal works which he executed in France and other countries. A very gracious idea is transmitted to us of this artist, who is represented as of a noble and disinterested spirit, and of a pleasing and agreeable manner. He died at Paris, in 1755.

BOG, a river of Poland, which runs south-west through Podolia and Budziac Tartary, falling into the Black Sea, between Oczakow and the river Dnieper.

BOILER. Many ingenious vessels and utensils have, at different periods, been invented, with a view to facilitate the process of boiling, and save the consumption of fuel. In the latter respect, Count Rumford stands at the head of those experimental enquirers, who have directed their labours to the benefit of society; yet we must confess that there is still great room for improvement. One of the latest inventions in this department of domestic economy, is that of Mr. Tho. Rowntree, engine-maker, of Great Surrey-street, Blackfriars-road, who, in 1798, obtained a patent for "a new method of applying fire for the purpose of heating boilers and other vessels, where heat is required." But as the patentee had not given a clear specification, from which an ordinary tradesman could have constructed a furnace on his principles, without any farther explanation, his patent was declared void, after a trial be-

fore Lord Eldon, and a special jury, on the 3d of November last, and has consequently become public property. These proceedings, however, have been attended with a good effect, as the obscure account published by Mr. Rowntree, has been more clearly defined by the evidence given in court, especially by that of Mr. Hindmarsh. We shall, therefore, present our readers with the specification communicated by the patentee, and accompanying it with the necessary illustrations.—The following is a literal abstract of the inventor's description:—"For heating of coppers, boilers, furnaces, ovens, and stoves, my fire-place is much smaller than heretofore made use of for the same sized copper, boiler, furnace, oven, or stove. Instead of placing my fire-place, according to the common practice, immediately under the boiler, or other vessel, I place it at the front, side, or end, as I see most convenient, in such a manner as to oblige the flame to rise in the front, side, or end, and pass all round the vessel, &c. while at the same time it strikes the bottom of the vessel, &c. without suffering the flame to pass off in a flue, or flues, as it usually does in the common way, and by that means sending the heat into the flues, instead of its being used where it ought to be, namely, on the vessels, &c.; this my method effectually prevents; for, by means of a small perpendicular or other opening, into a box or trap, which I call a reservoir, and which I place horizontally, or diagonally, as the situation may require, and is made of iron, brick, stone, or any other material capable of bearing heat, where a valve is placed riding on centres or otherwise, and standing in a diagonal or other direction, as is found most convenient, the flame is returned or impeded in its progress to the chimney, and made to descend below the bottom of the vessel, and pass out at the bottom, top, or side of said box, trap, or reservoir, into the common chimney. This reservoir is placed between the vessel, &c. and the chimney. To the opening, which admits the flame into the reservoir, are affixed, when necessary, sliders, registers, or stops, which serve to increase or diminish the heat. The valve in the reservoir is for the same purpose in another degree, which more immediately appertains to increasing or diminishing the draught, which it does by moving the said valve into different positions, as the speed of the operation may require."

It would be needless to state the particulars of the evidence relative to the effect produced to the new-invented furnaces, in heating boilers, &c. as well as the great saving of fuel, which was proved to be more than one-third, and in some cases nearly one-half, of what is usually consumed in furnaces constructed on the old plan. Hence we shall communicate only the substance of Mr. Hindmarsh's evidence, which greatly tends to illustrate the principles of the invention. This, he conceives, principally consists in the three following circumstances:

1. In the peculiar mode of constructing the furnace, or setting the boiler, and of placing the fire, not immediately under, but a little in front, or at one side of it, whereby the flame and hot air can get access to every part of the vessel, and not only strike with force against its bottom, with also with equal effect reverberate against, and violently embrace, its sides, and whole external surface; unlike every former contrivance, the most perfect of which could only cause the flame and hot air to act partially upon the bottom and sides of the vessel.

2. In the elevated situation, and smallness, of the aperture leading from the furnace towards the chimney; whereby the flame and hot air are impeded in their progress to the atmosphere, and compelled to tarry in the cavity of the furnace, and occupy every part thereof much longer than they otherwise would do. This effect in stopping, checking, and as it were arresting the flame and hot air, in their attempt to escape into the atmosphere, Mr. Hindmarsh considered as not only new, but singularly beneficial; for, by this means, the

flame and hot air are detained in the very place where their presence is most wanted, and constrained to give forth their energies with an impetus against the bottom and sides of the vessel to be heated; whereas, in none of the furnaces heretofore erected, was any effectual stop interposed between the fire and the chimney, to cause the flame and hot air to dwell under and round the sides of the vessel; but they passed rapidly off into the atmosphere, either by a direct communication through the chimney, or indirectly, but almost as speedily, by flues; or else by a drain (as it is called), the aperture of which is equal in dimensions to that of the chimney itself.

3. In an open space between the furnace and chimney, called by the patentee a box, trap, or reservoir, and intended as a receptacle of the flame, hot air, and smoke, after they have quitted the furnace, and passed through the small aperture as above described. This space, or reservoir, for the flame, hot air, and smoke, being closed at the top and external sides, and open only at the bottom outwards, for the purpose of permitting the smoke, &c. to pass off into the chimney, fill farther checks and detains the flame and hot air in the furnace; and being itself constantly full of warm air, smoke, &c. causes the heat to be reverberated against the sides and bottom of the vessel or boiler, and effectually prevents the admission of the cold atmospheric air from the chimney, which, on the old plans of construction, is found by experience to rob the furnace and vessel of more than half the supply of heat which any given quantity of fuel is capable of yielding. The valves, sliders, and dampers, are not essential parts of the invention, but merely as regulators, which, in many cases, may be altogether omitted, without detriment to the operation of the fire.

Although Count Rumford has successfully extended his researches to discover the most economical plan in the management of fire, and the generation of heat for culinary and other purposes, it does not appear from his writings, that he had a distinct conception of the new method suggested by Mr. Rowntree, till after the enrolment of his specification in May 1798. Nay, says Mr. Hindmarsh, the count evidently takes it for granted (see vol. II. p. 73, of his *Essays*), and even reasons on the fact, which he there supposes to be unavoidable, and beyond remedy, that the fire cannot be made to impinge against the sides of a vessel with the same force and effect as against the bottom: which is a plain proof, that at the time of writing that essay, he was totally unacquainted with Mr. Rowntree's method of applying and managing the fire; in which the very effect which the count considers as a desideratum in science, and which appears to have been one grand object of his philosophical pursuits, is now in a great measure completed.

BOILING, or EBULLITION (*Encycl.*). Count Rumford, in his admirable *Essays*, has taken much pains to impress on the minds of those who exercise the culinary art the following simple, but *practical important fact*, namely, that, when water begins only to be agitated by the heat of the fire over which it is placed, it is *incapable of being made hotter*; and that the violent ebullition occasioned by the application of more heat, is nothing more than an unprofitable dissipation of the water in the form of steam, and an absolute waste of the fuel employed. See *FIRE-PLACE*.

BOLABLOA, one of the Society Islands, in the South Pacific Ocean, surrounded by a reef of rocks, and several small islands, none of them more than eight leagues in compass. It is four leagues to the north-west of Otahe.

BOLBITINUM (anc. geog.), the second month of the Nile reckoning from west to east; now very small, choaked up with sand, and called *le Bras de Beldin*.

BOLENTIUM (anc. geog.), a town of Pannonia Superior; now *Rackerburg* in Stiria.

BOLSEC (Jerome), a Carmelite of Paris; who, having

preached somewhat freely in St. Bartholomew's church, forsook his order, and fled into Italy. He set up for a physician, and married; but soon after did something or other for which he was driven away. He set up afterwards in Geneva as a physician; but not succeeding in that profession, he went over to divinity. At first he dogmatized privately on the mystery of predestination, according to the principles of Pelagius; and afterwards had the boldness to make a public discourse against the received opinion. Upon this Calvin went to see him, and censured him mildly. Then he sent for him to his house, and endeavoured to reclaim him from his error; but this did not hinder Bolsec from delivering in public an insulting discourse against the decree of eternal predestination. Calvin was among his auditors; but, hiding himself in the crowd, was not seen by Bolsec, which made him the bolder. As soon as Bolsec had ended his sermon, Calvin stood up, and confuted all he had been saying. This was not all; a magistrate, who was present in that assembly, called him a seditious fellow, and sent him to prison. The cause was discussed very fully; and at last, with the advice of the Swiss churches, the senate of Geneva declared Bolsec convicted of sedition and Pelagianism; and as such banished him from the territory of the republic, on pain of being whipped if he should return thither. This was done in 1551. He retired into a neighbouring place, which depended on the canton of Bern, and raised a great deal of disturbance there. He boldly accused Calvin of making God the author of sin. Calvin, to prevent the impositions which such complaints might make upon the gentlemen of Bern, caused himself to be deputed to them, and pleaded his cause before them. He was so fortunate, that though he could not get a determination upon his doctrine, whether it was true or false, yet Bolsec was ordered to quit the country.

He retired to France, and applied himself to the Protestants; first at Paris, and afterwards at Orleans. He shewed a great desire to be promoted to the ministry, and to be reconciled to the church of Geneva; but the persecution that arose against the protestants, made him resolve to take up his first religion, and the practice of physic. He went and settled at Autun, and prostituted his wife to the canons of that place; and, to ingratiate himself the more with the papists, exerted a most flaming zeal against the reformed. He changed his habitation often: he lived at Lyons in 1582, as appears by the title of a book, which he caused to be printed then at Paris, against Beza. He died not long after; for he was not living in 1585. The book just mentioned is entitled, *The History of the Life, Doctrine, and Behaviour, of Theodore Beza*, called the Spectable great Minister of Geneva. This was preceded by the History of the Life, Actions, Doctrine, Constancy, and Death of John Calvin, heretofore Minister of Geneva; which was printed at Lyons, in 1577. Both these histories are altogether unworthy of credit; as well because they are written by an author full of resentment, as because they contain facts notoriously false.

BOLTON (Dr. Robert), was born in Northamptonshire, about the year 1690, and received his education at Wadham College, Oxford, where, on the 13th of June, 1728, he took the degree of master of arts. Being a valetudinarian and hypochondriac, he found a college life not agreeable to his temper; and being possessed of a small private fortune, he did not long reside at Oxford. In 1720 he lived at Fulham, where his acquaintance commenced with Mrs. Butler, which afterwards occasioned his being known to Mr. Pope; and he sometimes took up his abode with old Lady Blount, at Twickenham. About 1724 he resided at Kensington, where the celebrated Mr. Whiston then dwelt; and in part by his recommendation, on the resignation of Dr. Butler, afterwards bishop

of Durham, of the chaplainship of Sir Joseph Jekyl, master of the rolls, our author was received into that gentleman's family in the same capacity, and continued there unto the time of Sir Joseph's death.

Dr. Bolton's connection with Sir Joseph Jekyl, introduced him to the patronage of Lord Hardwicke, by whose means, in the year 1735, he was promoted to the deanery of Carlisle. In 1738 he was appointed vicar of St. Mary's, Reading; and both these preferments, the only ones he ever received, he held until the time of his death. He was an excellent parish priest, and a good preacher; charitable to the poor, and having, from his own valetudinary state, acquired some knowledge of physic, he kindly assisted them by advice and medicine. He was greatly beloved by his parishioners, and deservedly; for he performed every part of his duty in a truly exemplary manner. On Easter Tuesday, 1739, he preached one of the Spital sermons at St. Bride's, Fleet-street, which was afterwards printed in quarto. We do not find that he aspired to the character of an author, though so well qualified for it, until late in life. His first performance was entitled, *A Letter to a Lady on Card-playing on the Lord's-day*, 8vo. 1748, setting forth, in a lively and forcible manner, the many evils attending the practice of gaming on Sundays, and of an immoderate attachment to that fatal pursuit at any time. In 1750 appeared *The Employment of Time*, three essays, 8vo. dedicated to Lord Hardwicke; the most popular of our author's performances; and, on its original publication, generally ascribed to Gilbert West. The next year, 1751, produced *The Deity's Delay in punishing the Guilty*, considered on the Principles of Reason, 8vo.; and in 1755, *An Answer to the Question, Where are your Arguments against what you call Lewdness, if you can make no Use of the Bible?* 8vo.

Continuing to combat the prevailing vices of the times, he published, in 1757, *A Letter to an Officer of the Army on Travelling on Sundays*, 8vo.; and, in the same year, *The Ghost of Erastus, Great Grandfather of her Royal Highness the Princess Dowager of Wales; with some Account of his Life*, 8vo. Each of the above performances contains good sense, learning, philanthropy, and religion, and each of them is calculated for the advantage of society.

The last work which Dr. Bolton gave the public, was not the least valuable. It was entitled, *Letters and Tracts on the Choice of Company, and other Subjects*, 8vo. 1761. This he dedicated to his early patron, Lord Hardwicke, to whom he inscribed *The Employment of Time*, and who at this period was no longer chancellor. He died at London, on the 26th of November, 1763, and was buried in the porch between the first and second door of the parish church of St. Mary, Reading.

BOLZANO, a large and handsome town of Germany, in the Tyrol, on the river Eisach, twenty-seven miles north of Trent. Long. 11. 26. E. Lat. 46. 35. N.

BONA (John), a cardinal, famous for piety and learning, was descended from an ancient and noble family, and born at Mondovi, a town in Piedmont, upon the 10th of October, 1609. He was devoted to solitude, and had a contempt of the world from his infancy. At fifteen years of age he betook himself to a monastery near Pignerol, belonging to the begging friars of the order of St. Bernard; and in 1651 was made general of his order. Cardinal Fabio Chigi, who was Bona's great friend, and in 1655 chosen pope, under the name of Alexander VII. would have had him to have continued in this office, and used some means to prevail with him; but Bona pressed so earnestly to be discharged, that the pope at length suffered him to resign it. He did it, however, upon this condition, that Bona should not depart from Rome; and,

in order to reconcile him to it, gave him several considerable places. Clement IX. continued him in these places, conferred upon him new ones, and made a cardinal of him in November, 1669. This pontiff dying soon after, many people wished that Bona might succeed him in the holy see; but they were disappointed.

Bona was very learned, held a correspondence with most of the literati in Europe, and was sometimes at the pains of revising and correcting their works. He was the author of several things himself, chiefly written in the devotional way, which were much esteemed, and have been translated most of them into French. Bona died at the age of sixty-five.

BONA (*Encycl.*), a sea-port town of Algiers. The inhabitants deny it to be the ancient Hippo, which had been so often taken, retaken, and destroyed by the wars; and pretend it to be since rebuilt at the distance of two or three miles from the ancient Hippo, out of its ruins, and called *Balc-el-Ugned*, from a sort of trees that name that grow in the neighbourhood. It is now a very mean place, poorly built, and thinly inhabited, with scarce any traces of its former grandeur, except the ruins of a cathedral, or, as others guess, of a monastery, built by St. Austin, about three miles distance from the city. Near these ruins is a famed spring called by his name, much resorted to by the French and Italian sailors, who come to drink of its waters, and pay their devotions to a maimed statue, said also to belong to the saint, but so mutilated that no traces either of face or dress are remaining; and as each of them strives to break off some splinter, or to scrape off some part of it, on account of its supposed sanctity, it will probably be soon reduced to a state of non-existence. Bona was taken by the pirate Barbarossa, and joined to his new kingdom of Algiers; but as quickly lost, and recovered by its old masters the Tuniseens, who soon after lost it again. It is commanded by a little fort, in which is a garrison of about 300 Turks, under the command of an aga, who is also governor of the town. The road for the ships is good for nothing before the town, but a little farther west is very deep and safe. Dr. Shaw tells us, that the continual discharging of ballast into the road, and the neglect of cleansing the port which came to the very walls, is the cause of both becoming so unsafe and inconvenient; though this might be easily remedied, so as to make the town one of the most flourishing in all Barbary.

BONAVENTURE of Padua, a cardinal, was born in that city in 1332, and descended from a noble and illustrious family. He studied divinity at Paris, where he distinguished himself by his uncommon parts and application. He was of the order of St. Augustin, of which he was made general in 1377. Pope Urban VI. gave him a cardinal's cap the year after; which engaging him to stand up for the rights of the church against Francis de Carrario of Padua, that petty monarch contrived to have him murdered. He was dispatched with the shot of an arrow, as he was passing St. Angelo's bridge at Rome, in 1386. He was the author of several works: as, *Commentaries upon the Epistles of St. John and St. James, Lives of the Saints, Sermons, Speculum Maris*, &c.

BONAVISTA, a cape on the east side of the island of Newfoundland.

BONNA (anc. geog.), one of the fifty citadels built by Drusus on the Rhine; supposed by some to be the same with the *Ara Ubiorum*: now BONN.

BONNER (*Encycl.*). The following pieces were published under the name of this prelate. 1. Preface to the Oration of Stephen Gardiner, bishop of Winchester, concerning true obedience. 2. Several letters to the lord Cromwell, 3. A Declaration to Lord Cromwell, describing to him the evil behaviour of Stephen (bishop of Winchester). 4. Letter of his

about the proceedings at Rome concerning the king's divorce from Catharine of Arragon. 5. An Admonition and Advertisment given by the Bishop of London to all readers of the Bible in the English tongue. 6. Injunctions given by Bonner, bishop of London, to his clergy (about preaching), with the names of books prohibited. 7. Letter to Mr. Lechmore. 8. Responsum & Exhortatio; Lond. 1553, 8vo. Answer and exhortation to the clergy in praise of priesthood: spoken by the author in St. Paul's cathedral, the 16th October, 1553. 9. A Letter to Mr. Lechmore, 6th September, 1553. 10. Articles to be enquired of in the general visitation of Edmund bishop of London, exercised by him in the year 1554, in the city and diocese of London, &c. 11. A profitable and necessary Doctrine, containing an Exposition on the Creed, seven Sacraments, ten Commandments, the Pater Noster, Ave Maria, with certain Homilies adjoining thereto, for the instruction and information of the diocese of London. 12. Several letters, declarations, arguings, disputes, &c. of his are extant in John Fox's Book of Martyrs. 13. His Objections against the Proceeds of Robert Horne, bishop of Winchester, who had tendered the oath of supremacy to him a second time.

BONNEVAL (Claudius Alexander de), count, known in the latter part of his life by the name of *Ojman Bahaw*, descended from a family related to the blood-royal of France, entered himself at the age of sixteen in the service of that crown, and married the daughter of Marfhal de Biron. He made the campaign in Flanders in 1690; but soon after left the French army, and entered into the imperial service under Prince Eugene, who honoured him with an intimate friendship. The intrigues of the Marquis de Prié, his inveterate enemy, ruined his credit, however, at the court of Vienna, and caused him to be banished the empire. He then offered his service to the republic of Venice, and to Russia; which being declined, his next tender was to the Grand-Signior, who gladly received him: it was stipulated, that he should have a body of 30,000 men at his disposal; that a government should be conferred on him, with the rank of bahaw of three tails, and a salary of 10,000 aspers a-day; and that, in case of a war, he should be commander in chief. The first expedition he engaged in after his arrival at Constantinople, was to quell an insurrection in Arabia Petrea, which he happily effected; and at his return had large offers made him by Kouli Khan, but he did not choose to accept them. Some time after, he commanded the Turkish army against the emperor, over whose forces he gained a victory on the banks of the Danube. But success does not always protect a person against disgrace; for Bonneval, notwithstanding his service, was first imprisoned, and then banished to the island of Chio. The sultan, however, continued his friend; and the evening before his departure made him bahaw-general of the Archipelago, which, with his former appointment of beglerbeg of Arabia, rendered him one of the most powerful persons in the Ottoman empire. In this island he found a retirement quite agreeable to his wishes; but did not long enjoy it, being sent for back, and made *topigi* or master of the ordnance, a post of great honour and profit. He died in this employment, aged seventy-five, in 1747, and wrote the memoirs of his own life.

BONNY, a town of France, in the ci-devant Gatinois, seated at the confluence of a river of the same name with the Loire. E. long. 2. 54. N. lat. 47. 36.

BONONIA (anc. geog.), a town of Panonia Inferior, between Muria to the north-west, and Taurinum to the east.—Another Bononia, a town of Mesia Superior, on the Danube; now *Bodon*, in Bulgaria. See **BODON**.

BONWICKE (Ambrose), a nonjuring clergyman of great piety and learning, son of the Rev. John Bonwicke, rector of

Mickleham in Surrey, was born April 29, 1652, and educated at Merchant Taylors' school; he was elected to St. John's College, Oxford, in 1668, where he was appointed librarian in 1670; B.A. 1673; M.A. March 18, 1675; was ordained deacon May 21, 1676; priest, June 6 (Trinity Sunday), 1680; proceeded B.D. July 21, 1682; and was elected master of Merchant Taylors' school, June 9, 1680. In 1689, the college of St. John's petitioned the Merchant Taylors' company, that he might continue master of the school (which is a nursery for their college) for life; but at Christmas, 1691, he was turned out for refusing to take the oath of allegiance, and was afterwards for many years master of a celebrated school at Headley, near Leatherhead, in Surrey, where he had at one time the honour of having the poet Fenton for his usher, and Bowyer (who was afterwards the learned printer) for a scholar.

BOODGE-BOODGE, a town of Hindoostan Proper, capital of the rajah of Cutch, 330 miles N.E. by E. of Surat. Long. 68. o. E. Lat. 23. 16. N.

BOOK-BINDING (*Encycl.*). The following is an extract from the specification of the patent granted to Mr. Ebenezer Palmer, of Saint Mary Cole, Cheapside, stationer; for an improved mode of binding books, especially merchants' account books. It is dated December 30, 1800. The improvement consists in the addition of a metallic hinge or chain, contrived and made in the following manner:

"First. There are certain various small bars of metal, or composition of metals, about the thickness of a shilling, or more, according to the size and thickness of the book to be made, the length of each such bar being from half an inch to several inches long, in proportion to the strength required in the back of the book.

"Secondly. At each end of every such bar of metal is made a pivot, by being filed down, or otherwise, and which are of different lengths, also in proportion to the thickness of two links, which they are to receive.

"Thirdly. There are a certain number of links, made rather in an oval form, to the said hinge, each of which contains two holes, according to the sizes of the pivots they are to go on, which links are of the same metal as the hinge, or a composition of metals, as is judged necessary; each of the said links being nearly the length that two of the above-described bars are wide.

"Fourthly. When such metallic pivots are prepared, the afore-mentioned links are then rivetted on those pivots, each pivot receiving two links, and thereby hold the said hinge together, on the principle of a link-chain or hinge.

"Fifthly. There are two holes, or more, of different sizes, as required in each bar of the hinge or chain, by which means each section of the book is strongly fastened to the same; which hinge, so fastened, operates with the back of the book, when bound, in such an improved manner that thereby occasions the said sections to open in such a manner as to bring them on a parallel with each other, and in consequence thereof admit of the ruled lines being written into, even close to the back, without any inconvenience."

BOOK-KEEPING (*Encycl.*). In the year 1796, a patent was granted to Mr. Edward Thomas Jones, of Bristol, for his method or plan of detecting errors in accounts of all kinds, by which they may be adjusted in a regular and concise manner. This work is entitled, *The English System of Book-keeping*, which requires a day-book, or journal, an alphabet, and a ledger, ruled in the following manner: namely, the day-book has three columns on each page, for receiving the amount of the transactions; one column of which to receive the amount of the debits and credits, one column to receive the debits only, and another to receive the credits only; or it may be ruled

with only two columns on each page, one to receive the amount of the debits, and the other the amount of the credits. There must also be on each page of the day-book, four other columns ruled, two on the left side, next the amount of the debits, and two on the right side next the amount of the credits, for receiving the letter or mark of posting, and the page of the ledger to which each amount is to be posted. The alphabet need not be ruled at all, but must contain the name of every account in the ledger, the letter that is annexed to it as a mark of posting, and the page of the ledger. The ledger must be ruled with three, four, five, or seven columns on each page, as may be most agreeable, for receiving the amounts of the different transactions entered in the day-book.

But in order to prevent any mistakes that may happen from the hurry of business in a counting-house, Mr. Jones has given only one column for receiving the amount of every transaction, whether debits or credits, at the instant of making the entry: and, for the convenience of separating the debits from the credits, previous to posting, which is necessary to prevent confusion and perplexity, he has two other columns on the same page; that on the left side, into which the amount of every debit must be carefully entered, and that on the right for the amount of the credits; which columns must be cast up once a month. The column of debits and credits of itself forms one amount; the column for the debits produces a second amount; and the column of credits a third amount; which second and third amounts, added together, must exactly agree with the first amount, or the work is not done right. By this means, the man of business may obtain monthly such a statement of his affairs, as will show how much he owes for that month, and how much is owing to him; and the debits being added together for any given time, with the value of the stock of goods on hand, will, when the amount of the credits is subtracted therefrom, shew the profits of the trade.

The patentee's manner of examining the books kept by this method, also professedly differs from that hitherto practised, as well in expedition as in the certain accuracy which attends the process; it being only necessary to cast up the columns through the ledger debits and credits, according to the examples given, and the amount of those columns, if right, must agree with the columns in the day-book for the same corresponding space of time. These castings should take place once a month, and if the amounts do not agree, the posting must then, but not else, be called over; and when the time, whether it be one, two, three, or four months, that is allotted to each column of the ledger, is expired, the amount of each column should be put at the bottom of the first page, and carried forward to the bottom of the next, and so on to the end of the accounts; taking care that the amount in the day-book, of each month's transactions, be brought into one gross amount for the same time.

Having already enlarged upon this subject, we shall only observe, that this new system of book-keeping, however ingeniously contrived, has not met with that general approbation to which it is apparently entitled. To enforce his claim to public patronage, Mr. Jones concludes the specification of his patent by asserting, that upon his plan every page will be proved in the progress of calculation, and "the balance of ten thousand ledgers could not unobviously be taken off wrong."—We give him full credit for this assertion; though it has, perhaps by invidious rivals, been objected that his method is more complicated than the old Italian system of book-keeping; which has, by experience, been found fully adequate to the purpose of mercantile accuracy.

BOOTHAN, a country N.E. of Hindoostan Proper, between Bengal and Thibet, of which last it is a feudatory or dependency. The southernmost ridge of the Bootan mountains rises

near a mile and a half perpendicular above the plains of Bengal, in a horizontal distance of only fifteen miles; and from the summit the astonished traveller looks back on the plains, as on an extensive ocean beneath him. The capital of this country is Teshafudon.

BOOTH (Barton), a famous English actor, born in Lancashire in 1681, and educated in Westminster school under the celebrated Mr. Busby, where his success in the Latin plays customarily performed by the scholars gave him an inclination for the stage. He was intended for the church; but running away from school to Dublin, he there commenced actor. His first appearance was in the part of Oroonoko, in which he came off with every testimonial of approbation from the audience. From this time he continued daily improving; and, after two successful campaigns in that kingdom, conceived thoughts of returning to his native country, and making a trial of his abilities on the English stage. To this end, he first, by letter, reconciled himself to his friends; and then, as a further step towards insuring his success, obtained a recommendation from Lord Fitzharding (one of the lords of the bed-chamber to Prince George of Denmark) to Mr. Betterton, who with great candour and good-nature took him under his care, and gave him all the assistance in his power. The first part Mr. Booth appeared in at London was that of Maximus in Lord Rochester's *Valentinian*, his reception in which exceeded even his most sanguine expectations; and very soon after his performance of *Artaban*, in Rowe's *Ambitious Step-mother*, which was a new tragedy, established his reputation, as second at least to his great instructor. *Pyrrhus*, in the *Distressed Mother*, was another part in which he shone without a rival. But he was indebted to a happy coincidence of merit and chance, for that height of fame which he at length attained in the character of Cato, as drawn by Mr. Addison, in 1712. For this play being considered as a party one, the Whigs, in favour of whose principles it was apparently written, thought it their duty strongly to support it; while at the same time the Tories, who had too much sense to appear to consider it as a reflection on their administration, were still more vehement in their approbation of it, which they carried to such an height, as even to make a collection of fifty guineas in the boxes during the performance, and present them to Mr. Booth with this compliment, "That it was a slight acknowledgment for his honest opposition to a perpetual dictator, and his dying so bravely in the cause of liberty." Besides this, he had a present of an equal sum from the managers, in consideration of the great success of the play, which they attributed in a good measure to his extraordinary merit in the performance; and certain it is, that no one since that time has ever equalled, or even nearly approached, his excellence in that character.—But these were not the only advantages which were to accrue to Mr. Booth from his success in this part; for Lord Bolingbroke, then one of the principal secretaries of state, in a little time after procured a special licence from Queen Anne, recalling all the former ones, and nominating Mr. Booth as joint manager with Wilks, Cibber, and Dogget; none of whom were pleased at it; but the last especially took such disgust as to withdraw himself from any further share in the management. In 1704 Mr. Booth had married a daughter of Sir William Barkham, bart. who died in 1710 without issue. Being now established in the management, he once more turned his thoughts towards matrimony; and in the year 1719 united himself to the celebrated Miss Hester Santlow, a woman of a most amiable disposition, whose great merit as an actress, added to the utmost discretion and prudent economy, had enabled her to save up a considerable fortune. During the twenty years in which Mr. Booth continued a manager, the theatre

was in the greatest credit; and his illness and death, which happened on the 10th of May, 1733, contributed not a little to its decline.

Mr. Booth wrote a dramatic entertainment called *Dido and Æneas*; but his master-piece was a Latin inscription to the memory of Mr. William Smith, a celebrated actor, who died while he was young.—As an actor, his excellency lay wholly in tragedy, not being able to endure such parts as had not strong passion to inspire him. And, even in this walk, dignity rather than complacency, rage rather than tenderness, seemed to be his taste. For a particular idea of his abilities, we must refer to the description Mr. Cibber has given of him in his *Apology*; and the admirable character drawn of him by that excellent judge of dramatic perfection, Aaron Hill, esq. in a political paper published by him called the *Prompter*, which may be seen at length in Theoph. Cibber's *Lives of the Poets*, and Chetwood's *History of the Stage*.—His character as a man was adorned with many amiable qualities, among which, a goodness of heart, the basis of every virtue, was remarkably conspicuous; and so particularly was he distinguished and cherished, and his company sought by the great, that, as Chetwood relates of him, not one nobleman in the kingdom had so many sets of horses at command as he had.

BORBETOMAGUS (anc. geog.), a city of the Vaugiones on the Rhine; now *Worms*, in Germany.

BORCOVIUM (anc. geog.), a town of the Ottadini in Britain, now *Berwick-on-Tweed*.

BORDE (Andrew), a physician, was born at Pevensey in Suffex, early in the 16th century, and supposed to have been educated at Westminster school. In his Introduction to Knowledge, he says that he was a student of Oxford; but of what college, he does not mention. He left the university without a degree, and entered himself a brother of a Carthusian convent in or near London; but, not liking the severe discipline of that order, he returned to Oxford, and applied himself to the study of physic. Some time after, he embarked for the Continent; and, as he himself expresses it, "travelled through and round about Christendom, and out of Christendom into some parts of Africa." In the years 1541 and 1542 he resided at Montpellier in France, where he was made doctor of physic, and after his return to England was incorporated into the same degree at Oxford. From the preface to his introduction above mentioned, it appears that he had been in Scotland, which probably was soon after his return from France. Having now satisfied his inclination for travelling, he settled first at Pevensey where he was born, afterwards at Winchester, and finally in London, where he is said to have become a fellow of the college of physicians, and first physician to King Henry VIII. But, notwithstanding his eminence in his profession, he had the misfortune to spend the latter end of his life in the Fleet prison, where he died in the year 1549. As to his character, Wood says, that "he was esteemed a noted poet, a witty and ingenious person, and an excellent physician." Pits calls him a man of sufficient learning, but too volatile and inconstant. Bale and some others, on the contrary, abuse him grossly. His writings are: 1. A book of the introduction of knowledge, the which doth teach a man to speak part of all manner of languages, &c. Lond. 1542, 4to., dedicated, from Montpellier, to the Lady Mary, daughter to Henry VIII. It is written partly in verse, and partly in prose, containing thirty-nine chapters, before each of which is a wooden print of a man. 2. The breviary of health, wherein are remedies for all manner of sicknesses and diseases, &c. Lond. 1547, &c. 4to. 3. Dietary of health, Lond. 1576, 8vo. 4. The merry tales of the madmen of Gotham. Printed, says Wood, in the time of Henry VIII. in whose reign, and after, it was accounted a book full of wit and mirth by scholars and

gentlemen. Afterwards being often printed, it is now sold only on the stalls of ballad-singers. 5. A right pleasant and merry history of the mylner of Abington, with his wife and his fair daughter, and of two poor scholars of Cambridge. Lond. printed by Richard Jones, 4to. 6. A book of every region, country, and province; which shews the miles and leagues distance from city to city, and from town to town, with the noted things in the said cities and towns. Wood says that the author lent the manuscript of this book to his friend Thomas Cromwell, who lost it, to the great grief of the author, who would otherwise have published it. In this instance, however, the antiquary was misinformed; for it has since been published by Hearne at the end of *Benedictus abbas Peterb. de vita Henrici II.* Oxf. 1735, 8vo. 7. The principles of astronomy, the which diligently persecuted is in a manner a prognostication to the world. Lond. printed by Robert Copland, 12mo. The author says that he wrote this little book in four days, with one old pen without mending.

BORDUNI, or **BORDONE** (Paris), an excellent Italian painter, was born at Venice about the year 1512; and, being of a noble family, had a polite education. He was the disciple of Titian; but has been admired more for the delicacy of his pencil than for the truth of his outlines. He was at the court of France in the reign of Francis I. who had a great esteem for him, and for whom he drew not only abundance of history-pieces, but the portraits of several court-ladies, in so fine a manner, that original nature was hardly more charming. He at length returned to Venice, laden with riches and honour; and having gained great reputation in all parts of Italy, died in 1587, aged seventy-five.

BOREL (Peter), a learned physician, was the son of James Borel, who published several poems, and was born at Castrès in 1620. He applied himself to the study of physic, of which he was created doctor, and practised with great success in the city of Castrès. Towards the end of the year 1653 he went to Paris, and was soon after made physician in ordinary to the king. In 1674 he was received into the Academy of Sciences, and distinguished himself by writing a great number of works. The most esteemed are, 1. *Hijtoriarum & Observationum medico-physicarum*. 2. *Bibliotheca Chymica, duodecimo*. 3. *De vero telescopii inventore, cum brevis omnium conspiciendorum historia*. He died in 1678.

BORELLI (John Alphonso), a famous philosopher and mathematician, born at Naples the 28th of January, 1608. He was professor of philosophy and mathematics in some of the most celebrated universities of Italy, particularly at Florence and Pisa, where he became highly in favour with the princes of the house of Medici; but having been engaged in the revolt of Messina, he was obliged to retire to Rome, where he spent the remainder of his life under the protection of Christina queen of Sweden, who honoured him with her friendship, and by her liberality towards him softened the rigour of his hard fortune. He continued two years in the convent of the regular clergy of St. Pantaleon, called the *pious schools*, where he instructed the youth in mathematical studies. He died there of a pleurisy, the 31st of December 1679, in the 72d year of his age. He wrote, in Latin, 1. *Euclid restituted*. 2. The theory of the influence of the planets in medicine, deduced from physical causes. 3. Of percussive force. 4. Of natural motions depending upon gravity. 5. An historical and meteorological account of the burning of mount Ætna, in the year 1669. 6. Of the motion of animals; and several other works, some of which are in Italian.

BORGIA (Cæsar), natural son of Pope Alexander VI. was a brave general, but a most abandoned villain. It is incredibly what numbers he caused to be taken off by poison, or by the sword; and it is notorious that swarms of assassins were con-

stantly kept in pay by him at Rome, for the sake of removing all who were either obnoxious or inconvenient to him. He experienced various turns of fortune; and was sometimes very prosperous, sometimes the reverse. He very narrowly escaped dying by poison in 1503: for having concerted with the pope a design of poisoning nine newly created cardinals at once, for the sake of possessing their effects, the poisoned wine, destined for the purpose, was by mistake brought to and drank by themselves. The pope died of it; but Cæsar, by the vigour of his youth, and the force of antidotes, after many struggles, recovered. He only recovered to outlive his fortune and grandeur, to see himself depressed, and his enemies exalted; for he was soon after divested of all his acquisitions, and sent a prisoner to Spain, in order to free Italy from an incendiary, and the Italian princes from those dangers which the turbulent and restless spirit of Cæsar made them fear even though he was unarmed. He escaped from thence; and got safe to Navarre, to King John his brother-in-law, who was then at war with his subjects. Cæsar served as a volunteer in that war, and was killed in 1507.

BORGOGNONE, a celebrated painter, whose true name was *Giacomo Cortesi*; but he is commonly called *Borgognone*, from the country where he was born, about the year 1606. He was much admired and highly applauded for his admirable gusto, and grand manner of painting battles. He had for several years been conversant in military affairs, was an officer of considerable rank in the army, made the camp his school, and formed all his ideas from what he had seen performed in the field. His style is roughly noble, full of fire and spirit, and there are a few prints etched by his own hand. Towards the close of his life he retired to the Jesuits' convent in Rome, where he is said to have taken sanctuary to rid his hands of an ill bargain he had got of a wife. But happily surviving her, he lived in great esteem and honour till after the year 1675.

BORISTHENES (anc. geog.), the largest river of Sarmatia Europea, thus described by Mela, who copies *verbatim* from Herodotus: "It runs through a cognominal people, is the most pleasant of all the rivers of Scythia, and calmer than all of them in its course, and very agreeable to drink: it feeds very rich pastures, and produces large fish of the best flavour, and without bones: it comes a great way, rising from springs unknown; its course is a distance of forty days, and so far it is navigable." It is now called the *Dnieper* or *Nieper*.

BORLASE (Dr. Edmund), an eminent physician and English writer in the 17th century, was the son of Sir John Borlase, master of the ordnance, and one of the lord justices of Ireland in 1643. He studied in Dublin College, and afterwards at the university of Leyden, at which last place he took the degree of doctor of physic. He afterwards practised physic with great success in the city of Chester, and was incorporated doctor of the faculty in the university of Oxford. Among the books which he wrote and published are the following: 1. *Lathan Spaw in Lancashire*, with some remarkable cures and cures performed by it. 2. *The reduction of Ireland to the crown of England*. 3. *The history of the Irish rebellion*. 4. *Brief reflections on the Earl of Castlehaven's memoirs, &c.* He died after the year 1682.

BORNOU (*Encycl.*). No information can be obtained of this country from the actual visits of any European; but Mr. Lucas, the geographical missionary, sent by the African association, in 1788, obtained many particulars from some respectable Mahometans, whose information, however, on some accounts (without impeaching their veracity) is not absolutely to be depended on. The climate of Bornou, according to them, is characterized by excessive, though not by uniform, heat. Two seasons, the one commencing soon after the middle of April, and the other at the same period in October,

may be said to divide the year. The first is introduced by violent winds, that bring with them, from the S.E. and S. an intense heat, with a deluge of sultry rain, and such tempests of thunder and lightning as destroy multitudes of the cattle and many of the people. At the commencement of the second season, the ardent heat subsides; the air becomes soft and mild, and the weather perfectly serene. The complexion of the natives is black; but they are not of the negro cast. The dress of the greater part consists of shirts of blue cotton manufactured in the country, of a red cap imported from Tripoli, and a white muslin turban from Cairo. Note-rings of gold are worn by the principal people. But the only covering of the poorer sort, is sometimes a kind of girdle for the waist. They cultivate two kinds of Indian corn, the horse-bean of Europe, the common kidney-bean, cotton, hemp, and indigo. The hoe is used in tillage; the plough being unknown. While the men, with their hoes, form the trenches in straight parallel lines, the women follow and throw in the seed; but the latter take the hoe when the weeds begin to appear. They have neither olives nor oranges, but few figs, and no good apples, plums, or dates; but they have abundance of grapes, apricots, pomegranates, lemons, limes, and melons. The most valuable tree is called *Redeynah*, in form and height like an olive, the leaf resembling that of a lemon, and bearing a nut, both the kernel and shell of which are in great estimation; the first as a fruit, the last on account of the oil it produces when bruised. Horses, asses, mules, dogs, horned cattle, goats, sheep, and camels (of the flesh of which they are very fond), are the common animals of the country; but they have no oxen. Their hives of bees are so numerous, that the wax is often thrown away as an article of no value. Their game consists of the huadde, and other species of antelopes, the partridge, wild duck, and ostrich, the flesh of which they prize above every other. Their other wild animals are the lion, leopard, civet cat, wolf, fox; the wild dog, that hunts the antelope; the elephant, which is not common, and of which they make no use; the camelopardalis, crocodile, and hippopotamus. They are much infested with snakes, scorpions, centipedes, and toads. In some parts, particularly the mountainous, the herdsmen prefer a residence in tents to stationary dwellings. More than thirty different languages are said to be spoken in Bornou and its dependencies. The reigning religion is the Mahometan. Their monarchy is elective. On the death of the sovereign, the privilege of choosing a successor, from among his sons, without regard to primogeniture, is conferred on three of the most distinguished men, whose age and character for wisdom are denoted by their title of elders. These retire to a sequestered place, the avenues to which are carefully guarded; and, while their deliberations last, the princes are closely confined in separate chambers of the palace. Their choice being made, they proceed to the apartment of the sovereign-elect, and conduct him, in silence, to the gloomy place, where the unburied corpse of his father, that cannot be interred till the conclusion of this awful ceremony, awaits his arrival. There the elders expatiate to him on the virtues and defects of his deceased parent; describing, with panegyric or censure, the measures that exalted or sunk the glory of his reign. "You see before you," say they, "the end of your mortal career: the eternal, which succeeds it, will be miserable or happy, in proportion as your reign shall have proved a curse or a blessing to your people." The present sultan (in 1788) is a man of unostentatious appearance; undistinguished, in his dress, from his subjects. But he is said to have 500 ladies in his seraglio, and to be the reputed father of 350 children, of whom 300 are males: a disproportion which naturally suggests the idea, that the mother, preferring the joy of being the supposed parent of a future candidate for the

empire to the gratification of natural affection, sometimes exchanges her female child for the male offspring of a stranger. His fluid likewise contains 500 horses. He has a vast army, which consists almost entirely of horse. Fire-arms, though not unknown to them, they neither use nor possess. The fabre, lance, pike, and bow, are their weapons of offence, and a shield of hides is their armour. In their manners the people are courteous and humane. They are passionately fond of play; the lower classes of draughts; while the higher ranks excel in chess. Their capital is of the same name.

BORNOU, the capital of the empire of Bornou in Africa, situated in a flat country, on the banks of a small river. According to the information obtained by Mr. Lucas, it is of greater extent than Tripoli, but consisting of a multitude of houses, so irregularly placed, that the spaces between them cannot be called streets. Their mosques are constructed of brick and earth; and they have schools, in which the koran is taught, as in the principal towns of Barbary. The royal palace, surrounded by high walls, and forming a kind of citadel, is built in a corner of the town. The houses of the inhabitants are neatly plastered, both within and without, with clay or mud, and are similar in form to those of Tripoli. Bornou is surrounded by a wall, and is 650 miles S.E. of Mourzook. Long. 27. 30. E. Lat. 19. 40. N.

BOROMÆUS (Frederic), cardinal and archbishop of Milan. He, in 1609, celebrated the council of Milan. He founded the Ambrosian library, which he enriched with 9000 manuscripts. He left several works behind him, and died in 1632.

BORONDON (St.), an island in the Atlantic Ocean, mentioned by some writers, particularly Linfchotten, in their description of the Canary islands, as something supernatural. It is said to be about 100 leagues distance from Ferro, probably west, though no writer has pretended to lay down its exact situation. Here it is affirmed several ships have touched by accident, and all agree in their relations of the state of the inhabitants and island. They affirm, that it is perpetually clothed with a great variety of wood, chiefly fruit-trees: that the valleys are in a perpetual state of verdure; and continually decked with flowers, grass, and plants, the spontaneous productions of the earth; or with corn and pulc, cultivated with great care by the inhabitants: that the soil is so prolific as to raise large quantities of corn for exportation; and that the ships that call here never fail of meeting with refreshments of every kind. It is said to be peopled by Christians, who have a language of their own, apparently combined of a variety of modern languages; for, say they, whoever understands the European tongues may make shift to hold conversation with this people. It is remarkable, that no ships, expressly sent upon this discovery, were ever fortunate enough to fall in with the island of St. Borondon, though the Spaniards have several times attempted it from the Canaries. Hence it has been called the *marvellous island*; and hence indeed we may conclude, either that it exists wholly in imagination, or at least that it is surrounded with such currents as insensibly carry ships out of their course, and prevent their meeting with it. Some writers affirm that it actually disappears upon certain occasions, and shifts its position; while others, with more appearance of truth, allege, that it is frequently overcast with thick and impenetrable clouds, which occasion the disappointment of all the adventurers who have gone in search of it.

BORRICHIUS, one of the most learned men of his age, the son of a Lutheran minister in Denmark, was born in 1626. He applied himself to physic in the university of Copenhagen, and began to practise during a most terrible plague that made great havoc in that city. He travelled: but before his departure, in 1660, he was appointed professor in

poetry, botany, and chemistry; and at his return discharged his duties with great assiduity, of which the works he published afford full proof. He was raised to the office of counsellor in the supreme council of justice in 1686; to that of counsellor of the Royal Chancery, in 1689; and died of the operation for the stone, in 1690. He published, 1. *Lingua pharmacopæorum*; 2. *Disertationes de poeticis Græcis et Latinis*; 3. *De ortu et progressu chemie*: and several other works.

BORROWDALE, a district in the S. part of Cumberland, on the borders of Westmorland. It is a dreary region, abounding, beyond any other part of the world, with the finest sort of that valuable and singular mineral, black-lead or wad; the mines of which are only opened at intervals, and then carefully closed again, lest this precious substance should become too common. Copper, lead, and calamine, are also found in this tract.

BORROWSTONESS. See **BURROWSTONESS**.

BORZONI (Luciano), a Genoese historian and portrait-painter of great genius and abilities, flourished about the middle of the 17th century. His three sons were professors of the same art: but only one, Francis Maria, succeeded; and that was in fee-pieces, particularly forms.

BOS (John Baptist du), a celebrated author and member of the French Academy, was born at Beauvais in 1670, and finished his studies at the Sorbonne. In 1695 he was made one of the committee for foreign affairs under Mr. Torcy; and was afterwards charged with some important transactions in England, Germany, Holland, and Italy. At his return to Paris, he was handsomely preferred, made an abbé, and chosen perpetual secretary of the French Academy. He was the author of several excellent works; the principal of which are, 1. Critical reflections upon poetry and painting, 3 vols. 12mo. 2. The history of the four Gordians, confirmed and illustrated by medals. 3. A critical history of the establishment of the French monarchy among the Gauls, 2 vols. 4to., 4 vols. 12mo. He died at Paris, on the 23d of March, 1742.

BOSCOBEL, a village of Shropshire, near White Ladies, in the parish of Tongue, noted for the Royal Oak in which Charles II. was concealed, and saw the soldiers pass by in quest of him, after the battle of Worcester. The tree was inclosed by a brick wall, but is now almost cut away by travellers.

BOSCAN (John), a Spanish poet of the 16th century, born at Barcelona. He was the friend of Garcilasso de Vega, another Spanish poet. These two were the first who made any great improvement in the poetry of their nation, and their pieces were printed together. Boscan, who died about the year 1542, principally succeeded in sonnets.

BOSCHARTS (Thomas Vuillebos), a celebrated painter, was born at Bergen-op-zoom; and, like the great painters who flourished at that time, began to draw, when very young, in the books that were intended for other studies. Preferring his pencil to every thing else, he drew his own picture, by his resemblance in a looking-glass, so like, that those who saw it were astonished. This he did before he had the least instruction from any one, and when he was only twelve years of age. Upon this, his parents sent him to a master, that he might follow the bent of his genius; but his first master being only an indifferent painter, and incapable of satisfying his earnest desire of learning, he left him, and engaged himself with Gerard Segers, under whom, after four years' practice, he proved a most accomplished artist. Antwerp being at that time the seat of arts, where there was a conflux of the most eminent painters, he thought it the fittest place for his improvement; and there executed such a number of noble pieces as added greatly to the splendor of that wealthy city. In 1642, Henry Frederick prince of Orange, and his son Prince William, em-

ployed him in their service; in which he continued several years, and made those excellent pieces that are to be seen in that prince's palace at the Hague, and other parts of Holland, and painted portraits for most of the persons of quality that were then living. He died in the flower of his age, in 1670.

BOSSE (Abraham), an able engraver, born at Tours, was well skilled in perspective and architecture. He wrote two treatises, which are esteemed; the one on the manner of designing, and the other upon engraving.

BOSSU (René le), born at Paris in 1631, was admitted a canon regular in the abbey of St. Genevieve, in 1649; and after a year's probation, took the habit. He taught polite literature with great success in several religious houses for 12 years, when he gave up the task for retirement. He then published a parallel betwixt the principles of Aristotle's natural philosophy and those of Des Cartes, with a view to reconcile them; which was but indifferently received. His next treatise was on epic poetry; which Boileau declared one of the best compositions on that subject in the French language, and which produced a great friendship between them. He died in 1680, and left a great number of MSS. which are kept in the abbey of St. John de Chartres.

BOSSUET (James Benigne), Bishop of Meaux, was born at Dijon, on the 27th of September, 1627. He distinguished himself by his preaching, and the zeal he discovered in his endeavours to bring over the Protestants of France to the Romish church; by his opposition to Quietism; and by his numerous writings both in French and Latin, which have been collected together, and printed at Paris in 17 vols. 4to. This famous divine died at Paris, in 1704, aged 77.

BOSSUS (Matthew), distinguished by his virtue and his learning, was born in 1427. He devoted himself to the ecclesiastical state in 1451, in the congregation of regular canons of Lateran, and afterwards taught divinity at Padua. His orations, his sermons, and his letters, have often been printed. He also wrote a sort of an apology for Phalaris, and other works. He died at Padua in 1502, aged 75.

BOSWELL (James), an ingenious Scottish writer: He was the son of Alexander Boswell, lord Auchinleck, a judge in the supreme court of session and judiciary, and was born at Edinburgh in 1740. After studying the civil law at Edinburgh and Glasgow, he visited London, where he wished to enter into the army, but his father was inflexibly bent against the measure, being desirous to see his son make a figure at the bar. In compliance with his wish, he went to Utrecht, after which he made the tour of Europe. In 1763 he contracted an intimacy with Dr. Johnson, which lasted till the doctor's death. In 1766 he was admitted an advocate at the Scotch bar. In 1768 he published an Account of Corsica, with Memoirs of General Paoli, which is a curious and well-written book. In 1784 appeared another original work, which had a great run, a Journal of a Tour to the Hebrides with Dr. Johnson, full of anecdote, and highly entertaining. The same year he settled in London, and was admitted at the English bar. In 1790 appeared the work which will secure him a lasting name, the Life of Samuel Johnson, LL.D. This respectable and sensible man died in London in 1795: he had by his lady, who died before him, two sons and three daughters. Mr. Boswell printed several pamphlets and fugitive pieces.

BOTALLUS (Leonard), physician to the duke of Alençon, and to Henry III. was born at Asti in Piedmont. He introduced at Paris the practice of frequent letting of blood; which was condemned by the faculty; but soon after his death it came into practice with all the physicians. He pub-

lished several books in physic and surgery; the best edition of which is that of Leyden in 1660, octavo.

BOTANY (*Encycl.*). In page 48, 25th class, 2d line, for "*spadar*," read "*spadir*."

BOTH (John and Andrew), Flemish painters, and pupils of Bloemart. The union of these brothers was very singular; they were inseparable in their studies, travels, and paintings. John painted the landscape part of their pictures in the manner of Lorrain, and Andrew the figures and animals in the style of Bamboche. They both died in 1650. John's taste in landscape is elegant; his ideas are grand; his composition beautiful; and his execution rich and masterly in the highest degree. His light is not always well distributed; but his figures are excellent. It is to be regretted that we have not more of his works; for they are certainly, upon the whole, among the best landscapes we have.

BOTTRIGARO (Hercole), a person eminently skilled in the science of music, though not a musician by profession. He was a man of rank in Bologna; and appears, from several letters to him that have been printed, to have had the title of *count*. He published several controversial pieces on the subject of music. It seems that he entertained strong prejudices in favour of the ancient music; and that he attempted, as Vincentino and others had done, to introduce the chromatic genus into practice, but with no better success than had attended the endeavours of others. He corrected Gogavino's Latin version of Ptolemy in numberless instances; and that to so good a purpose, that Dr. Wallis has in general conformed to it in that translation of the same author, which he gave to the world many years after. He also translated into Italian *Boetius de Musica*, and as much of Plutarch and Macrobius as relates to music: besides this, he made annotations upon Aristoxenus, Franchinus, Spataro, Vincentino, Zarlino, and Galilei; and, in short, on almost every musical treatise he could lay his hands on, as appears by the copies which were once his own, and are now deposited in many libraries in Italy. Of Bottrigaro's works it is said that they contain greater proofs of his learning and skill in music, than of his abilities as a writer, his style being remarkably inelegant: nevertheless, he affected the character of a poet; and there is extant a collection of poems by him, in 8vo, printed in 1557. Walther represents him as an able mathematician, and a collector of rarities; and says that he was possessed of a cabinet, which the emperor Ferdinand II. had a great desire to purchase. He died in 1609.

BOUCHART, a small town of France, in the department of Indre and Loire, and late province of Touraine. It is situated in a small island of the river Vienne, 15 miles from Tours.

BOUCHET (John), a French poet and historian, flourished in the 16th century. The most considerable of his writings are the *Annals of Aquitaine*, and his *Chapelet des Princes*.

BOUFLERS (Lewis Francis, duke of), a peer and marshal of France, was born in 1644. He distinguished himself by his valour and conduct in several sieges and battles, and had the command of the right wing when the French were defeated at the bloody battle of Malplaquet. He died at Fontainebleau in 1711. Marshal Boufflers, his son, died at Genoa, after having delivered that republic.

BOUGEANT (William Hyacinth), a famous Jesuit, first taught humanity at Caen and Nevers, and afterwards settled at the college of Lewis the Great, where he employed himself in writing several works; the principal of which were, 1. A collection of physical observations, extracted from the best authors; 2. An history of the wars and negotiations

which preceded the treaty of Westphalia; 3. The female doctor, a philosophical amusement on the language of beasts, &c. He died in 1743.

BOUILLE (Marquis de), a celebrated French general, was descended of an ancient and noble family, from whom he inherited an ample patrimony. He received an excellent education, and was no less celebrated for the elegance of his manners than beloved for the goodness of his heart. During the American war he served in the West-Indies, and was appointed commandant of all the French West India islands: he was also advanced to the rank of lieutenant-general, and received the knighthood of the most noble order of the Holy Ghost. In the course of the war, several of the British islands fell under the dominion of the French, and the Marquis de Bouillé was endeared to the vanquished by the suavity of his manners, and the mildness of his sway. At the end of the war, after a short abode in the French metropolis, he came to London, and was received in a most favourable manner by the king; the West-India merchants also paid the homage due to him for the liberality he had shewn when their property was committed to his disposal. He afterwards visited Holland, Prussia, Bohemia, and Vienna, being everywhere received with the confidence due to his rank and talents, and entrusted with the secret of those important plans which, at the moment, agitated the bosoms of all the continental potentates. In the summer of the year 1785, he returned to Prussia, intending to have visited the court of Catherine II., but his journey was delayed by orders for his return to Paris, in consequence of a grand project formed by France and Holland, for an invasion of the British dominions in India, the command of which was to be entrusted to him. The execution of the project was, however, still distant, and the revolution in Holland, in 1787, ultimately prevented its prosecution.

The derangement of the French finances now demanded new and effectual exertions: M. de Calonne, having conceived a wife and just plan for repairing the deficiencies of the revenue, and having secured, as he thought, the necessary co-operation, convoked the *notables* to meet in January, 1787; a measure which had not been recurring to since the year 1625, in the reign of Lewis XIII. It is not necessary here to detail the causes which frustrated Calonne's intentions, and occasioned the dismissal of the notables; M. de Bouillé was one of their number, and, immediately on their dissolution, was appointed commandant of Metz, and of the province *des Evêchés*.

In the year 1788 those measures were pursued which laid the government entirely at the mercy of intriguers, which afforded a pretext for the convocation of the states-general, and for the recall of Necker. This quack-minister thought proper again to convene the *notables*, merely to shew them that he disregarded their advice. M. de Bouillé was again a member of this assembly, and saw with indignation the efforts which were daily used, and generally encouraged, to subvert the ancient constitution of the kingdom. He opposed, in an open and energetic manner, the project of the innovators, detailed the miseries to which they would give birth, and exposed the errors both of Necker and La Fayette in the most perspicuous terms. Alarmed at his firmness, they procured an invitation to be sent to him, through the Baron de Stael, Necker's son-in-law, to accept a command in the service of the king of Sweden, who was then at war with Russia. M. de Bouillé would, with pleasure, have accepted an offer which would have exempted him from witnessing and taking a share in the calamities which he saw ready to burst forth on his country; but was suddenly, in the month of March, 1789, ordered to his government of Metz.

His conduct in this department, at such a critical period, needs no other eulogy than his own inartificial narrative:—"While I commanded at Metz," he says, "not one person was assassinated; property in the towns, as well as in the country, remained inviolate; not a feat was burned, nor any nobleman or landholder exposed to the fury of the people, which evaporated in empty threats. For the first twelve months of the revolution, I was so happy as to preserve, among the twenty thousand men I had under my command, the same temper of mind as formerly." Here he had an opportunity of experiencing the ignorance, or, more properly, the treachery of Necker, who refused an offer which he made to distribute part of the grain in his possession among the people, on condition of its being restored to the garrison at the next harvest.

In this situation M. de Bouillé passed the eventful year 1789, contemplating with horror the progress of the revolution, in which he took no share, though earnestly solicited, and that, under the most plausible pretences, by La Fayette, who was his kinsman, and with whom he had been intimate from his infancy. But M. de Bouillé penetrated into the feeble and crafty character of this vain pretender to superiority in revolutions, and not only avoided a connection with him, but with every other political party which had a selfish view, derogatory to the true constitution of French government: he declared with honest magnanimity, "I am neither aristocrat nor democrat, I am a royalist."

But the efforts of the king's real friends received a fatal impediment from his visit to the assembly on the 4th of February, 1790, when, influenced by the advice of hypocritical traitors, he threw himself into the bosom of that rebellious body, and declared himself the head and protector of that revolution which had already deprived him of the best prerogatives, and his liberty, and was rapidly proceeding in those measures which hurried him to an untimely grave.

The distribution of arms among the populace, and the dissemination of jacobin principles among the soldiery, had already induced most of the commandants of provinces to resign, or to abandon the kingdom. M. de Bouillé, who had long contemplated with confidence the garrison under his command, as a resource for the royal family in the expected extremity, was now convinced no effectual use could ever be made of their services: he exerted himself with effect in maintaining order and quelling insurrection, but earnestly solicited leave to resign, and seek another country. This resolution he was induced to abandon by the king's own request: he took the constitutional oath, and permitted the federation of the national guards in his government with the troops of the line.

Having by these acts, in a certain degree, relinquished the line of conduct which his own principles would have dictated, M. de Bouillé endeavoured to serve the royal cause, as connected with the imaginary, and as yet unfounded, constitution, but in vain. The dissimulation of La Fayette, his folly, which gave a decided ascendancy to the jacobins, rendered all such attempts unavailing; and the troops who had been called to Paris to assist at the absurd ceremony of the confederation, spread anarchy and insurrection in every part of the kingdom. The garrison of Metz, in August, 1790, commenced a most dangerous insurrection, which was with difficulty suppressed; Nancy, in the same month, followed the example: the heroism of Desilles, who opposed his person to a loaded cannon, was insufficient to restrain the popular fury: M. de Bouillé, after essaying, without effect, every conciliatory measure, was reduced to the necessity of employing force, which he was authorized to do by a decree of the assembly; and, after an ob-

inate contest, reduced the insurgents, though not without great slaughter. For this timely effort he was assailed with all the virulence of jacobin vituperation; the ready pens of the Palais Royal were employed in aspersing his character, and the eager echoes of jacobin invention in other countries were prepared to repeat, with atrocious additions, the calumnies derived from that never-failing source. The Orleans faction, who could never forgive this check on their favourite projects, harassed the assembly with perpetual motions on the subject, and essayed all means to obtain the censure of the marquis, in which they were at length successful.

The contents of the various factions who pretended to give laws to France, tended only to one certain end, that of degrading the king, and making him miserable. La Fayette was become his gaoler, and with the office, adopted the manners of a turnkey. Worn out with repeated indignities, which were daily renewed and increased under various pretences, the king resolved to quit the capital, and seek refuge in one of the frontier towns, under the command of M. de Bouillé. Our limits do not allow a recapitulation of the negotiations with Mirabeau; the projects of various individuals; the causes which retarded the king's departure, and occasioned the final frustration of his plan. Throughout this critical emergency, which forms one of the most embarrassing crises of his life, Lewis displayed the utmost integrity of heart and goodness of disposition. M. de Bouillé, failing in all his efforts to secure the retreat of his sovereign, reluctantly secured his own safety by quitting a land which he considered irreparably dishonoured, and where the advantages of birth, fortune, long services, and unshaken loyalty, could no longer secure him an asylum. Still intent on rendering the latest service in his power to the king, M. de Bouillé wrote a letter to the national assembly, avowing himself the sole persuader and contriver of the king's flight, and endeavouring, by every means, to divert the force of popular fury from the king to himself: his efforts were insufficient to save the king; but the demagogues eagerly seized the opportunity of stigmatising a man whom they had long regarded as one of their most formidable enemies. The assembly passed a decree of accusation against him and his son, their estates were confiscated, and the national convention afterwards offered a reward to the man who would assassinate him.

M. de Bouillé, not seeing in the year 1791 any thing which denoted hostile preparations against France, offered his services to the empress of Russia, but being pressed by the king of Sweden, who was then at Aix-la-Chapelle, he accepted a commission in his service. Gustavus and Catherine had formed extensive and beneficial projects relative to France, which were however frustrated, partly by the backwardness of Austria and Prussia, partly by the inflexible neutrality of Great Britain, and finally by the assassination of the king of Sweden.

Soon after this event, M. de Bouillé quitted the service of Sweden. He had now, to use his own expression, connected his fate with that of two sovereigns, equally unfortunate, and henceforth resolved to secure himself from the frowns of Fortune by troubling her no longer. On the preparations in the year 1792 to invade France, he was offered a command of six thousand troops, but pecuniary difficulties prevented the intended arrangement, and he served as a volunteer under the prince of Condé. After the retreat of the allies, he took no public share in military or political transactions.

M. de Bouillé published in the year 1797 his memoirs relating to the French revolution, a work in which the most excellent principles are combined with a clear and ingenious narrative: and in which the author has the singular candour to

review his own conduct with frequent and decided disapprobation.

BOULAY (Cæsar Egasse du), in Latin *Buleus*, was born at St. Ellier, a village of Maine in France; and became professor of humanity at the college of Navarre, regiter, rector, and historiographer of the university of Paris. He died in 1678, after having published several works. The principal of them are, *A History, of the University of Paris*, in Latin, 6 vols. folio; and the *Treasure of Roman Antiquities*, in 1 vol. folio.

BOULTER (Dr. Hugh), was born in or near London, of reputable and wealthy parents. He was educated at Merchant-tailors' school; and, before the revolution, was from thence admitted a commoner of Christ-church in Oxford. Some time after, he was chosen a demy of Magdalen College, at the same election with Mr. Addison and Dr. Wilcox. From the merit and learning of the persons elected, this was commonly called by Dr. Hough, president of the college, the *golden election*. He afterwards became fellow of the same college; in which station he continued in the university till he was invited to London by Sir Charles Hodges, principal secretary of state, in the year 1700, who made him his chaplain, and recommended him to Dr. Tenison archbishop of Canterbury; but his first preferments were owing to the Earl of Sunderland, by whose interest and influence he was promoted to the parsonage of St. Olave in Southwark, and the archdeaconry of Surrey. Here he continued discharging very faithfully and diligently every part of his pastoral office, till he was recommended to attend George I. as his chaplain, when he went to Hanover in 1719. He had the honour to teach Prince Frederick the English language; and by his conduct he so won the king's favour, that he promoted him to the deanery of Christ-church, and the bishopric of Bristol, in the same year. As he was visiting his diocese five years afterwards, he received a letter from the secretary of state, acquainting him that his majesty had nominated him to the archbishopric of Armagh and primacy of Ireland. This honour he would gladly have declined; and desired the secretary to use his good offices with his majesty to excuse him from accepting it. Ireland happened to be at this juncture in a great flame, occasioned by Wood's ruinous project; and the ministry thought that the bishop would greatly contribute to quench it by his judgment, moderation, and address. The king therefore laid his absolute commands upon him: to which he submitted, but with some reluctance. As soon as he had taken possession of the primacy, he began to consider that country, in which his lot was cast for life, as his own; and to promote its true interest with the greatest zeal and assiduity. Accordingly, in innumerable instances, he exerted himself in the noblest acts of beneficence and public spirit. His charities for augmenting small livings and buying glebes amounted to upwards of 30,000*l.*, besides what he devised by will for the like purposes in England. In short, the instances he gave of his generosity and benevolence of heart, his virtue, his piety, and his wisdom, are almost innumerable, and the history of his life is his noblest panegyric. This excellent prelate died at London, on the 2d of June, 1742; and was interred in Westminster-abbey, where a beautiful monument of finely polished marble is erected to his memory.

BOURBON (Nicholas), a famous Latin poet in the 16th century, was a native of Vandeur near Langres, and the son of a wealthy man who was master of several forges. Margaret de Valois appointed him preceptor to her daughter Jane d'Albert of Navarre, the mother of King Henry IV. At length he retired to Condé, where he had a benefice, and died about the year 1550. He wrote eight books of Epigrams; and a

poem on the forge, which he has entitled *Terraria*. He had great knowledge of antiquity and of the Greek language. Erasmus praises his epigrams.

BOURBON (Nicholas), a celebrated Greek and Latin poet, was nephew of the preceding. He taught rhetoric in several colleges of Paris; and the Cardinal de Perron caused him to be nominated professor of eloquence in the Royal College: he was also canon of Langres, and one of the 40 of the French academy. At length he retired to the fathers of the Oratory, where he died in 1644, aged 70. He is esteemed one of the greatest Latin poets France has produced. His poems were printed at Paris in 1630.

BOURCHIER (John), lord Bemars, grandson and heir of a lord of the same name, who was descended from Thomas of Woodstock, duke of Gloucester, and had been knight of the Garter, and constable of Windsor-castle, under Edward IV. Our Lord John was created a knight of the Bath at the marriage of the Duke of York, second son of Edward IV., and was first known by quelling an insurrection in Cornwall and Devonshire, raised by Michael Joseph, a blacksmith, in 1495, which recommended him to the favour of Henry VII. He was captain of the pioneers at the siege of Therouenne, under Henry VIII., by whom he was made chancellor of the exchequer for life, lieutenant of Calais and the Marches, appointed to conduct the lady Mary the king's sister into France on her marriage with Lewis XII., and had the extraordinary happiness of continuing in favour with Henry VIII. for the space of 18 years. He died at Calais in 1532, aged 63. He translated, by King Henry's command, Froissart's Chronicle; which was printed in 1523, by Richard Pynson, the scholar of Caxton, and the fifth on the list of English printers. His other works were a whimsical medley of translations from French, Spanish, and Italian novels, which seem to have been the mode then, as they were afterwards in the reign of Charles II. These were, *The life of Sir Arthur, an Armoric knight*; *The famous exploits of Sir Hugh Bourdeaux*; *Marcus Aurelius*; and *The castle of love*. He composed also a book, *Of the duties of the inhabitants of Calais*; and a comedy entitled *Ite in Vincam*, which is mentioned in none of our catalogues of English plays. Anthony Wood says it was usually acted at Calais after vespers.

BOURDALOUE (Lewis), a celebrated preacher among the Jesuits, and one of the greatest orators France has produced, was born at Bourges, on the 20th of August, 1632. After having preached at Provence, he, in 1699, went to Paris; and there met with such applause, that the king resolved to hear him: on which he was sent for to court, and frequently preached before Lewis XIV. He assisted the sick, visited the prisons and hospitals, and was very liberal in giving alms. He died in Paris on the 13th of May, 1704. The best edition of his sermons is in octavo.

BOURMONT, a town of France, in the department of Upper Marne, and late province of Champagne, 22 miles from Chaumont. Long. ϵ . 43 E. Lat. 48. 14 N.

BOURTON-ON-THE-HILL, a village of Gloucestershire, on the side of a hill, with a fine prospect into Oxfordshire. There are two springs in this parish, one of which runs E. and empties itself into the Thames, and the other W. into the Severn. It is five miles from Stow, and 30 from Gloucester.

BOURTON-ON-THE-WATER, a village, about a mile from the preceding place, and near the Roman Foss; it is watered by a river that rises near it, which here spreads 30 feet wide, over which is a stone bridge, beside several others of wood at proper distances. It has many good houses and a tolerable trade. Adjoining to it is a quadrangular Roman camp, inclos-

ing 60 acres, now divided into 20 fields, where coins and other antiquities are dug up.

BOUSSAC, a town of France, in the department of Creuse and late province of Marche, with a castle, on an almost inaccessible rock, 25 miles N.E. of Gueret.

BOXHILL, a hill near Dorking, in Surrey, celebrated for its extensive prospects. It received its name from the box trees planted on the south side of it, by the Earl of Arundel, in the reign of Charles II.

BOXHORNIUS (Marc Zuerius), a learned critic, born at Bergen-op-Zoom in 1612, was professor of eloquence at Leyden, and at length of politics and history in the room of Heinfius. He published, 1. *Theatrum urbium Hollandiæ*. 2. *Scriptores historiæ Augustæ, cum notis*. 3. *Poetæ satyrici minores, cum comment.* 4. Notes on Justin, Tacitus: and a great number of other works. He died in 1653, aged 41.

BOXLEY, a village in Kent, a little to the east of Pinnerden Heath, near Maidstone; famous for an abbey of Cistercian monks, founded by William earl of Kent in 1146, the remains of which still exist. It was during his residence in this abbey that Edward II. granted the charter to the city of London, empowering them to elect a mayor from their own body. This abbey was also famous for the wooden figure, called the Rood of Grace; the lips, eyes, and head of which moved on the approach of its votaries. It was broken to pieces, at St. Paul's Cross, in 1538, by Hilsey bishop of Rochester, who shewed to the credulous people the springs and wheels by which it had been secretly moved.

BOYD (Mark Alexander), an extraordinary genius, was son of Robert Boyd, who was eldest son of Adam Boyd of Pinkhill, brother to Lord Boyd. He was born in Galloway on the 13th of January, 1662, and came into the world with teeth. He learned the rudiments of the Latin and Greek languages at Glasgow under two grammarians; but was of so high and intractable a spirit, that they despaired of ever making him a scholar. Having quarrelled with his masters, he beat them both, burnt his books, and forswore learning. While he was yet a youth, he followed the court, and did his utmost to push his interest there; but the fervour of his temper soon precipitated him into quarrels, from which he came off with honour and safety, though frequently at the hazard of his life. He, with the approbation of his friends, went to serve in the French army, and carried his little patrimony with him, which he soon dissipated at play. He was shortly after routed by that emulation which is natural to great minds, and applied himself to letters with unremitting ardour, till he became one of the most consummate scholars of his age. He is said to have translated Cæsar's Commentaries into Greek in the style of Herodotus, and to have written many Latin poems which were little inferior to the first productions of the Augustan age. He also left several manuscripts on physiological, political, and historical subjects, in Latin and French, which languages were as familiar to him as his native tongue. He could with facility dictate to three amanuenses at the same time, in different languages and on different subjects. He was also one of the best Scottish poets of the age. To all this we must add, that his personal beauty and accomplishments were equal to his mental superiority. He died at Pinkhill in Scotland, in 1691. The following works, which are all that have been printed, were published in the *Deliciæ Poetarum Scotorum*; Amstel. 1637. 12mo.: 1. *Epigrammata*, lib. ii. 2. *Heroïdum Epistolæ* XIV. lib. i. 3. *Hymni* XIV.

BOYLE (John), earl of Cork and Orrery, a nobleman distinguished by his learning, and genius, was the only son of Charles earl of Orrery, and was born on the 2d of January, 1707. He was educated at Christ-church College in Ox-

ford; but, as he himself declares, early disappointments, indifferent health, and many untoward accidents, rendered him fond of retirement, and of improving his talents for polite literature and poetry; of which last art he gave several excellent specimens. He also wrote a Translation of Pliny the Younger's letters, with various notes, for the service of his eldest son the Lord Boyle, in two volumes 4to. This was first published in 1751. The year following he published the Life of Dean Swift, in several letters, addressed to his second son Hamilton Boyle; and afterwards printed Memoirs of Robert Cary earl of Monmouth, a manuscript presented to him by a relation, with explanatory notes. He died in 1762.

BOYOLO, a town of Italy, in the duchy of Mantua, capital of a territory of the same name, subject to the house of Austria. It is fifteen miles S. W. of Mantua. Long. 10. 35. E. Lat. 45. 6. N.

BOYSE (Samuel), an English poet of some merit, but more worth recording as an example of the extreme distress consequent upon vice and folly in a literary character, was the son of the Reverend Joseph Boyse, a dissenting minister of eminence in Dublin. He was born in 1708; and after receiving his school education in his native city, he was sent to the university of Glasgow. Here his studies were interrupted by a love affair with the daughter of a tradesman in the place, as thoughtless as himself, whom he married before he reached his twentieth year. He took his wife and her sister to Dublin, and lived a dissolute life at his father's expence, till the death of this unfortunate parent. He then removed to Edinburgh, where in 1731 he published a volume of poems, which gained him reputation, and the patronage of some persons of rank; but a radical meanness of character, and fondness for low company and pleasures, prevented him from obtaining any solid advantages from the favour he acquired by his talents. On his removal to London, however, he carried with him recommendatory letters from the Dukes of Gordon and Lord Stormont, to Mr. Pope, the lord chancellor, and other persons of consequence; but his negligence and misconduct ruined every prospect. His talents, indeed, were merely those of a writer, and he was totally unfit to make his way by the powers of conversation, or any other mode of ingratiating himself with the respectable part of society. He soon fell into a state of extreme indigence, which he relieved as long as he could by begging with shameless importunity from the principal dissenters, and others to whom his father's name was known. What he obtained in this manner he squandered in selfish luxury, leaving his wife and child to starve at home. His industry was exerted in writing verses for the magazines, which he did with great facility, and for wretched pay. He pawned all his clothes, and even the sheets of his bed; and the manner in which at this period he courted the muse is thus described by an eye-witness: "He sat up in bed with the blanket wrapt about him, through which he had cut a hole large enough to receive his arm; and placing the paper on his knee, scribbled in the best manner he could the verses he was obliged to make." *Cibber, Lives of the Poets.* When he again appeared abroad, he occasionally supplied the want of a shirt by slips of white paper round his wrists and neck. Besides his poetry, he was employed in translating from the French, which he was capable of performing well; but it was his constant practice, after sending a sheet to the press, to pawn the original, and to repeat this as often as it was redeemed during the course of his work. Thus past his wretched and profligate life, in the vicissitudes of spunging-houses, garrets, and ale-houses. One of its principal changes was a residence

at Reading in 1745, on the invitation of Mr. D. Henry, proprietor of the Gentleman's Magazine, for the purpose of compiling an historical work on the events in Europe from the commencement of the Spanish war in 1739 to the rebellion in Scotland. Here his wife died, and he seems to have been reclaimed to a state of somewhat more decent manners and conduct. Indeed, the original impressions of a religious education were never effaced in him, and they aggravated the miseries of his life by the remorse with which his vicious indulgences were ever followed. He returned to London in declining health, married a second time a woman in low life, and died in May 1749, in obscure lodgings in Shoe-lane. His funeral was at the parish expence.

Boyse's poetical effusions, if collected from the periodical works, &c. in which they were inserted, would make several volumes; but this labour is certainly what they are not entitled to. A collection in two volumes was published during his life, but probably with little success. By much the most celebrated of his works is "Deity," a religious poem, probably first published about 1741. This was publicly praised by two very different writers: Harvey in his Meditations, and Fielding, in his Tom Jones; and it attracted notice enough to have passed through three editions in 1752. It is a piece without much plan or connection, but profuse in the splendid thoughts and images which belong to the subject, and generally harmonious and poetical in its diction, though with frequent inequalities. Boyse himself used to relate, that Pope, on being asked if he were not the author of it, disclaimed the work, but said there were many lines in it of which he should not be ashamed. Indeed, the style and versification seemed formed on that poet's manner, though certainly with very inferior powers. His other productions have a like mixture of poetical fancy and elevation with flatness and inaccuracy. The best of them are admitted into a very comprehensive collection of the poets of Great Britain, printed at Edinburgh, with biographical prefaces by Dr. Anderson. In Ogle's Canterbury Tales of Chaucer modernized, several appear under Boyse's name, and are executed with spirit.—We are indebted to the popular biographical work of Dr. Aikin for the foregoing particulars.

BRAAN, a river of Scotland, which descends from the hills of Perthshire, E. of Loch Tay, and falls into the Tay a little above Dunkeld. Upon this river is a grand scene, at a place called the Rumbling Bridge. Under an arch, thrown over a narrow chasm, between two projecting rocks, which almost meet, the whole waters of the river are precipitated in a fall of nearly fifty feet.

BRADESLEY, or BADESLEY, a village near Bromsgrove, in Worcestershire, where are the ruins of a superb abbey, founded by the Empress Maud, mother of Henry II.

BRADFORD (John), a divine, and martyr to the reformation, was born in the former part of the reign of Henry VIII. at Manchester in Lancashire. Being a remarkable penman and accountant, he became secretary to Sir John Harrington, who was several times employed by King Henry and his successor Edward VI. as paymaster to the troops abroad. Bradford at this time was a gay man, and to support his extravagance made free with the king's money; but being at last unable to support the reflection of his guilt, he determined to make restitution, and actually repaid the money. Quitting his employment of secretary, about the year 1547, he took chambers in the Inner Temple, and for some time studied the law; but finding in himself an inclination to preach the gospel, in the following year he removed to Catharine-hall in Cambridge, where he

applied with such uncommon assiduity to the study of divinity, that in a much shorter time than usual he was admitted to the degree of master of arts, and soon after made fellow of Pembroke-hall, Bishop Ridley, who, in 1550, was translated to the see of London, charmed with Bradford's application and zeal, now sent for him to the metropolis, ordained, and appointed him his chaplain. In 1553 he was also made chaplain to Edward VI. during which time he became one of the most popular preachers in the kingdom. Such a reformer was too dangerous to be suffered in the succeeding reign. Mary was hardly in possession of the crown, before Bradford's persecution began. He was first confined in the Tower for sedition, where he continued a year and a half; during which time he wrote several epistles that were dispersed in various parts of the kingdom. He was afterwards removed to other prisons, and at last brought to his trial before that infernal court of inquisition in which Gardiner sat as chief inquisitor, where he defended his principles to the last, in contempt of their utmost power. They condemned him to the flames; and he was accordingly burnt alive in Smithfield, on July 1, 1555. His works are: 1. Seventy-two letters, written to various people, whilst the author was in prison; printed in Bishop Coverdale's collection. 2. Ten letters, printed in Fox's acts and monuments. 3. Complaint of verity, 1559, 8vo. 4. Three examinations before the commissioners, and his private talk with the priests, with the original of his life, 1561, octavo. 5. Two notable sermons, 1574, octavo, 1631. 6. Godly meditations and prayers, 1614, 24to. 7. Treatise of repentance, 1622. With several translations and other pieces.

BRADSHAW (Henry), a Benedictine monk, was born at Chester, about the middle of the fifteenth century. Discovering an early propensity to religion and literature, he was received while a boy into the monastery of St. Werberg in that city; and having there imbibed the rudiments of his education, he was afterwards sent to Gloucester College, in the suburbs of Oxford, where for a time he studied theology with the novices of his order, and then returned to his convent at Chester; here, in the latter part of his life, he applied himself chiefly to the study of history, and wrote several books. He died in the year 1513, the fifth of Henry VIII. His poetry is not inferior to that of any of his contemporaries. His works are: 1. *De antiquitate et magnificentia urbis Eboracæ*. 2. *Chronicon*. 3. The life of the glorious virgin of St. Werberg. Printed Lond. 1521, 4to, in verse. The life of St. Werberg makes only part of this work; for it contains also a description of the kingdom of Mercia, life of St. Etheldred, the life of St. Sexburg, the foundation and history of Chester, and the chronicles of some kings. Possibly this work may include the two first. Bishop Tanner says, that he wrote a chronicle in English verse, extracted from Bede, Malmibury, Geraldus, and others. Probably this is the chronicle above mentioned.

BRADWARDIN (Thomas), archbishop of Canterbury, was born at Hartfield in Suffex, about the close of the thirteenth century. He was educated at Merton College, Oxford, where he took the degree of doctor of divinity; and acquired the reputation of a profound scholar, a skilful mathematician, and consummate divine. Authors are not agreed as to his first preferences. Pitts says he was professor of divinity at Oxford. They agree, however, in asserting, that from being chancellor of the diocese of London, he became a courtier and confessor to Edward III. whom he constantly attended during his war with France, assisting that victorious prince with his advice, animating the troops, and fervently praying for their success. After his return

from the war, he was made prebendary of Lincoln, and afterwards archbishop of Canterbury. He died at Lambeth in the year 1349, forty days after his consecration; and was buried in St. Anselm's chapel, near the south wall. His works are: 1. *De causa Dei*, printed in London, 1618, published by J. H. Savil. 2. *De geometria speculativa*, &c. Paris, 1495, 1512, 1530. 3. *De arithmetica practica*, Paris, 1502, 1512. 4. *De proportionibus*, Paris, 1495, Venice, 1505, folio. 5. *De quadratura circuli*, Paris, 1495, folio.

BRADY (Robert), born in Norfolk in 1643, was master of Caius College, Cambridge, regius professor there, and twice representative of that university in parliament. In 1685 he was made keeper of the records in the Tower, and was physician in ordinary to James II. He wrote, *An introduction to the Old English history*; *An history of England, from the time of the Romans, to the end of the reign of Richard II.*; and, *A treatise on English boroughs*. He died in 1700.

BRALLA, a town of Turkey in Europe, in Walachia, on the Danube. It has a castle, taken by the Russians in 1711; but afterwards restored.

BRALIO, a lofty mountain of the Alps, in the country of the Grisons. It separates the valley of Munster from the county of Bormio; and this part of the Alps is supposed to be the same which Tacitus mentions under the name of Jura Rhaetica.

BRAMHALL (Dr. John), archbishop of Armagh, was born of an ancient family at Pontefract in Yorkshire, about the year 1593. He was invited over to Ireland by the Lord-deputy Wentworth; and soon after obtained the archdeaconry of Meath, the best in that kingdom. In 1634 he was made bishop of Londonderry, which see he improved very much; but the greatest service he did to the church of Ireland, was by getting, with the deputy's assistance, several acts passed for abolishing fee-farms, recovering impropriations, &c. by which and by other means he regained to the church in the space of four years 30,000 or 40,000 l. a-year. In the convocation he prevailed upon the church of Ireland to unite in the same faith with the church of England, by adopting the thirty-nine articles of that church; and would willingly have introduced the English canons, but could only prevail on their accepting such as they deemed proper. Articles of treason were exhibited against him in the Irish parliament; and at the treaty of Uxbridge in 1644, the English parliament made it a preliminary article, that Bishop Bramhall, with Archbishop Laud, and others, should be excepted from the general pardon. He went abroad; but on the restoration was appointed archbishop of Armagh, primate and metropolitan of all Ireland, and was chosen speaker of the House of Lords. He died in 1663; and was the author of several works, which are collected in one volume folio.

BRAMPTON, a village in Herefordshire, one mile S. of Ross. Here are the ruins of a magnificent castle; and the gatehouse, which is entire, is a very curious structure.

BRAN (*Encycl.*) The scarcity of bread which has occurred of late years has led to many important experiments and discoveries. One of these is, that bran contains a very large portion of what is nutritious in wheat. The advantages to be derived from kneading flour for baking with bran-water instead of common water, were first made public in the following copy of a letter from the reverend Francis Haggitt, prebendary of Durham, to the lord bishop of Durham, dated Nuneham, February 18, 1800.

"If you were surprised, my lord, at receiving from me a

loaf of bread, your surprise will cease when I explain my reason for lending it; in doing which, I must enter into some details which, I am persuaded, will be far from uninteresting to your lordship. In the course of reading an old work of Rural Economy, I lately met with the following assertion, viz. that flour kneaded with bran-water will produce a more *substantial* bread, and a *greater quantity* of it, than is obtained by the common mode of baking. As the author says nothing more upon the subject, I conclude he wrote in a time of plenty; but the information (if it should prove correct) appeared to me of vast importance in these days of scarcity, and I determined to make the experiment without delay. Accordingly I caused four bushels of wheat (nine-gallon measure) to be ground, and nothing but the coarse bran taken out: the produce was four bushels and a half of flour, and 22 lb. of bran. About ten days ago, I boiled some of the bran, and kneaded a due proportion of the flour with the strained liquor, and the result of the experiment was so highly satisfactory, that I resolved to repeat it with the most strict attention, and the most scrupulous exactness. The details of this second experiment I am now about to communicate to your lordship; and I thought proper to send you also some of the bread produced by it, that you might form a judgment of its excellence. Yesterday I took 5 lb. of bran, boiled it, and with the liquor strained from it kneaded 56 lb. of flour, adding the usual quantity of salt and yeast. When the dough was sufficiently risen it was weighed, and divided into loaves; the weight, before being put into the oven, being 93 lb. 13 oz., or about 8 lb. 10 oz. more than the same quantity of flour kneaded in the common way; it was then baked two hours, and, some time after being drawn, the bread was weighed, and gave 83 lb. 8 oz.—loss in baking 10 lb. 5 oz. The same quantity of flour kneaded with common water loses about 15 lb. 11 oz. in the baking, and produces only 69 lb. 8 oz. of bread;—gain by my method 14 lb.; that is, a clear increase of one-fifth of the usual quantity of bread from a given quantity of flour. This increase, which at first appears astonishing (since only 5 lb. of bran were boiled), seems to depend on a combination of three causes;—first, the water in which the bran is boiled weighs half a pound more per gallon than plain water; secondly, owing to its glutinous consistence, it is less subject to evaporation by heat; thirdly, and principally, a greater quantity of it is necessary to make the dough; a bushel (or 56 lb.) of flour requires three gallons (i. e. 27 lb.) of plain water; but it imbibes three gallons and three quarts of bran-water, weighing 35 lb. 10 oz. The bran, after being used in this way, is equally fit for many domestic purposes, and I suspect even more nutritious for pigs and poultry than if given to them raw. I had the curiosity to weigh it after the liquor was strained off, and found that it had gained 12 lb. and if water incorporates with it in the same manner as it does with rice, why may not its nutritive power be increased in the same manner? The conjecture accords, at least, with Count Rumford's principle. But to return to my experiment: I have amused myself with the following calculation, which perhaps will make your lordship smile. The increase of bread, by this method, being a fifth from a given quantity of flour, the consumption of flour would be saved by it every sixth day, or sixty days in a year. Supposing then that the practice were universally adopted, and taking the consumption of flour in this kingdom at 200,000 bushels per day, the *annual saving* would amount to twelve millions of bushels, which, at the present price, would cost about ten millions sterling, and in ordinary times about four millions. Of the wholesomeness of the bread there can be no doubt;

of its flavour you will judge by the specimen I have sent you; and I can add from experience, that it keeps very well. After my *first* batch had been baked ten days, I put a loaf which remained of it into my oven for about twenty minutes, and, being suffered to grow cool again, it was cut, and had every appearance of new bread; nay, we even thought it better than it was at first. I am," &c.

This was published by the society for bettering the condition of the poor in London, but as the trials of this method fell short in some instances, it was followed by these "curatory observations on the use of bran in making bread."

"Most of the objections to the use of bran in the making of bread, appear to be founded on a presumption, that no mode of preparation will make any difference in the degree of nutriment to be derived from food. Though the subject is as yet but little understood, still we have gone far enough to ascertain the fact, that in most kinds of grain, some increase of the ordinary nutritive power may be produced by culinary process. The very making bread affords an example of this increase. In rice it is very great; and in barley-meal, particularly when used in soup, its increased power of nutriment may be extended to a surprising degree. It is now well known that rice, when increased by water to a solid substance of five times its original weight, or by the addition of milk to eight times what it originally weighed, is converted from a hard indigestible grain into a wholesome nourishing food.

"It appears from chemical experiments, and particularly from those made by a very able man, the late Dr. Anderson, the minister's father, and mentioned in the House of Commons, that wheat contains 'an essential oil of a most beneficial quality; and that *almost the entire of the oil is confined to the BRAN.*' These words are copied from the account given in the public papers, with a view of suggesting to the reader's mind, whether (if we can be persuaded that the result of these chemical experiments is just, and that there really is a *very nutritious essential oil in the bran* of wheat) that circumstance alone will not at once explain the cause of the increase, and demonstrate the value of the discovery.

"The use and application of Mr. Haggitt's process is now considerably extended, by the addition of the whole of the boiled bran to the dough. This has been adopted, for the last month, in some families, in the making of all their bread for common use; and the bread so made is perfectly good and sweet, and (as far as one may at present judge) quite as *wholesome and nourishing* as any other bread.

"The fact seems to be, that the boiling of the bran softens it, and divests it of its dry husky quality; thus preparing the nutritive part, the *essential oil*, for food. The increase in the quantity of bread by the addition of bran to 56 lb. of flour, is from 34 lb. to 36 lb. of bread beyond what is produced in the common mode. In one instance, the 56 lb. of flour with 14 lb. 14 oz. of bran, has produced 106 lb. and a half of bread, weighed the next day when cold; above half as much again as what is commonly made, and about twice the quantity that is produced from a bushel of wheat when merely the fine white flour is used. This improvement (if adopted only in the families of gentlemen and farmers, and in public institutions) would have an instantaneous effect in reducing the price of flour, and in baffling the arts of the *speculator*; and if universally adopted throughout the whole kingdom, the saving from it would be equal to one-third of our consumption; or to the annual amount of as much wheat as, with the same economy, would supply the whole kingdom for six months;—of as

much wheat as one thousand ships would import to our shores, if the rest of Europe were glutted with grain, and the millions which it would cost were no object of expenditure.

"There is not the most distant idea of pressing upon the poor any variation in their habits; particularly with respect to bread, now become their chief article of subsistence. But it is conceived, that, in the present crisis, the rich are *inexcusable*, if they neglect to attend to every practicable saving that can be made in the consumption of wheat corn. Whether the high price of bread is occasioned by actual scarcity, or by baneful monopoly, or whether (as some think) it owes its existence to both causes, it is one of our first duties to adopt every just and legal expedient to keep down the price of corn, and to husband this essential article of life for the benefit of our poor and necessitous brethren. Something has been already done, and with great and good effects: but it is hardly possible to conjecture what the price of bread would have been at this day, and how insupportable might have been the pressure upon the poor, if no measures had been taken for their relief and protection. When, therefore, we find any persons openly opposing those measures, or clandestinely endeavouring to diminish their effects, it is not very easy to divest the mind of the idea, that they have an interest in the increase of the evil, and are taking advantage of a public calamity."

BRANCASTER, a village of Norfolk, to the E. of the promontory of St. Edmund's-chapel, was anciently Brano-dunum, a considerable Roman city, where ancient coins have been frequently dug up.

BRANDELS, a town of Bohemia, on the river Elbe, 10 miles N. E. of Prague. Long. 14. 45. E. Lat. 50. 15. N.

BRANDT (Gerard), a learned divine of the reformed religion, was born at Amsterdam in 1626, and was successively minister in several places of the Netherlands. He wrote some works which are esteemed, particularly *The History of the Reformation of the Netherlands*, 4 vols. 4to.; and *The Life of Admiral Ruyter*; both written in the Flemish tongue. He died at Rotterdam in 1685.

BRASSA, a small island to the N. of Scotland, one of the Shetland islands. Between this and the principal island, called the Mainland, is the noted Brassa Sound; where a thousand sail may at once find commodious mooring.

BRATTON-CASTLE, on the E. side of Wexbury, in Wilts, the remains of a strong fortification, where the Danes held out against the English twenty-four days. It is seated on a hill, and is encompassed by two ditches, within which several pieces of old iron arms have been dug up.

BRAUBACH, a town of Germany, in Weteravia, with a castle, seated on the Rhine, eight miles S. of Coblenz.

BRAUN (George), in Latin *Braunius*, archdeacon of Dortmund, and dean of Notre Dame in Gradibus, at Cologne. He published a Latin oration against the priests guilty of fornication; he also wrote the *Life of Jesus Christ*, that of the Holy Virgin, and a controversial treatise against the Protestants; but his chief work is the *Theatrum Urbium*, in several volumes folio.

BRAY, a village of Berkshire, famous in song for its vicar, who, having been twice a Papist, and twice a Protestant, in the reigns of Henry VIII., Edward VI., Mary, and Elizabeth, and therefore taxed with being a turncoat, said, he always kept to his principle, which was, to live and die vicar of Bray. It is seated on the Thames, one mile from Maidenhead.

BRAZIL, erroneously spelt BZAZIL in our original article. See BRASILE.

BREAD (*Encycl.*) The following we add to our original article; viz. a method of fermenting a large body of flour with a small quantity of yeast, invented by Mr. James Stone, of Amport, in Hampshire. Suppose you want to bake a bushel of bread, and have not more than one tea-spoonful of yeast; put the flour into a kneading-trough, and take about three quarters of a pint of warm water, and the tea-spoonful of yeast, which if thick and steady the better; put it into the water, and stir it until it is thoroughly mixed; then make a hole in the middle of the flour large enough to contain two gallons of water; pour in your small quantity of yeast, mixed with water as above; then take a stick about two feet long, and stir in some of the flour until it is as thick as you would make batter for a pudding; strew some of the dry flour over it, and let it rest for about an hour, for in that time you will find this small quantity raised so that it will break through the dry flour which you shook over it; then pour in about a quart more of warm water, and stir it with your stick as before, and leave it for two hours more; you will find it rise, or break through the dry flour again; then add three quarts or a gallon more of warm water, and stir in the flour again; and in about three or four hours mix up the dough, and cover it warm. In four or five hours more you may put it in the oven, and you will have as light bread as though you had used a pint of yeast. It does not take above a quarter of an hour more time than the usual way of baking; for there is no time lost but that of adding water three or four times. When you find your body of flour sponged large enough, before you put in the rest of the water you should, with both hands, mix that which it sponged and the dry flour altogether, and then add the remainder of warm water, and your dough will rise the better and easier. The author asserts, that he constantly bakes this way: in the morning, about six or seven o'clock, he begins his first operation; in an hour's time he adds more water, in two hours more a greater quantity, about noon he makes up the dough, and about six in the evening it is put into the oven; and that he has always good bread, never heavy nor bitter. He adds, that the cause of heavy bread is not owing to the smallness of the quantity of yeast used, but to its not being used properly, for yeast is to flour what fire is to fuel—a spark of the latter will kindle a large body by only blowing it up, so a thimble full of the former, by adding warm water to it, will raise or sponge almost any quantity of flour.

This heavy bread is not owing to a deficiency in the quantity of yeast used, but to a deficiency of fermentation; for, if the dough be put into the oven before it is ripe, heavy bread is the natural consequence. In regard to the difference of seasons, he prescribes that in summer the water should be blood-warm, and in cold frosty weather as warm as you can bear your hand in it without making it smart; taking care in winter to cover up your dough.

In the British Magazine for 1800, we are taught how to make bread without yeast, as practised in Hungary.

Boil two good handfuls of hops in four quarts of water; pour this upon as much wheat bran as the liquor will moisten. To this add four or five pounds of leaven: mix the whole together, so as to unite the parts. Put this mass into a warm place for twenty-four hours; then divide it into pieces about the size of an hen's egg, which should be dried in the air, but not in the sun, and then will keep six months.

For six large loaves, six good handfuls of this broken small, and dissolved in eight quarts of warm water, and poured through a sieve into one end of the bread-trough; and three quarts more of warm water are poured through the

sieve after it, and what remains in the sieve well pressed out. This liquor must be mixed up with as much flour as will make a large loaf. This to be strewed over with flour, the sieve with its contents put upon it, and the whole covered up warm. When its surface begins to crack, fifteen quarts of warm water, in which six handfuls have been dissolved, must be poured through the sieve upon it, and the necessary quantity of flour added, and mixed and kneaded with the leaven; this must be covered up warm and left about an hour, then made up into loaves, which are kept in a warm room half an hour, and after that put into the oven till sufficiently baked.

"The leaven," says Mr. Holt, of Walton near Liverpool, who relates this process, "may be made in large quantities. By large loaves, I find by enquiry, in our own practice, is meant twelve pounds of flour, and to which four ounces of leaven in a dried state is a proper quantity."

The following account of *substitutes for flour or bread* we extract from an excellent contemporary work, entitled *The Domestic Encyclopædia*.

We have, in the preceding analysis, as well as on former occasions, mentioned various substances which might advantageously be employed in the manufacture of this indispensable article of human sustenance; independently of the different kinds of grain and roots that are already made subservient to this beneficial purpose. In order to exhibit a distinct view of the most promising substitutes, whether indigenous or exotic, and especially such as have actually been used, on the authority of credible evidence, we shall here divide them into three classes, having, in the course of the work, given a more particular account of each article, in its alphabetical order.

I. *Farinaceous Seeds*:—Wheat-grafs, or *Triticum Spelta*; millet, or *panicum milaceum*; common buck-wheat, or *polygonum fagopyrum*; Siberian buck-wheat, or *polygonum tataricum*; wild buck-wheat, or *polygonum convolvulus*; wild Fescue-grafs, or *Festuca fluitans*; Maize, or Indian Corn, the *Mays Zea*; Rice, or *Oryzafativa*; Guinea Corn, or White Round-seeded Indian Millet; the *Holcus Sorghum*, L.; Canary-grafs, or *Phalaris Canariensis*; Rough Dog's-tail Grafs, or *Cynofurus echinatus*; Water Zizany, or *Zizania aquatica*; Upright Sea Lime-grafs, or *Elymus arenarius*; Sea-reed, Marram, Helme, or Sea Mat-weed, the *Calamagrostis*, or *Arundo arenaria*.

The following mealy fruits, however, deserve a decided preference over many of the preceding: viz. Water Caltrop, or the fruit of the *Trapa natans*, L.; Pulse of various kinds, such as Peas, Lentils, Beans, and the seeds of the Common Vetch, Fetch, or Tare-acorns, and especially those of the *Quercus cerris* and *scutulus*; the seeds of the White Goose-foot, Common Wild Orange, or the *Chenopodium album*; the seeds and flowers of the Rocket, or *Brassica eruca*; the seeds of the Sorrel, or *Rumex acetosa*; of the different species of Dock, or *Lapathum*; of the Yellow and White Water-lily; or the *Nymphaea lutea* and *alba*; of the Corn-spurrey, or *Spergula arvensis*; of the Spinnage, or *Spinachia oleracea*, L.; of the Common Gromwell, or Graymill, the *Lithospermum officinale*; of the Knot-grafs, or *Panicum ariculare*; the Beech-nut; and even the husks of the Linseed, &c.

II. *Farinaceous Roots*: namely, those of the Common and Yellow Bethlehem Star, or *Ornithogalum luteum* and *undellatum*; of the well-known Yellow Asphodel; of the Wake Robin, or *Arum maculatum* (after being properly dried and washed); of the Pilewort, or Lesser Celandine, the *Ranunculus ficaria*; of the Common Dropwort, the *Spiraea filipendula*; of the Meadow-sweet, or *Spiraea ulmaria*;

of the White Bryony, or *Bryonia alba*; of the Turnip rooted Cabbage, or *Napobrassica*; of the Great Bistort, or Snake-weed; likewise of the Small, Welch, or Alpine Bistort; of the Common Orrobis, or Heath-pea; the Tuberous Vetch; the Common Reed; both the Sweet-smelling and Common Solomon's Seal; the Common Corn-flag, or *Gladiolus communis*; the Salt-marsh, Club-rush, or *Scirpus maritimus*, &c.—Indeed, some authors also include in this list the roots of the *Mandragora*, *Colchicum*, *Fumaria bulb*, *Helleborus acconitifol*, and *nigr*. *Lilium bulbif*, and many others; but for these last mentioned we have not sufficient authority.

III. *Fibrous and less juicy Roots*: viz. those of the Couch-grafs, or Creeping Wheat-grafs; the Clown's, or Marsh Wound-wort; the Marsh Mary-gold, or Meadow Bouts; the Silver-weed, or Wild Tansey; the Sea Seg, or *Carex arenarius*, &c.

Having thus stated the various substitutes for bread, which either have already been adopted with success in this country, or which might, in times of real scarcity, be easily converted into proper nutriment, we cannot better conclude this article than in the words of Arthur Young, esq. who, in his Observations on the late Royal Proclamation, recommending frugality in the consumption of corn, as one of the surest and most effectual means of alleviating the present pressure of the times, expresses the cause of the unfortunate poor, nearly in the following words: Every master or head of a family is in duty bound to second, without compulsion, the humane views of the legislature. Hence, bread made of the whole produce of the wheat, excepting only seven pounds of the bran in each bushel, and adding one-fourth or third part of a substitute, would probably be the most effective saving. If the consumption of the whole kingdom be computed at 8,000,000 of quarters in twelve months, this saving on all the wheat consumed in nine months would be 700,000 quarters, which would feed 875,000 persons, at the ordinary consumption of one quarter a head per annum; and probably be equal, under the present restrictions, to afford food to 1,000,000 of people for the next nine months. Further, if the saving of oats to the supposed number of 500,000 horses of luxury, be calculated at one bushel per week, this would, in nine months, amount to 18,000,000 of bushels; or sufficient to support 1,000,000 of persons for the same period of time, allowing to each not less than twenty-five bushels per annum. With due deference to Mr. Young's statistical information, however, we beg leave to doubt whether 500,000 fat horses, crammed on the food of man, move about the kingdom; though it must be acknowledged, that *pleasure horses* are spectacles of envy to the starving poor—abominable and scandalous spectacles, which, in times like these, ought to be removed from the view of those whose miserable children might be fed on the corn thus saved."

BREMENWOERD, a town of Germany, in the duchy of Bremen; formerly a fortified town; but, since the year 1683, the fortifications have been demolished. It is 27 miles N. of Bremen. Long. S. 45. E. Lat. 53. 33. N.

BRENT, a river of Somersetshire which rises in Selwood Forest, on the edge of Wilts, and receiving several rivulets, particularly one from Shepton-Mallet and Wells, falls into Bridgewater Bay.

BRENTE, a river which has its source in the bishopric of Trent, and falls into the gulph opposite Venice.

BRESLE, a river of France that has its source above Amale; separates the late provinces of Normandy and Picardy, waters Eu, and then falls into the English Channel.

BRESSUIRE, a town of France, in the department of

the two Sevrès and late province of Poitou, with a college, 35 miles N.W. of Poitiers.

BRETAGNE, a late province of France, 150 miles in length, and 112 in breadth. It is a peninsula, united on the E. to Anjou, Maine, Normandy, and Poitou. The air is temperate, and it has large forests. It is formed into five of the new departments of France; namely, the North Coast, Finistère, Ille and Vilaine, Lower Loire, and Morbihan.

BRETEUIL, a town of France, in the department of Lower Seine and late province of Normandy, seated on the river Iton, 15 miles S.W. of Evreux. Long. 1. o. E. Lat. 48. 56. N.

BREWING (*Encycl.*). In March, 1783, Mr. W. Ker, of Kerfield, Tweeddale, received the king's patent for his improvement in brewing ale, beer, porter, and other malt liquors, so as to have a considerable portion of hops, to produce the liquors of a superior flavour and quality, and render them less liable to become acid or putrid. The steam which arises from the boiling copper, is known to be strongly impregnated with the essential oil of the hops, in which their flavour consists. Instead, therefore, of allowing it to escape and evaporate, as it does in the common mode of brewing, Mr. Ker contrives to preserve and condense it, by means of a winding-pipe fixed to the copper, similar to the worm of a still, or by a straight pipe passing through cold water, or any other cooling medium. The oil and water, thus obtained, are returned into the worts, when boiled; or the oil, after being separated from the water, along with which it had been exhaled, is returned into the worts after they are boiled; and the watery part, which, after the oil is separated, still continues impregnated with the aromatic taste and bitter of the hop, is returned into the next copper or boiling vessel, and so on, from one copper or boiling vessel into another. By this process, a considerable part of the hop and flavour, which is lost in the ordinary mode of brewing, is preserved; the flavour of the liquor is improved by the preservation of the finer parts of the aromatic oil; and the ale and beer are better secured from any tendency to acidity or putrefaction, and therefore must be fitter for home consumption and exportation.

In June 1790, Mr. John Long, of Ireland, obtained a patent for an improvement, which he calls *an entire new method, in all the essential parts of brewing good malt liquor*. Though his method, in one respect, is similar to that adopted by Mr. Ker, yet, as it comprehends the whole process of brewing, we shall lay it before our readers, nearly in the words of its author.

1. For the better extracting the virtues of malt, place near a mash-tun a shallow copper, or other vessel, that will readily heat, the curb of which to be on a level with the run, and to contain from two to six hogheads, according to the dimensions of the tun, more or less; and, at the lower end of the copper, have a cock, from two to five inches in diameter, to conduct the heated liquor from the copper into a tube, which passes down the external part of the tun, and enters it through an aperture about six inches from the bottom; then forming two revolutions, more or less, through the body of the tun, and communicating its heat to the wort as it passes through the tube; and then, at a convenient distance from the place where it first entered, it runs from the tun into a cistern or tub, situate as near as convenient to the copper or heating-vessel. In the tub or cistern is to be placed a pump, for the purpose of conveying the cooler liquor back to the copper or heating-vessel again, there to receive the heat of 208 degrees, more or less (which it will require after the first half hour), and then convey it through

the mashing-tun, as before, and in the same manner, as long as the working-brewer may think necessary, to raise the mashing-tun to any degree of heat required. By adhering to the foregoing process, the first liquor may, with the greatest safety, be let upon the malt, from 20 to 30 degrees lower than the present practice; by which means it operates with gentleness, opens and expands the malt, and prepares it for the reception of sharper or warmer liquor, so as to extract the whole of the saccharine quality from the malt. By the foregoing method, the mashing-tun, instead of losing its first heat (which it does by the present practice), continues to increase in heat every moment, by conveying the heated liquor through the tube into the tun; by which means, at the end of two hours, the working-brewer can have the tun brought to any degree of heat he shall think best suited to the different qualities of the malt. Persons who would wish to save expence, may heat their mashing-tun at the side or bottom, by a large piece of metallic substance made fire-proof, and fixed therein; which, in some degree, will answer the end proposed, but with great trouble and delay.

2. To prevent the wort from receiving a disagreeable flavour, while in the under-back, a tube must be placed at the cock of the mashing-tun, to receive the wort as it comes off, and convey it to a great cistern, or refrigerator, which is supplied with a stream of water. The wort, passing through that medium in a spiral tube, soon loses that heat which so often proves prejudicial to the brewer in warm weather: it is then poured from the tube into a vessel in which pumps are placed, to return the wort into the copper, for the purpose of boiling off.

3. As the great object of long boiling the wort is remedied, by this invention of taking the extract from the hops in a separate manner from the worts, Mr. Long boils the latter no longer than from fifteen to twenty minutes; and by pursuing that method, he saves much time and fuel, and regulates the length of time accordingly.

4. He steep his hops the preceding day to which they are to be used, in a copper or other vessel, with as much fluid, blood warm, as will cover the hops; where it is to remain over a slow fire at least fourteen hours, close covered; the copper, at the tenth hour, not to be of a greater heat than 175 degrees, continuing slow until the last hour. Then he brings the copper gradually to a simmer, or slow boil; in which state he suffers it to remain about ten minutes, and then runs off the fluid; and this he does at the same time the first wort is boiled off, that they may both pass together through the refrigerator, into the fermentation or working-tun. After the foregoing operation, he covers the hops again with other liquor, brings the copper to boil as soon as convenient, and lets it remain in that state a considerable time, until the second worts are boiled off. Then he passes the hop-fluid with the wort, the same as in the first instance; and, if there is a third wort, he boils the hops a third time with small worts, and drains off the liquid as before; by which means he gradually obtains the whole of the essential oil and pleasant bitter from the hops, which is effectually preserved in the beer.

5. When the wort is boiled off, it is conducted from the cock of the copper or boiler into a tube of a proper dimension, which passes the wort from the cock to the large cistern or refrigerator, and there performs several revolutions, in a spiral manner, through the same tube; which is immersed in a constant supply of cold water, where it loses the greatest part of its heat in a short time, and thence continues a straight course through the tube, a little elevated, and some suitable length, placed in brick-work, until it meets a small

refrigeratory, supplied with colder water from a reservoir made for that purpose, at the head of the works; whence a continual stream runs on the surface of the tube down to the great refrigeratory, cooling the wort as it passes, in order to enable the working-brewer to send it into the backs, or working-tuns, at whatever degree of heat he may think proper. The tube may be made of lead, or any other metallic substance.

6. To enable him to brew in the warm summer months, Mr. Long sinks the backs, or working-tuns, at least to a level with the ground, but if deeper the better, and covers them closely by an arch made of bricks, or other materials, that will totally exclude the atmospheric air. He then places them as near as possible to a spring or sand-drain, as their depth will naturally draw the water thence, which must be so contrived as to pass or flow round the backs or tuns. Next, he introduces a large tube, which passes through the tuns, and keeps the wort several degrees lower than can possibly be done by the present practice; by which means he produces a complete fermentation, even in the dog-days.

7. In cold or frosty weather, if the tun and backs should lose the first heat, intended to be conducted through the process by the foregoing method, a supply of warm or boiling water may be conveyed by the tube, which passes through the body of the backs or tun, communicating its heat, which rises to any degree the working-brewer shall think proper: by pursuing this method, in the coldest season, a fermentation may always be procured.

In February 1798, Dr. Richard Shannon obtained a patent for his method of improving the processes of brewing, distilling, boiling, evaporating, raising, applying, and condensing steam or vapour from aqueous, spirituous, saccharine, saline, and other fluids. The principle of his invention consists chiefly in the following arrangement: By covering and making the mash-tun air-tight, and casing it round, under and over, with a steam-tight casing, so that, during the mashing and soaking of the malt and grain used, the heat may be preserved, or raised and regulated to any pitch, by the application of steam, both in and between the casing of the mash-tun; by which contrivance, the whole of the *farina* and substance of the grain may be as effectually extracted in one, or at most in two mashings, as is now done in three or four. The steam, conducted by a proper tube or pipe, is to be also employed for sweetening and cleansing all the brewing, distilling, and vinegar-making utensils, and casks employed in each, &c. so as in future to prevent furring, foxing, &c. even in the inmost crevices.

In June 1798, the same patentee, in partnership with Mr. Robert Burnett, of Vauxhall, procured another patent, for the discovery of a principle and invention of a method of improving the process of fermentation, by which porter, beer, ale, malt and molasses wash, wine, cyder, and all other saccharine and fermentable fluids, may be conducted with certainty through the vinous process of fermentation in mild, warm, hot, and cold weather, without being materially injured as heretofore, by the different changes of the atmosphere, &c. But as these improvements depend on the application of an expensive *pneumatic apparatus*, which does not appear to us adapted to the use of families, we refer the reader to the tenth and fourteenth volumes of the *Repository of Arts and Manufactures*, where he will find a detailed specification of both patents.

The last patent we shall mention, is that of Mr. Thornton, of East Smithfield; which, being dated April 15, 1778, is earlier than either of the preceding, and does not strictly relate to the process of brewing, as his invention consists in a new method of *reducing malt and hops* to an essence or ex-

tract, from which beer may be made either at sea or in distant countries. The whole is managed by the transmitted heat of compressed vapour of boiling water, and a proper apparatus for that purpose. This apparatus may be made of iron, tin, or copper: it consists of a boiler of any dimensions, a double vessel, and conducting tubes. The double vessel consists of one vessel placed within another, and fitted tight at their rims. The upper vessel forms the upper part of the under vessel, and contains the liquor to be evaporated. The under vessel is every-where inclosed, except at an aperture communicating with the boiler, and at another aperture communicating with the conducting tubes; and is constructed so as not to allow any part of the vapour condensed into drops within it to escape, except back again into the boiler: it is not so extensive as to act as a common refrigeratory, and yet is capacious enough to prevent the liquor boiling over. The aperture communicating with the boiler is large enough to freely admit the vapour from the boiler into the under vessel; and the aperture communicating with the conducting tubes is of a proper size to allow of the vapour in the under vessel being compressed, to a degree capable of transmitting to the liquor to be evaporated a proper heat, and at the same time to serve as a passage for more heat than is necessary to keep up that degree of compression. The conducting tubes are to convey this superfluous heat or vapour, to be used for farther purposes, or immediately out of the building.

Those of our readers who are desirous of further information on the subject, may consult the last edition of *Philosophical Principles of Brewing*, by Mr. Richardson, of Hull; a work of acknowledged merit, and practical utility.

BRICKS (*Encecl.*). In addition to what has been said under that article, it is necessary briefly to notice the patent of Mr. Sandford, of Hartford, in Connecticut, North America. On the 20th of January, 1800, he received the king's patent for a method communicated to him by Dr. A. Kinley, of the same place, for manufacturing bricks, tiles, and pottery-ware in general, and for discharging the moulds used therein. The principle of this invention is amply detailed in the specification, a copy of which is inserted in the 13th volume of the *Repository of Arts*, &c. p. 148, and following, illustrated by a plate. From the subjoined extract, however, the reader may form a tolerable idea of the nature and utility of this invention, which chiefly consists in a newly-contrived apparatus, for expediting the tedious process of making bricks, and other earthen-ware. The moulds used in this machine may be various, either with false or fixed bottoms, sides, or ends; or open at top, bottom, sides, or ends: but such as are used by the original inventor, Dr. Apollon Kinley, are the most convenient, and contain from one to six bricks in each mould, according to their size. Each frame, or mould, has a fixed bottom; and when more than one brick is moulded in the same frame, or mould, the division between them is made in three parts. The middle piece is made a little tapering, and serves as a wedge to confine the other two parts in their places, while the mould is filling; and, when discharged, the wedge or middle part is lifted out, which liberates the other two: by that means the moulds are discharged with ease. Moulds for large single bricks and ornaments, have one side, bottom, or end, taken off by means of steady pins, joints, or cramps, which will confine them while filling, and may be opened in any way that will allow them to discharge. The moulds may be made of metal, or of wood and lined with metal. The foot of the spindle may stand in, and be supported by a bar, made fast to the platform, at the bottom of the tub; or it may be supported by a collar, inclosing the spindle above the semi-circular sections, and made fast to the tub; by that mean the whole space under the forcers will be open, and free to form

bricks and ornaments of any size or shape. The friction-rollers are placed in a frame which may be raised or lowered by screws, according to the thickness of the bricks or ornaments: and, by means of the screws, the moulds may be liberated from any foul matter that may obstruct their passage through the machine. Clay for bricks, ornaments, potters-ware, and tiles, of all descriptions, may be tempered and moulded, of any size or shape, in the above-described apparatus. The clay being put into the tub is, by the action of the sections, perfectly tempered and moulded at the same time, &c.

The reasons why the modern bricks are so very inferior to those made by the ancients; which, in their monuments, after having withstood the ravages of time for many centuries, are still in perfect preservation, appear to be principally the following: in the present expensive state of society, the price of manual labour, though far from being adequate to the pressure of the times, is so considerable, that the manufacturer is under a kind of necessity to make choice of those materials which are the cheapest and most easily procured: thus, a mixture of the most improper earths and clay is often employed in the manufacture of bricks, without reflecting that two bodies specifically different in their nature, must necessarily require different degrees of heat in the kiln, in order to produce an uniform hardness, and an intimate combination of parts. On the contrary, the ancients not only selected the very best sort of clay, but combined it with other ingredients well adapted to form the most complete cement, such as coarsely powdered charcoal and old mortar added to the clay. Of this description, likewise, were the bricks which Professor Pallas, on his last journey through the southern provinces of Russia, discovered in the stupendous Tartar monuments, and which would scarcely yield to the force of a hammer. Another advantage peculiar to the bricks and tiles manufactured by our forefathers, arose from their method of burning them uniformly, after being thoroughly dried. There is no doubt, that if all the defects before pointed out were removed, and modern brick-makers were to pay more attention to their art, by digging the clay at proper seasons, working it better than is done at present, bestowing more care on the burning of them, and particularly by making them much thinner than what is prescribed by the standard form, we might produce bricks of an equal strength and durability to those of our less enlightened, but more provident and industrious, ancestors.

BRIDGE (*Encycl.*). A patent was granted to Mr. Nath. of Dover-street, in 1797, for an invention somewhat similar to that across the Wear. He provides hollow masses of cast or wrought iron, which are to be filled with earth, sand, &c. and have the appearance of solid bodies. According to this plan, the arch of the bridge is formed by hollow frames, or boxes, each consisting of four sides and a bottom. These boxes, after being properly arranged in the manner fitted by the patentee, are then to be filled with sand, stones, &c. by which means the arch becomes like one solid body cased with iron. A further explanation of this invention may be seen in the 6th volume of the *Repertory of Arts and Manufactures*.

The latest patent for bridges, was that granted in June 1800, to Mr. Samuel Wyatt, of Chelsea College, for his invention of a new method of constructing bridges, warehouses, &c. without the use of wood, as a constituent part. The principle of his discovery consists in the combination of pipes, tubes, or hollow pieces of cast-iron, in a longitudinal direction, and plates or pieces of the same material, having sockets in them to receive the ends or shoulders of the pipes, placed transversely, and extending from one side of the bridge to the other, so that when the requisite number of pipes, &c. are put together, they form the arch so firmly as not to re-

quire the aid of screws, bolts, cramps, or any iron fastening whatever; but the joints should be closed with lead or cement.

When applied to warehouses and other buildings, Mr. Wyatt's invention consists in forming arched ceilings of cast-iron, and supporting them and the floors by hollow pillars, or cylinders, of the same material. It ought to be remarked, that the number of sockets in the transverse iron plates, should always correspond with the number of ribs in the arch.

BRIDGE-END, a town of Glamorganshire, with a market on Saturday. It is seated on the river Ogmere, which divides it into two parts, joined by a stone bridge. It is seven miles W. by N. of Cowbridge, and 178 W. of London. Long. 3.38 W. Lat. 51.30. N.

BRIENTZ, a lake of the canton of Bern, in Switzerland, three leagues long and one broad. It is well stored with fish; with a very delicate kind especially, which is peculiar to this lake, and which is salted and dried like red-herrings. The river Aar runs through the whole extent of this lake, and unites it to that of Thun. Beside the Aar, the lake of Brientz receives the Lutschinen. See *LUTSCHINEN*.

BRIEY, a town of France, in the department of Moselle and late province of Lorraine, seated near the river Manie, 30 miles N.E. of St. Michael.

BRIGANTIA, or **BRIGANTIUM** (anc. geog.), a town of Vindelicis; now *Bregentz*, in Tyrol, at the east end of the lake of Constance. Another *Brigantium* in the Alpes Cottiae; which last is probably Briançon, a town on the borders of Dauphiny.

BRIGANTINUS LACUS (anc. geog.), a lake of Rhatia, or Vindelicis, which Tacitus includes in Rætia. Ammian calls the lake *Brigantia*. It took its name either from the Brigantii, the people inhabiting on it, or from the adjoining town. Now the lake of *Constance*, or *Bodensee*.

BRIGANTINUS PORTUS (anc. geog.), a port of the hither Spain; so called from Flavius Brigantium. Now *El Puerto de la Coruña*, commonly the *Groynne*.

BRIGGS (William), an eminent physician in the latter end of the 17th century, was the son of Augustin Briggs, esq. four times member for the city of Norwich, where our author was born. He studied at the university of Cambridge; and his genius leading him to the study of physic, he travelled into France, where he attended the lectures of the famous anatomist M. Vieuissens, at Montpellier. After his return, he published his *Ophthalmographia* in 1676. The year following he was created doctor of medicine at Cambridge, and soon after was made fellow of the College of Physicians at London. In 1682 he quitted his fellowship to his brother; and the same year, his *Theory of Vision* was published by Hooke. The ensuing year he sent to the Royal Society a continuation of that discourse, which was published in their Transactions; and the same year he was, by King Charles II., appointed physician to St. Thomas's hospital. In 1684 he communicated to the Royal Society two remarkable cases relating to vision, which were likewise printed in their Transactions; and in 1685 he published a Latin version of his *Theory of Vision*, at the desire of Mr. Newton, afterwards Sir Isaac, professor of mathematics at Cambridge, with a recommendatory epistle from him prefixed to it. He was afterwards made physician in ordinary to King William, and continued in great esteem for his skill in his profession till he died, September 4th, 1704.

BRIMPSFIELD, a village of Gloucestershire, on the river Stroud. Here are the foundations of a castle long destroyed. It had also a nunnery. The river Stour rises here, and the turnpike road from Gloucester to Cirencester (the Ermine-street of the Romans) extends along the side of this parish, and divides it from Cowley. It is seven miles from Gloucester.

BRINN, a strong town of Moravia, where the assembly of the states meet. It was invested by the Prussians in 1742; but they were obliged to raise the siege. It is seated at the confluence of the Zwittia and Swart, 53 miles N. of Vienna, and 27 S.W. of Olmütz. The castle of Spielberg is its principal defence, and is seated on an eminence. Long. 16. 49. E. Lat. 49. 6. N.

BRISSAC, a town of France, in the department of Maine and Loire and late province of Anjou, seated on the river Angre, 13 miles S. of Angers. Long. 6. 27. W. Lat. 47. 20. N.

BRISTOL (*Encycl.*). The "crops" described in that article as "standing in the College Green," should not have been mentioned. It was removed several years ago, and is now in the garden of Sir Richard Hoare, at Sturton.

BRITAIN, New, an island to the north of New Guinea. By whom this land was first discovered is uncertain. Dampier first failed through the strait which separates it from New Guinea; and Captain Carteret, in 1767, failed through another strait which divides it into two islands, the northernmost of which he called *New Ireland*. New Britain lies in long. 152. 49. E. and lat. 4. 0. S. The shores of both islands are rocky, the inland parts high and mountainous, but covered with trees of various kinds, among which are the nutmeg, the cocoa-nut, and different kinds of palm. The inhabitants are black, and woolly-headed, like negroes, but have not their flat noses and thick lips.

BRITANNICA, in botany, the trivial name of the *rumex* aquatics. See *RUMEX*.

BRITANNICUS, son to the Emperor Claudius by Messalina, was excluded from the empire after his father had married Agrippina; who put her son Nero on the throne, and caused Britannicus to be poisoned, A.D. 55.

BRITANNICUS, an Italian, one of the best humanists of the 15th century, was born at Brescia. He published notes on Perſius, Juvenal, Terence, Statius, and Ovid. He died in 1510.

BRIVA ISARÆ (anc. geog.), a town of Gallia Belgica on the river Hara or Oyse: now *Poyntouffe*.

BRIVATES (anc. geog.), a part of Gallia Celtica: now *Bress*, in Britany.

BRIXIA (anc. geog.), a town of the Cenomani in the Regio Transpadana: now *Brescia*, capital of the Bresciano.

BRIZEN, or **BRIZZEN**, a town of Germany, in the Middle Marche of Brandenburg, seated on the river Adah, 12 miles N.E. of Wirtemberg.

BROAD-TENNESSE, a noble river of N. America, which rises in N. Carolina, and crosses the parallel of 35°. N. lat. into the state of Georgia; just before it passes through Cumberland or Laurel Mountains. Its passage through these mountains occasions a remarkable whirl. The stream, which a few miles above is half a mile wide, is here compressed to the width of about 100 yards. Just as it enters the mountain, a large rock projects from the northern shore, in an oblique direction, which renders the bed of the river still narrower, and causes a sudden bend: the water of the river is thrown, consequently, with great rapidity, against the southern shore, whence it rebounds around the point of the rock, and produces the whirl, which is about 80 yards in circumference. Canoes have been often carried into this whirl, and escaped unhurt. Near a mile below, the river spreads into its common width, and, except the interruption of some muske shoals, flows in a beautiful and placid stream, till it mingles with the Ohio; before it reaches which, it is called the *Cherokee river*.

BROD-NEMEKEI, or **TREUTCH-BROD**, a town of Bohemia, on the river Sozawa, 20 miles S. by E. of Czaſlaw. Long. 15. 40. E. Lat. 49. 33. N.

BRODZIEC, a town of Lithuania, on the river Berezina, 100 miles S. of Poloczki. Long. 28. 5. E. Lat. 54. 8. N.

BROEK, a town of Germany, in the circle of Westphalia, and duchy of Berg; the capital of a county of the same name, seated on the river Roer, 11 miles N. of Duffeldorp. Long. 6. 53. E. Lat. 51. 23. N.

BROEK, in North Holland, six miles from Amsterdam, one of the most singular and picturesque villages in the world. "The inhabitants," says Madame de Sillery (late Countess de Genlis), "though peasants only, are all rich. The streets are paved in mosaic work, with variegated bricks, and display the greatest neatness. The houses are painted on the outside, and are as fresh and bright as if quite new. Each has a garden and terrace, inclosed by a low railing, that permits every thing to be seen. The terrace is in the front of the house, and from this we descend into the garden, which forms the separation between each house. The streets on both sides are laid out in the same manner. The gardens are adorned with china vases, grottoes of shell-work, trees, and flowers; with borders composed of minute particles of glass of different colours, of a dazzling brightness, and disposed into a variety of forms. There are likewise other borders formed of small shells, and arranged with as much skill and care as those in a museum. Behind the houses and gardens are extensive meadows, full of cattle grazing. The outhouses are likewise behind; so that waggons, carts, and cattle, never enter these neat streets. The floor of the houses are paved with shining stones, in equal squares, commonly black and yellow. The principal apartments are waincotted. This waincot is of its natural colour, ornamented with the prettiest sculpture imaginable. In the best room is a large buffet, with glass folding-doors, through which are seen the most beautiful china, and quantities of plate perfectly bright. One would imagine, from their uniformity, that the fortunes of the respective owners were equal. In every house are two doors, one of which is called *the door of ceremony*, being never opened but for the event of marriage or death. The new-married couples enter at this door, and never pass through it again but to their graves: in the interval it is constantly shut up. They have also a chamber, which is never made use of but on their wedding-day; and it is ever after considered as a temple, in which it would be a profanation to sleep. This chamber is more splendid than the others, and the bed is profusely ornamented with lace. On a table is a pretty basket, which contains the finery worn by the bride on her wedding-day. In a word, they never enter this sacred retreat but to adorn it with vases of flowers, or to shew it to strangers. The dress of the men is very plain, and that of the women as studied. They wear the most beautiful silks, the finest linen, and many trinkets of gold and pearls. A hood of white cambric conceals their hair, fastened on the two sides by large gold pins set with fine pearls. Many servants are dressed in this manner: their mistresses excel them only in finer necklaces, rings, and more expensive linen. The manners of these people are irreproachable: they live together in perfect harmony; but are very uncivil to strangers. The moment they see such arrive, they shut themselves up, and refuse to open their doors; but they have a natural gallantry, or, to speak more properly, a certain respect for women, that makes them behave very differently to them. They no sooner see them, than they hasten to shew them every mark of politeness; and although the fair strangers were accompanied by men, this would not prevent their conducting them to the houses, and shewing them every thing. Their wives never stir from Broek, and a young woman would find it difficult to marry, if she went to another village a small distance from it. Amsterdam is as little known to them as London or Constantinople. They

find their happiness at home; Broek is the whole world to them; and they preserve, in course, their manners and their virtue. They marry invariably among themselves. Many nobles of this country have been desirous of espousing young women of Broek, on account of their riches; but the overtures of none have proved successful. The inhabitants pride themselves in their simplicity, and in their states as peasants. They lead a frugal life. To adorn their houses is the greatest pleasure they know: to live in peace the only happiness they court. Handsome as the natives are throughout all Holland, they are particularly so at Broek. The children are all charming; the men robust; and the women tall, well-made, and generally pretty, with a surprising freshness of complexion. In a word, this village exhibits a very singular picture. Every thing in it delights the eye and heart: not one disagreeable object appears to spoil the piece. Not only not a single beggar is to be seen, but not a person, moreover, who is not perfectly at ease; not a cripple, not one infirm old person, nor a single decayed house. Health; all that affluence can with; the elegance of industry and neatness; simplicity, humanity, virtue, and happiness; these are the inestimable advantages, these the delightful objects that we find at Broek; and which, added to the striking singularity of their dress, their houses, and their manners, render it altogether a very extraordinary place."

BROKEN BAY, a bay of New South Wales, on the E. coast of New Holland. It is formed by the mouth of a great river called the Hawkebury. Long. 151. 27. E. Lat. 33. 34. S.

BROMPTON, a populous village, in the parish of Kenington, in Middlesex. Here is the public botanical garden and library of Mr. William Curtis, the author of *Flora Londinensis* and other botanical works.

BROMPTON, a village in Kent, delightfully situated on an easy ascent from Chatham, and containing the fine barracks for the accommodation of the military of that garrison.

BROOM-GALL (*Encycl.*), in natural history. This gall is of a very singular kind: it is round and prickly; the stalk of the broom always grows directly through it, as if thrust through its middle; and, when nicely examined, the whole gall appears to be formed of a congeries of leaves much larger than those of the broom naturally are, and twisted into a sort of horns or cornets, ending in a point: these leaves are all hollowed in the middle; and are so thick set and nicely fixed to one another, that they make up the substance of the gall, which is nevertheless a considerably hard one, and their points make the appearance of spines or prickles on the outside. Sometimes there is a sort of fleshy or pulpy substance within it, which supports the leaves; and the worms are sometimes found in this, sometimes in the hollows of the leaves, and sometimes between them: they are so numerous, that there are often some hundreds of them in one gall. The origin of this gall is not from the eggs of the parent animal lodged in the tree; but they are deposited on the surface of the branches, and the young worms, while very small, almost as soon as hatched from them, go in company to some bud on the side of the branch: they get into the folds of this bud, and wounding it in several parts, cause a wrong derivation of the juices into it; the consequence of which is, that instead of forming a branch shooting out from the other, it only yields a congeries of leaves which everywhere surround it. These galls are of various sizes, the largest seldom exceeding that of a nut; and there are often three or four of them seen on one branch, placed at an inch or a little more distance from one another.

Broom, Loch, a great lake and arm of the sea, in Ross-shire, on the W. coast of Scotland. It has long been noted

for herrings of peculiar excellence, and is esteemed one of the best fishing stations on the coast.

BRORA, a seaport of Scotland, on the E. coast of Sutherlandshire. Here is a coal mine, which was lately worked, and the coal was used in the manufacture of salt. But this coal cannot be exported, or carried to any distance, as it takes fire on being exposed to the air. The lime-stone quarry, above this place, is an interesting fund of speculation: the variety of shells contained in the heart of the stone is equally surprising and beautiful. Brora is forty miles N. by E. of Inverness.

BRORA, a river of Scotland, in Sutherlandshire, which issues from a beautiful lake of the same name. Above Brora, it forms several fine cascades; and below that village it falls into the British Ocean. Many precipices on the banks of this river are full of shells, as in the lime-stone quarry near it.

BROUCA, a town of Sicily, on the S. side of the gulf of Catania; fifteen miles S. of Catania. Long. 15. 30. E. Lat. 37. 25. N.

BROUCKE, a town of Switzerland, in Argow, of which it is the third free city. It is seated on the river Aar, over which is a handsome bridge. There is likewise a college, with a public library. It is twenty-two miles S.E. of Basil. Long. 8. 4. E. Lat. 47. 21. N.

BROWNE (William), an old English poet of considerable excellence. As the peculiar fate of unmerited oblivion which attended this great genius precludes any minute disquisition, for his entire history may be compressed in a very small space; and it will be scarcely credited that we can find no trace of an edition of his works (excepting one) since the usurpation of Cromwell, although he had been highly commended by the learned Selden, and was an adopted favourite of the proud, but judicious, Ben Jonson. Mr. Dermody relates the particulars of our poet's life and writings in the following terms:

"William Browne, says he, was born at Tavistock in Devonshire, in the year 1590; his father, according to Prince, in his *Worthies of Devon*, being probably of the knightly family of Browne, of Browne's-Ilath, in the parish of Langtree, near Great-Torrington. After he had passed through the grammar-school, we find him at Exeter College in the university of Oxford, about the beginning of the reign of King James the First, where he became celebrated for classical erudition, and for his knowledge in the belles-lettres nearly unequalled; from thence, however, before he had taken any academical degree, he removed to the Inner-Temple, London, where he more assiduously devoted himself to the muse. In the beginning of the year 1624, he returned again to the college, was appointed tutor to Robert Dormer, who was afterwards Earl of Carnarvon, and lost his life at Newbury fight, on the 20th of September, 1643. On the 25th of March, 1624, our author received permission to be actually created a master of arts, although the degree was not conferred upon him till the November following. In the public register of the university he is styled thus: *Vir omni humanâ literaturâ, et bonarum artium cognitione instructus*.

"After he had left college with his pupil, he was gladly received into the family of the munificent Earl of Pembroke, who entertained a great regard for him, and in that situation he made his fortune so well, that he had it in his power to purchase a comfortable independence. The precise period of his death cannot be ascertained, but according to Wood, author of the *Athenæ Oxonienses*, it may be ascribed with most certainty to the year 1645.

"His *Shepherd's Pipe* consists of seven eclogues, among

which is an admirable monody, entitled *Philarète*, written upon the death of his friend Mr. Thomas Manwood, which, whether equally excellent or not, was certainly the model from which Milton did not disdain to borrow the charming idea of Lycidas, one of the most beautiful pieces of pastoral poetry that, perhaps, ever appeared in any language. There is another production of Browne, *The Inner Temple Masque*, to which I imagine the world of taste may esteem themselves equally indebted for the birth of *Comus*. Even this very distinction ought to have placed Browne in a more favourable light, for, assuredly, the divine framer of *Paradise Lost* would not condescend to copy an indifferent original at any time.

"But as I mean to confine myself more particularly to the notice of this author's chief performance, *Britannia's Pastorals*, I shall waste no speculation upon such miscellaneous pieces as occur, but just take the liberty of recommending them, indiscriminately, to the attention of the reader, and pursue my main subject with less deviation from the regular rules of criticism. The design, then, of those pastorals is original and perfect in the highest degree; they profess no imitation of any ancient or foreign writer; and are meant solely as a compliment to our own country, which is set in happy competition with that famous haunt of demi-gods, Arcadia itself. The style is harmonious and flowing, diversified with a pleasing assemblage of new and captivating imagery; and even the measure is sometimes changed, not for the worse, as it administers a kind of metrical relaxation, that relieves the fancy by variety without violence.

"To exemplify this assertion, I must beg leave to transcribe a few passages, which, considering the time they were composed, will be found not destitute of elegant thought, and polished verification. The following address to a river deity contains both those requisites, in my humble opinion:

— May first

(Quoth Marine) swaines give lambs to thee;
And may thy flood have seignorie
Of all floods else; and to thy fame
Meete greater springs, yet keep thy name.
May never euet, nor the toade,
Within thy bankes make their abode!
Taking thy journey from the sea,
Maist thou ne'er happen in thy way
On niter or on brimstone myne,
To spoil thy taste! this spring of thine
Let it of nothing taste but earth,
And salt conceived, in their birth
Be ever fresh! let no man dare
To spoile thy fish, make locke or ware,
But on thy margent fill let dwell
Those flowres which have the sweetest smell:
And let the dust upon thy strand
Become like Tagus' golden sand,
Let as much good betide to thee,
As thou hast favour shew'd to me.

Booke I. Song 2.

Nor do I think this other short extract inferior to any of our old poets in point of conception:

Near to this wood there lay a pleasant meade,
Where fairies often did their measures treade,
Which in the meadow made such circles greene,
As if with girlands it had crown'd beene,
Or like the circle where the signs we tracke
And learned shepheards call't the zodiacke:

Vol. X.

Within one of these founts was to be seene
A billocke rise, where oft the faire queene
At twilight fate, and did command her elves,
To pinch those maides that had not swept their selves;
And further if by maidens over-light,
Within doores water were not brought at night:
Or, if they spread no table, let no bread,
They should have nips from toe unto the head:
And for the maid that had performed each thing,
She in the water-pale bade leave a ring.

Ibid.

"The fulblimity of this exclamation will be a sufficient excuse for its insertion.

What muse! what powre! or what thrice sacred herse,
That lives immortal in a wel tun'd verse,
Can lend me such a sight that I might see
A guilty conscience true anatomic;
That wel kept register wherein is writ
All his men doe, all goodnesse they omit?
His pallid feares, his sorrowes, his affrightings,
His late wifd had-I-wits, remorseful bringings:
His many tortures, his heart-renting paine:
How were his griefs compos'd in one chaine,
And he by it let downe into the seas,
Or, through the center, to the antipodes,
He might change climates, or be barr'd heav'n's face,
Yet finde no false, nor ever change his case.

Ibid.

The preceding extracts are intentionally quoted to convey some idea of the general tenor of the work, we shall next introduce a few unconnected sketches of more than ordinary beauty; and then presume on no further intrusion, but a cursory critique, written in the most concise manner. A musical concert of birds is thus most fancifully, though quaintly, depicted:

Two nights thus past: the lilly-handed morne
Saw Phœbus stealing dewe from Ceres' corne,
The mounting lark (daie's herald), got on wing,
Bidding each bird chuse out his bough and sing:
The lofty treble sung the little wren;
Robin the meane, that best of all loves men;
The nightingale the tenor, and the thrush
The counter-tenor sweetly in a bush:
And that the musicke might be full in parts,
Birds from the groves flew with right willing harts:
But (as it seem'd) they thought (as do the swaines,
Which tune their pipes on sack'd Hibernia's plaines)
There should some drooning parrot be, therefore willd
Some bird to flie into a neighbouring field,
In embasie unto the king of bees,
To aide his partners on the flowres and trees:
Who condescending gladly flew along
To beare the bafe to his wel tuned song.
The crowe was willing they should be beholding,
For his deepe voice, but being hoarse with foulding,
He thus lends aide, upon an oake doth clime,
And nodding with his heade, so keepeth time.

Booke I. Song 3.

"No mind, susceptible of the charms of natural description, but will coincide with my sentiments on the excellence of the subsequent two very opposite, but equally well-delineated, landscapes.

These pitchy curtains drew 'twixt earth and heaven,
And as night's chariot through the air was driven,

5 R

Clamour grew dumb, unheard was shepherde's song,
And silence girt the woods ; no warbling tongue
Talk'd to the echo ; satyres broke their dance,
And all the upper world lay in a trance.
Onely the curled streams lost chidings kept,
And little gales that from the greene leaf swept
Dry summer's dust, in fearfull whipp'ings stir'd,
As loath to waken any singing bird.

Booke II. Song 1.

The muse's friend (grey cyde Aurora) yet
Held all the meadows in a cooling sweat,
The milk-white gossamores not upwards frow'd,
Nor was the sharpe and useful steering goad
Laid on the strong-neckt ox ; no gentle bud
The sun had dryde ; the cattle chew'd the cud
Low level'd on the grasse ; no flies quicke Ring
Inforc'd the stone-horse in a furious ring
To teare the passive earth, nor lash his taile
About his buttocks broad ; the slimy snayle
Might on the waincot (by his many mazes
Winding meanders and selfe-knitting traces)
Be follow'd, where he stucke, his glit'ring slime
Nor yet wipt off. It was so early time
The carefull smith had in his footy forge
Kindled no coale ; nor did his hammers urge
His neighbour's patience : owles abroad did flye,
And day as then might plead his infancy.

Ibid. Song 2.

"These are only the *disiecta membra poetarum*;" for, indeed, to do any diffuse performance, proper justice, it should be never taken by piecemeal, or exposed to public inspection by lines and sentences; yet as there is no other method, at first, of rescuing its merit from immediate obscurity, even this mode of selecting a few specimens may be not unworthy of approbation. The good taste of the present day has been highly favourable to those pieces executed in the simple style of pastoral, as the liberal reception which *The Farmer's Boy* has deservedly received very amply testifies. It contains a profusion of exquisite images, enriched with the highest colouring, though perfectly chaste, and never distorted by a gaudy extravagance. I may be suspected by many of having a whimsical turn for hypothesis; but I declare I have fancied various instances of a corresponding genius between William Browne and Robert Bloomfield, not forgetting this one material difference and advantage, that the former was a profound and accomplished scholar. But what I remark as a coincidence in both promiscuously, is an unaffected felicity of calling forth new objects from the level scene of life; and an harmony of style and expression peculiarly fortunate. The poets of Elizabeth's reign down to that of James, piqued themselves on a pompous display of learned acquisition, nearly approaching to pedantry; it was an established custom to bring in the heathen mythology on every occasion; and even so late as Waller and Lonsdowne, we can trace the progress of this absurd fashion, which, in the infancy of English poetry, was more pardonable. Now, in our enlightened era, a person who should crowd his pages with a motley texture of Grecian demi-gods and heroes, would justly merit the derision of the judicious; and even the frequent invocation of the muse, a being whom we acknowledge merely ideal, having lost its primary attraction, though not yet entirely discarded, is unnatural and unhappy; unnatural, from the improbability it casts on any grave subject; and unhappy, from the obsolete insipidity of the fiction.

"Browne's pastorals are not very faulty in this respect;

the ancient fables which he does, at times, allude to, are not the most hackneyed, and his main story is, at any rate, as I mentioned before, entirely his own. His allegories are not so intricate as those of his contemporaries; they are picturesque without perplexity, and favour more of the school of Tasso than that of Spenser. Yet two of his imaginary personifications would not, perhaps, disgrace the sublime pencil which dashed out the wild horrors of the Cave of Despair; namely, Riot, in Book I. Song 4; and Limes, or Famine, in Book II. Song 1. We there defy all the bold and poetical conceit of Ovid, in the favourite parts of his *Metamorphoses*, without those minute and laborious touches which seldom come from the hand of a very great master. Salvator Rosa might have here satiated the luxury of his imagination, without restraining his enthusiasm. It is certain that our most inspired children of fancy did not dwell in patient apathy on the niceties of composition. What can be more fervid and engaging than the irregular graces of Collins, who was a profest admirer of our old bards, who made them his chief study, and even forfeited the estimation of all but the congenial few through a desire of indulging in these rapturous excursions! There are some, and those by far the most delicious of his odes, which to a common plodding reader would appear verging closely on the confines of absolute insanity; but I am mistaken much, if they appear so to the man whose "eye in a fine frenzy rolling, glances from heav'n to earth, from earth to heav'n!" I have likewise to assert, that one of the most exquisite little poems we can boast, entitled *A Hymn to May*, was written by William Thompson, whose fancy was fed with the pure honey of Browne, and who revised the only modern edition of his works. This hymn, so much deserving the notice of every elegant reader for the voluptuous tenderness of its language, although composed after the ancient model, is to be found in the *Poetical Calendar*, published periodically, some time ago, by Fawkes and Woty; wherein some other pieces of considerable value are included.

"I know of no two productions more worthy of revival by some man of influence and fortune, than this, which I have attempted to draw into a fainter degree of observation from its long unmerited darkness of recess; and *The Piscatory Eclogues* of Phineas Fletcher, whose *Purple Island*, though inferior, has been favourably regarded by some late commentators of literary eminence. I am conscious this slight effusion of applause, secretly nourished since my earliest days, is both desultory and incorrect; yet I wished to discover a mine to which I have been indebted for much intellectual treasure; and the rich ore extracted from which source, I have so publicly prefixed as the very motto to my first poetical exertion.

"I quit my talk thus, far from being finished, with particular regret, transferring it to the care and abilities of some abler hand, with another concluding quotation.—

Looke as a lover with a lingering kisse,
About to part with the best half that's his;
Faine would he stay but that he feares to do it,
And cursefeth time for so fast hastning to it;
Now takes his leave, and yet begins anew
To make lesse voves than are esteemed true
Then sayes he must be gone, and then doth finde
Something he should have spoke that's out of minde,
And whilst he stands to looke for't in her eyes,
Their fid sweet glance so tyie his faculties,
To thinke from what he parts, that he is now
As farre from leaving her, or knowing how
As when he came; begins his former strain,
To kisse, to vow, and take his leave againe.

Then turnes, comes backe, fighes, parts; and yet doth goe, Apt to retire, and loath to leave her fo.

BRUCHUS (*Encycl.*). To that article add the words, "See Plate 61."

BRUGGE, or **BRUGEN**, a town of Germany, in the circle of Lower Saxony and bishopric of Hildesheim, six miles from the city of that name. Long. 10. 5. E. Lat. 52. 6. N.

BRUNETO, an episcopal town of Italy, in the territory of Genoa, at the foot of the Apennines, thirty-five miles south-east of Genoa. Long. 9. 30. E. Lat. 44. 15. N.

BRUN (Anthony le), an ambassador of Spain, famous for his skill in negotiating, was of an ancient and noble family, and born at Dole in the year 1600. He was attorney-general in the parliament of Dole; during which time he had a hand in all the state negotiations which concerned the provinces. He was sent afterwards by Philip IV. to the diet of Ratisbon, and from thence to the court of the emperor Ferdinand III. He was one of the plenipotentiaries of his Catholic majesty, at the conferences of Munster held in 1643; where, though all the other plenipotentiaries took place of him, yet it is said that he far exceeded them all in capacity. The king of Spain was particularly beholden to him for the peace which the Dutch made at Munster, exclusively of France; and the intriguing turn which he shewed upon this occasion made him dreaded ever after by French ambassadors. He was a man of letters, as well as of politics; and therefore employed his pen, as well as his tongue, in the service of his master. He died at the Hague, during his embassy, in the year 1654.

BRUNDISIUM, or **BRUNDISIUM** (anc. geog.), a town of Calabria, with the best harbour in Italy. It was a very ancient town, and belonged originally to the Salentines; but was taken by the Romans about 256 years before Christ. Now *Brindisi*; which see.

BRUNETTO, a strong and important place in Piedmont, near Susa, which it defends.

BRUTII, an ancient people of Italy, inhabiting the country now called *Calabria Ultra*; different from the ancient Calabria, or *Messapia*, to the east on the Adriatic or Ionian sea.

BRUTUS (Lucius Junius), the avenger of the rape of Lucretia, and founder of the Roman republic, flourished 509 years before Christ.

BRUTUS (Marcus), the passionate lover of his country, and chief conspirator against Cæsar, slew himself on losing the battle of Philippi, forty-two years before Christ.

BRUTUS (Stephen Junius), the disguised author of a political work in titled *Vindicia contra tyrannos*.

BRYENNIUS (Nicephorus), a prince distinguished by his courage, probity, and learning, was born at Orestia in Macedonia; where his father by rebellion provoked the emperor to send his general Alexis Comnenus against him, who ordered his eyes to be pulled out: but being charmed with his son Bryennius, he married him to Anne Comnenus his daughter, so famous by her writings. When Alexis came to the throne, he gave Bryennius the title of *Cæsar*; but would not declare him his successor, though solicited to it by the empress Irene; and was therefore succeeded by his son John Comnenus, to whom Bryennius behaved with the utmost fidelity. Being sent about the year 1137 to besiege Antioch, he fell sick; and returning, died at Constantinople. This prince wrote the *History of Alexis Comnenus*, which he composed at the request of his mother-in-law the empress Irene.

BÜCHORN, a free and imperial town of Germany, in

the circle of Suabia, on the lake of Constance, 18 miles E. of Constance. Long. 9. 42. E. Lat. 47. 41. N.

BUEN RETIRO, a palace of the king of Spain, on the E. side of Madrid: it is a perfect square, and at each angle is a pavilion. It is generally the residence of the king in the spring, and part of the summer.

BUCK-BEAN (*Encycl.*), read *Buck-BEAN*.

BUILDING (*Encycl.*). From the description given in the 493d number of the *Philosophical Transactions*, by Mr. ARDERON, it appears that the ruins of two old towers, belonging to the Roman camp at Caistor, in Norfolk, were built in the following ingenious manner: they began first with a layer of bricks, laid flat as in pavements; on that they placed a layer of clay and marl mixed together, and of the same thickness with the bricks; then a layer of bricks, afterwards of clay and marl, then of bricks again; making in the whole three layers of bricks, and two of clay. Over this were placed bricks and lime twenty-nine inches, the outside being faced with bricks cut in squares; then brick and clay alternately, as high as the old ruins now remain standing. He adds some remarks on the hardness of the mortar, and durability of the bricks, the length of which last is found to be 17,4-tenths inches, or a Roman foot and a half; their breadth 11,6-tenths inches, or precisely a Roman foot; and their thickness only 1,3-tenths of an inch.

Many compositions have, with more or less success, been devised for making mortar impenetrable to moisture. The following we believe is one of the most simple and effectual: mix thoroughly one-fourth of fresh unslaked lime with three-fourths of sand; and let five labourers make mortar of these ingredients, by pouring on water, with trowels, to supply one mason, who must, when the materials are sufficiently mixed, apply it instantly as cement or plaster, and it will become hard as stone. This recipe is given by Mr. R. DOSSETT, in his second volume of "Memoirs of Agriculture and other Economical Arts," 1771. The author, on this occasion, observes that the lime used should be stone-lime; that previous to its use, it should be preserved from the access of air or wet, and the plaster screened for some time from the sun and wind. He justly remarks, that its excellence arises from the particular attraction between lime and sand; which would be destroyed by slackening the lime. Skimmed milk (says he) is preferable to water; and for the similarity of this mortar to that of the ancients, he refers us to Pliny, Vitruvius, &c.

Another very durable and cheap cement in building, which is particularly designed as a handsome coping of walls, is that of the late P. Wych, Esq. Take four or five bushels of such plaster as is commonly burnt for floors about Nottingham (or according to Mr. Dossie, a similar quantity of any tarras, plaster, or calcined gypsum); beat it to fine powder; then sift and put it into a trough, and mix with it one bushel of pure coal ashes, well calcined. Pour on the water, till the whole becomes good mortar. Lay this in wooden frames of twelve feet in length on the walls, well smoothed with common mortar and dry, the thickness of two inches at each side, and three inches in the middle. When the frame is moved to proceed with the work, leave an interval of two inches for this coping to extend itself, so as to meet the last frame-work.

In December 1780, Dr. R. Williams obtained the king's patent for his invention of a mortar or stucco for the purpose of buildings. As the term of the exclusive privilege of using this composition is now expired, we shall give the following particulars: take of sharp, rough, large grained sand, sifted, washed, dried, and freed from all impurities; of well-burnt lime, slaked and finely sifted; of curd, or cheese, pro-

duced from milk; (the first, fresh made and strongly pressed, to divest it of its whey; the second, whilst perfectly sound, raised into powder with a grater, or brought into a very light substance with scrapers, or fine-toothed planeirons, in a turner's lathe); and lastly, of water in its natural state, in the following proportions, viz. of the cheese, or curd, four pounds; the lime twelve pounds; the sand eighty-four pounds; the water ten pounds. If the sand is not thoroughly dried, or the lime has got damp from the air, the quantity of water must be less than the above proportion; and, on the contrary, when the lime is used immediately, it may require more; so that the proper stiffness of the mortar, under those circumstances, will regulate the making of the composition.

As the goodness of this mortar depends on the preservation of the natural properties of the cheese, or curd, made use of, all those parts the least tainted or rotten must be rejected; and as the cheese, like the curd produced from skim-milk, is divested of its buttery and oily particles, and on that account possesses a powerful cohesive quality, which makes it better for this work than that made of milk in its rich and pure state; it is at all times to be bought of the wholesale cheese-mongers at a lower price than any other; and being more convenient than the curd, as that will require frequent making, is to be preferred to it, as well as to every other sort of cheese; for less of it is sufficient, only four pounds being allowed to the nett hundred weight of all the solid ingredients; more than which might make mortar too lively to keep in its place without bagging, but less should not be used; as that, on the other hand, would endanger its drying loose and gritty within its surface, hinder it from adhering properly to the walls, and thus reduce it to the level of common mortar. Many tedious and trivial rules are stated by the patentee, relative to the manner of applying this cement, and its preservation in boxes for ready use. Those who wish to acquire additional information concerning this subject, may find the specification of the patent, at full length, in the third volume of the "Repertory of Arts and Manufactures."

In July, 1796, Mr. H. Walker, of Thurmaston, Leicestershire, procured a patent for his invention of a method, by which houses and other buildings, of any description or dimensions, might be erected in one entire mass or body, at a much easier expence, especially in the articles of timber, lime, and workmanship, and which would be equally as durable in themselves, and less liable to accidents by fire, than buildings erected upon the common construction. His process is as follows:

1. The patentee takes an argillaceous earth or natural clay, which he purifies by the usual well-known methods, and compounds it with sand, or broken or pounded pottery or brick, coal-ashes, charcoal, or, in short, with any other of those substances which are adapted to form a good, firm, and durable brick, when properly baked; and he varies the composition according to the nature of the component parts themselves, and the purposes which they are intended to answer; but, for common constructions, he uses the same proportions as brick-makers in general. He then proceeds to mix, knead, and incorporate the said materials, till they are brought to the requisite firmness and tenacity for building; which is nearly such, that the parts of any lump or mass of the same may be readily incorporated with, or joined to, any other similar mass, by moderate blows with a wooden mallet, and the occasional addition of a very small portion of water: this composition he calls the prepared material.

2. He constructs floors, walls, and all other buildings, according to this invention, in such a manner that the power of fire, from wood, coal, charcoal, coak, or other

combustible matters, may be applied to the external and interior surfaces of the floors, walls, and other parts, by means of fires maintained in cavities left within, which he calls by the name of furnaces.

3. With respect to the particular forms, dimensions, and relative positions of the said floors, walls, and other parts of buildings, and the furnaces left or formed within the same, together with the apertures or communications, for the purposes of ventilating the fires, of suffering the volatile matters to escape, and of converting the whole into one entire mass of brick, by a due communication and continuance of heat, Mr. Walker says, the ground must be rendered solid, and the foundation laid in the usual manner; after which he applies a quantity of the prepared material before alluded to, and beats, rams, or presses it down to the thickness of about six inches; and in width, corresponding with the intended dimensions of the wall, regulated by boards or framing. He then plants upright, at a distance of about thirty inches asunder, in the said layer or bed of prepared material, a number of cylindrical pieces of wood, of about nine inches in diameter each, and eighteen or more inches in length, to serve as moulds for the cavities of the furnaces; and between each of such moulds he places, in the longitudinal direction of the wall, a number of pipes of wood, or other materials, or rods, of combustible or incombustible matter, for the purpose of forming communications between all the several furnaces, or as many of them as he thinks proper. Then he proceeds to form another layer or bed of the material, to the same height, namely, about six inches, and disposes a number of such pipes, or rods for the purpose of forming similar communications. In this manner he constructs the whole, or so much of the wall as he apprehends, all the time, may be conveniently formed, in the raw or unburnt state; taking care, as the work advances, to raise the wooden cylinders, or moulds, that a sufficient portion of them may remain above the surface of the work to admit the reception and proper fashioning of each subsequent layer; or he forms the communications between the furnaces, by perforating the wooden moulds, in various places, at right angles to their respective axes; and through the said perforations he passes a bar of iron, or other material, which serves to connect three or more of the said furnace-moulds, and being afterwards withdrawn, as the work proceeds, leaves cavities of communication, similar to those formed by pipes, rods, &c. in the manner before described. Further, he opens such a number of horizontal or oblique apertures, or flues, into all the furnaces, and likewise into all the cavities, as may be requisite for admitting, on all sides, the excess of atmospheric air. In some instances, he forms horizontal or oblique apertures or flues, by disposing, along with the pipes, a suitable number of taper rods, which are afterwards extracted.

4. When the wall is built, he either suffers it spontaneously to dry, or promotes this effect by moderate fires in the furnaces. Sometimes by increasing the heat within, and at others by suitable applications of fire externally, he converts the whole into one entire mass of brick. By occasional closing or opening of the furnaces at top, or any of the other apertures, in various parts, the intelligent operator will easily understand how to regulate the progress, communication, and effect of the heat, that the conversion into brick may be uniform through the entire mass.

5. The dimensions of the furnaces, the positions and relative distances of the pipes of communication and lateral apertures, and the thickness of the layers of the prepared material, are each susceptible of great variation, according to the nature of this preparation, the activity of the fuel, the proposed solidity or figure of the work, &c.

6. He then forms the remaining parts of the wall, or edifice, by applying additional portions of the prepared material in contact with that already baked; while he also avails himself of proper and suitable external and internal moulds, supports, frames, and other occasional contrivances, well known to builders, for sustaining works, or forming arches, or determining the figure and positions of soft plastic substances.

7. The ground-floor is likewise formed of the prepared material, leaving hollow spaces between the supports beneath, for making fires, ventilated by side apertures, which are provided with numerous holes. When the floor is of considerable thickness, it will require the construction of furnaces in every respect similar to those before described.

8. The first above the ground floor is made upon suitable temporary framing, in such a manner that the upper surface shall be plane, and the lower concave, so that it may, when baked, support itself upon the principle of a low arch.

9. and 10. The patentee constructs, bakes, or burns other floors above the first, and also the roof, &c.; he closes the apertures, fills up the furnaces, amends the deficiencies, adorns the walls, floors, ceilings, or other parts, with his prepared material, according to the taste and direction of the proprietor.

Various plans have lately been devised for securing buildings, and ships, against fire. We shall, however, mention only that of David Hartley, Esq. who, in April, 1773, obtained a patent for his invention of applying plates of metal and wire, varnished or unvarnished, to the several parts of buildings or ships, so as to prevent the access of fire, and the current of air; securing to the several joints by doubling in, over-lapping, folding, rivetting, or in any other manner closing them up; nailing, screwing, sewing, or otherwise fastening, the said plates of metal in, to, and about, the several parts of buildings, and ships, as the case may require.

BULAM, or BULAMA, as it is more usually called, forms part of the Archipelago, or cluster of Islands, lying on the western or windward coast of Africa, and known by the name of the *Bissaos* or *Bissagos*, which are supposed to have been celebrated by the ancients under the appellation of the *Hesperides*. It is situated at the mouth of the Rio Grande, in 11° N. Lat. and 15° W. Long. from the meridian of London; and is between seventeen and eighteen leagues long, and from four to five broad.

This island has become an interesting object to the inhabitants of Great Britain, in consequence of its having been purchased in the year 1792 by a society instituted for the same humane purposes with those which gave rise to the *Sierre Leone* Company. The Bulam association was formed towards the latter end of the year 1791; and they were induced to pitch upon that island as the most eligible tract for their intended colony, in consequence of the flattering description given of its climate, soil, and harbours, by M. Brue, formerly director-general of the French African companies.

The original trustees for managing the concerns of the association at home were, Paul Le Mesurier, M.P.; James Kirkpatrick, Esq. George Hartwell, Esq. Moses Ximenes, Esq. Sir John Riggs Miller, Bart. and David Scott, Esq. M.P.; and for establishing the colony, and conducting the affairs of the society abroad, the following gentlemen were nominated, viz. Messrs. H. H. Dalrymple, John Young, Sir William Halton, Bart. John King, Philip Beaver, Peter Clutterbuck, Nicholas Bayly, Francis Brodie, Charles Drake, John Paiba, Richard Hancorne, Robert Dobbins, and Isaac Ximenes.

A sum of 5000*l.* being quickly subscribed for the establishment of the intended colony, this committee failed from

Spithead in three ships on the 11th of April, 1792; and landing in due time at Bulama, they purchased that island from the kings of Canabac, who claimed it as their property. They purchased likewise from the kings of Ghinala the neighbouring island Arcas, and the adjacent land on the continent; and these several purchases being taken possession of in the usual form, a body of settlers, consisting of forty-nine men, thirteen women, and twenty-nine children, were left at Bulama under the superintendence of Mr. Beaver, with a temporary supply of provisions, stores, plantation-tools, and merchandize, for trading with the neighbouring natives. It is from the dispatches of these settlers, after having lived some time in Bulama, that the following account of the island was drawn up by Mr. Johanfen.

"The climate, on the whole, may be deemed salubrious, and will become more so in proportion to the increase of cultivation. The mornings and evenings are temperate and pleasant; the middle of the day is hot, but the fine sea breeze which then sets in tends greatly to cool and refresh the air. The heat of the sun is not either too excessive or intolerable as has been generally supposed; indeed nature has most admirably adapted our mechanical and physical qualities to the exigencies of different regions; and man, who is the inhabitant of every climate, may, in some measure, render himself indigenous to every soil. Here the only danger arises from too sudden an exposure to the operation of the vertical rays of the sun, or an excess of labour; both of which the first settlers ought most studiously to avoid.

"It appears from Mr. Beaver's observations at noon, between the 20th of July, 1792, and the 28th of April, 1793, that the thermometer, when lowest, was at seventy-four; the medium heat eighty-five; and that it never exceeded ninety-six, except at one time when it rose to 100, during a calm that occurred in the interval between the north-east breeze in the morning, and the south-west in the evening of the 19th of February, 1793. The difference between the heat of noon and that of the morning and evening is from twenty to thirty degrees. On the 23d of October, 1792, hail of the size of a pin's head fell during two minutes, although not a cloud was to be seen during this phenomenon. The mercury in the thermometer then stood at eighty-five; the wind was at north-east in the morning, and south-west in the evening.

"Immediately after sun-set a dew constantly begins to fall, which induces some to light a fire in their houses; they at the same time put on warmer clothing. There is little or no twilight; and night and day are nearly equal: the earth has therefore time to cool during twelve hours absence of the sun.

"None of those terrible and destructive hurricanes so frequently experienced in the West Indies are to be met with here. The *tornadoes*, which arise chiefly from the eastern point of the compass, are but of short duration, seldom lasting above an hour, and may be readily foreseen some time previously to their commencement. They occur at the beginning and close of the wet season, and are highly beneficial, as they purify the air, and dispel the noxious vapours with which it would otherwise abound.

"The rains set in about the latter end of May or the beginning of June, and discontinue in October or November. They do not fall every day, for there is often a considerable interval of clear weather, during which the atmosphere is beautifully serene; the showers in the first and last month occur but seldom, and are far from being violent; while, on the other hand, they sometimes resemble torrents, more especially towards the middle of the season. During the whole of this period, Europeans should, if possible, confine themselves to their habitations, as the rains prove injurious to health,

more especially if those exposed to them neglect to wipe their bodies dry, and to change their clothes immediately on their return home. It is deemed prudent also not to dig the earth until the expiration of a month after the return of fair weather, as this is considered to be unhealthy.

"During the continuance of the dry season, a dew falls during the night, in sufficient quantity to answer all the purposes of vegetation.

"Every stranger is generally here, as well as in the West Indies, subject to a fever or *jaquining* on his arrival. This is not infectious; it proceeds perhaps from an increased perspiration and a sudden extension of the pores of the human body, in consequence of the heat, by which means it is rendered more liable to imbibe the abundant exhalations that arise from the animal, vegetable, and mineral kingdoms; but even this, slight as it is, might doubtless be avoided by means of a proper regimen, and a short seclusion from the full action of the open air, more especially at noon, and during the evening, until the climate has been rendered familiar.

"Bulama is admirably adapted for all the purposes of an extensive commerce, being not only happily situated at the mouth of the Rio Granda, but in the vicinity of several other navigable rivers; so that a trade with the internal parts of Africa is thereby greatly facilitated. The landing is remarkably easy and safe, there being no surge; the ebb and flow is regular, and there is an increase of sixteen feet of water at spring tide. The bay opposite the Great Bulama is adorned with a number of islands, covered with trees, and forms a most excellent harbour, sufficiently capacious to contain the whole navy of Great Britain, which might ride there in safety. The settlement in general is well supplied with water. A number of springs have lately been discovered in different places; and besides a draw-well in the fort, which was erected for the defence of the colony, there is a small stream, which runs into Elewis Bay, near the new settlement called Heper Elewis: this is admirably situated for the supply of shipping.

"The island is beautifully surrounded, and interspersed with woods: lofty fruit and forest trees, mostly free from underwood and brambles, form a verdant belt, in some places two or three miles broad, which entirely encircles it, in such a manner as to represent a plantation artificially formed around a park. Within this the fields are regularly divided by trees, so as to resemble the hedge-rows in England. The beach has in some places the appearance of gravel walks; it is fringed with mangrove trees, which forming a line with the high-water mark, dip their branches into the sea, and thus afford nourishment to the oysters that often adhere to their extremities.

"Several parts of Bulama have been occasionally cultivated by the neighbouring blacks, though they did not constantly reside on it.

"The land in general rises gradually towards the middle of the island, where the highest spot is from sixty to 100 feet above the level of the sea. The small hill on which the fort is situated is nearly of the same altitude.

"The soil is abundantly rich and deep; stones do not here impede the labours of the farmer; and indeed none have hitherto been discovered, but a small fort, resembling pieces of ore, which are to be met with on the shore. There are many *jacannas* or natural meadows, so extensive that the eye can scarcely discern their boundaries. These are admirably adapted for the rearing of stock and feeding of cattle of every kind.

"Cotton, indigo, rice, and coffee, grow spontaneously on this coast; the sugar-cane is indigenous to many parts of

Africa, and might be cultivated here by the labour of freemen, in equal perfection, and to much greater advantage, than in the exhausted islands of the West Indies. All kinds of tropical productions, such as pine-apples, limes, oranges, grapes, plums, cassia, guava, Indian wheat, the papaw, water-melon, musk-melon, the pumpkin, tamarind, banana, and numbers of other delicious fruits, all flourish here. The adjoining territories produce many valuable sorts of spices, gums, and materials for dyeing: all of which, it is but fair to suppose, might be readily cultivated in a kindred climate and a congenial soil.

"The neighbouring seas abound with a variety of fish, highly agreeable to the palate. The lion, tyger, jackall, &c. are natives of the continent; but in Bulama no animals have been discovered, the wolf, some buffaloes, a few elephants, and a species of the deer excepted.

"The woods abound with doves, guinea-fowls, and a variety of birds, celebrated for the beauty of their plumage.

"The natives of this part of Africa, like all savages, are entirely under the dominion of their passions: hence the violence of their attachment to their friends, and the excess of their resentment against their enemies. Their notions of property are very obscure and confused: they have no idea of any right arising from occupancy or improvement. What they want, they either receive or take wherever they may happen to meet with it, and they permit others to do the same. They have been taught by experience, that the Europeans will not agree to this: against them therefore they employ every artifice that it is in the power of cunning to suggest.

"The colonists need not fear any attack on the part of the negroes, provided their own conduct be just and peaceable: for Mr. Beaver, who was indeed admirably calculated by nature and habit for the station he occupied, could insure both safety and respect when the settlers under him were reduced to four white men, although the neighbouring nations knew that he was in possession of commodities, for the acquisition of which many of them had become day-labourers. He often kept from twenty to forty gronittos, or black cultivators in pay, at that very period, at about four or five bars each per month. A bar is about the value of three shillings and six pence. These are easy to be procured, to almost any number that can possibly be wanted.

"Until a sufficient quantity of stock and provisions can be raised in the company's settlements, the adjacent islands will furnish abundance of cattle, hogs, fowls, &c. at a very cheap rate. A horse may be purchased at Goree for *tl.* 10s. a bullock may be had from 12s. to 18s. sterling: provisions of all kinds are equally reasonable. Honey is also to be procured in great plenty, and bees-wax may be rendered an advantageous object of commercial speculation.

"In short, the acquisition of Bulama, Arcas, and the adjacent territories, presents the fairest opportunity of furnishing Europe with many valuable articles that have hitherto been brought from more remote countries, with much greater hazard, and at an increased expence. The intercourse with England is easy, safe, and expeditious; for the voyage may be performed in the space of three or four weeks: and by the terms of the first subscription, a settler on Bulama might purchase 500 acres of land for 30*l.* sterling, by the terms of the second, which we suppose are the terms at present, he might purchase on the islands of Bulama and Arcas, or on that part of the adjacent coast which was ceded to the society by the kings of Ghinala, 200 acres for 50*l.* sterling.

"The colonization of Africa opens a noble and extensive field to nations and to individuals. To people those fertile territories, despoiled of their inhabitants by the slave-trade; to

year the productions of the climes between the tropics, by the assistance of free men; to give ample scope to the industry and exertions of those who may be inclined to remove from Great Britain; and to extend the commerce and the manufactures of our native country—these are subjects which have excited the attention of the Bulama association, and now claim the assistance of the ingenious, the support of the rich, and the concurrence and good wishes of all."

BULLER (Sir Francis), one of the judges of the court of Common Pleas, long celebrated for the extent and correctness of his judicious knowledge, was the second son of James Buller, Esq. member of parliament for Cornwall, by his second wife Jane, daughter of Allen, Earl of Bathurst.

Sir Francis Buller received a classical education at a private school in the west of England, and having elected the law for his profession, was entered in the Temple, under the pupilage of Mr. (afterwards judge) Ashurst. He was early distinguished for great depth of knowledge, and professional accuracy; and for some years before he was called to the bar, practised with great success as a special pleader. Fashion, and the indiscriminate use of a phrase which is little understood, have occasioned somewhat of contempt to be attached to the reputation of a special pleader: by some, special pleading is understood to mean nothing more than a proficiency in the science of chicane, and a facility of exerting technical knowledge in enabling iniquity and injustice to triumph over candour and good faith; by others it is considered as a mere accumulation of jargon without any exact meaning, and without any other result than the increase of expence, and the delay of justice. Those who make these applications of the term, speak from the abuse against the science. Special pleading, or rather the art of drawing pleas, is founded on the strictest, and, at the same time, most liberal rules of logic. It implies not only a correct and minute, but a vigorous and comprehensive, mind; not only a talent for perceiving the shades of difference which are found between the extremes of right and wrong, but a great degree of readiness in applying them to a particular case. The nervous exercise of vigorous and manly eloquence obtains greater applause, and produces a more perceptible effect on the minds of juries; but in vain does the advocate obtain a verdict at *Nisi Prius*, if the correctness of the special pleader has not laid the foundation on which the superstructure of ultimate success must be raised; nor is the support of the throne of justice, and the final adjudication of the law, ordinarily committed to those orators whose talents have been most admired at *Nisi Prius*, but to those who, by their skill in special pleading, have evinced that laborious attention and precise information, without which justice may be perverted, and the judgment led captive by the imagination.

While Mr. Buller practised as a special pleader, Mr. Erskine was numbered among his pupils. In Easter term, 1772, he was called to the bar, and in the same year published his "Introduction to the Law of *Nisi Prius*;" a work which reflects the greatest honour on his learning, judgment, and ability; it still remains in high repute, and although Mr. Espinasse has published a very laborious and successful work on the same subject, Buller's *Nisi Prius* is, and perhaps always will be, a book in great demand and high estimation.

Mr. Buller's progress at the bar was extremely rapid: he is said to have owed much of his success to parliamentary connection; but this appears to be one of those fictions by which dunces attempt to depreciate genius when it has met its due reward. Mr. Buller was never in parliament, nor was he ever a conspicuous supporter of any ministers or their measures. Lord Mansfield, though an active and able politician, was not subject to be biased on the judgment-seat by his political pre-

dilections; at least, not in such a way as make coincidence a motive of personal preference. In Michaelmas term, 1777, he was honoured with a silk gown, and in three days after his promotion (27th November) made second judge of Cheffer. In the ensuing Easter term, a vacancy arising by the death of Sir Richard Ashton, Mr. Buller was, at the express and earnest recommendation of Lord Mansfield, advanced to the bench.

In this court, judge Buller sat for sixteen years, and his conduct abundantly verified the high hopes entertained of his abilities. Lord Mansfield supported his early exertions with all the weight of his authority, all the persuasion of his irrefragable eloquence: and when in the evening of his days that truly great character was frequently obliged to seek a temporary respite from the fatigues of his station, his place was supplied by Judge Buller, with a degree of ability and integrity which left little room for regretting the absence of the principal. Lord Mansfield was so entirely convinced of his ability, that he is said to have exerted all his influence, and to have even held his office after the power to execute its functions had ceased, for the purpose of obtaining the succession to Sir Francis Buller.

His efforts failed, but this was not the only instance in which a marked predilection was shewn for Buller's talents: he was often deputed by Lord Thurlow to sit in the Court of Chancery; and during the interval between the resignation of Lord Thurlow and the appointment of Lord Loughborough, Judge Buller was one of the commissioners of the great seal.

In Trinity term, 1794, finding the business of the court of King's-bench too multifarious for his state of health, he exchanged situations with Sir Soulden Lawrence, who had recently been made a judge; and sat in the court till the end of his days.

Sir Francis was always celebrated for his ready perception of the real point in a cause, his penetration in detecting the fallacies of advocates, and the equivocations of witnesses, and his clearness in explaining his opinions to the jury. His integrity is not commended, because no British judge has been known since the revolution to want that quality. The detractors of Buller, and detractors every man in an exalted situation must expect, have imputed to him somewhat too much of severity in criminal cases; but this insinuation is not founded on any cogent proof: one case alone is cited, but the public seems long since to have acquiesced in the justice of Donnellan's sentence. In the year 1785, Judge Buller encountered much obloquy on account of an altercation with Mr. Erskine, on the trial of the Dean of St. Asaph; but the heat of political dispute had considerable effect, and the judge was unfairly balanced in the public mind against an able and popular advocate in a popular cause. In 1798 he was at the head of the commission for trying the state prisoners at Maidstone, and conducted himself with the most exemplary dignity, prudence, and moderation. This was the last conspicuous act of his public life. He died on Wednesday, the 4th of June, 1800.

In private he was amiable, gay, and benevolent; in person remarkably handsome, his complexion florid, his eye brilliant, and replete with sagacity and penetration. His health, during his latter years, was undermined by continual attacks of the gout; and at the time of his death, he intended to have resigned his situation of judge in a few days. His death was remarkably sudden; he fell from his chair while playing a game at picquet, and expired instantaneously. He was in his 55th year.

BULNESS, a village in Cumberland, at the end of the Picts wall, on the Solway Frith, whence Antoninus began his Itinerary, and whence the people say a paved causeway ran formerly along the shore of Elenborough, of which, though few tokens appear, yet tracks of streets, pieces of old

walls, and Roman coins, are often discovered in ploughing the fields.

BUNDELA, or **BUNDELCUND**, a territory of Hindoostan Proper, on the S.W. of the river Jumna, and separated from it by a narrow tract of low country. It is inhabited by a tribe of Rajpoots, and is surrounded by the dominions of Oude, Benares, and the Mahrattas. It was formerly subject to a rajah of the name of Hindooput, but is now equally divided among his sons, or their descendants. It is a mountainous tract, of more than 100 miles square, and contains the celebrated diamond mines of Panna, or Purna, with some strong fortresses. Chatterpou, which is reckoned the capital, lies in the parallel of 25° N.

BUNGO, a kingdom of Japan, in the island of Ximo, whose capital is Lunay. The king of this country was converted to Christianity, and sent an embassy to pope Gregory, in 1683; but there is not now one Christian in all Japan.

BUNIVA, a mountain of Greece, between Janna and Achaia, extending as far as the gulf of Zeiton. The ancient name was Eta; and it is famous for the narrow pass of Thermopylae (so called from the hot baths in the neighbourhood) where Leonidas, and his gallant 300 Spartans, resisted, for three days, the whole Persian army. This is the place, feigned by the ancients to be the scene of the death of Hercules.

BURAGRAG, a river of Barbary, in the kingdom of Fez, which falls into the Atlantic ocean, at the town of Sallee.

BURGAUW, a town and castle of Germany, in the circle of Suabia, capital of a margravate of the same name. It belongs to the house of Austria, and is 26 miles W. of Augsburg. Long. 10. 15. E. Lat. 48. 28. N.

BURG-CLERE, a village of Hampshire, situated on the W. of King's-Clere, at the foot of a hill, which has a military camp on the top, and an extensive prospect.

BURGH-UPON-SANDS, a village of Cumberland, near Solway Frith, where the victorious Edward the First died, in 1307, as he was preparing for an expedition against Scotland. It is five miles N.W. of Carlisle.

BURHANPOUR, a city of Hindoostan, in the Deccan, the capital of Candesh, and, at one period, of the Deccan also. It is still a flourishing city, situated in the midst of a delightful country, 225 miles E. by N. of Surat. Long. 76. 19. E. Lat. 21. 25. N.

BURKE (Edmund), a writer, orator, and statesman, of superior eminence, was born at Dublin on January 1, 1730. His father was an attorney of reputation, of the protestant persuasion. Edmund received the early part of his education under Abraham Shackleton, a quaker, who kept a school or academy at Ballyore near Carlow. If in this seminary he did not acquire that exactness of classical instruction, which is the pride of the public schools, it is probable that he was indebted to it for the rudiments of a larger plan of intellectual pursuit, which is often the advantage of a private institution. It is to the honour both of the master and the scholar, that for near forty years, the latter, in his visits to Ireland, used to travel many miles to pay his respects to the former, who lived to an advanced age. In 1746 Edmund entered at Dublin College as a scholar of the house. It does not appear that he distinguished himself in the studies and exercises of the place; but his mind was by no means unoccupied. He closely pursued a plan of study of his own choice, of which the principal objects were logic, metaphysics, morals, history, rhetoric, and composition. He seems to have left Dublin College after taking a bachelor's degree in 1749; and it has been commonly reported that he finished his studies in the Jesuits' College at St. Omer's. This circumstance, which has liberally been made a sort of charge against him, has been denied, apparently

on good grounds, by his biographers. Nothing, however, is recorded of him about this period of his life, but that he made an unsuccessful application for the vacant professorship of logic at the university of Glasgow. In 1753 he first entered upon the great theatre of London, as a law-student at the Temple. He soon became the wonder of his acquaintance for the brilliancy of his parts, and variety of his acquisitions; but, like many other nominal students of the law, he directed the force of his mind rather to general literature, than to studies properly professional. Indeed it appears probable that he was obliged to depend upon his pen for a support; for, soon after his settling in London, he became a regular writer in newspapers and magazines, which was a drudgery his genius would scarcely have submitted to, but for its emoluments. He was always industrious, and never wasted his time or spirits on the pursuits of fashionable dissipation. Yet he was not so much a recluse as to be a stranger to the societies of the gay and polite; and an intimacy with the celebrated actress Mrs. Woffington, whose conversation was at that time courted by men of wit as well as by men of pleasure, contributed to form his manners and expand his social talents. A state of ill health, into which assiduous application threw him, rendered him a guest in the house of Dr. Nugent, a physician, and was eventually the cause of his marriage with the doctor's daughter. This lady retained his esteem and affection during the whole of a long union. As she was a Roman-catholic, additional force was given by that connection to the prevailing notion of Mr. Burke's good-will towards that communion.

His first avowed work appeared in 1756. It was a pamphlet entitled, "A Vindication of natural Society; or, a View of the Miseries and Evils arising to Mankind from every Species of artificial Society; in a Letter to Lord ***," by a late noble Writer." This supposed noble writer was Lord Bolingbroke, whose manner of writing and reasoning Mr. Burke in this piece ironically imitated, in order to show, as he afterwards asserted, that the same arguments from abuse, with which that nobleman had attacked religion, might be equally employed against all civil and political institutions: and thereby to infer their fallacy. In so serious and forcible a strain, however, did Mr. Burke argue upon the evils of society, proceeding from the tyranny, injustice, and ambition of kings and governors, that the irony to many eyes was invisible; and the work has actually been republished in late times for the purpose of aiding the cause of a radical reform in human institutions. Whatever the author really meant by it, he certainly displayed great powers of writing and extensive knowledge; yet the work excited little notice, and it is only his subsequent fame that has made it an object of curiosity. For this disappointment, however, he was fully compensated by the reception of his next literary performance, the "Essay on the Sublime and Beautiful," published in 1757. The elegance of its language, and the spirit of philosophical investigation it displayed, at once raised its author to the first class among writers on topics of taste and criticism. The hypothesis he maintained concerning the objects of his enquiry was, that the principal source of the sublime is terror, or some sensation analogous to it; and that beauty is that quality, or the result of those qualities in objects, by which they excite love, or some similar affection. This theory is supported with much acuteness, and felicity of illustration; and though, like many other ingenious men, he has shewn too great a propensity to generalizing, it is certain that many of his observations are not less solid than elegant. The fame acquired by this work soon introduced the author to the best literary acquaintance. He became intimate in the house of Reynolds, afterwards Sir Joshua; and this connection, which lasted for life, was equally serviceable to the reputation of the one, and the pecuniary circumstances of the other.

Even the great Johnson courted his society, and there was no man of whose exalted talents he was more sensible. "Burke," said he, in his strong manner, "is one, with whom if you were to take shelter from a shower under a gateway, you would say you had been in company with the most extraordinary man you had ever seen." This praise implies not only uncommon qualifications, but as uncommon a readiness of displaying them; which, in fact, was one of Burke's striking distinctions. It is also said, that Johnson would more readily bear contradiction in opinion from Burke than from any other person; and that if he did not fear him, he was at least held by him in respect. In 1758 Burke suggested to Dodsley the bookfeller the plan of that valuable and entertaining work, the "Annual Register," and he took upon himself the writing of the historical part, which he continued for a number of years, greatly to the credit of the publication. It is allowed, that in no periodical work the narrative of the current transactions was ever given in a manner so nearly approaching to the dignity and consequence of history.

He was thus gradually forming for a statesman and orator; and his career may be said to have commenced in 1761, when he went over to Ireland as confidential friend to Mr. Hamilton, secretary to the lord-lieutenant, Lord Halifax. That gentleman, commonly known by the name of *single speech*, from a brilliant but sole display of his oratorical powers in the English House of Commons, was possessed of less industry than ability; and Mr. Burke is thought to have rendered him and the ministry some useful political services in Ireland, which were rewarded with a pension of 300*l.* on the Irish establishment. Soon after his return from that country in 1765, he was introduced by Mr. Fitzherbert to the Marquis of Rockingham, then appointed first lord of the treasury, who made him his private secretary; and through the interest of Lord Verney, he was elected representative for the borough of Wendover. The marquis, resolving durably to attach to himself a man of such first-rate talents, raised him at once to affluence by a nominal loan, but real gift, of a large sum, with which he was enabled to clear off incumbrances, and to purchase the elegant seat near Beaconsfield, where he thenceforth constantly resided. Mr. Burke was thus completely enlured into party, under an aristocratical influence, but at that time exerted in favour of popular measures. Before his political conduct is more particularly considered, it will be candid to furnish the reader with a kind of clue, which is contained in the character given of him by his early friend Mr. Hamilton: "Whatever opinion Burke, from any motive, supports, so ductile is his imagination, that he soon conceives it to be his right." This may be supposed chiefly applicable to the earlier part of his political life; yet it is sufficiently evident that his imagination had a great sway over his judgment to the last moment of his existence.

At this period the rising discontents in America were the great objects of interest to the nation. The stamp-act, imposed by the Grenville ministry, had kindled a flame among the colonists which threatened very serious consequences. Mr. Burke's first speech in parliament was on this subject, and it was much admired as a piece of eloquence. It was from his advice that the Rockingham administration took the middle and indecisive course of repealing the stamp-act, and passing a declaratory act, asserting the right of Great Britain to tax America; thus getting rid, indeed, of the present difficulty, but leaving to their successors the temptation of renewing a project which it was evident would be attended with a renewal of all the hazard and contention. The repeal, however, was an extreme popular measure at the time; and the ministry proceeded to other popular acts, as the repeal of the excise-tax, and the resolution against general warrants, when, after a

very short reign, they were turned out to make room for a new administration under the auspices of Mr. Pitt. It is allowed that Burke, though exhibiting great splendor of talents, was at this time too speculative and refined for real practice. He had, indeed, gone through a very different course of preparation for public life from that usually pursued. He had taken a wide range through all the studies which teach the nature, fortune, opinions, and principles, of mankind, and had employed himself in laying up those rich stores of knowledge, which he afterwards poured forth in such astonishing profusion. It was about this period that the character drawn for him by the poet Goldsmith, in the set of imaginary epigrams compiled for the several members of their celebrated literary club, appear to have been particularly applicable:

Here lies our good Edmund, whose genius was such,
We scarcely can praise it or blame it too much;
Who born for the universe, narrow'd his mind,
And to party gave up what was meant for mankind.
Though fraught with all learning, yet fraining his throat
To persuade Tommy Townsend to lend him a vote;
Who too deep for his hearers still went on refining,
And thought of convincing, while they thought of dining;
Though equal to all things, for all things unfit;
Too nice for a statesman; too proud for a wit;
For a patriot too cool; for a drudge disobedient;
And too fond of the right to pursue the expedient,
In short, 'twas his fate, unemployment or in place, fir,
To eat mutton cold, and cut blocks with a razor.

It is not intended in this biographical sketch to enter minutely into the political transactions of the time; it will suffice for our purpose to give a succinct view of the principles supported by Mr. Burke in that long warfare of opposition to ministerial measures in which he passed his best days. After concluding his official labours by a Short Account of a late short Administration, written with force and simplicity, he took his station, along with his discarded brethren, as a guardian of the people's rights and the public welfare, and a vigilant censor of the conduct of his successors. In the proceedings against Mr. Wilkes, and the case of the Middlesex election, Burke found large scope for blaming and ridiculing the policy of ministers; and he strenuously joined his efforts to those of the remonstrants against the violation of the rights of electors. About that time he published one of his most remarkable political works, entitled, *Thoughts on the Causes of the present Discontents*, which contains a large and explicit declaration of his ideas of the English constitution, and the mode by which power should be administered. He attributes all the evils and misgovernment of the reign to a plan formed by the court for governing by the private influence of its favourites, thus establishing a secret cabinet, always controlling the operations of the ostensible ministers, and dismissing them when not compliant with its designs. He shews in strong terms the incompatibility of such a secret influence with the principles of a free state; and supports some extremely popular notions concerning the House of Commons, which he says was originally designed as a "control, issuing immediately from the people, and speedily to be resolved into the mass whence it arose." Democratical as these sentiments may appear, his proposed remedy for the prevailing evils was perfectly aristocratical; since it consisted essentially in placing the government in the hands of the great whig families which had been the supporters of the revolution, and its consequent measures;—in other words, the Rockingham party. This narrow conclusion from enlarged principles gave great offence to many friends of freedom; and the celebrated Mrs. Macaulay wrote a pamphlet expressly in answer

to it, in which with much force and spirit he maintained her speculative notions on the great ends of government, and the equal rights of all citizens to participate in it. If it be of importance to acquit Mr. Burke of the charge of ever having been inclined to democracy in practice, certainly this publication may be confidently adduced as a proof of very different views. He was uniformly, however, the supporter of liberty, and the causes connected with it; freedom of the press, the rights of juries, and religious toleration: nor would his sincerity in these points ever have been questioned, had he not in his last years appeared as the champion of principles supposed directly adverse to them.

But the most lasting, as well as the strongest and noblest, of his parliamentary exertions, was his opposition to the train of ministerial measures antecedent and consequent to the American war. The whole powers of his eloquence, and the whole resources of his political wisdom, were employed first to prevent, and then to heal, the fatal breach between the mother country and her colonies; and to expose the misconduct and imbecility of those whom he considered as the authors of the calamity. And as this period comprised the full maturity of his oratorical abilities, it seems the proper place to describe the peculiar character of his oratory.

In all the records of eloquence an example probably is not found of a speaker so full of mind as Burke. Ideas and images crowd in upon him from all quarters. On every topic he not only takes in the whole compass of matter belonging to it, but makes excursions to a vast variety of subjects connected by the slightest associations. His diction is equally rich and varied with his matter. Figure rises after figure, image after image, in endless profusion; often splendid, sublime, and beautifully illustrative; not seldom coarse, disgusting, and puerile; for the rapidity of the current allowed him no time to select or purify. When he got up, it was scarcely possible for the audience to divine whither he would carry them; but they were sure of hearing nothing trite or common-place, and generally repaid for a patient attention, by striking and original sentiment, or deep and ingenious observation. From his speeches may be collected masterly discussions of almost every point interesting to human society, together with a great fund of historical narration and delineation of eminent characters. In argument he is often close and cogent, sometimes lax and sophistical. In praise and invective he is equally fervid and exuberant, exhausting all the tropes and epithets of language. In him feeling and fancy were alike potent, and daring vigour was allied with playful ingenuity. But oratory, as it was his forte, was also his foible. He loved too much to talk, and got the habit both of rising too often and staying up too long. His copiousness degenerated into prolixity; and after charming and convincing hearers with the beginning of his speech, he would tire them with the end. His vivacity and irritability rendered him not enough master of himself for a senatorial debator. He was sometimes hurried into violations of prudence and decorum, and said rash things in heat which he could not recal, and which could not be forgotten. His own party trembled to see him rise, and on many occasions would have preferred his silence to his aid. On the whole, he was not the most effective speaker of the house, though certainly the greatest genius. It may be added, that his manner was little in his favour; his voice was harsh, his tone natural, his action forcible, but strained and inelegant.

Mr. Burke's principles were supposed to be favourable to liberty, that in 1774 he was chosen member for Bristol, by the zealous and spontaneous efforts of the whigs and dissenters of

that opulent city. It does not appear, however, that, even in the great American contest, he ever explicitly declared himself concerning the fundamental rights of men in society. He was accustomed expressly to shun all such abstract questions, which he seemed to think dangerous and incapable of positive decision; and his attacks upon the measures of ministers were chiefly directed against their inexpediency, severity, and partial injustice. He very early proposed conciliation on the ground of renouncing future taxation, without discussing the question of right; though indeed he argued strongly against the assumed right of taxing *British subjects* who were unrepresented. It is needless here to say, that all the efforts of Burke and his friends were ineffectual. The war even became popular, and Burke seemed to lose ground in the public esteem by his opposition to it. He further gave offence to many, particularly his Bristol constituents, by his support of the Irish petitions for a free trade, and of a bill for taking off some hardships and penalties to which the Roman-catholics were exposed. He, however, recovered a large share of popularity by his famous bill of reform in the national expenditure, introduced in February 1780. In the framing of this bill, it was wonderful what minute accuracy of research he had employed; thus usefully proving, as he also did by the general tenor of his life, that the most brilliant imagination is not in the least incompatible with plodding industry. His speech on the bill was likewise remarkable by an extraordinary mixture of wit and humour with financial detail; an alliance no one but himself could or would have made. But though the idea of retrenchment was very grateful to the nation, it was not likely to be so to ministers and courtiers; and Burke's proposed bills were rejected.

In March 1782, an end was put to the ministry of Lord North, which was succeeded by the return of the Marquis of Rockingham and his party to power. Burke in this change obtained the lucrative post of paymaster to the forces, and a seat at the council-board. One of the first measures was the re-introduction of his reform bill, which passed, though not without considerable modifications. The death of the marquis, however, very soon put a period to this ministry; for upon the appointment of Lord Shelburne to succeed him as head of the treasury, instead of the Duke of Portland, several of the duke's friends resigned, and among them Mr. Burke. The Shelburne administration did not long survive the peace; and it was succeeded by that known by the name of the *Coalition*, as being composed in part of those former ministers who had been the objects of such a long and violent opposition, and in part of that opposition itself. The coalition was projected by Burke, who appears little to have calculated the effect upon the public mind of such a violent shock to all ideas of sincerity and consistency. It was, however, conformable enough to his old notion of governing by great families, and certainly still further absolves him from the charge of democratical principles. This association of power was dissolved by Mr. Fox's India bill, which had the warm support of Burke, but united against it both king and people. Mr. Pitt succeeded to the helm, and dissolved the parliament. This measure was attacked by Burke with great acrimony, and he moved a set of representations to the crown on the subject, one of which seems to go further in asserting the right of innovating upon established constitutions, than his usual latitude. He says, "Necessary reformation may hereafter require, as they have frequently done in former times, limitations and abridgments, and, in some cases, an entire extinction in some branch of prerogative." The grand desideratum of so many friends of freedom, parliamentary reform, was not however a species of alteration which he approved; and he opposed the plan for that purpose introduced by Mr. Pitt in 1785. Such a conduct was

consistent enough with the partisans of an aristocracy of borough-holding nobles.

The impeachment of the celebrated East-India governor, Mr. Hastings, was one of the great events of Burke's public life. He was the original promoter of it; and private motives of resentment were thought to have united with a regard to public justice in his pursuit of that national cause. He employed uncommon industry in collecting and arranging the materials of the charge, and followed it up with distinguished perseverance and ardour. His principal speech in support of the charge, was remarkable for violence and exaggeration; and upon the whole he was no gainer in the public estimation by this memorable impeachment, though perhaps the enormous length of the proceedings contributed more to render it unpopular than any well-grounded conviction of the innocence of the culprit.

The settling of the regency on the king's malady in 1788 was another subject in which Burke took a warm and active part. He contended vigorously against the minister's purpose of limiting the powers of the regent (the Prince of Wales), and his principle that the regency was elective and not hereditary. It is well known that the efforts of the opposition on this occasion were neither successful nor popular; and Burke expostulated himself to particular censure in consequence of some very unfeeling and irreverent expressions concerning the king, which escaped him in the vehemence of debate.

The last great act of Burke's political life was the part he took with respect to that mighty event, the French revolution. Though it might be supposed that one who had so long acted with the avowed friends of liberty at home, and had shewn such countenance to subjects whom oppression had driven into actual rebellion, would applaud the efforts of a great nation to found a free constitution out of the wrecks of absolute monarchy; yet, on the other hand, his constant unwillingness to resort to first principles, his reverence for established forms, and all the honours and splendors of civilized society, his contempt for the vulgar, and, it may be fairly added, his strong feelings of justice and humanity, might reasonably be expected to cause him to regard first with suspicion, and then with detestation, a revolution which soon betrayed symptoms of violence and a profligate spirit. He early manifested his dislike to it; and in February 1790, on a debate in the House of Commons concerning the reduction of the army, in which Mr. Fox recommended a generous confidence of this country towards the new rulers of France, he broke out into a virulent declamation against the original principles and the conduct of the French revolutionists, renounced personal friendship with Mr. Fox and those who supported the same opinions, and took his decided stand of hostility against every thing connected with the new order of things. From that time he sat down to the composition of his famous *Reflections on the Revolution in France*; on which he bent the utmost powers of his mind. It appeared in October, and no work perhaps ever excited more attention, or produced more effect. It is, in reality, a performance of wonderful vigour, displaying every characteristic excellence of the writer, and not a few of his defects. A liberal antagonist will not deny that it contains much justness of argument, much profundity of observation, with extraordinary beauties of language; while a judicious advocate will confess that it is not free from sophism and misrepresentation, and betrays a heated and ungoverned imagination. The most reprehensible circumstance is, that the writer, in his zeal to deviate as far as possible from principles which he thinks hurtful, uses arguments which would be applicable to the defence of the most tyrannical establishment, and to the condemnation of every struggle in favour of liberty. This work had a sale

almost unprecedented; and its author received the most unbounded praise from all those who were engaged in the support of establishments, and from many others, who were convinced by his arguments, and with him were shocked by the character the French revolution was daily assuming. On the other hand, it met with severe and formidable critics, and affixed, in the opinion of a numerous party, the stain of *apology* on the writer. It produced, among other replies, Paine's celebrated *Rights of Man*, which, for a time, seemed fully to balance its effects; but in the end, events, and the efforts of power and property, threw the preponderance in the scale of Burke; and it is not doubted that the turn he gave to the national opinions was an efficacious preparative to the ensuing war. He followed up his attack on the French principles, with *A Letter to a Member of the National Assembly*, in 1791; *An Appeal from the New Whigs to the Old*; *Letter to a noble Lord on the Subject in Discussion with the Duke of Bedford*; and *Thoughts on a Regicide Peace*; with several Memorials, &c. privately circulated; in all of which he displayed unabated powers of mind, together with such an earnest and inflamed zeal in the cause, as must remove all doubts of his sincerity. Indeed, enmity to the French revolution became the leading passion of his soul. He could not hear it named without violent irritation, and its success certainly embittered and disquieted all the concluding years of his life. Yet it must be allowed that his zeal was also invigorated by emolument. His hospitable disposition, and carelessness with regard to expence, had always rendered him a needy man; and the large pensions which were conferred upon him by the crown doubtless animated his love of royalty. These pensions were made a subject of severe animadversion in parliament, but he defended himself on their account with great vigour and spirit in his *Letter to a noble Lord*, above mentioned. The only other political object which occupied him during this period, was the emancipation of the Roman-catholics in Ireland from the disabilities they lay under, which he urged in *A Letter to Sir Hercules Langrishe, on the Propriety of admitting the Roman-catholics to the Elective Franchise*, 1792. He withdrew from parliament in 1794, and his seat for New Malton was occupied by his only son, a rising young man, whom his father viewed with the highest admiration as well as affection. The death of that son, soon after, was a most severe stroke upon him, and hastened the decline of nature he was beginning to feel. This, by gradual approaches, brought on a tranquil termination of his life on July 8, 1797, in the sixty-eighth year of his age. He preserved his senses to the last, and a few hours before his death caused to be read to him Addison's paper in the *Spectator*, on the immortality of the soul.

Mr. Burke was a very admirable man in private life, exemplary in his domestic and social relations, and greatly beloved by his friends, from several of whom he received substantial tokens of regard. His conversation was delightful, when not exasperated by inflammatory topics. He loved praise to a degree of weakness, and was not sparing in returning it. He had a very elegant taste for the fine arts, and was much attached to rural improvements, and the pursuits of agriculture. He was highly charitable and benevolent in his private capacity, and promoted many beneficent plans in his neighbourhood. The stream of his bounty latterly was directed to the relief of the sufferers from the French revolution, and he founded a school for the children of emigrants, the permanent support of which seems to have been one of his latest cares.

In addition to his literary exertions, it should be mentioned, that one of his biographers has asserted with the greatest confidence, that he was the real writer of Sir Joshua Reynolds's

Academical Discourses, that great artist having only contributed to the general plan, and the professional observations; and indeed the finished excellence of the composition, together with the great pecuniary favours he received from his friend, might render the supposition probable; yet it is strenuously denied by other authority. It is more certain that he had a great share in the composition of an admired account of the European settlements in America, undertaken by his cousin William Burke. The celebrated Letters of Junius were by many ascribed to Edmund Burke, at least as a leading associate in the design, and plausible arguments have been adduced for the opinion: but this literary mystery is yet untravelling. Other anonymous pieces of the political kind are known to have employed the masterly pen of Burke, as a principal or an auxiliary.—We are indebted to the popular work of Dr. Aikin, for the foregoing particulars.

BURKHAUSEN, a town of Germany, in Lower Bavaria, on the river Saltz, twenty-seven miles N. by W. of Saltzburg. Long. 12. 50. E. Lat. 40. 17. N.

BURMAH, an extensive kingdom of Asia, to the E. of the Ganges; sometimes, but erroneously, called Ava, from the name of its capital. It is bounded by Pegu on the S. and occupies both sides of the river Ava, as far as the frontiers of China. On the W. it has Aracan; and on the E. Upper Siam. This country, which is very little known to Europeans, produces some of the best teak timber in India. Ships built of teak, upward of forty years old, are no uncommon objects in the Indian seas, while an European-built ship is ruined there in five years. The forests which produce this valuable wood (which may be styled the *Indian oak*), are situated between the W. bank of the river Ava, and the country of Aracan, and are only 250 miles from the sea, by the course of the river.

BURNS (Robert). Scarcely any of the *self-taught* poets in any country have displayed so much real genius, or attained so much excellence, as the subject of the present article, who was the son of a gardener and small farmer, a native of the northern part of Scotland, but finally settled in the county of Ayr. Near the town of Ayr, Robert was born on January 29, 1759. He was brought up to rustic labour; but such a destination was not thought incompatible with that degree of literary education which is so general among the natives of Scotland. It appears that his father, a man of superior understanding, as well as of uncommon worth, exerted himself extraordinarily to procure instruction for his children; for, joining with some other heads of families of his own station, they engaged a master of considerable ability, under whom Robert became a very good English scholar, well grounded in the grammar, and possessed of a remarkable copiousness of words and expressions. His memory was retentive; and his love of reading, in proportion as proper objects were presented to him, became ardent. There was no great variety or choice among the books he first procured, nor does it appear that poetry was his earliest taste. The *Life of Hannibal*, and the *History of Sir William Wallace*, were his first favourites; and even polemical divinity, a topic of peculiar interest among his countrymen, was not without its attractions to him. In the mean time his imagination received a vigorous though homely food; from the conversation of an old woman resident in the family, who was plentifully stocked with the popular stories of fairies, witches, ghosts, and goblins, all which the piously believed. His father's circumstances did not permit Robert to enjoy a regular and unbroken course of instruction. It was interrupted by the necessity of early and hard labour; which, with poor diet, and melancholy prospects, fixed upon him a hypochondriacal tendency, that found its speediest cure in society and dissipation. The sum of direct instruction he received, included a smattering

ing of the French language, and some lessons in practical mathematics; but his own strong sense, with the aid of observation and casual reading, was continually making important additions to his mental stock. As he grew towards manhood, some of the best English poets came under his perusal; and he derived very essential benefit from a collection of letters by the most eminent writers, which by a lucky mistake fell into his hands, instead of a common introduction to the art of letter-writing.

His first poetical inspirer was Love, a passion of which he was ever singularly susceptible, and which formed much of the pleasure and pain of his life. A harvest companion gave him at fifteen the earliest impressions of this delicious emotion. She had several successors; but for a considerable time no other consequences ensued than the change of a topic for his verses. As he began to be known in the neighbourhood for strength of understanding and powers of conversation, his company was courted, and he too soon became initiated into riotous conviviality, though the love of company was long more prevalent over him than the love of drink. He has justly remarked, that his great misfortune at this period was the want of a fixed aim in life. His spirit rose above the meanness of his station. Though active in body, he could not submit to the thought of passing his whole existence in corporeal labour; yet no mode of elevating his condition presented itself. He made a trial at manufacture, and associated himself with a flax-dresser in the neighbouring town of Irvine; but the scheme ended in nothing but giving him a stronger relish for a town life. His reception among the fraternity of free-masons was an additional step towards his acquisition of convivial habits. After his father's death he joined his second brother in a small farm; but a course of bad seasons caused it to prove a losing concern, and they were obliged to give it up with the loss of their stock. During this period, he formed a connection with a young woman, which his circumstances, or his roving disposition, prevented him from improving into a legal union. When consequences ensued which could not be concealed, he endeavoured to ease his partner's mind by giving her an acknowledgment of a private marriage, which, upon information of his ruined condition, her parents induced her to resign. Poor Burns, now driven to utter despair, and having in prospect the horrors of a gaol, resolved to quit his native country, and actually engaged himself as assistant-overseer to a plantation in Jamaica. But he had for a considerable time been known in his neighbourhood as a maker of verses, and his compositions had become popular. Of these, some of the first were satirical effusions against the rigid Calvinistic clergy of the district, which, while they rendered the writer suspicious to the godly, were favourably received by those of a freer cast. Other pieces, humorous, descriptive, tender, and bacchanalian, were handed about and admired, and Burns himself began to think that he might lay some claim to the envied title of a poet. With the double view, therefore, of obtaining fame, and some pecuniary supply for his necessities, he resolved before his departure to publish a collection of such of his poems as he most approved; and in 1786 he printed a small volume at Kilmarnock, of which about 350 copies were subscribed for. When it is known that Halloween, the Address to the De'il, the Field Mouse, Mountain Daisy, and, above all, the Cotter's Saturday Night, were in this collection, it will not be wondered at, that they not only excited rustic admiration, but were perused with wondering applause by persons of the most refined taste. The local success was prodigious. The Ayrshire plowman became the pride of the country; and the labourer and maid-servant were impatient to convert a portion of their hard-earned gains into a copy of the delightful productions of the Scottish muse.

Burns, however, persisted in his purpose of quitting his native land; and with part of the sum his publication yielded, actually paid for his passage to the West Indies in a ship from the Clyde. "I had taken," says he, "the last farewell of my few friends; my chest was on the road to Greenock; I had composed the last long I should ever measure in Caledonia, 'The gloomy night is gathering fast;' when a letter from Dr. Blacklock to a friend of mine, overthrew all my schemes, by opening new prospects to my poetic ambition." That amiable poet, in common with some other persons of taste in Edinburgh, had been struck with the extraordinary merit of Burns, and had given his opinion that a visit to that capital would prove highly advantageous to him. Burns embraced the proposal with rapture, and posted to Edinburgh in November, 1786, relying solely on his fame, as he did not possess a single acquaintance in the place. His reception surpassed his most sanguine hopes. He was introduced to men of the first rank in letters, and to others of title and fortune; he was invited to all parties, praised, caressed, feasted, and more solidly encouraged by large subscriptions for a new edition of his poems. An ingenious periodical paper, entitled *The Lounger*, being about to conclude, one of its last numbers was devoted to a critique on the poetry of Burns, in which their peculiar excellences were amply displayed. In this new scene Burns exhibited a fund of manly sense and enlarged understanding, which rendered the man as much the object of admiration, as his *works* had been. The strength, purity, and fluency of his language in conversation, were thought particularly remarkable in one of his rank and education. His manners were simple and independent; he was above all the affected singularities of pretenders to genius: and though he sufficiently displayed a consciousness of his value, he was neither vain nor assuming. Nature had given him a countenance expressive and dignified, and a free cast of sentiment had taught him to hold up his head in the presence of his fellow-men; so that strangers who thought they were going to confer an honour on the peasant by their notice, were involuntarily awed by the first interview. The firmness of his mind, however, was not proof against the temptations to excess which assailed him from every quarter at Edinburgh. His social propensities were under continual stimulation, and the world of company obtained as easy a possession of him as the best. He passed the bounds of moderation in all his enjoyments, and his abode of two winters in the Scotch metropolis irretrievably fixed his unfortunate habits.

In February 1788, he found himself master of 500*l.* the fruits of that extraordinary encouragement which his new edition of poems had met with. Of this sum he advanced 200*l.* to his brother, the farmer; and with the remainder he took a considerable farm of a gentleman in Dumfriesshire, upon terms intended to be much in his favour. But it is evident that he himself at this time suspected that he should be unequal to the constant attention and industry which are absolutely requisite to produce success in the laborious and anxious occupation of agriculture. As a kind of *dernier resort*, he had employed all his interest to procure an appointment to the humble post of an exciseman, the highest, it seems, which the favour of the great could obtain for him. We may be surprised that a man of his character should be ambitious of an office which could not but hurt his generous feelings in its exercise, and completely destroyed his independence; and the fact can only be attributed to his melancholy forebodings with respect to the other plan. But his proposed union of the two employments was an absurdity which he obviously led to ruin, that his friends should have interferred to prevent it. Before settling, he took the honourable step of legalising, by a declaration of marriage, his connection with the female above men-

tioned, who had been absolutely turned out of doors by her father.

Burns for a time seemed to enjoy his rural and domestic pleasures, and worked cheerfully at his plough; but his fame and his habits drew him too often from his solitude to convivial company, and the unhappy excise business gave him too good a plea to quit his farm, and take up his abode at ale-houses. After three years and a half, he found it necessary to resign his lease into his landlord's hands, and remove to a small house in the town of Dumfries as a mere exciseman. One of the first troubles that followed him was a charge of diloyalty. Like most other ardent and ingenious spirits, he had been warmed to admiration of the beginning of the French revolution, and to concurrence in the principles on which it was founded. These he expressed with his usual freedom of speech, and his incautious language was reported to the board. This offence was much more heinous than the jacobinism of his younger days, which, indeed, was no more than a harmless play of romantic sentiment. A supervisor was appointed to enquire into his delinquency; and it was not without the intercession of a respectable friend, and promise of more guarded behaviour, that he was suffered to retain his situation. He afterwards wiped off all stain of diloyalty, so as to be placed on the list of expecting supervisors, though he did not live to attain his advancement. It would be painful to dwell upon the poor remnant of his life, in which he sunk into the habitual, forgetful of reputation, health, virtue, and the claims of those who ought to have been dearer to him. Even in this state of degradation; however, he exhibited admirable powers of the imagination, and his mind was vigorous while his body was daily becoming more feeble and diseased. He retained, too, a principle of honour in pecuniary matters, which preserved him from meanness even when oppressed with poverty. He was jealous of all offers of assistance, and long declined even the fair recompence of literary services. The latter years of his life were much occupied in lyric compositions, which he undertook at the request of a Mr. Thomson in Edinburgh, who was making an ample collection of Scottish song tunes, to many of which there existed either no words, or poor and improper ones. Burns engaged with ardour in this national work, waving all proposals of remuneration; and he poured forth a surprising number of pieces, many of them exquisite specimens of descriptive and sentimental beauty, clothed in language of touching simplicity and delicacy. He continued also to write to his correspondents letters full of fancy and energy. Several of these contain expressions of the keenest remorse for the faults he was daily committing; though neither that compunction, nor the religious sentiments with which he was permanently imbued, had power to overcome the force of habits, now become part of his nature. With respect to religion, though his mind had been early shocked with the horrors of the calvinistic faith, and he had been thrown into a state of doubt concerning revelation, yet he always cherished the hope and belief of a future life, as the only true solace under poverty and adversity; and many noble and pathetic declarations to this purpose are to be found in his letters. After much suffering from pain and depression, he died of the consequences of irregularities, in July 1796, in his thirty-eighth year. He left his wife and four children with no other provision than the interest inspired by a name endeared to the lovers of poetry, by performances never to be forgotten. This provision has proved not unfruitful. A considerable sum was raised for his family by subscription soon after his death; and Dr. Currie, an eminent physician at Liverpool, generously undertook to prepare for their benefit a complete edition of his works, which appeared in 1800, in 4 vols. 8vo. enriched with an ample account of his life, and

a criticism on his writings, with some observations on the character and condition of the Scottish peasantry; the whole forming a highly valuable addition to English literature.

The poems of Burns consist of pieces, none of considerable length, upon a great variety of subjects, and in very different styles. Most of them are written in the old Scottish dialect, and in figurative measures, of which he found the examples in Allan Ramsay's works. The best of them possess a vigour of imagination, a warmth of feeling, a happy simplicity and force of expression, that render them irresistibly engaging. It is difficult to determine whether he excels most in the sublime, the tender, or the humorous. In fact, in all these modes he drew his ideas immediately from nature, and animated them with the fire of genius. Though he can only rank among the minor poets, he will continue to be read and admired as long as poetry is relished, unless his productions should be prematurely hurried into oblivion by the use of an obscure and decaying dialect. His letters will by many be thought as extraordinary proofs of literary talents, superior to his situation, as his poems. They are in general written with a purity and command of language which would be admired in any condition; and they abound with passages of elegance, variety, and vigour, which genius alone could produce. With one of these, which may serve as a sketch of his own character drawn by himself, we shall conclude this article: "Take a being of our kind, give him a stronger imagination and more delicate sensibility, which between them will ever engender a more ungovernable set of passions than are the usual lot of man; implant in him an irresistible impulse to some idle vagary, such as, arranging wild flowers in fantastic nosegays, tracing the grasshopper to his haunt by his chirping notes, watching the frisks of the little minnows in the funny pool, or hunting after the intrigues of butterflies; in short, send him adrift after some pursuit which shall eternally mislead him from the paths of lucre, and yet curse him with a keener relish than any man living for the pleasures that lucre can bestow; lastly, fill up the measure of his woes by bestowing on him a spurning sense of his own dignity;—and you have created a wight nearly as miserable as the poet."—We are indebted to the popular biographical work of Dr. AIRIN, for the foregoing particulars.

BURNT ISLAND, a borough of Scotland, on the Frith of Forth, in Fifeshire. It has an excellent harbour, in form of a basin, where ships sometimes perform quarantine. It has a sugar-house, and some beginning manufactures. Near this place are found stones that appear to have been thrown out by a volcano. It is seated under a stupendous rock, ten miles N.W. of Edinburgh. Long. 3. 5. W. Lat. 56. 8. N.

BURRAMPOOTER, a river of Asia, which rises near the head of the Ganges, in the mountains of Thibet. Of these two rivers it is remarkable, that, issuing from opposite sides of the same ridge of mountains, they direct their course towards opposite quarters, till they are more than 1200 miles asunder; meeting in one point beyond the sea, after it has performed a winding course of more than 2000 miles. From its source, the Burrampooteer proceeds easterly

through Thibet, where it is named Sanpoo, or Zancin, that is, the *River*. After washing the border of the territory of Lassa, it takes a south-easterly course, and approaches within 220 miles of Yunan, the westernmost province of China. It then turns suddenly to the W. and proceeding through Aflamp, assumes the name of Carampooteer. It enters Bengal on the N. E. makes a circuit round the western point of the Garrow Mountains, and then, altering its course to S. meets the Ganges about forty miles through Bengal. This river bears so intimate a resemblance to the Ganges, except in one particular, that the same description might serve for both. The exception is, that during the last sixty miles before its junction with the Ganges, it forms a stream which is regularly from four to five miles wide; and, but for its freshness, might pass for an arm of the sea.

BUTRAGO, a town of Spain, in New Castille, formerly a bishop's see. It is seated on the river *Lozoya*, thirty miles N. by E. of Madrid. Long. 3. 5. W. Lat. 40. 46. N.

BUTTERMERE-WATER, a lake in Cumberland, about eight miles S. W. of Kelwick. It is two miles long, and not quite one broad. On the W. side it is terminated by a mountain, called, from its ferruginous colour, the Red Pike. A strip of cultivated ground adorns the E. shore. A group of houses, called Gategarth, is seated on the S. extremity, under a very extraordinary amphitheatre of mountainous rocks. Here Homister Crag is seen rising to a vast height, flanked by two conical mountains, Fleetwith on the E. and Scarf on the W. side. A hundred mountain torrents form never-failing cataracts, that thunder and foam down the centre of the rock, and form the lake below. Here the rocky scenes and mountain landscapes are diversified and contrasted with all that aggrandize the object in the most sublime style. This lake is called the Upper Lake; and, near a mile from it, to the N. E. is the Lower Lake, called also Cromack-water. The river Cooker flows through both these lakes to Cockermouth.

BYRON'S ISLAND, an island in the S. Pacific Ocean, discovered by Commodore Byron in 1765. It is low, full of wood, and very populous. On his approach to the island, several natives put off to the ship. After gazing at it some time, one of them suddenly sprung out of his canoe, into the sea, swam to the ship, ran up the side like a cat, and sitting down, when he got on deck, burst into a violent fit of laughter; then starting up, he ran all over the ship, attempting to steal whatever he could lay his hands upon, but being quite naked, he was always foiled. The seamen put a jacket and trowers on him, which caused great diversion, as he displayed all the antics of a monkey; at last he leaped overboard in this dress, and swam to his canoe. His success led several others to swim to the ship, and whatever they could seize they carried off with astonishing agility. These people are tall, well proportioned, and clean; their features good, and their countenance expressive of a surprising mixture of intrepidity and cheerfulness. Long. 173. 46. E. Lat. 1. 18. S.

BYZANTIUM. See CONSTANTINOPLE.

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CABALLINUM (anc. geog.), a town of the Ædii in Gallia Celtica: now *Chalon sur Saone*, which see.

CABALLINUS (anc. geog.), a very clear fountain of mount Helicon in Boeotia; called *Hippocrene* by the Greeks; because opened by Pegasus on striking the rock with his hoof, and hence called *Pegafus*.

CABALLIO, or **CABELLIO** (anc. geog.), a town of the Cavares in Gallia Narbonensis, situated on the Druentia. One of the Latin colonies, in the Notitiae called *Civitas Cabellivorum*. Now *Cavaillon* in Provence. See *CAVAILLON*.

CABRERIA, a small island in the Mediterranean, about seven miles to the S. of Majorca. It has a large harbour, defended by a castle.

CABUL, the capital of the province of Cabul, and of the dominions of the king of Candahar, situated near the foot of the Indian Caucasus, not far from the source of the Attock, which runs near it. Its situation is spoken of by the Indian historians in terms of rapture; it being no less romantic than pleasant; and having within its reach, the fruits and other products both of the temperate and torrid zone. It is considered as the gate of India toward Tartary, as Candahar is with respect to Persia. It is 680 miles N. W. of Delhi. Long. 68. 58. E. Lat. 34. 36. N.

CACACA, a town of Africa, in the kingdom of Fez, near Malilla. The moors retook it from the Spaniards in 1534; and it has a fort upon a rock. Long. 2. 55. W. Lat. 35. 2. N.

CACERES-DE-CAMARINHA, a town of Asia, in the file of Luconia, with a bishop's see, subject to Spain. Long. 124. 0. E. Lat. 14. 35. N.

CACONGO, a small kingdom of Africa, on the river Zaïre, whose inhabitants are great traders. Their manners, religion, and government, are the same as in Loango. It lies in Lat. 5. 0. S.

CACORLA, a town of Spain, in Andalusia, on the rivulet Vega, between two mountains. It belongs to the Archbishop of Toledo, and is fifteen miles E. S. E. of Ubeda. Long. 2. 55. E. Lat. 37. 40. N.

CADURCI, **CADURCUM**, *Cadurcus*, and *Cadurx* (anc. geog.), a town of the Cadurci, a people of Aquitania; situated between the rivers Oldus running from the north, and the Tarnis from the south, and falling into the Garumna: now *Cahors*, capital of the territory of the Querci, in Guienne. A part of the Caduci, to the south next the Tarnis, were called *Eleutheri*.

CADURCI (anc. geog.), a people of Media Atropatene, situated to the west in the mountains, and reaching to the Caspian sea; between whom and the Medes perpetual war and enmity continued down to the time of Cyrus.

CÆRE (anc. geog.), a town of Etruria, the royal residence of Mezentius. Its ancient name was *Argyllæ*. In Strabo's time not the least vestige of it remained, except the baths called *cæretana*. From this town the Roman censor's tables were called *cæretis tabulae*. In these were entered the names of such as for some misdemeanor forfeited their right of suffrage, or were degraded from a higher to a less honourable tribe. For the people of Cære hospitably receiving those Romans who, after the taking of Rome by the Gauls, fled with their gods and the sacred fire of Vesta, were, on the

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Romans recovering themselves from this disaster, honoured with the privilege of the city, but without a right of voting.

CAERWENT, a village of Monmouthshire, famous for a beautiful mosaic pavement, discovered in 1777; and asserted to be superior to any such discovered on this side of the Alps, and equal to those preserved by the king of Naples at Portici.

CÆSAR Augusta, or *Cæsarea Augusta* (anc. geog.), a Roman colony situated on the river Iberus in the hither Spain, before called *Salduba*, in the territories of the Edetani. Now commonly thought to be *Saragosa*. See that article.

CÆSARODUNUM (anc. geog.), a town of the Turones in Celtic Gaul: now *Tours*, the capital of Touraine. See *TOURS*.

CÆSAROMAGUS (anc. geog.), a town of the Trinobantes in Britain; by some supposed to be *Chelmsford*, by others *Brentford*, and by others *Burset*.

CÆSENA (anc. geog.), a town of Gallia Cispadana, situated on the rivers Iapis and Rubicon: now *Cæsa*, which see.

CÆSIA SYLVA (anc. geog.), a wood in Germany, part of the great Sylva Hercynia, situated partly in the duchy of Cleves, and partly in Westphalia between Wesel and Kessel.

CÆTOBRIX (anc. geog.), a town of Lusitania, near the mouth of the Tagus on the east side; now extinct. It had its name from its fishery; and there are still extant fish-ponds on the shore, done with plaster-of-Paris, which illustrate the name of the ruined city.

CAIETA (anc. geog.), a port and town of Latium, so called from Æneas's nurse; now *Gaeta*, which see.

CAIN, eldest son of Adam and Eve, killed his brother Abel; for which he was condemned by God to banishment and a vagabond state of life. Cain retired to the land of Nod, on the east of Eden; and built a city, to which he gave the name of his son Enoch.

CAIRNGORM, a mountain of Scotland, in the east of Invernesshire; the lofty top of which is patched with snow. It is famous for its beautiful rock-crystals of various tints. They are much esteemed by lapidaries; and some of them, having the lustre of fine gems, bring a high price.

CALAGORINA, or **CALAGURIS**, distinguished by the surname *Nafica* (anc. geog.), a city of the Vascones in the hither Spain: now *Calahorra*.

CALAMATA (*Encycl.*). Erroneously spelt *CALAMATA*. **CALAMIANES**, three small islands of Asia, between Borneo and the Philippines, and N. of Parago. They are famous for their edible bird-nests. Long. 118. 5. E. Lat. 11. 0. N.

CALAURIA (anc. geog.), an island of Greece in the Saronic bay, overagainst the port of Troezen, at the distance of forty stadia. It was thirty stadia in compass, and had a temple of Neptune held in great veneration. It was also an asylum, and the place of the convention or assembly of the seven cities of the Amphictyons. To this place Demosthenes went twice into banishment.

CALBEN, a town of Germany, in the Old Marche of Brandenburg, with a good castle, thirty-two miles N. of Magdeburg.

CALES (anc. geog.), a municipal city of some note in

Campania, at no great distance from Casilinum. The epithet *Caleans* is by Horace and Juvenal applied to a generous wine which the territory produced.

CALETES (anc. geog.), a people of Gallia Celtica, on the confines of Belgica, situated between the sea and the Sequana. Now called *le Pays de Caux*, in Normandy.

CALLE (anc. geog.), a town of Hither Spain, situated on an eminence which hangs over the river Durus; whose port was at the mouth of the river. Now *Porto, Oporto*, or *Port a Port*. See **Oporto**.

CALLIRHŒ (anc. geog.), surnamed *Emecacrunos*, from its nine springs or channels; a fountain not far from Athens, greatly adorned by Pifistratus, where there were several wells, but this only the running spring. Callirhoe was also the name of a very fine spring of hot water beyond Jordan near the Dead Sea, into which it empties itself.

CALORIMETER, an instrument or apparatus, invented by the celebrated Lavoisier, for measuring the escape of heat. See **CHEMISTRY**, pages 376 and 480.

CALVADOS, a department of France, including part of the late province of Normandy. It is so called from a rock of the same name. Caen is the capital city.

CALVARY MOUNT, a hill near Jerusalem, on which **JESUS CHRIST** was crucified.

CALYDON (anc. geog.), a town of Ætolia, situated seven miles and a half from the sea, and divided by the river Evenus; the country was anciently called *Æolis*, from the Æolians its inhabitants. This country was famous for the story of Meleager and the Calydonian boar.

CAM, or GRANTA, a river which rises in Hertfordshire, runs N.E. by Cambridge, and N. to the Isle of Ely, where it falls into the Ouse.

CAMARAT, a sea-port of France, in the department of Finistère and late province of Brittany. In an expedition against Brest in 1694, the English landed here, and lost a great number of men. It stands on a bay of the same name.

CAMBERWELL, a fine village of Surrey, two miles S.E.E. of London. Its parish includes the villages of Dulwich and Peckham.

CAMPBELL (Archibald), earl and marquis of Argyle, was the son of Archibald earl of Argyle, by the Lady Anne Douglas, daughter of William earl of Morton. He was born in the year 1598; and educated in the profession of the Protestant religion, according to the strictest rules of the church of Scotland, as it was established immediately after the reformation. During the commonwealth he was induced to submit to its authority. Upon the restoration, he was tried for his compliance; a crime common to him with the whole nation, and such a one as the most loyal and affectionate subject might frequently by violence be induced to commit. To make this compliance appear the more voluntary and hearty, there were produced in court, letters which he had wrote to Albemarle, while that general governed Scotland, and which contained expressions of the most cordial attachment to the established government. But, besides the general indignation excited by Albemarle's discovery of this private correspondence, men thought, that even the highest demonstrations of affection might, during jealous times, be exacted as a necessary mark of compliance from a person of such distinction as Argyle; and could not, by any equitable construction, imply the crime of treason. The parliament, however, scrupled not to pass sentence upon him, and he suffered with great constancy and courage.

CAMPBELL (Archibald), earl of Argyle, son to the former, had from his youth distinguished himself by his loyalty, and his attachment to the royal family. Though his father was head of the covenanters, he himself refused to concur in any of

their measures; and when a commission of colonel was given him by the convention of states, he forbore to act upon it till it should be ratified by the king. By his respectful behaviour, as well as by his services, he made himself acceptable to Charles when that prince was in Scotland; and even after the battle of Worcester, all the misfortunes which attended the royal cause could not engage him to desert it. Under Middleton he obstinately persevered to harass and infect the victorious English; and it was not till he received orders from that general, that he would submit to accept of a capitulation. Such jealousy of his loyal attachments was entertained by the commonwealth and protector, that a pretence was soon after fallen upon to commit him to prison; and his confinement was rigorously continued till the restoration. The king, sensible of his services, had remitted to him his father's forfeiture, and created him Earl of Argyle; and when a most unjust sentence was passed upon him by the Scots parliament, Charles had anew remitted it. In the subsequent part of this reign Argyle behaved himself dutifully; and though he seemed not disposed to go all lengths with the court, he always appeared, even in his opposition, a man of mild dispositions and peaceable deportment.

A parliament was summoned at Edinburgh in the summer of 1681, and the duke was appointed commissioner. Besides granting money to the king, and voting the indefeasible right of succession, this parliament enacted a test, which all persons possessed of offices, civil, military, or ecclesiastical, were bound to take. In this test the king's supremacy was asserted, the covenant renounced, passive obedience assented to, and all obligations disclaimed of endeavouring any alteration in civil or ecclesiastical establishments. This was the state of the test as proposed by the courtiers; but the country party proposed also a clause of adherence to the Protestant religion, which could not with decency be rejected. The whole was of an enormous length, considered as an oath; and, what was worse, a confession of faith was there ratified which had been imposed a little after the reformation, and which contained many articles altogether forged by the parliament and nation. Among others, the doctrine of resistance was inculcated; so that the test being voted in a hurry, was found on examination to be a medley of absurdity and contradiction. Though the courtiers could not reject the clause of adhering to the Protestant religion, they proposed, as a requisite mark of respect, that all princes of the blood should be exempted from taking that oath. This exception was zealously opposed by Argyle; who observed that the sole danger to be dreaded for the Protestant religion must proceed from the perversion of the royal family. By insisting on such topics, he drew on himself the secret indignation of the Duke of York, of which he soon felt the fatal consequences.

When Argyle took the test as a privy-counsellor, he subjoined, in the duke's presence, an explanation which he had beforehand communicated to that prince, and which he believed to have been approved by him. It was in these words: "I have considered the test, and am very desirous of giving obedience as far as I can. I am confident that the parliament never intended to impose contradictory oaths: therefore, I think no man can explain it but for himself. Accordingly I take it as far as it is consistent with itself and the Protestant religion. And I do declare that I mean not to bind myself, in my station, and in a lawful way, from wishing and endeavouring any alteration, which I think to the advantage of church or state, and not repugnant to the Protestant religion and my loyalty: and this I understand as a part of my oath." The duke, as was natural, heard it with great tranquillity: no one took the least offence: Argyle was admitted to sit that

day in council : and it was impossible to imagine that a capital offence had been committed where occasion seemed not to have been given so much as for a frown or reprimand.

Argyle was much surprised a few days after, to find that a warrant was issued for committing him to prison ; that he was indicted for high-treason, leasing-making, and perjury ; and that from the innocent words above mentioned an accusation was extracted, by which he was to forfeit life, honours, and fortune. It is needless to enter into particulars, where the iniquity of the whole is so evidently apparent. Though the sword of justice was displayed, even her semblance was not put on ; and the forms of law were preferred to sanctify, or rather aggravate, the oppression. Of five judges, three did not scruple to find the guilt of treason and leasing-making to be incurred by the prisoner : a jury of fifteen noblemen gave verdict against him ; and the king being consulted, ordered the sentence to be pronounced, but the execution of it to be suspended till further orders. Argyle, however, saw no reason to trust to the justice or mercy of such enemies : he made his escape from prison, and, till he could find a ship for Holland, he concealed himself during some time in London. The king heard of his lurking place, but would not suffer him to be arrested. All the parts, however, of his sentence, so far as the government in Scotland had power, were rigorously executed ; his estate confiscated, his arms reversed and torn. Having got over to Holland, he remained there during the remaining part of the reign of Charles II. But thinking himself at liberty, before the coronation of James II. to exert himself in order to recover the constitution by force of arms, he concerted measures with the Duke of Monmouth, and went into Scotland to assemble his friends : but not meeting with the success he expected, he was taken prisoner ; and being carried to Edinburgh, was beheaded upon his former unjust sentence, June 30, 1685. He shewed great constancy and courage under his misfortunes : on the day of his death he ate his dinner very cheerfully ; and, according to his custom, slept after it a quarter of an hour or more, very soundly. At the place of execution he made a short, grave, and religious speech ; and, after solemnly declaring that he forgave all his enemies, submitted to death with great firmness.

CAMPBELL (John), duke of Argyle and Greenwich, grandson of the former, was born on the 10th of October, 1680 ; and, on the very day when his grandfather suffered at Edinburgh, fell out of a window three pair of stairs high, without receiving any hurt. At the age of fifteen, he had made a considerable progress in classical learning. His father then perceived and encouraged his military disposition, and introduced him to King William, who, in the year 1694, gave him the command of a regiment. In this situation he remained till the death of his father, in 1703 ; when becoming Duke of Argyle, he was soon after sworn of Queen Anne's privy-council, made captain of the Scotch horse-guards, and appointed one of the extraordinary lords of session. In 1704, her majesty reviving the Scottish order of the Thistle, his grace was installed one of the knights of that order, and was soon after appointed high-commissioner to the Scotch parliament ; where, being of great service in promoting the intended union, he was on his return created a peer of England, by the titles of Baron of Chatham and Earl of Greenwich, and in 1710 was made knight of the Garter. His grace first distinguished himself in his military capacity at the battle of Oudenard ; where he commanded as brigadier-general, with all the bravery of youth, and the conduct of a veteran officer. He was present under the Duke of Marlborough at the siege of Ghent, and took possession of the town. He had also a considerable share in the victory

obtained over the French at the battle of Malplaquet, by dislodging them from the wood of Sart, and gaining a post of great consequence. In this sharp engagement, several musket-balls passed through the duke's clothes, hat, and periwig. Soon after this hot action, he was sent to take the command in Spain ; and after the reduction of Port Mahon, he returned to England. His grace having now a seat in the House of Lords, he censured the measures of the ministry with such freedom, that all his places were disposed of to other noblemen : but at the accession of George I. he recovered his influence. At the breaking out of the rebellion in 1715, he was made commander-in-chief of his majesty's forces in North Britain ; and was the principal means and cause of the total extinction ; at that time, of the rebellion in Scotland, without much bloodshed. In direct opposition to him, or that part of the army he commanded, at the head of all his Campbells was placed Campbell earl of Braidalbin, of the same family and kindred, by some fatal error, that ever misguided and milled that unhappy family of the Stuarts and all its adherents. The consequence was, that both sets of Campbells, from family affection, refused to strike a stroke, and retired out of the battle. He arrived at London, March 6th, 1716, and was in high favour : but, to the surprise of people of all ranks, he was in a few months divested of all his employments ; and from this period, to the year 1718, he signalized himself in a civil capacity, by his uncorrupted patriotism and manly eloquence. In the beginning of the year 1719 he was again admitted into favour, appointed lord-treasurer of the household, and in April following was created Duke of Greenwich. He continued in the administration during all the remaining part of that reign ; and, after his late majesty's accession, till April 1740 ; when he delivered a speech with such warmth, that, the ministry being highly offended, he was again dismissed from his employments. To these, however, on the change of the ministry, he was soon restored ; but not approving of the measures of the new ministry more than those of the old, he gave up all his posts for the last time, and never after engaged in affairs of state. He now enjoyed privacy and retirement ; and died of a paralytic disorder, on the 4th of October, 1743. To the memory of his grace a very noble monument was erected in Westminster-abbey, executed by the ingenious Rubiliac.

The Duke of Argyle, though never first minister, was a very able statesman and politician, most steadily fixed on those principles he believed to be right, and not to be shaken or changed. His delicacy and honour were so great, that it hurt him to be even suspected ; witness that application said to be made to him by one of the adherents of the Stuart family before the last rebellion in order to gain his interest, which was considerable both in Scotland and England. He immediately sent the letter to the secretary of state ; and it vexed him much even to have an application made to him, lest any person should think him capable of acting a double part. When he thought measures wrong or corrupt, he cared not who was the author, however great or powerful he might be ; witness his boldly attacking the great Duke of Marlborough in the House of Lords, about his forage and army contracts in Flanders, in the very zenith of his power and popularity, though in all other respects he was the most able general of his time. The Duke of Argyle, on all occasions, spoke well, with a firm, manly, and noble eloquence ; and seems to deserve the character given of him by Pope :

Argyle, the state's whole thunder born to wield,

And shake alike the senate and the field.

CAMPI (Bernardine) of Cremona, an Italian painter, author of an admired treatise on the art, flourished in the 12th century.

CAMPSEY HILLS, a ridge of hills in Stirlingshire, which extend from E. to W. and occupy the centre of the county.

CANAL (*Encycl.*). The following is the specification of a patent granted to Mr. Huddleston, of Shaftesbury, for a method of conveying boats or barges from a higher level to a lower, and *vice versa*, on canals, by the immersion of a plunger or plungers. "I assume and propose," says the inventor, "that in order to put in practice such my method of conveying boats or barges from a higher level to a lower, and *vice versa*, on canals, by the immersion of a plunger or plungers, there shall be or be supposed a lock (constructed of the usual and proper materials, with which locks on canals are usually or may be conveniently made to contain water), of a proper form and dimension, placed in a line between, and connecting together, the upper and lower parts of a canal and navigation, and furnished at each end with a gate or sluice, sufficiently wide to allow, when opened, the passage of the boat or vessel about to be conveyed; such gates or sluices to be adapted in their respective depths, the one to the upper, the other to the lower level of the canal or navigation; the upper part or coping of such lock must be made of a height sufficient to contain the water of the upper line, and the bottom of such lock must be of a depth to correspond with that of the lower line of navigation. The horizontal superficies or form of the boat or barge intended to be conveyed, ought to correspond with that of the lock, with the allowance of sufficient space for the free rise and fall of the vessel, within the sides and bounds of the lock, the depth of such boat being necessarily regulated by that of the navigation.

"I next propose that there be a reservoir building or excavation made (and prepared with stone, brick, wood, or any other proper material capable of containing water), the upper part or coping of which should be level with that of the said lock; and that the area of the said reservoir should be equal to (or rather in practice somewhat exceeding) the area of the said lock. In this case the perpendicular depth of the reservoir should be equal to double the intended rise or fall of the vessel within the lock; but where the areas of the lock and reservoir are unequal, this proportion varies: for as in all cases the quantity of water to be displaced out of the reservoir into the lock, must be equal in cubical content to that of the space in the said lock between the surface of the lower line and that of the upper, it follows; that if the area of the reservoir be greater than that of the lock, the necessary depth of the water to be displaced will be so much the less than in the case before stated: and, *e contra*, if the area of the reservoir be less than that of the lock, the necessary depth of water to be displaced will be so much the greater: so that whether this proportional quantity of water shall be obtained by the greater depth or the greater area of the reservoir, is a point for the consideration of the artist. A communication sufficient for the free passage of water at or near the bottoms, or in the lower parts of such lock and reservoir, is in all cases essentially necessary. The distance between the said lock and reservoir or reservoirs (where more than one) is discretionary, provided there be such level and communication: the shape of the reservoir is also discretionary, though for the better adaptation of the plunger or plungers, hereafter to be described, I regard an angular form as the most convenient; and to obviate the possibility of damage or obstruction to the free motion of the plunger, by the falling of stones or other substances, between the sides of the reservoir and plunger, it may be practically expedient to give to the plunger or plungers a shape somewhat diminishing downwards, in the nature of a reversed pyramid, in order to enable them on ascending to clear themselves from the obstructing substance.

"Assuming the said lock and reservoir to be formed to

communicate as aforesaid, and to be supplied with water from the lower line, whence of course it would follow, that whatever may be the depth of the reservoir, the water contained in it, and the water in the lock, and of such lower line, would have one common level: supposing a vessel floated into such lock, the lower gate or sluice shut, and that some solid body or bodies, equal or nearly so in cubical content to that of the reservoir itself, be plunged downwards (whether falling by superior specific gravity to that of water, or forced by mechanical means) to the lower part or bottom of such reservoir, it is obvious that the water (if not at least nearly all) in such reservoir would be displaced, and by passing into the lock would, in addition to the water therein-before contained, fill or nearly fill the said lock; and the small quantity of water remaining in the said reservoir would surround the immersed body or bodies up to a level with the water in the lock; and if such solid body or bodies were withdrawn from such reservoir, then the water in the lock would subside to its original level, reoccupying the space in the reservoir, lately held by the body or bodies now raised and before immersed, which I call a plunger or plungers.

"My said invention therefore consists in the practical application of the two following laws of Hydrostatics, for the purposes of conveying boats or barges from a higher level to a lower, and *vice versa*. 1st, That two columns of water, however different in lateral dimensions, will, if there be a communication between them, always maintain one and the same level: and 2^{dly}, That the immersion of any solid body in water will displace a portion of the fluid, equal in quantity to the bulk or solid contents of the body immersed.—And to obviate any objection respecting the above application of the term *solid*, I beg to be understood as using it hypothetically only; being well aware, that in order to produce the proposed effect by immersion, it is not necessary that the body immersed should be a solid one.

"Therefore I apply to the reservoir above predicated (and to more reservoirs than one where necessary, and in any position relative to the lock, so as the lock and reservoirs have such levels, capacities, convenient forms, and communications, as above described) one or more plunger or plungers, fitted to and nearly filling such reservoir or reservoirs, and freely moving up and down therein (but not water-tight, or acting as pistons or forcers in the common acceptance of those terms), formed of such materials, be they stone, wood, brick, copper, iron, or any other suitable material or combination of materials, as may be most conveniently applied to and used in such reservoir or reservoirs. The means of raising or depressing such plunger or plungers, whether by levers, balancing-weight, ropes, chains, pulleys, tooth and pinion, wheel, capstan, windlars, winch, crank, screw, animal force, steam, or other engine or engines, or other mechanical or statical contrivances, must according to situations, circumstances, and expediency, be left to the choice of the person or persons applying such plunger or plungers.

"The said invention may also be executed by causing one or more such plunger or plungers, in respect to height and solid content, to descend or rise within the area of a lock capable of containing, with the allowance of free motion up and down, both the proposed boat or vessel, and the proposed plunger or plungers, and of a depth or depths adapted in its several parts to the necessary rise and fall of each of them respectively, such plunger or plungers being understood to be also of such a figure or figures, as to permit the said boat or vessel to ascend and descend freely within the said lock, and along side of such plunger or plungers: but considering, as I do at present, a partition between the plunger and the lock as more eligible, I notice such an application of my said method principally with a view to prevent evasion.

"My present model consists of a lock and boat as already described (having a certain excess in the depth of each of them), a reservoir near to and parallel with such lock, oblong and rectangular, a sub-communication as specified, a single plunger, oblong and rectangular, fitting, and subject to free motion, filling such reservoir, having two large guiding-wheels or pulleys raised by two other corresponding wheels secured upon a windlass or axis, by means of lines representing chains fastened to such windlass-wheels, and passing under and round the said plunger-wheels, the ends of such lines or chains being brought up and fastened to a beam and frame, supported on the space or partition dividing the reservoir and lock; which frame and the upper part of the windlass-wheels have an elevation sufficient to allow of the ascent of the plunger, till raised above the surface-water of the reservoir. The plunger is counter-balanced by a weight suspended by a line, representing a rope or chain, fixed to the extremity of a curved or spiral lever (as I term it, though perhaps not with strict propriety, it being analogous to the fusee of a time-piece), which lever proceeds from the windlass axis; so that whilst the plunger is raising from its lowest depth to its greatest height (*viz.* to the surface of the water), the said curved lever, by removing the balance-weight from the axis of the windlass, in a ratio corresponding with, or counteracting, the increasing weight of the plunger, facilitates and promotes the steady raising of the plunger; and when the plunger is to be depressed, by reversing the action of the windlass, the weight is made to approach the axis of the windlass, and following the curve of the lever, it surrenders its counteracting powers in proportion, or nearly so, to the increase of the action of the displaced water upon the lower surface of the plunger, as depressed into the reservoir.

"Premising that I consider my said method as preferably applicable, where the lifts or descents are small or moderate, yet without suggesting precise limits, which practice only can regulate; premising also, that boats of a moderate size, as recommended by Dr. Anderson and Mr. Fulton, and exceeding rather in depth than in length or breadth, seem best adapted to the mode of conveyance, the conveying of boats or barges is effected by this invention:

"Let us suppose the reservoir to be sixteen feet deep, and by means of the communication with the water in the lock and lower canal to be half full of water; let us suppose the plunger to be raised to its greatest height of suspension, and to be at or above the surface of the water in the reservoir; let a boat or barge be floated through the lower sluice or gate into the lock, the lower sluice or gate being closed, and the upper one remaining so; let the plunger be depressed to the bottom of the reservoir; the water in the reservoir (minus the small quantity encompassing the plunger) is displaced into the lock through the passage of sub-communication, and the surface of the water in the lock is raised as much as the plunger sinks, *viz.* eight feet, which brings the water in the lock on a level with the upper line of navigation. The upper gate or sluice may then be opened, and the boat floated out of the lock into the upper canal or line of navigation. For descending conveyance, the lock gates, plunger, and reservoir, remaining or being put into the present supposed state, let a boat or barge be floated into the lock from the upper canal or line, the upper gate or sluice be closed, and the plunger raised, the water in the lock will fall as the water in the reservoir takes place of the plunger; and when the plunger is wholly raised, the vessel in the lock will have descended as many feet, *viz.* eight; as the plunger has ascended, and the boat or barge being lowered to the water-level, or nearly so, of the lower line of navigation or canal, is ready to proceed along such lower line, on the opening of the lower gate or sluice. The

lock remains in a situation to receive another vessel from the lower line to be raised to the upper line in the course already described. It may be proper to observe, that in all cases it is necessary that the height of the reservoir should be at least equal to that of the lock, and that the plunger or plungers should fill or nearly fill the reservoir or reservoirs.

"This method of conveying boats or barges from line to line, whenever it is expedient to be practised, seems, on a comparison with other contrivances of a late invention, to be attended with the following material advantages.

"1st, The only machinery essentially necessary (the two sluices excepted) is, for the purpose of raising and depressing the plunger or plungers.

"2d, Whilst the machinery in other contrivances above alluded to, is either wholly or in part liable to injury from water, the machinery in this (the two sluices excepted) is wholly exempt from that disadvantage.

"3d, Whilst in the other contrivances, caissons, coffers, &c. require not only the opening of one or more sluices, but also an adjustment of their ends to the mouth of the canal, to prevent the loss of water, before each boat can enter the lock; according to this plan, on the opening of a single sluice, the boat floats at once into the lock without loss of water, and without any such delay or difficulty. When I say without loss of water, it must be understood with this allowance, that if a boat goes down laden, and returns (or another goes up) unladen, the upper level gains a body of water equal to the weight of the cargo; *e contra*, the lower canal gains similarly, if a boat goes down unladen, and returns laden.

"4th, By the application of this method to the common gate-lock, or by forming the lock of this invention for the escape of water from the higher level into the lock, and from the lock into the lower level, the properties and uses of the common gate-lock and of this invention are united, and they may be used either in combination with other contrivances, or independently. So that

"5th, Whenever the water of the upper line is in plenty, sufficient to allow of the transmission of a lockful of water to the lower level, the machinery of this invention may be left at rest, and vessels may pass and repass by the operation of the common lock: whereas in the other inventions alluded to, no boat or vessel can pass or repass without working the machinery, though the water be ever so abundant.

"6th, On the supposition that the lock used in this invention is constructed as the common gate lock for the transmission of water, this further and important advantage arises, *viz.* that should the machinery of the plunger or plungers be at any time disordered, boats may still pass and repass as through the common gate lock; whereas, should any accident embarrass the machinery of the other locks already alluded to, the whole navigation is obstructed."

CANDAULES, the last king of Lydia, of the family of the Heraclides, was so proud of the beauty of his wife, that he had the folly to let Giges, his favourite, see her naked while she was bathing. The queen, enraged at this action, which, according to the opinion of the Lydians, rendered her infamous, persuaded Giges to murder Candaules; after which the married him, about 716 years before the birth of Christ. In him began the race of the Merminades, which lasted till the defeat of Croesus.

CANDLE (*Encycl.*). A patent was lately granted to Mr. Bolts, of Cannon-street, London, for an improved mode of manufacturing candles. The patentee, by means of moulds with spindles of proper shape and dimensions in the centre, casts hollow candles, or tubes of tallow or wax, without wicks. These tubes are of various shapes; round, elliptical, hexagonal. The hollow in the centre of the tube is also of different shapes

and dimensions, sometimes round, for common purposes, sometimes elliptical, to receive a broad flat wick which shall give a greater light. The wicks are put in at pleasure, thicker or thinner at the choice of the person using the candles, who can thus, after having made trial of one candle for a short while, fo proportion the wicks to all the others of the same size in his possession, that they shall burn equally and without waste of tallow or wax by guttering. The wicks also are thus kept perfectly in the centre, without any of those little projecting jags of cotton which frequently waste and disfigure candles.

In some cases, a solid centre of tallow or wax is inserted into the tube above described; a space being left between the centre and the tube for a circular wick, as used in Argand's lamp.

The wicks do not run the whole length of the candles, but are made sometimes by means of a weight, sometimes of a spring or key, to accommodate themselves to the progressive consumption of the tallow or wax, and seldom require to be snuffed.

Thin tubes of wax are also cast, which are filled with a tallow inside, adding economy to neatness. And whether wax or tallow be the substance employed, it is rendered more solid by the application of pressure by means of an air-pump; while yet in a fluid state in the moulds.

The patentee has, moreover, contrived a very ingenious and expeditious mode of manufacturing the wax or tallow tubes, which consists in forcing, by means of an air-pump, a constant stream of the melting substance through a mould open at both ends, from which it falls, in proper candle lengths, into a vessel of water placed beneath to receive them.

CANE, *GAORTA DEL*, accelerated grotto, on the banks of the Lake d'Agnano, seven miles from Puzzoli, in the kingdom of Naples. Here many dogs have been cruelly tortured and suffocated, to shew the effect of a vapour, which rises a foot above the bottom of this little cave, and is destructive of animal life. A dog having his head held in this vapour is convulsed in a few minutes, and soon after falls to the earth motionless. The experiment is repeated for the amusement of every unfeeling person who has half-a-crown in his pocket, and affects a turn for natural philosophy. The fellows who attend at the cave, have always some miserable dogs, with ropes about their necks, ready for this cruel purpose.

CANGERECORA, a large river of the peninsula of Hindostan. It descends from the Gaut Mountains, and flowing south-west to the coast of Malabar, enters the western ocean, four miles to the north of Mount Dilla; previous to which its course is parallel with the sea coast for about eleven miles, being separated only by a spit of sand.

CANAADERAGO, LAKE, a narrow lake of North America, in the state of New York. It is about nine miles long, and lies to the West of Lake Otego. A stream called Oaks Creek, issues from it, and falls into the river Susquehannah, five miles below Otego. The best cheese in the state of New York is made on this creek.

CANNÆ (anc. geogr.), a mean hamlet of Apulia in the Adriatic, at the mouth of the river Aufidus; raised out of obscurity by a most terrible overthrow given the Romans by the Carthaginians under Hannibal. The Roman consuls were C. Terentius Varro, and L. Emilius Paulus. Their army was vastly superior in numbers to the Carthaginians; but the latter were superior in cavalry. Notwithstanding, however, that the Romans were no fewer than 87,000, so great was the fame of Hannibal, that the consuls were divided in their opinion as to the venturing of an engagement. Emilius was for avoiding a battle, and accordingly encamped on the eminences where the cavalry of the enemy could not act; but next day, it be-

ing Varro's turn to command, he advanced into the plain in which Cannæ was situated, and brought the army into such a situation that an engagement became unavoidable. The Romans were then drawn up in the usual manner; the *hastati* in the first line, the *principes* in the second, and the *triarii* in the third. The cavalry were posted on the wings. On the right, the Roman knights flanked the legionaries; on the left, the cavalry of the allies covered their own infantry. The two consuls commanded the two wings, Emilius the right, and Terentius the left; and the two proconsuls Servilius and Atilius the main body. On the other hand, Hannibal, whose army consisted of 40,000 foot, and 10,000 horse, placed his Gaulish and Spanish cavalry in the left wing, to face the Roman knights; and the Numidian horse in his right; over against the cavalry of the allies of Rome. As to his infantry, he divided the African battalions into two bodies; one of which he posted near the Gaulish and Spanish horse, the other near the Numidian. Between these two bodies were placed on one side the Gaulish, on the other the Spanish infantry, drawn up in such a manner as to form an obtuse angle projecting a considerable way beyond the two wings. Behind this line he drew up a second which had no projection. Aldrubal commanded the left wing; Maeheral the right; and Hannibal himself, with his brother Mago, the main body. He had also taken care to post himself in such a manner that the wind *Favurus*, which rises at certain stated times, should blow directly in the faces of the Romans during the fight, and cover them with dust. The onset was begun by the light-armed infantry; the Romans discharging their javelins, and the *baleares* their stones, with pretty equal success; nevertheless, the consul Emilius was wounded. Then the Roman cavalry in the right wing advanced against the Gaulish and Spanish in Hannibal's left. As they were shut in by the river Aufidus on one side, and by their infantry on the other, they did not fight, as usual, by charging and wheeling off, and then returning to the charge; but continued fighting each man against his adversary, till one of them was killed or retired. After they had made prodigious efforts on both sides to overbear each other, they all on a sudden dismounted, and fought on foot with great fury. In this attack the Gauls and Spaniards soon prevailed; put the Romans to the rout; and pursuing them along the river, strewed the ground with their dead bodies, Aldrubal giving no quarter. This action was scarce over, when the infantry on both sides advanced. The Romans first fell upon the Spaniards and Gauls, who, as already observed, formed a kind of triangle projecting beyond the two wings. They gave ground, and, pursuant to Hannibal's directions, sunk into the void space in their rear; by which means they insensibly brought the Romans into the centre of the African infantry, and then the fugitives rallying, attacked them in front, while the Africans charged them in both flanks. The Romans, being by this artful retreat drawn into the snare and surrounded, no longer kept their ranks, but formed several platoons, in order to face every way. Emilius, who was on the right wing, seeing the danger of the main body, at the head of his legionaries, acted the part both of a soldier and general, penetrating into the heart of the enemy's battalions, and cutting great numbers of them in pieces. All the Roman cavalry that were left, attended the brave consul on foot; and, encouraged by his example, fought like men in despair. But, in the mean time, Aldrubal, at the head of a detachment of Gaulish and Spanish infantry brought from the centre, attacked Emilius's legionaries with such fury, that they were forced to give ground and fly: the consul being all covered with wounds, was at last killed by some of the enemy who did not know him. In the main body, the Romans, though invested on all sides, continued to sell their lives dear; fighting in platoons,

and making a great slaughter of the enemy. But being at length overpowered, and disheartened by the death of the two proconsuls Servilius and Attilius who headed them, they dispersed and fled, some to the right, and others to the left, as they could find opportunity; but the Numidian horse cut most of them in pieces: the whole plain was covered with heaps of dead bodies, inasmuch that Hannibal himself, thinking the butchery too terrible, ordered his men to put a stop to it.—There is a great disagreement among authors as to the number of Romans killed and taken at the battle of Cannæ. According to Livy, the republic lost 50,000 men including the auxiliaries. According to Polybius, of 6000 Roman horse, only seventy escaped to Venuſia with Terentius Varro, and 300 of the auxiliary horse. As to the infantry, the writer tells us, that 70,000 of the Roman foot died on the field of battle fighting like brave men; and that 13,000 were made prisoners. According to Dionysius of Halicarnassus, of 6000 horse, only 370 escaped the general slaughter, and of 80,000 foot, 3000 only were left. The most moderate computation makes the number of Romans killed amount to 45,000.

CANNAY, one of the western isles of Scotland, to the south-west of the isle of Skye. In this verdant and fertile island, are vast basaltic columns, which rise above each other to a great height, in many, successive ranges, each separated from the other by a stratum of pebbly concretions, resembling pudding-stone. On the east side of the island, the tops of an immense number of these columns appear at low water, forming a sort of causeway of surprising extent, and of which the surface is smooth and regular, like an ordinary paved street.

CANOGUE, a town of Hindostan Proper, in the province of Agra, seated on the west bank of the Ganges, near its confluence with the Calini. It is said to have been built more than 1000 years before the Christian æra, and to have been the capital of all Hindostan, under the predecessor of Porus, who fought against Alexander, in the year 326 before Christ. In the 6th century, it was said to contain 30,000 shops, in which betel-nut (which the Indians almost universally chew, as some Europeans do tobacco) was sold. It is now reduced to the size of a middling town. It is 127 miles south-east of Agra. Long. 80. 13. E. Lat. 27. 3. N.

CANOPUS, in Pagan mythology (*Encycl.*). It is said, that the Chaldeans, who worshipped fire, carried their fancied deity through other countries to try its power, in order that, if it obtained the victory over the other gods, it might be acknowledged as the true object of worship; and it having easily subdued the gods of wood, stone, brass, silver, and gold, its priests declared, that all gods did it homage. This the priests of Canopus hearing, and finding that the Chaldeans had brought their god to contend with Canopus, they took a large earthen vessel, in which they bored several holes, which they afterwards stopped with wax, and having filled the vessel with water, painted it of several colours, and sitting the head of an idol to it, brought it out, in order to contend with the Chaldean deity. The Chaldeans accordingly kindled their fire all around it; but the heat having melted the wax, the water gushed out through the holes, and extinguished the fire; and thus Canopus conquered the god of the Chaldeans.

CANOPUS, or *Canobus*, according to Strabo, had been Menelaus's pilot, and had a temple erected to him in a town called *Canopus*, near one of the mouths of the Nile. Dionysius mentions it.

Καὶ τὴν τοῦ πλοῦτος Ἀρχαίου οὐ Κανόβη.

There stands Canobus's temple known to fame;

The pilot who from fair Amycla came.

Vossius remarks, on this occasion, the vanity of the Greeks, who, as he conjectures, hearing of an Egyptian deity named

Canopus, took from thence an opportunity of deifying the pilot of Menelaus who bore the same name, and giving out that the Egyptian god Canopus had been a Greek. F. Monfaucou gives several representations of this deity. One, in allusion to the victory above mentioned, throws out water on every side through little holes.

CANSTAT (*Encycl.*), erroneously spelt CONSTAT.

CANTABRIA (anc. geog.), a district of Terraconensis, on the Oceanus Cantabricus or bay of Biscay; now BISCAY. The inhabitants were remarkable for their warlike character. In conjunction with the Asturians, they carried on desperate wars with the Romans; but they were subdued by them, about twenty-five years before Christ. Being impatient, however, of a foreign yoke, they in a few years revolted. Most of their youth had been already taken prisoners by the Romans, and sold for slaves to the neighbouring nations; but having found means to break their chains, they cut the throats of their masters; and returning into their own country, attacked the Roman garrison with incredible fury. Agrippa marched against them with great expedition; but, on his arrival, met with so vigorous a resistance, that his soldiers began to despair of ever being able to reduce them. As the Cantabrians had waged war with the Romans for upwards of 200 years, they were well acquainted with their manner of fighting, no way inferior to them in courage, and were now become desperate; well knowing, that if they were conquered, after having so often attempted to recover their liberty, they must expect the most severe usage, and cruel slavery. Animated with this reflection, they fell upon the Romans with a fury hardly to be expressed, routed them in several engagements, and defended themselves when attacked by the enemy with such intrepidity, that Agrippa afterwards owned, that he had never, either by sea or land, been engaged in a more dangerous enterprise. That brave commander was obliged to use entreaties, menaces, and to brand some of his legionaries with ignominy, before he could bring them to enter the lists with such a formidable enemy. But having at last, with much ado, prevailed upon them to try the chance of an engagement in the open field, he so animated them by his example, that, after a most obstinate dispute, he gained a complete victory, which indeed cost him dear, but put an end to that destructive war. All the Cantabrians fit to bear arms were cut in pieces; their castles and strong holds taken and rased; and their women, children, and old men (none else being left alive), were obliged to abandon the mountainous places, and settle in the plain.

CANTAL, a department of France, including part of the late province of Auvergne. It is so called from a high mountain, near St. Flour and Aurillac, almost always covered with snow. The capital is St. Flour.

CANTIUM (anc. geog.), a promontory of Britain, literally denoting a head-land, giving name to a territory called *Cantium*, now *Kent*. The promontory is now called the *North Foreland*.

CAPNOIDES, in botany, the trivial name of a species of *FUMARIA*.

CAPPADOCIA-MAGNA (*Encycl.*). The first king of Cappadocia we read of in history was Pharnaces, who was preferred to the crown by Cyrus king of Persia, who gave him his sister Atossa in marriage. This is all we find recorded of him, except that he was killed in a war with the Hyrcanians. After him came a succession of eight kings, of whom we know scarce any thing but that they continued faithful to the Persian interest. In the time of Alexander the Great, Cappadocia was governed by Ariarathes II. who, notwithstanding the vast conquests and fame of the Macedonian monarch, continued unshaken in his fidelity to the Persians. Alexander was

prevented by death from invading his dominions; but Perdiccas marching against him with a powerful and well-disciplined army, dispersed his forces, and having taken Ariarathes himself prisoner, crucified him, with all those of the royal blood whom he could get into his power. Diodorus tells us that he was killed in the battle. He is said to have reigned 82 years. His son Ariarathes III. having escaped the general slaughter of the royal family, fled into Armenia, where he lay concealed, till the civil dissensions, which arose among the Macedonians, gave him a fair opportunity of recovering his paternal kingdom. Amyntas, at that time the governor of Cappadocia, opposed him; but being defeated in a pitched battle, the Macedonians were obliged to abandon all the strong holds. Ariarathes, after a long and peaceable reign, left his kingdom to his son Ariarathes II. He applied himself more to the arts of peace than war, in consequence of which Cappadocia flourished greatly during his reign. He was succeeded by his son Ariarathes IV. who proved a very warlike prince, and having overcome Arsaces, founder of the Parthian monarchy, considerably enlarged his dominions.

He was succeeded by Ariarathes V. who marrying the daughter of Antiochus the Great, entered into an alliance with that prince against the Romans; but Antiochus being defeated, the king of Cappadocia was obliged to sue for peace, which he obtained, after having paid 200 talents by way of fine, for taking up arms against the people of Rome. He afterwards assisted the republic with men and money against Perseus king of Macedon, on which account he was by the senate honoured with the title of *the friend and ally of the Roman people*. He left the kingdom in a very flourishing condition to his son Mithridates, who on his accession took the name of Ariarathes VI.

This prince (surnamed *Philopater*, from the filial respect and love he shewed his father from his very infancy) immediately renewed the alliance with Rome. Out of mere goodnature he restored Mithrobuzanes, son to Ladriades king of the Lesser Armenia, to his father's kingdom, though he foresaw that the Armenians would lay hold of that opportunity to join Artaxias, who was then on the point of invading Cappadocia. The differences, however, were settled, before they came to an open rupture, by the Roman legates; and Ariarathes seeing himself delivered from an impending war by the mediation of the republic, presented the senate with a golden crown, and offered his service wherever they thought proper to employ him. The senate in return sent him a staff, and chair of ivory; which were presents usually bestowed on those only whom they looked upon as attached to their interest. Not long before this, Demetrius Soter king of Syria had offered Ariarathes his sister in marriage, the widow of Perseus king of Macedon: but this offer the king of Cappadocia was obliged to decline for fear of offending the Romans; and his so doing was in the highest degree acceptable to the republic, who reckoned him among the chief of her allies. Demetrius, however, being greatly incensed at the slight put upon his sister, set up a pretender to the throne, one Orophernes, a supposititious, or, as others call him, a natural son of the deceased king. The Romans ordered Eumenes king of Pergamus to assist Ariarathes with all his forces: which he did, but to no purpose; for the confederates were overthrown by Demetrius, and Ariarathes was obliged to abandon the kingdom to his rival. This happened about 159 years before Christ, and the usurpers immediately dispatched ambassadors to Rome with a golden crown. The senate declined accepting the present, till they heard his pretensions to the kingdom; and this Orophernes, by suborned witnesses, made appear so plain, that the senate decreed that Ariarathes and he should reign as partners; but next year, Orophernes

was driven out by Attalus brother to Eumenes, and his successor to the kingdom of Pergamus.

Ariarathes being thus restored, immediately demanded of the Priennians 400 talents of gold which Orophernes had deposited with them. They honestly replied, that as they had been entrusted with the money by Orophernes, they could deliver it to none but himself, or such as came in his name. Upon this, the king entered their territories with an army, destroying all with fire and sword. The Priennians, however, still persevered in their integrity; and though their city was besieged by the united forces of Ariarathes and Attalus, not only made an obstinate defence, but found means to restore the sum to Orophernes. At last they applied to the Romans for assistance, who enjoined the two kings to raise the siege, under pain of being declared enemies to the republic. Ariarathes immediately obeyed; and marching his army into Assyria, joined Alexander Epiphanes against Demetrius Soter, by whom he had been formerly driven out of his kingdom. In the very first engagement Demetrius was slain, and his army entirely dispersed, Ariarathes having on that occasion given uncommon proofs of his courage and conduct. Some years after, a war breaking out between the Romans and Aristonici, who claimed the kingdom of Pergamus in right of his father, Ariarathes joined the former, and was slain in the same battle in which P. Crassus, proconsul of Asia, was taken, and the Roman army cut in pieces. He left six sons by his wife Laodice, on whom the Romans bestowed Lycania and Cilicia. But Laodice, fearing lest her children, when they came of age, should take the government out of her hands, poisoned five of them, the youngest only having escaped her cruelty by being conveyed out of the kingdom. The queen herself was soon after put to death by her subjects, who could not bear her cruel and tyrannical government.

Laodice was succeeded by Ariarathes VII. who, soon after his accession, married another Laodice, daughter of Mithridates the Great, hoping to find in that prince a powerful friend to support him against Nicomedes king of Bithynia, who laid claim to part of Cappadocia. But Mithridates, instead of assisting, procured one Gordius to poison his unhappy son-in-law; and, on his death, seized the kingdom, under pretence of maintaining the rights of the Cappadocians against Nicomedes, till the children of Ariarathes were in a condition to govern the kingdom. The Cappadocians at first fancied themselves obliged to their new protector; but, finding him unwilling to resign the kingdom to the lawful heir, they rose up in arms, and, driving out all the garrisons placed by Mithridates, placed on the throne Ariarathes VIII. eldest son of the deceased king.

The new prince found himself immediately engaged in a war with Nicomedes; but, being assisted by Mithridates, not only drove him out of Cappadocia, but stripped him of a great part of his hereditary dominions. On the conclusion of the peace, Mithridates seeking for some pretence to quarrel with Ariarathes, insisted upon his recalling Gordius, who had murdered his father; which being rejected, with abhorrence, a war ensued. Mithridates took the field first, in hopes of over-running Cappadocia before Ariarathes could be in a condition to make head against him; but, contrary to his expectation, he was met on the frontiers by the king of Cappadocia with an army no way inferior to his own. Hereupon he invited Ariarathes to a conference; and, in sight of both armies, stabbed him with a dagger, which he had concealed under his garment. This struck such terror into the Cappadocians, that they immediately dispersed, and gave Mithridates an opportunity of possessing himself of the kingdom without the least opposition. The Cappadocians, however, not able to endure the tyranny of his prefects, soon shook off the yoke;

and recalling the king's brother, who had fled into the province of Asia, proclaimed him king. He was scarce seated on the throne, however, before Mithridates invaded the kingdom at the head of a very numerous army, and having drawn Ariarathes to a battle, defeated his army with great slaughter, and obliged him to abandon the kingdom. The unhappy prince soon after died of grief; and Mithridates bestowed the kingdom on his son, who was then but eight years old, giving him also the name of *Ariarathes*. But Nicomedes Philopater, king of Bithynia, fearing lest Mithridates, having now got possession of the whole kingdom of Cappadocia, should invade his territories, suborned a youth to pass himself for the third son of Ariarathes, and to present to them a petition in order to be restored to his father's kingdom. With him he sent to Rome Laodice, sister of Mithridates, whom he had married after the death of her former husband Ariarathes. Laodice declared before the senate, that she had three sons by Ariarathes, and that the petitioner was one of them; but that she had been obliged to keep him concealed, lest he should undergo the same fate with his brothers. The senate assured him that they would at all events reinstate him in his kingdom. But, in the mean time, Mithridates having notice of these transactions, dispatched Gordius to Rome, to undeceive the senate, and to persuade them that the youth to whom he had resigned the kingdom of Cappadocia was the lawful son of the late king, and grandson to Ariarathes, who had lost his life in the service of the Romans against Aristonicus. This unexpected embassy put the senate upon enquiring more narrowly into the matter, whereby the whole plot was discovered; upon which Mithridates was ordered to resign Cappadocia, and the kingdom was declared free. The Cappadocians, however, in a short time sent ambassadors to Rome, acquainting the senate that they could not live without a king. This greatly surprised the Romans, who had such an aversion to royal authority; but they gave them leave to elect a king of their own nation. As the family of Pharnaces was now extinct, the Cappadocians chose Ariobarzanes; and their choice was approved by the senate, he having, on all occasions, shewn himself a steady friend to the Romans.

Ariobarzanes had scarce taken possession of his kingdom, when he was driven out by Tigranes king of Armenia; who resigned Cappadocia to the son of Mithridates, in pursuance of an alliance previously concluded between the two parties. Ariobarzanes fled to Rome; and, having engaged the senate in his cause, he returned into Asia with Sylla, who was enjoined to restore him to his kingdom. This was easily performed by Sylla, who, with a small body of troops, routed Gordius who came to meet him on the borders of Cappadocia at the head of a numerous army. Sylla, however, had scarce turned his back, when Ariobarzanes was again driven out by Ariarathes, the son of Mithridates, on whom Tigranes had bestowed the kingdom of Cappadocia. This obliged Sylla to return into Asia, where he was attended with his usual success, and Ariobarzanes was again placed on the throne. After the death of Sylla, he was the third time forced by Mithridates to abandon his kingdom; but Pompey, having entirely defeated Mithridates near Mount Stella, restored Ariobarzanes to his throne, and rewarded him for his services during the war, with the provinces of Sophene, Gordiene, and great part of Cilicia. The king, however, being now advanced in years, and desirous of spending the remainder of his life in ease, resigned the crown to his son Ariobarzanes, in preference of Pompey; and never afterwards troubled himself with the affairs of state.

Ariobarzanes II. proved no less faithful to the Romans than his father had been. On the breaking out of the civil war between Cæsar and Pompey, he sided with the latter; but

after the death of Pompey, he was received into favour by Cæsar, who even bestowed upon him great part of Armenia. While Cæsar was engaged in a war with the Egyptians, Pharnaces king of Pontus invaded Cappadocia, and stripped Ariobarzanes of all his dominions; but Cæsar, having defeated Pharnaces, restored the kingdom of Cappadocia, and honoured him with new titles of friendship. After the murder of Cæsar, Ariobarzanes, having refused to join Brutus and Cassius, was by them declared an enemy to the republic, and soon after taken prisoner and put to death. He was succeeded by his brother Ariobarzanes III. who was, by Marc. Anthony, deprived both of his kingdom and life; and in him ended the family of Ariobarzanes.

Archelaus, the grandson of that general of the same name who commanded against Sylla in the Mithridatic war, was, by Marc. Anthony, placed on the throne of Cappadocia, though nowise related either to the family of Pharnaces or Ariobarzanes. His preferment was entirely owing to his mother Glaphyra, a woman of great beauty, but of a loose behaviour, who, in return for her compliance with the desires of Anthony, obtained the kingdom of Cappadocia for her son. In the war between Augustus and Anthony, he joined the latter; but, at the intercession of the Cappadocians, was pardoned by the emperor. He afterwards received from him Armenia the Lesser, and Cilicia Trachea, for having assisted the Romans in clearing the seas of pirates, who greatly infested the coasts of Asia. He contracted a strict friendship with Herod the Great, king of Judæa; and even married his daughter Glaphyra to Alexander, Herod's son. In the reign of Tiberius, Archelaus was summoned to appear before the senate; for he had always been hated by that emperor, because in his retirement at Rhodes he had paid him no sort of respect. This had proceeded from no aversion in him to Tiberius, but from the warning given Archelaus to his friends at Rome. For Caius Cæsar, the presumptive heir to the empire, was then alive, and had been tent to compose the differences of the East, whence the friendship of Tiberius was then looked upon as dangerous. But when he came to the empire, Tiberius, remembering the disrespect shewn him by Archelaus, enticed the latter to Rome by means of letters from Livia, who promised him her son Tiberius's pardon, provided he came in person to implore it. Archelaus obeyed the summons, and hastened to Rome; where he was received by the emperor with great wrath and contempt, and soon after accused as a criminal in the senate. The crimes of which he was accused were mere fictions; but his concern at seeing himself treated as a malefactor was so great, that he died soon after of grief, or, as others say, laid violent hands on himself. He is said to have reigned 50 years.

On the death of Archelaus, the kingdom of Cappadocia was reduced to a Roman province, and governed by those of the equestrian order. It continued subject to the Romans till the invasion of the eastern empire by the Turks, to whom it is now subject, but has no distinguishing modern name. In what was anciently called *Cappadocia*, however, the Turks have four beglerbeglics, called *Sivas*, *Trebizand*, *Maraschi*, and *Cogni*.

The religion of the ancient Cappadocians was much the same with that of the Persians. At Comana there was a rich and stately temple dedicated to Bellona; whose battles the priests and their attendants used to represent on stated days, cutting and wounding each other as if seized with an enthusiastic fury. No less famous and magnificent were the temples of Apollo Catanius, and of Jupiter: the last of which had 3000 sacred servants, or religious votaries. The chief priest was next in rank to that of Comana; and, according,

to Strabo, had a yearly revenue of 15 talents. Diana Persica was worshipped in a city called *Cassaballa*, where women, devoted to the worship of that goddess, were reported to tread barefooted on burning coals, without receiving any hurt. The temples of Diana at Diospolis, and of Ania at Zela, were likewise held in great veneration both by the Cappadocians and Armenians, who flocked to them from all parts. In the latter were tendered all oaths in matters of consequence; and the chief among the priests was no way inferior in dignity, power, and wealth, to any in the kingdom; having a royal attendance, and an unlimited authority over all the inferior servants and officers of the temple. The Romans, who willingly adopted all the superstitious and superstitious rites of the nations they conquered, greatly increased the revenues of this and other temples; conferring the priesthood on such as they thought most fit for carrying on their designs.—We are told that human sacrifices were offered at Comana; and that this barbarous custom was brought by Orestes and his sister Iphigenia from Taurica Scythica, where men and women were immolated to Diana. But this custom, if ever it obtained in Cappadocia, was abolished in the times of the Romans.

CAPSA (anc. geog.), a large and strong town of Numidia, situated amidst vast deserts; waste, uncultivated, and full of serpents, where Jugurtha kept his treasure. In his time it was taken and rased by Marius the Roman general, who put to death all the citizens capable of bearing arms, and sold the rest for slaves. It was, however, afterwards rebuilt by the Romans, and strongly fortified; but, on the decline of their empire, was taken and demolished a second time by Occuba, a famous Arab general. The walls of the citadel are still remaining, and are monuments of the ancient glory and strength of Capsa. They are 24 fathoms in height, and five in thickness, built of large square stones, and have now acquired the solidity and firmness of a rock. The walls of the town were rebuilt by the inhabitants since their first demolition; but were afterwards destroyed by Jacob Almanzar, who sent a governor and troops into the province. In Marmol's time Capsa was very populous, and abounded with stately mosques and other structures of superb and elegant workmanship; but at present it is occupied by a poor and indigent people, fleeced and oppressed by the Tunisian government. In the very centre of the city stands an inclosed fountain, which both supplies the people with drink, and affords them an agreeable bath. The adjacent country is now cultivated; and produces several kinds of fruits; but the climate is unhealthy. The inhabitants are remarkable for their peevishness of temper. Both men and women dress handsomely except their feet, which they cover with coarse shoes of burling workmanship, and made of the rough skins of wild beasts, equally inconvenient and unbecoming. E. Long. 9. 3. N. Lat. 33. 15.

CAPTION, in Scots law, a writ issuing under his majesty's signet, in his majesty's name, obtained at the instance of a creditor in a civil debt, commanding messengers at arms and other officers of the law to apprehend and imprison the person of a debtor until he pay the debt.

CAPUA, a town of the kingdom of Naples, with an archbishop's see. It is two miles from the ancient Capua, and was built out of its ruins. It is the place where Hannibal and his officers trifled away their time in pleasure, during which the Romans recovered from their consternation after the battle of Cannæ. It was taken by the allies in 1707; and is seated on the river Volturno, 15 miles N. of Naples. Long. 14. 19. E. Lat. 41. 7. N.

CAPUA (anc. geog.), a very ancient city of Italy, in Campania, and capital of that district. It is famous for the abode

of Hannibal the Carthaginian general after the battle of Cannæ, and where Livy accuses him, but unjustly, of having enervated himself with pleasure. It still retains the name, and is the see of an archbishop. It is seated on the river Volturno, in E. long. 15. 5. N. lat. 41. 7.

CARACCAS (*Encycl.*). Of this district the coast is rocky and mountainous, interspersed with small fertile valleys; subject at certain seasons of the year to dry north-west winds, but blessed in general with a clear air and wholesome climate. A very great illicit trade is carried on by the English and Dutch with this province, notwithstanding all the vigilance of the Spaniards, who have scouts perpetually employed, and breastworks raised in all the valleys. A vast number of cacao-trees are cultivated in this province; and it is reckoned that the crop of cacao produced here amounts to more than 100,000 fanegas of 110 pounds each. The country of Santa Fé consumes 20,000; Mexico a little more; the Canaries a small cargo; and Europe from 50 to 60,000. The cultivation of the plant employs 10 or 12,000 negroes. Such of them as have obtained their liberty have built a little town called *Nirva*, into which they will not admit any white people. In 1728 a company was formed at St. Sebastian, which obtained an exclusive right of maintaining connections with this part of the new world. Four or five ships, which they dispatch every year, sail from thence, but they return to Cadiz.

CARAITES (*Encycl.*). The Caraites pass for the most learned of the Jewish doctors. They are chiefly to be met with in Poland, Muscovy, and the East; and they are but few in comparison of the bulk of the Jews who are of the party of the rabbins. The latter have so great an aversion to the Caraites, that they will have no alliance or even conversation with them: they treat them as bastards; and would a Caraitite turn rabbinist, the other Jews would not receive him. In our original article this word has been erroneously spelt **CARAITES**.

CARARA, a small town of Italy, in the duchy of Massa, between the towns of Massa and Sarzana, five miles from each. Near this place are quarries of marble of various colours. Long. 9. 55. E. Lat. 44. 5. N.

CARASU, a river of Natolia, which rises in Carmania, crosses part of Aladula, and falls into the Mediterranean. The water of this river is so cold, that when Alexander the Great bathed in it, it threw him into a dangerous disease. The emperor Barbarossa was killed by it on his return from the Holy Land, in 1100.

CARASU-MESTRO, a river of Romania, in Turkey in Europe, which takes its rise in Mount Rodolpho, and falls into the Archipelago.

CARASUI, a lake in Bulgaria, said to be 55 miles in circumference, and to contain several islands. It is formed by a branch of the Danube, not far from its entrance into the Black Sea.

CARAVACCA, or **THE CROSS OF CARAVACCA**, a town in Spain, among the mountains near the Segura, in Murcia. They pretend to have a cross here, brought by an angel to a priest, who was going to say mass to a Moorish king. It is 50 miles N.W. of Carthagea. Long. 2. 5. W. Lat. 38. 5. N.

CARDIGAN-BAY, on the coast of Cardiganhire, at the mouth of the Tywy, extending to Barley island in Carnarvonshire. It is 40 miles from one cape to the other, and affords good shelter for ships.

CARIGNANO, a town of Piedmont, in a district of the same name. It is seated on the river Po, three miles S. of Turin. Long. 7. 45. E. Lat. 44. 57. N.

CARIMAN-JAVA, a cluster of islands to the N. of Java, at the principal of which European ships touch for refresh-

ments in their voyage to Borneo. Long. 110. 12. E. Lat. 5. 56. S.

CARNATIC, *THE*, a country of the peninsula of Hindoostan, extending from the Guntoor Circar, along the whole coast of Coromandel, to Cape Cormorin; including its appendages, which are Tanjore, Maravar, Tritchinopoly, Madura, and Tinevely. It is 570 miles in length from N. to S. but no more than 120, and commonly 75 miles wide. The revenue of the sovereign, who is called Nabob of Arcot, is stated at 1,500,000. per annum, out of which he pays a subsidy of 160,000. to the East-India Company, toward the expence of their military establishment. The British possessions in the Carnatic are confined chiefly to the tract called the Jaghire, which extends 108 miles along the coast, and 47 inland in the widest part; its annual revenue 150,000. There is, besides, a land-revenue of 725,000. dependent on Madras. The Carnatic is a rich, fertile, and populous country, and contains an incredible number of fortresses. Public monuments too, the unequivocal marks of civilization and opulence, are more common here than in the N. parts of India. In 1787 the East-India Company took the whole administration of the Carnatic, and the collection of the nabob's revenues, into their own hands; on which account his highness instituted a suit in the British Court of Chancery against the Company, and likewise presented a petition for redress to the House of Commons.

CAROLINA. (*Encycl.*) This country is seated between extremities of heat and cold, though the heat is more troublesome in summer than the cold in winter; their winters being very short, and the frosty mornings frequently succeeded by warm days. The air is generally serene and clear the greatest part of the year; but in February and March, the inhabitants have a custom of burning the woods, which causes such a smoke as to strangers would seem to proceed from a fog or thickens in the air. The smoke of the tarketins likewise deceives the strangers, and gives them an ill opinion of the air of Carolina; to which also conduces a custom of the Indians of setting fire to the woods in their huntings, for many miles round. The great rains are in winter, though they are not without heavy showers at midsummer; add to these the constant dews that fall in the night, which refresh the ground and supply the plants with moisture. In North Carolina, the north-west winds in the winter occasion very pinching weather: but they are not of long continuance. Westerly winds bring very pleasant weather; but the southerly are hot and unwholesome, occasioning fevers and other disorders. But this must be understood of summer, for in winter they are very comfortable. The depth of winter is towards the latter end of February, and then thence is not strong enough to bear a man's weight. In August and September, there are sometimes great storms and squalls of wind, which are so violent as to make lanes of 100 feet wide, more or less, through the woods, tearing up the trees by the roots. These storms generally happen once in about seven years; and are attended with dreadful thunder, lightning, and heavy rains. They commonly happen about the time of the hurricanes which rage so fatally among the islands between the tropics; and seem to be occasioned by them, or to proceed from the same cause: but by the time they reach Carolina, their force is much abated; and the further north they proceed, so much the more do they decrease in fury. The soil on the coast is sandy; but further up, the country is so fruitful, that they have not yet been at the trouble to manure their land. The grains most cultivated are Indian corn and rice, though any sort will thrive well enough; they have also pulse of several forts, little known in England. All kinds of

garden-stuff usual in England are cultivated here, and may be had in great plenty. They export large quantities yearly of rice, pitch, tar, turpentine, deer-skins, and timber for building; cyprès, cedar, salisfras, oak, walnut, and pine. Besides these they also send out beef, pork, tallow, hides, furs, wheat, peas, potatoes, honey, bees-wax, myrtle-wax, tobacco, snake-root, cotton, several sorts of gums, and medicinal drugs. Indigo is also cultivated in this province, but of an inferior quality to that which comes from the Caribbee islands. It hath been attempted in vain to cultivate vines, and produce silk, in this country; for though the frosts here do not continue long without intervals of warmer weather, they are sufficient to check the growth of the vine, as well as olives, dates, oranges, &c. The furs are bought of the Indians with vermilion, lead, gunpowder, coarse cloth, iron, and spirituous liquors. As yet they have not a sufficient number of handicraftsmen; which renders labour very dear, and a supply of clothes from Europe necessary. The aspect of the country is very fine, being adorned with beautiful rivers and creeks, and the woods with lofty timber, which afford delightful and pleasant seats for the planters, and render the fencing their lands very easy. And as they have plenty of fish, wild-fowl, and venison, besides other necessities which this country produces naturally, they live easy and luxuriously. The planters and their families that are born here, are troubled with few distempers; and are generally tall, well made, and active. The women who are not exposed to the weather are remarkably fair and handsome, with fine eyes. They marry at thirteen or fourteen; and where there is no clergyman, the ceremony is performed by a justice of the peace. They are very fruitful, have easy labours, and the children at nine months old are able to run about the house. Both sexes, as well young as old, are very dextrous in paddling and managing the canoes, being bred to it from their infancy. The religion of the planters is that of the church of England; but, as there is liberty of conscience, here are dissenters of all sorts.—The most substantial people build their houses with brick and lime made with oyster-shells; for there is no stone except near the mountains. The meaner sort make theirs with rough boards, and cover them with shingles. Their diet, except Indian corn, differs little from ours; and they import several sorts of strong liquors. Besides which they have cyder, persimon, and cedar beer, of their own. They have likewise a beer made with molasses, wheat-bran, and hops, which is very good. There are mines of pit-coal in this country; but they have much plenty of wood for firing, that there is no occasion to work them.

Their rivers are large, and navigable a great many miles up the country. They rise near the mountains, and abound with delicate fish, besides water-fowl of different kinds. In some there are islands which yield good pasture, without the annoyance of wild beasts. The chief mountains are the Cherokee or Allegany mountains, which are situated north and north-west, five or six hundred miles distant from the sea. They are very high; and abound with trees, plants, stones, and minerals, of different kinds. The inhabitants chiefly make use of paper money among themselves.

The most common diseases are agues, cachexies, fluxes, the yaws, colics, convulsions, the hooping-cough, tetters, the prickly heat, and the itch.

The Indians, like those in other parts, are well made, of a red copper colour, with black hair, and the whites of their eyes streaked with red. They have no beard, nor hair on any part of the body but the head. Those that are clothed and brought up among the planters, have their skins of a bright reddish colour; but those that go naked are more

dusky, from a custom of daubing themselves with bears' grease. However, by painting themselves with roucou, they appear more red than they naturally would be. They use other colours on different occasions. They generally go quite naked, except a few who have been taught to be a little more modest. They are great smokers, and good marksmen; and will walk on the ridge of a house without fear of danger of falling.

This country is divided into North and South Carolina, and Georgia; each of which is under a particular governor. The North is subdivided into four counties, Granville, Colleton, Berkeley, and Craven; and South Carolina into two, Clarendon and Albemarle. This last is also divided into fourteen parishes or townships, each of which has a brick or timber church. The former likewise has the same number of parishes. Charlestown is the capital of the whole country.

Carolina was discovered by Sebastian Cabot, about the year 1500, in the reign of Henry VII. but the settling of it being neglected by the English, a colony of French Protestants, by the encouragement of Admiral Coligni, were transported thither; and named the place of their first settlement *Arx Carolina*, in honour of their prince, Charles IX. of France: but in a short time that colony was destroyed by the Spaniards; and no other attempt was made by any European power to settle there till the year 1664, when 800 English landed at Cape-Fear in North Carolina, and took possession of the country. In 1670 Charles II. of Britain granted Carolina to the Lords Berkeley, Clarendon, Albemarle, Craven, and Ashley, Sir George Carteret, Sir William Berkeley, and Sir John Colleton. The plan of government for this new colony was drawn up by the famous Mr. Locke, who very wisely proposed an universal toleration in religious matters. The only restriction in this respect was, that every person claiming the protection of that settlement, should, at the age of seventeen, register himself in some particular communion. To civil liberty, however, our philosopher was not so favourable; the code of Carolina gave to the eight proprietors who founded the colony, and to their heirs, not only all the rights of a monarch, but all the powers of a legislation. The court, which was composed of this sovereign body, and called the *Palatine Court*, was invested with the right of nominating to all employments and dignities, and even of conferring nobility; but with new and unprecedented titles. They were, for instance, to create in each county two *cuciques*, each of whom was to be possessed of 24,000 acres of land; and a *landgrave*, who was to be bestowed were to compose the upper house, and their possessions were made unalienable. They had only the right of farming or letting out a third part of them at the most for three lives. The lower house was composed of the deputies from the several counties and towns. The number of this representative body was to be increased as the colony grew more populous. No tenant was to pay more than about a shilling per acre, and even this rent was redeemable. All the inhabitants, however, both slaves and freemen, were under an obligation to take up arms upon the first order from the Palatine court.

It was not long before the defects of this constitution became apparent. The proprietary lords used every endeavour to establish an arbitrary government; and, on the other hand, the colonists exerted themselves with great zeal to avoid servitude. In consequence of this struggle, the whole province, distracted with tumults and dissensions, became incapable of making any progress, though great things had been expected from its particular advantages of situation. Though a toleration in religious matters was a part of the original constitu-

tion, dissensions arose likewise on that account. In 1705, Carteret, now Lord Granville, who, as the oldest of the proprietors, was sole governor of the colony, formed a design of obliging all the non-conformists to embrace the ceremonies of the Church of England; and this act of violence, though disavowed and rejected by the mother-country, inflamed the minds of the people. In 1720, while this animosity was still subsisting, the province was attacked by several bands of savages, driven to despair by a continued course of the most atrocious violence and injustice. These unfortunate wretches were all put to the sword: but, in 1728, the lords proprietors having refused to contribute towards the expenses of an expedition, of which they were to share the immediate benefits, were deprived of their prerogative, except Lord Granville, who still retained his eighth part. The rest received a recompence of about 24,000l. The colony was taken under the immediate protection of the crown, and from that time began to flourish. The division into North and South Carolina now took place; and the settlement of GEORGIA commenced in 1732.

CARPATHIAN MOUNTAINS, mountains which divide Hungary and Transylvania from Poland.

CARSHALTON, a village in Surrey, situated south-west of Croydon. It lies among many springs, which joining others from Croydon and Beddington, form a river, in the very street, called the Wandle.

CARRIAGE (*Encycl.*), a vehicle serving to convey persons, goods, merchandizes, and other things, from one place to another. The following description of an apparatus for preventing passengers in carriages being injured when the horses have taken fright, by Mr. George Davis, of Windsor, is worthy of being noticed, since the Society for the Encouragement of Arts, Manufactures, and Commerce, deemed the inventor worthy of a bounty of thirty guineas. Having given in plate 19. a view of the apparatus as fixed to a coach, we should conceive it will not be necessary to enter into a very particular description of it. We shall therefore only relate the manner of operation in the inventor's words.

"It is fixed behind the splinter-bar," says he, "and the communication, by means of a copper chain, is carried through the boot to the side of the coach-box, that, in case of the horses taking fright, or, of that more fatal accident, the reins breaking, which precludes the possibility of stopping the horses, the coachman can discharge them instantaneously. There is this superiority in my invention over any other method hitherto put in practice, That the horses can be liberated, even when the pole is at right angles, or locked close to the perch, a position which otherwise overturns a carriage. I have had the honour of exhibiting a trial before his majesty, and discharged the horses three times; which Mr. Vidler, of Millbank, can attest, having been present on the spot, and who was pleased to say, that he thought, if it was more generally known, no carriage would be without it.

"Fig. A, is the splinter-bar of a carriage, to which the horses are attached by the traces fixed to the rollers B, B, B, B, and to the pole C.

"D D D, a brass chain, extending from the coach-box to the splinter-bar: this chain goes under the roller E, is then wound once round the pulley G, and thence directed, by the small rollers H and I to the quadrant K, to the farthest extremity of which it is attached.

"The quadrant K has a vertical axis, on the upper part of which is a pinion with four teeth (see L, figs. 2 and 3). This pinion works in two racks, M, M, fixed on two elbow-head bolts N, N; and by means of these racks, the bolts are moved backwards and forwards by the action of the quadrant K.

These bolt-bars extend from the centre of the splinter-bar

to its extremity, the straight end of the bolts shooting into the rollers B, B, fig. 1, at the end of the splinter-bar, and the elbow-heads, *n, n*, shooting into the two centre-rollers B, B.

"On the lower part of the axis of the quadrant K is a female screw, which receives a bolt O (see fig. 3), one end of which, when bolted, passes through the bolt C: the other end of it is a small screw.

"P, Q, are two collars fixed on the splinter-bar, which collars confine the axis, and prevent its being displaced.

"Fig. 4, shews the pulley G, round which the chain D passes: the axis of this pulley contains two female screws, R, S, with threads in different directions moving the two bars, T, V, backwards or forwards, so as to protrude them on the conical part of the naves of the fore wheels of the carriage, and to act as a brace thereon, so as to retard their motion.

"Fig. 5, is a link of the chain, in order to shew its make or formation.

"When the horses are to be detached, and the carriage stopped, the coachman, sitting on the coach-box, draws up a handle W, fig. 1, affixed to the chain D by means of an iron bolt with a spring upon it, to retain it when drawn out: the chain D pulls back the quadrant K, and draws back the double bolts N, N, which pass through square holes at the lower end of the rollers B. The same motion of the quadrant, by means of its female screw, raises the screw-bolt O, and sets the pole at liberty; so that the horses move off with the pole and rollers. It has been before observed, that the chain D winds once round the pulley G; by this means, when the chain is drawing up to detach the horses, the motion of the pulley propels, from its female screw on each side, bolts which have screw-heads at one end, and wedges at the other, which wedges, when propelled, act as braces on the conical-formed naves of the fore-wheels, and stop the motion of the fore-wheels.

"X is a square head on the axis of the quadrant K: by means of a key applied on this head, when necessary to attach the horses to the carriage, the quadrant is returned to its place, and bolts the rollers and pole, after they are replaced in their proper situations: the quadrant at the same time pulls back the chain on the pulley G, which pulley draws back the wedge-bolts from the conical naves of the fore-wheels, and sets them free to move.

"The Committee of Mechanics, to whose consideration this business was referred by the Society, appointed a trial to be made near the Magazine in Hyde Park, on Thursday, the 27th of March, 1800, with a coach, to which the apparatus was attached. Four horses and two postillions were employed for the purpose. A person sitting on the coach-box loosed the pole and rollers from the carriage, by pulling a chain placed near the boot, which chain drew back the bolts in the splinter-bar, and allowed the pole and rollers to be carried off by the horses, at a time when they were galloping at the rate of more than ten miles an hour. The experiment was repeated thrice, and the horses disengaged each time; but the impetus given to the carriage by the velocity of the horses, occasioning the coach to run forwards above twenty yards on level ground, after the horses were detached, the committee were of opinion, that a part, but not the whole of the object of the society was answered, as the passengers in the carriage might yet suffer injury from the motion of the carriage after the horses were liberated. On their noticing this circumstance to Mr. Davis, and a gripe being added to stop the motion of the wheels, Mr. Davis, on the 8th of May last, produced the present ingenious invention to the committee; by means of which, at one pull of the chain, the horses may be liberated, and two bolts propelled on the nave of the fore-wheels, so as to retard their motion."

The following is the specification of the patent granted to Mr. Reddel, of Birmingham, for a new method of constructing carriages for the conveyance of merchandize either by land or water; which carriages may be removed (either loaded or unloaded) from the land to the water, or from the water to the land, with ease, expedition, and safety.

"I make the bodies of the carriages," says Mr. Reddel, "to any form or size required, chiefly of wood, and strengthen or fasten the parts together with iron, or any other suitable substance, and make the bottoms, ends, and sides of them as water-tight as possible. I then fix a suitable number of wheels thereto, by means of an axletree, or axletrees, or in any other eligible manner (but in most cases it will be best to place them so that the bottom of the carriage or carriages may not be more than six, or less than three or four inches above the level surface of the ground). I sometimes place the wheels, in suitable recesses, in the sides of the boat-parts, or bodies, of the carriages, and put either a broad plank, or some strong iron work, over their centres, in order to support and protect them; or they may be fixed in narrow water-tight compartments, or boxes, in suitable places in the inside of the boat-part, or body, of the carriage, but of course the number of the wheels, and the manner of fixing them, must be varied according to circumstances. When they are in the water, a considerable number of the small-sized carriages may be fastened together, in any eligible manner, and hauled by one horse; and if they are wanted out of the water they must be separated, and drawn up an inclined plane by one or more at a time. They may then be taken up, or let down, a plane to a higher or lower level of water, as circumstances may require, or be drawn by land (either loaded or unloaded) to any place wherever they may be wanted, very near, if not quite, as readily as a common waggon or cart. Carriages of this description may be made to carry any reasonable burden, that is to say, from one ton to twenty tons and upwards, according to the uses for which they are intended; such as are meant to be drawn about when on the land by two or three horses would be best, if calculated to carry about two or three tons. They may be made principally with square ends, and may be either linked, tied, or grappled, to each other when they are in the water, or a rope or ropes, chain or chains, may pass through either rings, loops, or holes, made in, or attached to, each of them: and by means of a lever, weight, or spring, in one or both of the end carriages, they may be braced together sufficiently tight. The foremost end of the body of the leading carriage, if it is deemed necessary, may be made in the usual cut-water form, and the hindmost may have a rudder attached to it, which may be taken off, or put on, at pleasure, and they all may be steered together as one boat. In canals, where the water is on different levels, if a sufficient quantity cannot conveniently be spared from the upper level for the supply of locks, it will be extremely eligible to have carriages of the aforesaid description to carry about six or eight tons each, and when three of them are fastened together in the water, they will be equal in size and appearance to a common canal coal-boat, and to pass them from one level to another it would be necessary to have an inclined plane or planes to go down into the water at the head of the upper level, and another from thence down into the water of the lower level, and of course a certain degree of power would likewise be necessary to let down, and draw up, the carriages on the inclined planes. A small steam-engine, somewhat like those which are used at several of the collieries in the kingdom, to draw the coals out of the pits, if well executed, would pass upwards of two hundred tons over the planes in an hour, if the difference in the levels was not more than twenty or thirty feet; and the expense of making the planes, and erecting the engine, would not be much more, if so much, as making four common

locks, with the necessary appendages; or any other power might be made use of that was thought more eligible. If still greater dispatch is required, the machinery may be made a little stronger, and carriages of nine or ten tons burden or more may easily be taken over the planes, and then may be constructed that when two of them are fastened together in the water, they would form but one complete boat in size and appearance, of course they may pals the locks together as one boat, if there are any locks on the line of the canal where these boat-carriages may be used, or pals the planes separately, with expedition and safety."

The following duties have been laid by parliament on carriages kept for pleasure.

By the stat. 38 Geo. III. c. 41. there shall be paid from and after April 5. 1798, in lieu of the old duties repealed by this act, the following duties for every carriage herein-after mentioned:

	£.	s.	d.
For one such carriage with four wheels and no more	9	12	0
For two such carriages with ditto	10	4	0
For three with ditto	11	4	0
For four with ditto	11	8	0
For five with ditto	11	11	0
For six with ditto	11	12	0
For seven with ditto	11	13	6
And for eight such carriages with four wheels and upwards	11	14	0

The said duties to be charged for every carriage with four wheels, or any number thereof, kept by any person for his own use, or to let out for hire.

And there shall be paid for every such carriage with four wheels let to hire for the purpose of travelling post, by any licensed postmaster, or inn-keeper, and whereon the name and abode of the person licensed shall be painted

8 8 0

And for every carriage with less than four wheels

4 4 0

The last duty to be charged on every carriage with less than four wheels, kept by any person for his own use, or to let out to hire, to be paid by the person keeping or using such carriage.

TABLE OF THE DUTY ON CARRIAGES.

Carrriages with 4 Wheels. Carriage with 2 Wheels.

No. of C.	Duty per Carriage			Total Amount			No. of C.	L. s. d.			Total Amount		
	L.	s.	d.	L.	s.	d.		L.	s.	d.	L.	s.	d.
1	9	12	0	9	12	0	1				4	4	0
2	10	4	0	20	8	0	2				8	8	0
3	11	4	0	33	12	0	3				12	12	0
4	11	8	0	45	16	0	4				16	16	0
5	11	11	0	57	15	0	5				21	0	0
6	11	12	0	69	12	0	6				25	4	0
7	11	13	6	81	14	6	7				29	8	0
8	11	14	0	93	12	0	8				33	12	0
9				105	6	0	9				37	16	0
10				117	0	0	10				42	0	0
11				128	14	0	11				46	4	0
12				140	8	0	12				50	8	0
13				152	2	0	13				54	12	0
14				163	16	0	14				58	16	0
15				175	10	0	15				63	0	0
16				187	4	0	16				67	4	0
17				198	18	0	17				71	8	0
18				200	2	0	18				74	12	0
19				211	16	0	19				79	16	0
20				223	10	0	20				80	0	0

And so on, at the rate of 11l. 14s. for every carriage with four wheels, and 4l. 4s. for every carriage with two wheels.

Note, Carriages with four wheels, let to hire to travel post for a day, or less period of time, or by the mile, or from stage to stage, are chargeable only 8l. 8s. per carriage.

CART (Encycl.). We propose to extend this article, by availing ourselves of the selections of our respectable fellow-labourer the editor of the DOMESTIC ENCYCLOPEDIA.

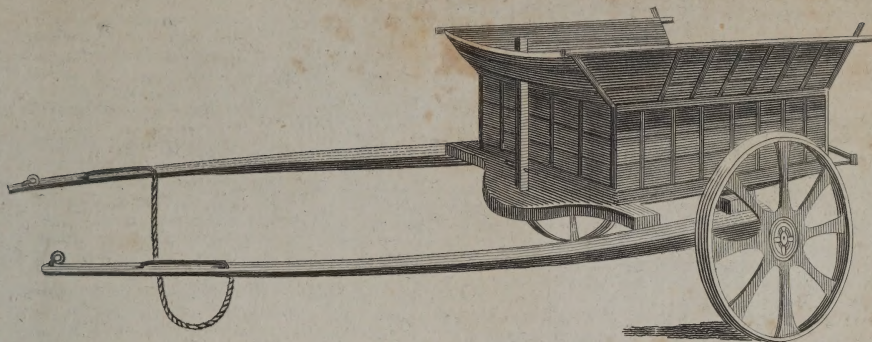
In rural economy, the proper construction, and adaptation of carts to different soils and situations, are objects of the first consequence to every reflecting farmer. Nevertheless, it is surprising, that little attention has been paid to this important subject, previous to the late improvements in agriculture: the flourishing era of which, in Britain, commenced about the middle of last century, or the year 1754, when that patriotic Society for the Encouragement of Arts, Manufactures, and Commerce, was instituted at London. Since that memorable period, numberless inventions have been introduced into rural economy, and the names of many other illustrious promoters of true national wealth, will be remembered by a grateful posterity. In Mr. Arthur Young's Annals of Agriculture, the 18th volume, we meet with an elaborate paper, entitled *The Farmer's Cart*; by the editor; from which we shall extract the following particulars: Mr. Young first observes, that the most general farmer's carriage in England, is a waggon, drawn by four horses, in which is conveyed corn, hay, wood, &c. but not dung or earth, which are usually moved by carts, or tumbrils, drawn by three or four horses:—carriers almost universally employ broad-wheeled waggons, drawn by eight horses.

In Scotland, waggons were formerly used, but afterwards changed for large carts, and more lately for small ones, drawn by one horse.

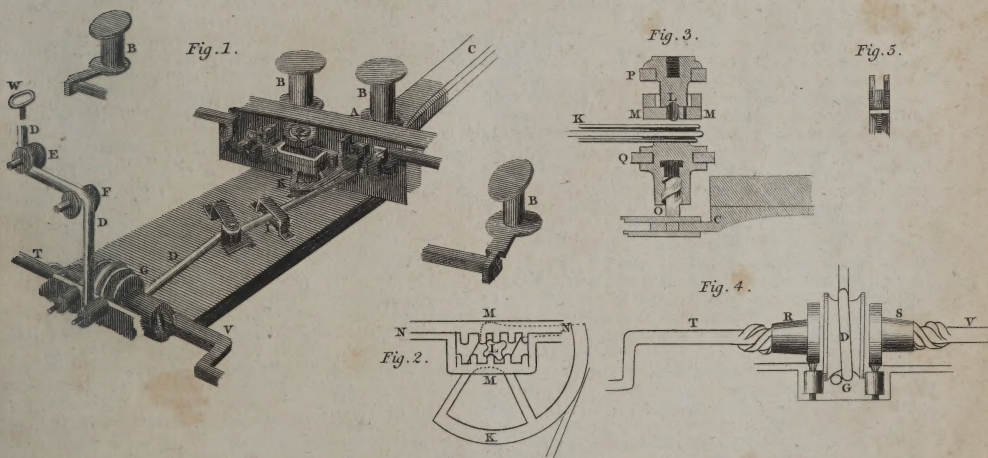
In Ireland, the most common vehicle at present is the one-horse cart, with low wheels beneath the body of the machine; which has universally superseded the use of English carts and waggons, from a conviction of their inferiority. Nothing, says Mr. Young, exceeds the amazing expedition with which corn and hay fields are cleared in that country, by means of this useful, though inelegant implement. In consequence of such a decisive encomium, as well as the very favourable account given of this machine by the late Mr. Bakewell, of Dishley, Leicestershire, in the Communications to the Board of Agriculture, we have been induced to present our readers with the following description, of an Improved Irish Car. See Pl. 19.

The advantages of this vehicle, which was preferably employed, and strongly recommended, by the last-mentioned agriculturist, consists in the facility with which it is laden, on account of its lowness; and, when gate-ways and roads are narrow, much room is gained by the wheels being fixed under the body of the cart. In such situations, therefore, it is well calculated for carrying manure, especially on meadow or ploughed land; and for that purpose, its wheels ought to have a flat bearing, and to be at least six inches in breadth. Another peculiarity in the construction of this cart is, that its wheels are necessarily cylindrical; and that the facility of draught arising from this unobserved circumstance, was probably imputed to some other part of the machinery. But, though contrary to the generally-received opinion, Mr. Alexander Cummins (in his Observations on the Effect which Carriage-wheels with Rims of different Shapes have on the Roads, printed in the Communications to the Board of Agriculture), has satisfactorily demonstrated, and it is likewise evinced by experience, that the resistance to the cylindrical wheel is not increased, but diminished, by increasing the breadth and the flat bearing of its rim. The knowledge of this fact is of very great importance to the farmer, as well as to the waggoner;

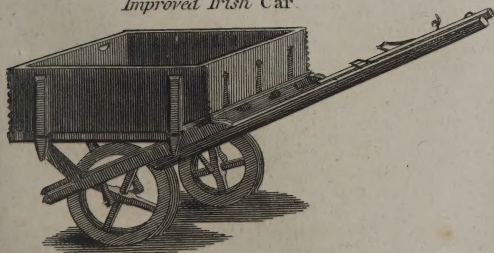
Lord R. Seymours One Horse Cart



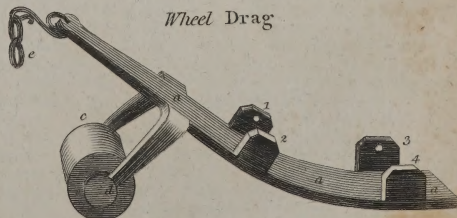
M. Davis's invention for security in Carriages



Improved Irish Car



Wheel Drag



for, by availing himself of this simple improvement, he may be enabled, in almost all seasons, to drive his broad-wheeled carts, &c. on his meadow or ploughed ground, when no narrow wheel can be employed.—Hence, it would be superfluous to enumerate the further advantages of this implement; yet, when the width of gate-ways and the breadths of roads will admit of the wheels being placed at the sides of the cart, without confining the width of its body, it will probably be more advantageous to have them at the sides, than under the cart.

One of the greatest advocates for one-horse carts, is Lord Robert Seymour, whose excellent paper on this subject, dated Talairis, 5th September, 1796 (inserted in the 27th volume of the *Annals of Agriculture*), deserves the thanks of all British farmers. This patriotic nobleman strongly recommends the cart which he employs on these estates, as a most useful implement of husbandry. Convinced of its superior excellence, in many situations, we have thought proper to annex an accurate engraving of this cart, for the elucidation of which, we shall extract the following particulars from his lordship's letter, addressed to the editor of the last-mentioned work:

The advantages of single-horse carts are universally admitted, wherever they have been attentively compared with carriages of any other description. By his own observation, Lord Seymour is led to conclude, that a horse acting singly will do half as much more work as in conjunction with another, so that two horses will, separately, perform the work of three conjunctively. This difference, he believes, arises partly from the single horse being so near the load he draws, and partly from the point or line of draught being so much below his breast; as the wheels, of single-horse carts are usually made very low. When a horse draws in conjunction with another, he is generally embarrassed by some difference of rate—the horse behind, or before him, being quicker or slower than himself: whereas a single horse has only his load to contend with, and is not inconvenienced by the greater or lesser height of his fellow. Nor is there any necessity for employing additional drivers; as horses, once in the habit of going singly, will follow each other as uniformly and readily, as they do when harnessed together: hence, on the most frequented roads in Ireland, one man conducts three, four, or five single-horse carts, without any inconvenience to the passenger.

Dimensions of the body of the cart: two feet eleven inches across the bottom; three feet nine inches, inside length; one foot high; sloping top, nine inches. It has iron wheels; two feet eight inches high; rim, three inches and a half wide, and from three-quarters to an inch thick: spoke, three inches and a quarter at each end, worked off to two inches at its centre. See Pl. 19.

In the introduction to the letter above alluded to, his lordship observes, that the price of iron-cast into wheels is 16s. per cwt: and the weight of each wheel is about three-quarters of a hundred.—Two inconveniences, however, arise from the use of low cast-iron wheels; namely, 1. That such iron is very liable to break upon concussion; and, 2. That the course of a wheel of so small a diameter, occasions a very quick consumption of grease. The first of these objections is, in a great measure, removed by the facility with which the rim of the wheel may be repaired by the application of wrought-iron; the latter being joined to the former by a rivet, the wheel acquires a degree of elasticity, and thus becomes, perhaps, stronger than it was when new. In order to furnish a regular supply of grease, Lord Robert has introduced four grooves or cavities in the boxes, increasing a little towards their centres: and with a view to defend the axle-tree, which consists of wrought-iron, against the harder body of the box, he ordered the extremity of it to be steeled.

Mr. Arthur Young, in the 18th volume of his *Annals of Agriculture*, before quoted, states the following dimensions of a single-horse cart, which he, by the test of experience, has found to be the most advantageous:

Buck.—Length, 5 feet 1 inch.
Breadth, 3 feet 7 inches.
Depth, 2 feet.

Cubical feet, 35 and a fraction.

On his farm of 350 acres, in Suffolk, Mr. Young employs only five such carts; and observes, that he would not add more than one to the number, even though he should increase his business to 400 or 500 acres: hay, corn in the straw, fagot-wood, billets, dung, clay, marl, lime, bricks, &c. are all conveyed by them; carrying out nine, and even ten coombs of wheat in sacks, and they are never drawn by more than one horse or ox.—No farm of the same extent, in an arable country, has less than three waggons, three tumbrils, and a light cart: the exact price of these different implements, in the year 1792, amounted to 109l.; while the building of six carts, upon Mr. Young's plan, costs only 63l.: thus he saves about 40 per cent. in annual repairs. Besides this great reduction of expence, another circumstance deserves particular notice.—As these carts had for many years been the object of ridicule, Mr. Young offered a bet to one of his prejudiced neighbours, that he should load a waggon, till five horses could not stir with it; and Mr. Young engaged to carry away that load with ease, in his carts, with four of the same horses; but the confidence which his antagonist possessed in waggons would not allow him to accept the offer.

The infinite benefit, concludes Mr. Young, of which these carts would be to the roads, if their use should become general, may be easily conceived. In all the examinations before committees of the House of Commons, as well as in most of the treatises published on the subject, it has been admitted that no police or management can keep the roads in repair, while such weights are permitted to be drawn in a single cart, while Parliament has been made so sensible of this fact, that repeated acts have been passed, by which the weight of waggons was limited, and a certain breadth of the wheels enjoined. Experience, however, has proved, that both are insufficient; and that the only method of effecting a favourable change, would be to prohibit numerous teams. Let every man carry whatever weight he pleases in one-horse carts, and pay a light toll; led the load of a two-horse cart be limited, and the toll increased; further lessening the weight, and raising the toll, when four horses are employed; and thus advancing the turnpike expences for every additional horse, till it amounts nearly to a prohibition. If such a plan were to be adopted, we should soon see all our roads in an improved state. Rollers have, indeed, been greatly indulged both in weight and toll; but this was a preposterous measure, for a roller will crush a pebble to dust, as well as a wheel, and the badness of roads must be attributed to the materials being reduced to powder, almost as soon as laid on, and either blown away in dust, or carried off in mud. Having followed some of Sharp's waggons, and observed the effect, Mr. Young is persuaded, that the roller is more detrimental to the road than nine-inch wheels. In such an enquiry, facts only can decide the question: the Irish roads are made at an expence beyond comparison less than the English, and were at the time he visited that country greatly superior to those in England. This difference, in his opinion, must be attributed entirely to the use of one-horse carts, as he has explained in his *Tour of Ireland*. “Many hundred thousands a-year would be saved in England, if these carts were so favoured in road-acts, as to ensure a great decrease of waggons.” On the whole, he ventures to recommend the use of one-horse carts to his brother farmers, with that confidence

which ought to arise solely from numerous and varied experiments.

Having concluded the subject of single-horse carts, we shall only observe, for the information of those who employ teams with two-wheeled carriages, that several useful implements have lately been invented, for the more effectual stopping of such carts, in descending steep hills, and likewise for taking off the increased weight thrown on the shaft horse's back in all descents. See a description of the latter contrivance, under the head of **LOCKING-POLE**. The **WHEEL-DRAW** is represented in Pl. 19. where *a, a, a, a*, is a piece of wrought-iron, curved to the exact form of a cart-wheel, with the thickest part at *b*, on which the weight of the cart rests. 1, 2, 3, 4, are shoulders, that keep the wheel within the drag, and should be about four inches high. *c*, is the wheel, made of solid iron, which is nearly as wide as the drag, seven inches in diameter; runs on its axis at *d*; has a strong shoulder; and, as it projects, resists the sudden jolts of rough roads. *e*, is the chain to be fastened to the near shaft, in order to keep the drag properly under the wheel, which, from being violently jerked, might be apt to pass over the drag, and leave it behind: this is a necessary precaution, though seldom wanted if the drag be well constructed. In the shoulders marked 1, 2, are holes, by which the drag is suspended on hooks beneath the tail of the cart when it is not employed.

In London and Westminster, carts are not permitted to carry more than twelve sacks of meal, 750 bricks, one chaldron of coals, &c. on pain of forfeiting one of the horses (stat. 6 Geo. I. c. 6).—By the laws of the city, carmen are forbidden to ride either on their carts or horses: they are to lead or drive them on foot through the streets, under the penalty of 10s.

Rolling carts are very useful machines for carrying manure on low-lands during wet seasons. According to an account given by Mr. Richard Moyle, and inserted in the 14th volume of the Transactions of the Society for the Encouragement of the Arts, &c. such a cart consists of three circular pieces of strong elm, two feet in diameter, and each eighteen inches long, through which a strong iron axis is passed, so as to protrude a few inches on each end beyond the rollers; after all, allowing an inch between each piece, for the convenience of turning round. On the projecting part of the axis, a fixed frame is placed, for supporting the body of the cart, which, according to the nature of the soil, may be loaded to any degree, and employed simply as a roller, or for carrying manure, &c. on land where common wheels cannot be admitted.

By means of these rolling carts, the surface of the land is to be frequently compressed, in order to consolidate the soil more perfectly, so that the earthy particles may embrace the roots of the grasses, and retain their proper moisture; on which the luxuriance of such soils in a great measure depends.

By 28 Geo. III. c. 93, there shall be paid for every carriage with less than four wheels, to be drawn by one horse, which shall be built wholly of wood and iron, without any covering other than a tilted covering, and without any lining or springs, or any ornament whatever, other than paint of a dark colour for the preservation of the wood or iron only, and which shall have the words "A TAXED CART," and also the owner's name and abode, thereon, and the price of which (repairs excepted) shall not have exceeded or which shall not at any time exceed twelve pounds, the annual sum of 11 and 4s.

But nothing herein shall authorise any person to keep any carriage as a taxed cart, who shall be liable to the duties for any four-wheel carriage, or for two male servants; but every such person shall be liable to the full duty of four pounds four shillings, imposed on carriages with two wheels.

Also all carriages, of whatever construction the same may be, which shall be let out to hire, shall be subject to the duty of 41. 4s.

But no person affected to the duty of 11. 4s. shall be charged in respect thereof with the additional duties granted by the triple assessment act of this session. And if any cart shall have been assessed, the commissioners may, on appeal, cause the assessments to be vacated, but so as not to annul any payment already made, nor the collection of any arrears: but such appeals are not to be heard till after ten days' notice to the surveyor; and in case either the party, or surveyor, shall be dissatisfied, they may demand a case, in like manner, as for other assessed taxes.

Persons occupying farms, or carrying on trades, and making a livelihood solely thereby, and ecclesiastical persons not possessed of an annual income of one hundred pounds or upwards, whether arising from ecclesiastical preferment, or otherwise, who shall keep any carriage subject to the duty hereby granted, shall be charged, in respect of the horse, at the rate prescribed for horses not kept for the purpose of riding, or drawing carriages, so as such horse be not at any time used for riding or drawing carriages.

Every person to be rated as aforesaid, shall paint on a black ground in white letters, or on a white ground in black letters, on the outside of the back panel, or back part of such carriage, or if it be constructed without a back part on which they may be painted, then on the side, or some conspicuous part on the outside, his christian and sur-names, and the place of his abode, and the words "A TAXED CART," in Roman letters, and in words at full length, each at least one inch in length, and shall, upon demand, produce such carriage to the assessor or surveyor, or at any meeting of the commissioners; and if any person shall keep any such carriage, the price whereof, or for any subsequent addition (repairs excepted), have been charged (the proof of which shall lie on the owner) at more than 121. or if the value thereof shall appear to the commissioners, on examination, to exceed 121. or if such carriage shall be built contrary to the provisions before mentioned, or shall not be so marked, or if such person shall neglect or refuse, upon demand, to produce the carriage, such person shall be charged with the duty of 41. 4s.

Nothing herein shall subject to the said duty of 11. 4s. any cart whatever which shall be kept without fraud to be used wholly in the affairs of husbandry or of trade, by reason of the owner or any of his servants riding therein, when laden, or when returning from, or going to, any place, to or from which any load shall be to be carried in the course of husbandry, or for the purpose of trade, or for conveying the owners thereof, or their families, to or from divine service, on Sundays, or for carrying persons going to or returning from the election of members of parliament.

CART, the name of two rivers of Renfrewshire, in Scotland, distinguished by the appellation of *Black* and *White*. The *Black Cart* issues from the lake called Lochwinnoch, or Castle Semple Loch; the *White Cart* descends from the north-east angle of the county; and, uniting their streams, they both flow into the Clyde, near Renfrew. Opposite this town, in the road to Port Glasgow, is a handsome bridge of ten arches, built exactly at the confluence of these two rivers. Three roads meet upon this bridge, so that it has three ends or entrances.

CARTERET ISLAND, an island of the South Pacific Ocean, seen by Captain Carteret in 1767. It is about six leagues long from east to west. Long. 159. 14. E. Lat. 8. 26. S.

CARTHAGO, a rich trading town of North America, in Mexico, with a bishop's see, 360 miles west of Panama. Long. 85. o. W. Lat. 9. 5. N.

CARTHAMUS (*Encycl.*). Having in the article *Dyeing* referred to **CARTHAMUS**, we think it necessary to speak more at large on its qualities. We shall therefore present the reader with the account given of it by Berthollet.

“ *Carthamus* contains two kinds of colouring matter; the one, yellow; the other, red. The first alone is soluble in water: its solution is always turbid; with re-agents it exhibits the appearances commonly observed in yellow colouring matter: acids render it lighter, alkalies make it deeper, and more approaching to orange: both produce a small portion of a fawn-coloured precipitate by means of which it becomes clearer. Alum forms with it a deep yellow precipitate in small quantity: solution of tin, and other metallic solutions, precipitates which have nothing remarkable.

“ Alcohol acquires but a slight tincture from the flowers, after all the yellow substance has been extracted by repeated washings. If these flowers be put into a solution of caustic alkali, they become yellow, and the liquor which is pressed out is of a deep yellow colour. On saturating the alkali with an acid, the liquor becomes turbid, reddish, and gradually deposits a very small quantity of a reddish yellow precipitate. With solutions of alum, zinc, and tin, a yellow precipitate is formed; and with solutions of iron and copper, a precipitate inclining to green. If instead of a solution of caustic alkali, a solution of carbonate of alkali be used, acids produce with it a more copious precipitate of a redder hue: but the redness differs according to the acid employed. Alum also produces with the latter alkaline solution, a red precipitate, which is so light, that it generally swims on the surface of the liquor. This colouring matter is so delicate, and so easily changed, that if heat be employed to dissolve it, the precipitates produced by acids will not have so fine a colour.

“ Mr. Beckmann has observed, that the carthamus of Thuringia contained much more of the yellow matter, than that of the Levant: that in other respects the red matter of the former was by no means inferior in beauty to that obtained from the latter: yet, that to produce equal effects, half as much more of it was required. He next examined, whether this difference depended on the climate, or only on the mode of preparation.

“ Hæfcliquist relates, in his travels in Egypt, that when the flowers of carthamus are gathered, they are pressed between two stones, to squeeze out the juice. After this they are washed several times with water, which in Egypt is naturally salt. When taken out of the water they are pressed between the hands, and then spread on mats, placed on the flat roofs of their houses; where they are covered in the day-time, that the sun may not dry them too fast, but left exposed to the dew at night. They are occasionally turned, and when sufficiently dry, taken in, and kept for sale under the name of *saffron*.

“ If the carthamus of Levant, such as it is in commerce, be compared with that of Thuringia, the former will be found to be more pure, a little moist, and in compressed masses; the latter, drier and more elastic. These differences depend on the preparation. Writers on agriculture, deceived by the erroneous name of *bastard saffron* given to carthamus, have supposed, that it should be treated like saffron. Hence they direct it to be gathered in a dry season, and dried with care. Mr. Beckmann thinks, on the contrary, that the mode adopted in Egypt ought to be imitated. He advises even to add a little salt to the water used in preparing it, to give it the quality it has naturally in Egypt.

“ The flower of carthamus has a fine colour of fire, but in drying it grows yellow. It should not be gathered till it grows dry; and it is better if it has been rained upon in that state, though the contrary opinion is erroneously held. The want of rain may be supplied by watering the flowers morning and evening. When they are gathered, the seeds may still be left to ripen.

“ The intention of these directions is, to promote the separation of the yellow matter, the abundance of which constitutes the difference between the carthamus of our climates, and that of the Levant. Carthamus should be kept in a moist place, as its becoming too dry would be injurious.

“ There are many reasons to induce us to enrich our agriculture with this production. The seeds of carthamus are very good food for wild fowl, and particularly for parrots, whence they have received the name of grain de perroquet. An useful oil might be expressed from them, and the residue given to cattle. The dry leaves and stalks would serve as fodder for sheep and goats in the winter; and those stalks which are too large might be used as fuel, after they had stripped them. Mr. Beckmann has found the carthamus ripen well at Gottingen, where the soil is sandy. The ground should be moderately dunged; and the plant neither transplanted nor watered.

“ No use is made of the yellow substance of carthamus: but to extract that part, it is put into a bag and trodden in water, till no more colour can be pressed out. The flowers, which were yellow, become reddish in this operation, and lose nearly half their weight: it is in this state they are used.

“ The yellow substance might however be employed: and Mr. Poerner has made many experiments on the subject. (Vide *Chemische Versuche und Bemerkungen zum Nutzen der Farbekunst*; dritter Theil.) The principal results of his experiments were, that wool, without any preparation, takes from it a yellow colour, which is not permanent; but that which it takes after having been prepared with alum and tartar, though not very lasting, is better. Mr. Beckmann asserts, that cloth prepared with tartar, or with tartar and alum, acquires from it a good yellow colour; and that carthamus contains more yellow colouring matter than an equal weight of fustic itself.

“ To extract the red part of carthamus, and afterwards apply it on the stuff, recourse is had to the property alkalies possess of dissolving it; and it is precipitated by means of an acid. It has been found, that lemon-juice produces the finest colour. Mr. Beckmann says, that next to this, the sulphuric acid produces the best effect, provided a proper quantity only be used.”

CARWAR, a sea-port of the peninsula of Hindoostan, on the coast of Malabar. It was subject to Tippoo Sultan, regent of Myfore, and is sixty miles S. by E. of Goa. Long. 74. 34. E. Lat. 15. 0. N.

CASA DEL CAMPO, a palace belonging to the king of Spain, seated on the west side of Madrid, opposite the castle on the other side of the river.

CASCO BAY, a bay on the east of the province of Maine, in New England, situated between Cape Elizabeth, and Cape Small Point. It is twenty-five miles wide; and is a beautiful bay, interspersed with small islands. Long. 69. 30. W. Lat. 44. 5. N.

CASBIN, or CASWIN, a considerable town of Persia, in Irac Agemi, where several of the kings of Persia have resided. The houses are below the surface of the earth. The air is subject to such sudden changes, from heat to cold; and the contrary, that it is very unwholesome for strangers. Nadir Shah built a palace here, inclosed by a wall a mile and a half in circumference; and the town is encircled by one four miles in circuit. It carries on a great trade, and is seated near the high mountain Elwend, where there are fine quarries of white marble, 180 miles north of Isfahan. Long. 52. 16. E. Lat. 35. 30. N.

CASCHAW, or CASSOVIA, a town of Upper Hungary, on the river Horat, 115 miles north-east of Buda. Long. 27. 25. E. Lat. 48. 46. N.

CASHGUR, a kingdom of Asia, in Tartary, otherwise

called Little Bokharia; bounded on the north by the Calmucs and Monguls, on the east by Thibet and the deserts of Gobi, on the south by Hindoostan, from which it is separated by the high mountains of Hindoo-ko, and on the west by Great Bokharia. This country is populous and fertile, but the air is cold, on account of the mountains. Here are rich mines of gold and silver, which the natives do not work, because they are employed wholly in feeding cattle. The mink-animals are found in this country; and they have several precious stones beside diamonds.

CASHGUR, a town of Asia, capital of a kingdom of the same name. It stands at the foot of the mountains, and enjoys a good trade with the neighbouring countries. The houses are of stone, and very good. Both sexes dress alike. Their complexion is swarthy, and they have all black hair. Long. 73. 25. E. Lat. 41. 30. N.

CASHNA, an extensive empire in the centre of Africa, being part of the region called Soudan, by the Arabs, and Nigritia or Negroland by the Europeans. It is bounded on the north by the mountains of Eyre, which separate it from Fezzan, and by a district of Zahara in the Desert; on the south by the Niger; and on the east by the kingdom of Zamphara and the empire of Bornou. It resembles Bornou much in climate, soil, and natural productions, and in the colour, genius, religion, and government of the people. The rains, indeed, are less violent than those of Bornou. Its monkeys and parrots (but seldom seen in Bornou) are numerous and of various species. The common people are less courteous in Cashna than in Bornou. A thousand towns and villages are said to be included in this empire, which, like Bornou, consists of different tribes or nations, subject to the dominion of one ruling power.

CASHNA, the capital of the empire of Cashna in Africa. It is 370 miles S. by W. of Mesurata, in 16. 20. N. lat.

CASSERTA, a magnificent palace of his Sicilian majesty, sixteen miles north of Naples. This immense building is of a rectangular form, 780 feet by 580; about 112 feet high, comprehending five habitable stories, which contains such a number of apartments, as to accommodate the most numerous court, without any accessory buildings. The gardens are proportionably extensive and magnificent.

CASSOVIA, a strong town of Hungary, with the finest arsenal in that kingdom. It is near the river Horat, fifty-five miles north-east of Agria. Long. 21. 25. E. Lat. 46. 48. N.

CASTELLANE, a pleasant town in France, in the department of the Lower Alps and late province of Provence. It is seated on the river Verdon, in a mountainous country, which, however, is fertile in corn and pasture. About a mile from the town, is a salt spring, from which the water issues in such abundance as to turn the mill at the very source. Many of the ancient lords of Castellane were distinguished among the Provençal poets, called Troubadours. It is twenty-seven miles S. by E. of Senez. Long. 6. 34. E. Lat. 43. 55. N.

CASTELLAZO, a town of Italy, in the duchy of Milan, remarkable for a battle fought between the French and Austrians in 1704. It is two miles east of Alexandria. Long. 8. 50. E. Lat. 45. 3. N.

CASTELÓN, a town of Spain, in Catalonia, five miles N.W. of Roses. Long. 2. 58. E. Lat. 42. 18. N.

CASTELNAUDARY, a considerable town of France, in the department of Aude and late province of Languedoc, on an eminence, at the foot of which is the Royal Canal, which here forms a basin about 3600 feet in circumference. Near this town, in 1632, Marshal Schomberg defeated the army of Gaston duke of Orleans, and took the unfortunate Montme-

rency prisoner. Castlenaudary is fifteen miles west of Carcassonne. Long. 2. 0. E. Lat. 43. 19. N.

CASTELVETRO (*Encycl.*). Erroneously spelt CASTELVERTO.

CASTON, a town in Norfolk, with a market on Monday. It is ten miles N. by W. of Norwich, and 113 north-east of London. Long. 1. 22. E. Lat. 52. 48. N.

CASTOR, a town of Lincolnshire, with a market on Saturday. It is twenty miles north-east of Lincoln, and 159 north of London. Long. 0. 9. W. Lat. 53. 30. N.

CASTRO, a town of South America, in Chili, capital of the island of Chiloe. It is 180 miles south of Baldivia. Long. 75. 5. W. Lat. 42. 4. S.

CASTRO-DEL-REY, a town of Spain in the province of Galicia. Long. 3. 24. W. Lat. 43. 20. N.

CASTRO-MARINO, a town of Portugal, in Algarve. It is strong by situation, and seated near the mouth of the Guadiana, fifty-five miles S. of Beja. Long. 7. 12. W. Lat. 37. 6. N.

CASTRO-VEREGNA, a town of South America, in Peru, remarkable for mines of silver, good tobacco, and wholesome air. It is 125 miles south-east of Lima. Long. 74. 45. W. Lat. 12. 50. S.

CATACOSTICS. See ACOUSTICS in this SUPPLEMENT.

CATHARINE I. Empress of Russia, was raised to that dignity, from the condition of a menial servant, by the discerning Peter the Great, who married her in 1711. She attended the emperor in all his expeditions; and when he was surrounded by the Turks on the banks of the Pruth, his army was saved by her prudent advice. Peter afterwards never resolved on any affair of consequence without first consulting her; success attended him in every thing, and the court of Peterburgh appeared in a new light. He instituted the order of St. Catharine in her honor, which he gave her power to bestow on such of her sex as she judged proper; and, finally, appointed her his successor. On the death of her husband, she took all proper means to secure the quiet, advance the civilization, and promote the general welfare, of her kingdom; and it is more than probable, that the late illustrious Empress Catharine II. considered her as a bright example: for Catharine I. established the Academy of Sciences at Peterburgh, now brought to such perfection. She likewise increased the naval force of Russia: and set on foot a design for discovering the north-east passage to China. "The lenity of this prince's (says Voltaire, in his Life of Peter the Great) was carried to a degree unparalleled in the history of any nation. She promised, that during her reign nobody should be put to death; and she kept her word: she was the first sovereign that ever shewed this respect to the human species. Malefactors were condemned to work in the mines, and other public works; a regulation not less prudent than humane, since their punishment was rendered of some advantage to the state." She died on the 17th of May, 1727; leaving issue, Anne who married Frederic duke of Holstein, and Elizabeth afterwards empress of Russia.

CATHARINENSIAE, or ECATERINENSIAE, one of the governments of the Russian empire, being the new name of the extended government of Aloph, which is now made to comprise New Russia and the Crimea. This government is divided into two provinces; namely, Catharinensla, which includes New Russia and the late government of Aloph; and the province of Taurida, which includes the Crimea.

CATHARINENSLAE, the capital of the province of the same name, built by the late Empress of Russia. It is seated near the spot where the river Kiltzin falls into the Samara. Its

name signifies, "The glory of Catharine;" and it is colonized by many Greeks and Armenians from Cym Tartary, and others of the nations who served in the preceding war against the Turks. It is 178 miles N.E. of Cherson. Long. 35° 15'. E. Lat. 47° 23'. N.

CATMANDU, the capital of Napaul, in Hindoostan Proper, 445 miles E. of Delhi. Long. 84° 51'. E. Lat. 28° 6'. N.

CATOUCH, CAPE, the N.E. promontory of Yucatan, in South America. Long. 86° 30'. W. Lat. 22° 10'. N.

CATTACK, or COTACK, the capital of Orissa, a province of Hindoostan, in the Deccan. It is a post of consequence, as it lies on the only road between Bengal and the Northern Circars; and the possession of the city and its dependencies gives the Berar rajah (a Mahratta prince) more consequence in the eyes of the government of Bengal, than even his extensive domain and central position in Hindoostan. Cattack is seated on the river Mahanuddy, near its entrance into the bay of Bengal, and 220 miles S.W. of Calcutta. Long. 86° 1'. E. Lat. 20° 51'. N.

CATTARICK, a village, near Richmond, in the W. riding of Yorkshire. It has a bridge over the river Swale, and there is a fort of catarrack near it, from which it seems to have derived its name. It appears to have been a great city in the time of the Romans, one of whose highways crossed the river here. On the banks of it are the foundations of great walls, and a mount cast up to a vast height. Many Roman coins and urns have been dug up here. The final destruction of this city was by the Danes.

CATTERTHUN (*Encycl.*). This Caledonian post is, by Mr. Pennant, described as of uncommon strength. "It is (says he) of an oval form, made of a stupendous dike of loose white stones, whose convexity, from the base within to that without, is 122 feet. On the outside, a hollow, made by the disposition of the stones, surrounds the whole. Round the base is a deep ditch, and below that about 100 yards, are vestiges of another, that went round the hill. The area within the stony mound is flat; the axis, or length of the oval, is 436 feet, the transverse diameter 200. Near the east side is the foundation of a rectangular building; and on most parts are the foundations of others small and circular: all which had once their superstructures, the shelter of the possessors of the post: there is also a hollow, now almost filled with stones, the well of the place." There is another fortification, but of inferior strength, in the neighbourhood. It is called the *Brown Catterthun*, from the colour of the ramparts, which are composed only of earth. It is of a circular form, and consists of various concentric dikes. On one side of this rises a small rill, which, running down the hill, has formed a deep gully. From the side of the fortrefs is another rampart, which extends parallel to the rill, and then reverts, forming an additional post or retreat.

CAVENDISH (Margaret) duchess of Newcastle, famous for her voluminous productions, was born about the latter end of the reign of James I. and was the youngest sister of Lord Lucas of Colchester. She married the Duke of Newcastle abroad in 1645; and on their return after the Restoration, spent the remainder of her life in writing plays, poems, with the life of her husband, to the amount of about a dozen folios. "What gives the best idea of her unbounded passion for scribbling (says Mr. Walpole), was her seldom revising the copies of her works, lest, as she said, it should disturb her following conceptions." She died in 1673.

CAUCASUS, one of the 41 governments into which the Russian empire has been lately formed. It is divided into the two provinces of Astracan and Caucasus, but is not yet subdivided into districts. The province of Caucasus is to comprize the

Cuban, and all that district to the E. and S. now in the possession of Russia, between the rivers Don and Cuban, and between the Black Sea and the Caspian, extending as far as the confines of Georgia, and continually augmenting by the reduction and submission of the wandering hordes of Mount Caucasus.

CAUNE, LA, a small town of France, in the department of Tarn and late province of Languedoc, seated near the mountains, where the river Agout has its source. It is 21 miles N.E. of Castres. Long. 2° 43'. E. Lat. 43° 40'. N.

CAUVERY, or CAVERY, a considerable river of the peninsula of Hindoostan, which rises among the Ghauts, takes a S.E. direction through Mysore, and watering Seringapatam and Tanjore, enters the bay of Bengal, by several mouths, between Cuddalore and Trichinopoly.

CAUSTICITY (*Encycl.*). The causticity of bodies depends entirely on the state of the saline, and chiefly of the acid, matters they contain. When these acids happen to be at the same time much concentrated, and slightly attached to the matters with which they are combined, they are then capable of acting, and are corrosive or caustic. Thus fixed and volatile alkalies, although they are themselves caustic, become much more so by being treated with quick-lime: because this substance deprives them of much fat and inflammable matter, which binds and restrains the action of their saline principles. By this treatment, then, the saline principle is more diffused, and rendered more capable of action. Also all combinations of metallic matters with acids form salts, more or less corrosive, because these acids are deprived of all their superabundant water, and are besides but imperfectly saturated with the metallic matters. Nevertheless, some other circumstance is necessary to constitute the causticity of these saline metalline matters. For the same quantity of marine acid, which, when pure and diluted with a certain quantity of water, would be productive of no harm, shall, however, produce all the effects of a corrosive poison, when it is united with mercury in *corrosive sublimate*, although the sublimate shall be dissolved in so much water that its causticity cannot be attributed to the concentration of its acid. This effect is, by some chemists, attributed to the great weight of the metallic matters with which the acid is united: and this opinion is very probable, seeing its causticity is nothing but its dissolving power, or its disposition to combine with other bodies; and this disposition is nothing else than attraction, which is one and the same thing as weight or gravitation.

The best method of *destroying the activity of corrosive sublimate* taken into the stomach, is to give free and repeated doses of a *solution of any alkaline salt*, as pot-ash, or salt of tartar. By this means Dr. Houlston succeeded, at Liverpool, in recovering a person who had swallowed half an ounce, with the intention of suicide.

CAUTERETS, a village of France, in the department of the Upper Pyrenæes and late province of Bigorre, noted for its mineral water. It is 18 miles S.W. of Bagnères.

CAWOOD, a town in the E. riding of Yorkshire, with a market on Wednesday, 12 miles S. of York, and 186 N.W. of London. Long. 1° 0'. W. Lat. 53° 47'. N.

CAXTON, a town in Cambridgeshire, with a market on Tuesday. It is 10 miles W. by S. of Cambridge, and 49° N. of London. Long. 0° 10'. W. Lat. 10° 0'. N.

CAYA, a river of Portugal, which rises near Portalegra, and running S.E. divides Spain from Portugal, and falls into the Guadiana, at Badajoz, in Spanish Estramadura.

CAYLUS (Count de) (*Encycl.*). We think it due to the memory of this extraordinary man to add to our original article the following particulars. The French Academy of

Painting and Sculpture adopted him an honorary member in the year 1731; and the count, who loved to realize titles, spared neither his labour, nor his credit, nor his fortune, to instruct, assist, and animate the artists. He wrote the lives of the most celebrated painters and engravers that have done honour to this illustrious academy; and, in order to extend the limits of the art, which seemed to have to move in too narrow a circle, he collected, in three different works, new subjects for the painter, which he met with in the works of the ancients.

Such was his passion for *antiquity*, that he wished to have had it in his power to bring the whole of it to life again. He saw with regret, that the works of the ancient painters, which have been discovered in our times, are effaced and destroyed almost as soon as they are drawn from the subterraneous mansions where they were buried. A fortunate accident furnished him with the means of shewing us the composition and the colouring of the pictures of ancient Rome. The coloured drawings which the famous Pietro Sante Bartoli had taken there from antique pictures, fell into his hands. He had them engraved; and, before he enriched the king of France's cabinet with them, he gave an edition of them at his own expence. It is perhaps the most extraordinary book of antiquities that ever will appear. The whole is painted with a purity and precision that are inimitable: we see the liveliness and the freshness of the colouring that charmed the Cæsars. There were only 30 copies published; and there is no reason to expect that they will hereafter be any more.

Count de Caylus was engaged at the same time in an enterprise still more favourable to Roman grandeur, and more interesting to the French nation. Colbert had framed the design of engraving the Roman antiquities that are still to be seen in the southern provinces of France. By his orders Mignard the architect had made drawings of them, which Count de Caylus had the good fortune to recover. He resolved to finish the work begun by Colbert, and to dedicate it to that great minister: and so much had he this enterprise at heart, that he was employed in it during his last illness, and warmly recommended it to M. Mariette.

In 1742 Count Caylus was admitted honorary member of the Academy of Belles-lettres; and then it was he seemed to have found the place for which nature had designed him. The study of literature now became his ruling passion; he consecrated to it his time and his fortune; he even renounced his pleasures, to give himself wholly up to that of making some discovery in the field of antiquity. But amidst the fruits of his research and invention, nothing seemed more flattering to him than his discovery of encaustic painting. A description of Pliny's, but too concise a one to give him a clear view of the matter, suggested the idea of it. He availed himself of the friendship and skill of M. Magault, a physician at Paris, and an excellent chemist; and by repeated experiments found out the secret of incorporating wax with divers tints and colours, and of making it obedient to the pencil. Pliny has made mention of two kinds of encaustic painting practised by the ancients; one of which was performed with wax, and the other upon ivory, with hot punches of iron. It was the former that Count Caylus had the merit of reviving; and M. Muntz afterwards made many experiments to carry it to perfection.

In the hands of Count Caylus, literature and the arts lent each other a mutual aid. But it would be endless to give an account of all his works. He published about 40 dissertations, in the *Memoirs of the Academy of Belles-lettres*. The artists he was particularly attentive to; and to prevent their falling into mistakes from an ignorance of costume, which the ablest of them have sometimes done, he founded a prize of 500

livres, the object of which is to explain, by means of authors and monuments, the usages of ancient nations. In order that he might enjoy with the whole world the treasures he had collected, he caused them to be engraved, and gave a learned description of them in a work which he embellished with 800 copper-plates.

The tomb erected to the honour of Count Caylus is to be seen in the chapel of St. Germain-l'Auxerrois, and deserves to be remarked. It is perfectly the tomb of an antiquary. This monument was an ancient sepulchral antique, of the most beautiful porphyry, with ornaments in the Egyptian taste. From the moment he procured it, he had destined it to grace the place of his interment. While he awaited the fatal hour, he placed it in his garden, where he used to look upon it with a tranquil but thoughtful eye, and pointed it out to the inspection of his friends.

The character of Count Caylus is to be traced in the different occupations which divided his cares and his life. In society, he had all the frankness of a soldier, and a politeness which had nothing in it of deceit or circumvention. Born independent, he applied to studies which suited his taste. His heart was yet better than his abilities. In his walks he used frequently to try the honesty of the poor, by sending them with a piece of money to get change for him. In these cases, he enjoyed their confusion at not finding him; and then presenting himself, used to commend their honesty, and gave them double the sum. He said frequently to his friends, "I have this day lost a crown; but I was sorry that I had not an opportunity of giving a second. The beggar ought not to want integrity."

CEBU, one of the most southerly of the Philippine islands in the Indian Ocean.

CEDAR CREEK, a water of James River in Virginia, in the county of Rockbridge. It is sufficient, in the dryest seasons, to turn a grist-mill, though its source is not more than two miles above. But it is most remarkable for its natural bridge, which is certainly one of the most sublime of Nature's works. It is on the ascent of a hill, which seems to have been cleft through its length by some convulsion. The fissure, just at the bridge, is by some admeasurements 270 feet deep, by others only 250. It is about 45 feet wide at the bottom, and 90 feet at the top. This of course determines the length of the bridge, and its height from the water. Its breadth in the middle is about 60 feet, but more at the ends, and the thickness of the masonry at the summit of the arch about 40 feet. A part of the thickness is constituted by a coat of earth, which gives growth to many large trees. The residue, with the hills on both sides, is one solid rock of lime-stone. The arch approaches the semielliptical form; but the larger axis of the ellipsis, which would be the chord of the arch, is many times longer than the transverse. Though the sides of the bridge are provided in some parts with a parapet of fixed rocks, yet few men have resolution to walk to them, and look over into the abyss. You involuntarily fall on your hands and feet, creep to the parapet, and look over it. "Looking down from this height about a minute, gave me," says Mr. Jefferson, "a violent headach. If the view from the top be painful and intolerable, that from below is delightful to the extreme. It is impossible for the emotions arising from the sublime to be felt beyond what they are here: at the sight of so beautiful an arch, so elevated, so light, and springing as it were up to heaven, the rapture of the spectator is really indescribable! The fissure continuing narrow, deep, and straight, for a considerable distance above and below the bridge, opens a short but very pleasing view of the North Mountain on one side,

and Blue Ridge on the other, at the distance, each of them, of about five miles." This bridge gives name to the county of Rockbridge, and affords a public and commodious passage over a valley, which cannot be crossed elsewhere for a considerable distance.

CEDONGA, a town of the kingdom of Naples, with a bishop's see, at the foot of the Apennines, 12 miles N.W. of Melit. Long. 15. 38. E. Lat. 41. 5. N.

CEDRIA, a resinous liquor issuing from the great cedar tree, or cedar of Lebanon. The word is also written *cedrium*, and *cedrinum*.—Cedria, when good, yields a strong smell, is transparent, and of a thick fatty consistence; so that in pouring it out it does not fall too fast or freely, but equally, drop by drop. It is possessed of two opposite qualities, *viz.* to preserve dead bodies by its drying and consuming superfluous moisture without damaging the solid parts, and to destroy the soft and tender parts of living bodies without exciting any pain. The cedria is properly the tear of the cedar; some call it the gum, others the pitch, of the cedar. The same denomination is also given to the *cedrelæon*, or oil of the cedars, which differs little from the resin, except that it is of a thinner consistence.

CEFALONIA, a considerable island of Greece, to the S. of Albania, and to the N.E. of the Morea. It is fertile in oil, and excellent muscadine wine. The climate is hot, and there are blossoms on the trees throughout the winter. It is subject to the Venetians and the capital is of the same name. Long. 20. 36. E. Lat. 38. 22. N.

CEFALÙ, a town in Sicily, in the valley of Demona, with a castle, a harbour, and a bishop's see. Long. 13. 58. E. Lat. 38. 25. N.

CELTIBERIA (anc. geog.) a county of the Hither Spain, along the right or south-west side of the river Iberus: though sometimes the greatest part of Spain was called by the name of Celtiberia. The people were named *Celtiberi*, or the Celtæ seated on the Iberus. They were brave and warlike, their cavalry in particular was excellent. They wore a black and rough cloak, the flag of which was like goats' hair. Some of them had light bucklers like the Gauls; others hollow and round ones like those of other nations. They all wore boots made of hair, and iron helmets adorned with crests of purple colour. They used swords which cut on both sides, and poniards of a foot long. Their arms were of an admirable temper, and are said to have been prepared in the following manner; they buried their plates of iron under ground, where they let them remain till the rust had eaten the weakest part of the metal, and the rest was consequently hard and firm. Of this excellent iron they made their swords, which were so strong and well tempered, that there was neither buckler nor helmet that could resist their edge. The Celtiberians were very cruel towards their enemies and malefactors, but shewed the greatest humanity to their guests. They not only cheerfully granted their hospitality to strangers, who travelled in their country, but were desirous that they should seek protection under their roofs.

CEMENT (*Encycl.*). In July 1800 a patent was granted to Mr. John Baptist Denize, of Paris, chemist; for a new cement fit for various purposes. The inventor prefixes to the account of this discovery the following observations: "Convinced by repeated proofs," says he, "that the decay of mortars or cements in general use, occasioned by the alternate or combined efforts of damp or dry weather, was owing chiefly to the bad choice and imperfect preparation of the matters they are composed of; that their difficulty in adhering with any strength to various materials indifferently, but particularly to wood, to preserve it from rotteness and worms, and to iron, to prevent its growing rusty, was owing to the want of visco-

sity and clamminess to resist air, and to the water and salts which constitute their glutinous quality; and persuaded therefore that substances of a more fixed and identical nature, combined and glued together by a viscous body, unalterable in itself, and yet sufficiently unctuous and penetrating, so as to incorporate easily with the various objects on which it might be applied, would, on the contrary, form a composition the more useful and valuable as it would then possess qualities entirely opposite, I applied myself in the research of that object; and, after repeated essays (of which I shall hereafter give an account, as belonging to the subject), I succeeded in finding out the peculiar nature, proportions, and preparation, of these substances; the exact combination of which ascertains definitively the utility of my proceedings.

"*Indication of fixed matters.*—The materials which I employ in preference to those of which I shall afterwards give a list, agreeable to my foregoing observations, are, *viz.* First, all the various species of scoriaceous matters, metallic fumes, or drofs of iron, and generally all other kinds of remnants or fine dust found in forges and founderies, containing a great deal of metallic substances, adulterated by the effect of combustibles, principally iron, in very great quantities; or, instead of those various substances, old iron reduced to the same state by calcination, and pulverized by the effect of heat and charcoal; and all kinds of metallic dust and filings more or less reduced to that state; and in general every other produce of nature or of art in which metallic substances, especially iron, are found in a state of calcination, and chiefly carbonate. Secondly, all volcanic products, called ashes of volcanoes, and lava; particularly those which are reduced to the greatest state of attenuation, such as pozzolana and pumice-stone. Instead of those volcanic matters, one may almost as effectually employ ochres, and other ferruginous earth, particularly yellow oxide of iron (as painters make use of), or reddish-brown oxide, when calcined by the same degree of heat as that of a potter's kiln, or at least sufficient to reduce those substances to a state of demi-vitrification; or what remains after the distillation of acid nitre, by the means of solar earth, cleared of that acid by a strong calcination, and mixed with sulphat of iron, equally dissolved by the same means, and known in commerce by the name of *caput mortuum*, of *aqua fortis*, and of *colcothar*; or also all ashes produced from the incineration of vegetables, especially those of pit-coal, and charcoal of the hardest wood, from the identity of nature which subsists particularly between that species of ashes and the above-mentioned volcanic matters; or those various terreous and metallic particles which it has been proved by analyzing that the above-mentioned lava and ashes were composed of; such for instance, as *flex*, or *quartz*; that hard vitrifiable earth *alumine*, or pure clay *lime*, or chalky clay, *magnesia*, and *barytes*, or *terra-ponderosa*, and *manganese*, or any other metallic particle, especially iron; the whole mixed in proportions, more or less conformable to those which constitute the volcanic and vegetable ashes which I mentioned before, and calcined the same as ochres by a degree of heat sufficient to bring those particles more or less to that state in which they are by nature found, contained in those two kinds of produce; and in general all other combinations, whether natural or artificial, which, from the proportions and identity, or analogy of their terreous and metallic particles with those I have already mentioned, could produce the same effects; in this I comprehend, therefore, not only the various matters described in the list, subjoined to this specification, by reason of their being composed of the particles alluded to, but which I partly exclude from the composition of this cement, on account of the defects which I have found in them; but also, all

other kinds of compositions whatever, of a nature more or less analogous with those I have just now described. Thirdly, pit-coal of a flat hard nature, and that kind particularly which has a brightness in it like Kendal, or Cannel, coal: and fourthly, glass, or flint stone.

"Indication of glutinous matters.—First, sublimated sulphur: secondly, bitumen, made of pit-coal; in lieu of it either of those substances that derive therefrom, classed in the following order, viz. petrol, mineral, pitch, naphtha, asphaltos, or any other modification of pit-coal bitumen, equally proper to replace said substances; thirdly, tallow-pitch, known also under the name of pitch-rofin, and white-rofin, and, in short, every kind of resinous substance, whether natural or factitious, more or less analogous in its consistence and effects to the above ones; such as pitch, and tar, and every other produce of that kind: and, fourthly, that mucilage produced by the decoction of linseed, after it has been boiled sufficiently to a degree of consistence of about twice the thickness of the white of an egg. Instead of that mucilage, that of any other seed, plant, or animal substance susceptible of producing the same, or the equivalent, either of themselves or by the effect of their combination; or such mucilage as might be made out of various kinds of indigenous or exotic gums, whether resinous or not, with meal and feculum and other similar substances: or one may use also linseed oil, or any other kind of oil, or grease, of a defecative and mucilaginous nature, such as is extracted from poppies, nuts, pinks, &c.; or other vegetable and animal oils or grease, that are not by nature defecative, but which may be rendered so by their combination with other substances composed of defecative principles, such as the various kinds of gums, and wax, spermaceti, oils of turpentine, or those matters from which they are extracted; oxides and acids, or any other defecative substance whatever.

"Preparation of fixed matters.—In order better to impregnate those fixed matters with the gluten which is to combine and unite them together, they must be first prepared as follows: viz. the dross of iron, the pozzolana, and pumice-stone, or the other kinds of metallic scums and volcanic matters, must be well cleared of all saline, terreous, sulphureous, stony, or those particles extraneous to them, and reduced to a powder as fine as that of well-calcedined ashes; and the ashes which might be substituted to the above-mentioned volcanic products, or those terreous and metallic particles which I also indicated as a substitute to these, must be calcined till they become white, provided they have not already undergone that operation by fire; then washed in lye, to extract by these two operations the sulphates and salts which might be mixed with them, and afterwards well dried and sifted. With regard to pit-coal, glass, or flint-stone, they must also be reduced to a very fine powder like that of ashes, and sifted afterwards.

"Preparation of the gluten.—Take sublimated sulphur in the proportion of one-eighth more or less to the quantity or volume of cement which you intend to make, mix with it one-third more or less of pit-coal bitumen, then let it dissolve on a slow gradual fire till it insensibly rise up in momentary bubbles; stir the mixture during that time, and when it is completely dissolved take it off the fire and add to it, whilst you continue to stir, one-third more or less of black pitch; then let it sit on the same slow fire again till it has risen up gradually as before; take it then once more off the fire, and add one-twentieth more or less of the total weight of fixed and glutinous matters, composed of a mixture of two equal portions of good tallow, or any other hard grease, and of white clear rosin or wax, and mix then the whole on the same fire again till it is perfectly dissolved and combined together; or in order to render the cement more fluid, and thereby more

easy of application, to the one-eighth in volume (not in weight) of sublimated sulphur well dissolved, with the one-third of pit-coal bitumen, add one-third part, in volume also, composed of one-sixth part of good tallow melted together; and after you have well mixed the whole on the fire, add one more third part, in volume also, composed equally of one-sixth part of pit-coal bitumen well mixed together whilst cold; (*a sixth part of some other substance appears to be omitted*); or instead of this a same third part, in volume always, of linseed oil, or of any other defecative oil, and lastly one more third part composed of two portions, equal in weight, of black pitch and of rosin melted together: and after you have equally well mixed these matters with the rest, and stirred the whole on a slow fire for a while sufficient to unite and combine them perfectly together, use this bituminous composition, or the one preceding, in the manner indicated hereafter.

"Composition of the cement.—To either of the two glutinous compositions above mentioned, made perfectly liquid by fire, add at several times, in order the better to combine them together, the following proportions of fixed matters, well mixed and sifted together: viz. three-fourths in volume (not in weight) of dross of iron, one-eighth of pozzolana, and one-eighth of pumice-stone, or the same quantity of two substances the most analogous to those volcanic matters, such as I have mentioned as substitutes for them, one-eighth of pit-coal being named, and one-eighth of glass or flint-stone; let the whole boil on a fire sufficiently great to keep those materials in a state of fusion, but not so much as to cause the volatile principles to evaporate, which must be guarded against. Stir now and then so as to bring the fixed matters up from the bottom to the surface in order to combine them better, and after three or four times boiling, for that cement made with the first kind of glutinous composition, or double that time for that made with the other kind, make a trial of it by laying some of it on wood, and passing the trowel with which you stir hard over it, to judge whether and how much it requires longer to be boiled. One sees that it is done, when after being laid on the wood it becomes hard as it gets cold, and that though still warm it does not stick to the hand, with which you must therefore press hard upon it. If one should delay too long to make that trial, the cement might be boiled too much, which would then take from its viscosity, and would make it necessary to remedy this by the addition of one-twentieth part of the weight of it, more or less, according to the degree of its adulteration, of either tallow, bitumen, or pitch. But if the cement does not possess the above properties when that trial is made, it must then be boiled, stirring it always till it has acquired the same. In general the more equal the fire is, the better will the cement be, provided the volatile principles do not evaporate. It would on that account be advisable to boil that composition by the heat resulting from boiling water and in an uncovered vessel, for by that means this composition would be rendered (even should a great proportion of glutinous principles be added thereto) extremely compact, and as hard as it may be wished, without depriving it (for all that) of those unctuous and penetrating qualities which render it so valuable.

"Manner of employing the cement.—It is first broken in small pieces, then you add to it one-fortieth part, more or less, of its weight of good tallow, or other hard grease, or instead of them not quite a fortieth of black pitch, asphaltos, rosin, or wax, or only half that proportion of pit-coal bitumen, mineral pitch, naphtha, or some defecative oil: but if it was intended to employ that cement (especially that made with less glutinous principles) for the purpose of joining or cementing more quickly, it would then be proper to add one half more than

the fortieth part of the above-mentioned matters. The whole is then melted and liquified for a quarter of an hour in an earthen vessel, or one of cast iron, whilst you continue to stir it on a slow fire, or what would be better, on the heat of boiling water, the same as it is done for glue; after which you take that composition from the bottom of the vessel whilst you still continue to stir, and make the application of it immediately. It is necessary to observe, that when the cement appears to become too dry, from its long continuance on the fire, one must then add to it a small portion of the matters before mentioned, in order to give it that unctuous quality again, and to keep it so in that state during the time that you make use of it. Experience will however better teach what proportion of these matters will be required occasionally, and their choice.

Secondary methods of making this cement.—As the composition of this cement may be varied by the different choice and proportions of glutinous matters relatively to the more or less fixed nature of the others, and by the boiling it for more or less time, as I have myself ascertained the same by many experiments (for instance, by the composition and application of that cement without the use of fire), I reserve to myself the privilege of those various modifications, as being a direct practice of that same theory and appertaining necessarily to this invention. With regard to the various substances which I used in my different essays, and which I found less proper for the composition of this cement, they are as follow; viz. charcoal and foot, and even glass flint, whether calcined or not, potter's earth, brick, tile, slate, clay, marl, the various species of gravel or sandy stones, lime or calx, plaster, sand, oyster-shells, or any other shells when those substances are used exclusively or in too great proportions."

CENADA, an ancient town in Italy, in the marquise of Trevisana, with a bishop's see. It is 18 miles N. of Treviso. Long. 12. 26. E. Lat. 46. 2. N.

CENIS, a mountain, which is a part of the Alps, and separates the marquise of Sufa from the Morianne.

CENU, a town in South America, in Terra Firma, eight miles S. of Carthagena. Long. 75. 24. W. Lat. 10. 19. N.

CERDAGNA, a small district, partly of Spain in Catalonia, and partly of France, in the department of the Eastern Pyrenées and late province of Roussillon. Puycerda is the capital in Spain, and Mount Louis in France.

CERINTHUS, a heresiarch, contemporary with the apostles, ascribed the creation not to God, but to angels. He taught that Jesus Christ was the son of Joseph, and that circumcision ought to be retained under the gospel. He is looked upon as the head of the converted Jews, who raised in the church of Antioch the tumult of which St. Luke has given the history in the 15th chapter of the Acts. Some authors ascribe the book of the Apocalypse to Cerinthus; adding, that he put it off under the name of St. John, the better to authorise his reveries touching Christ's reign upon earth: and it is even certain that he published some works of this kind under the title of *Apocalypse*. See *APOCALYPSE*.

CERNÉE, NORTH, a village in Gloucestershire, near the Downs, where Cirencester races are run. In an adjacent field is a camp of considerable extent. It is four miles from Cricklade.

CHABLAI, a province of Savoy, bounded on the N. by the lake of Geneva, on the E. by Valais, on the S. by Faucigny, and on the W. by the republic of Geneva. Thonon is the capital.

CHABLIS, a town of France, in the department of Yonne and late province of Burgundy, remarkable for white wines. It is fifteen miles from Auxerre. Long. 3. 59. E. Lat. 47. 42. N.

CHACKTOOLE BAY, a bay in Norton Sound, discovered Vol. X.

by Captain Cook in 1778. It is exposed to S. and S.W. winds. Long. 162. 47. W. Lat. 64. 31. N.

CHAIS-DIEU, a town of France, in the department of Upper Loire and late province of Velay. Its late Benedictine abbey was much celebrated. It is twelve miles E. of Brioude. Long. 3. 4. E. Lat. 45. 15. N.

CHAMB, a town of Germany, in the circle of Bavaria, capital of a county of the same name, and seated on the river Chamb, 37 miles N.E. of Ratibon. Long. 12. 55. E. Lat. 49. 14. N.

CHAMBORT, a late royal palace in France, nine miles E. of Blois. It was built by Francis II. and from the number and trifling minuteness of its parts, has been compared to a house of cards. It stands in a park, 21 miles in circumference; but has no gardens. The style of this structure is Gothic, and it is built of free-stone. King Stanislaus resided here nine years; and it was the retreat of Marshal Saxe, who died here in 1750.

CHAMOND, a town of France, in the department of Rhone and Loire and late province of Lyonnais, with a castle, on the river Giez, seventeen miles from Lyons. Long. 4. 55. E. Lat. 45. 29. N.

CHANCH, a rich town of Egypt, five miles from Cairo, at the entrance of the desert which leads to Mount Sinai.

CHANDA, a considerable city of Berar, in the Decan of Hindoostan, subject to the chief of the eastern Mahrattas. It is seated on a branch of the Godavery, twenty miles S. of Nagpore. Long. 79. 40. E. Lat. 20. 10. N.

CHANMANNING, a city of Thibet, in Asia, which has been the residence of the grand lama. It is about 130 miles W. of Lassa. Long. 89. 45. E. Lat. 31. 0. N.

CHANNERAY, a village of Rosshire, in Scotland, near the frith of Murray, formerly a bishop's see. It is thirty miles W. of Elgin, the fine cathedral of which town is called Channey church, it having been intended, it is said, to be built here.

CHAPARANG, or **DSAPRONG**, a considerable city of Thibet in Asia, seated on the southern head of the Ganges, not far westward from the lake Manasarvar. Long. 78. 42. E. Lat. 34. 0. N.

CHARADE (*Encycl.*). The exercise of charades, if not greatly instructive, is at least innocent and amusing. At all events, as it has made its way into every fashionable circle, and has employed even Garrick, it will scarcely be deemed unworthy of attention. Indeed most that have appeared in the papers under this title, are not only destitute of pleantry, but formed in general of words utterly unfit for the purpose. They have therefore been treated with the contempt they deserved. In trifles of this nature inaccuracy is without excuse. The following examples are at least free from this blemish:

I.

My *first*, however here abused,
Designs the sex alone;
In Cambria, such is custom's pow'r,
'Tis Jenkin, John, or Joan.
My *second* oft is loudly call'd,
When men prepare to fit it:
It's name delights the female ear;
Its force, may none resist it!
It binds the weak, it binds the strong,
The wealthy, and the poor;
Still 'tis to joy a passport deem'd,
For sullied fame a cure:
It may insure an age of bliss,
Yet mis'ries oft attend it;
To fingers, ears, and noses too,
Its various lords commend it.

My whole may chance to make one drink,
Though vended in a fish-thop;
'Tis now the monarch of the seas,
And has been an archbishop.

Her- ring.

II.

My first is plowed for various reasons, and grain is frequently buried in it to little purpose. *My second*, is neither riches nor honours; yet the former would generally be given for it, and the latter is often tasteless without it. *My whole* applies equally to spring, summer, and autumn, and winter; and both fish and flesh, praise and censure, mirth and melancholy, are the better for being in it. *Sea-fan.*

III.

My first, with the most rooted antipathy to a Frenchman, prides himself, whenever they meet, upon flicking to his jacket. *My second* has many virtues, nor is it its least that it gives name to my first. *My whole*, may I never catch!

Tar-tar.

IV.

My first is one of England's prime boasts; it rejoices the ear of a horse, and anguishes the toe of a man. *My second*, when brick, is good; when stone, better; when wood, best of all. *My whole* is famous alike for rottenness and tin.

Corn-wall.

V.

My first is called bad or good,
May pleasure or offend ye;
My second, in a thirsty mood,
May very much befriend ye.
My whole, tho' styled "a cruel word,"
May yet appear a kind one;
It often may with joy be heard,
With tears may often blind one.

Fare-well.

VI.

My first is equally friendly to the thief and the lover, the roper and the student. *My second* is light's opposite: yet they are frequently seen hand in hand; and their union, if judicious, gives much pleasure. *My whole*, is tempting to the touch, grateful to the sight, fatal to the taste. *Night-jade.*

CHARCOS, Los, a province of South America, in Peru. It has the finest silver mines in the world. La Plata is the capital. See POROSI.

CHARD, a town in Somersetshire, with a market on Monday. It is seated on the side of a hill, six miles W. of Crewkerne, and 14½ W. by S. of London. Long. 3. 18. W. Lat. 50. 52. N.

CHARENTE, a department of France, which includes the late province of Angoumois. It is named from a river, which rises in Limosin, runs by Angoulême and Saintes, and falls into the bay of Biscay. Angoulême is the capital.

CHARENTE, LOWER, a department of France, which consists of the two late provinces of Anous and Saintonge. Saintes is the capital.

CHARITE, La, a town of France, in the department of Nièvre and late province of Nivernois. It stands between a hill and the Loire, over which is a stone bridge. Its situation on the road from Paris to Lyons, and the canal of Briare, has made its trade very brisk. Here are forges for converting the iron in the neighbourhood into steel, a woollen manufactory, and another for arms, helmets, pinchbeck buckles, steel buttons, and hardware in general. Here is a very pretty public walk. The suburb in which it is situated, is a kind of island, which forms about a fourth of the town. The stone bridge communicating with it was ruined by the melting of the ice in 1789. The most remarkable edifice in this town is the priory of the late Benedictine Clunites. When we consider the vast riches and prerogatives of this monastery (the prior commen-

datory of which was temporal lord of the town) we should not forget, at the same time, that, in a season of scarcity, the whole town has subsisted upon the bounty of this abbey; and hence it derives its name. It is fifteen miles N. of Nevers.

CHARITY, a term applied to certain benevolent institutions whose modes of assisting the poor are incapable of any more appropriate designation. Thus we have CHARITIES for lying-in women, for convalescents, for destitute females, &c. The following is an account of a charity for the relief of lying-in women and sick persons, at Tottenham in Middlesex.

In August 1791, eight ladies of this parish united in a plan for the relief of their poor neighbours during the time of lying-in. They began their undertaking by subscribing three shillings and sixpence each, for the purchase of linen, and afterwards appointed one of their number treasurer and manager; and in order to supply a fund for the purpose of allowing five shillings towards the payment of a midwife, and six shillings for a nurse for each patient, they agreed to contribute sixpence a-piece weekly. The plan being approved, met with encouragement, and the number of subscribers annually increased. The following statement of the number of persons annually benefited by the charity is a clear demonstration of its success and progress. There were relieved in seven years from 1791, 416 persons.

The society finding that the sick stood as much in need of assistance as lying-in women, and desirous of rendering the institution as useful as possible, determined to extend the benefit to either, without distinction; and the funds having been since considerably increased, it has been resolved to provide a large number of bags of linen; and the manager is authorised to lend them, as long as the case requires, to all sick persons who are in want, throughout the parish, where the disease is not of an infectious kind.

The following are the regulations and rules of the charity.

That a set of linen be lent to every lying-in woman, or sick person, that receives a ticket from any subscriber, for one month; such set containing one pair of sheets, twelve napkins, one bed-gown, and one shirt.—That eleven shillings be paid to such lying-in woman towards defraying the expences of a midwife and a nurse.—That the same sum be laid out for each sick person, according to their wants, either in procuring necessary food, coals, or medicines; or, at the discretion of the governors, to be paid them in a weekly allowance.—And that one of the subscribers be appointed by the rest, to preside over, and manage the affairs of the charity, liable to the control of the annual meeting of subscribers.

Every subscriber to pay three shillings and sixpence upon admission into the society, towards the purchase of linen; and afterwards to continue to pay sixpence per week, to be collected annually.—Every subscriber to receive a ticket inscribed with the name, every six months, from the governors, which such subscriber may dispose of to any object residing in the parish, whether lying-in or sick, who shall appear deserving of the bounty.—Every patient that receives a ticket shall present it to the governors, that the name may be set down for admission.—If the patient be a lying-in woman, the ticket to be returned to her; that when taken ill, she may find it to the governors for a bag of linen.—No linen to be delivered without a ticket, or previous to the woman's indisposition.—None, but married women can receive a lying-in ticket.—No woman to keep the linen longer than a month, without leave from the governors, who shall have a discretionary power of prolonging the time, in case of unusual circumstances.—Every woman to return the linen clean, and right in number.—Any woman neglecting to observe these rules, to be incapable of receiving any future benefit from the charity.—The governors is empowered to lend bags of linen to persons of good cha-

rafter, who have been disappointed of obtaining tickets, if there be a sufficient quantity to supply the patients. *This is a means of considerably extending the benefits of the institution.*—None shall receive presentations to this charity but such as reside in the parish, without regard to their being a parishioner.—There shall be an annual meeting of the subscribers on the first of May; at which time the subscriptions are to be collected.—Those who are prevented from attending personally, are requested to send their subscriptions, in order to save trouble.—It is earnestly requested, that the subscribers will be careful that the objects of their bounty do not suffer under any infectious disease.—Sick persons whose diseases are infectious, such as small-pox, fevers, &c. can only receive the appointed sum, without being assisted with linen.

The utility of this plan has already recommended it to the inhabitants of several other places. Charities similar in design, though varying in some particulars, have been established, among other places, at Cambridge, Ipswich, Colchester, Needham, Halstead, Stoke Newington, Edmonton, Cheshunt, Ware, Hertford, Woodford, Wanstead, and Walthamstow.

The most obvious advantages of this mode of administering charity, are, that the relief is bestowed at a time when it is particularly wanted, and when the occasion of that necessity disables the sufferer from earning the means of procuring a supply: that assistance is given to a great number of persons at a very small expence; for, exclusive of those who receive tickets, which entitle them to the whole benefit of the institution, the comfort of change of linen in the time of sickness is enjoyed by numbers, whose utmost frugality does not enable them to keep a sufficient stock for that purpose: and that it affords relief, but by no means precludes the necessity of industry and provident care against a day of trouble.

Nor let it be esteemed the least of its excellencies, that it induces women of superior rank to become acquainted with the temporary, as well as the habitual, distresses of their poor neighbours; that it invites them to visit those to whom they have given their tickets; and personally to inspect the abodes of poverty. If the judgment of the poor may be thought worthy of consideration, there are but few plans, upon so small a scale of expence, which afford them such an acceptable relief.

CHARITY-SCHOOLS (Encycl.). The nature of these schools in general is well known, and has been stated under *SCHOOLS*; but we conceive it to be of some importance to notice the improvements of which these seminaries have been found capable, and this will appear from the following account of the extension of the benefits of the charity-schools at Chester.

The income of the blue-coat-school at Chester had for several years been applied to the maintenance and education of thirty boys, who were admitted at nine years of age, and kept in the house for four years. This provision had proved to be extremely inadequate to its object; the greater number of the poor of that city being left entirely destitute of instruction. In 1783 the trustees adopted a beneficial extension of the charity: and in the course of that and of the ensuing year, they opened a day-school, in a wing of the hospital, for the instruction of 120 boys in reading, writing, and accounts. This they call the *green-school*, from the circumstance of each of the boys wearing a green bonnet. Two masters were engaged, one at 35l. the other at 30l. a-year; and they have proved quite equal to the care of the 120 boys. The whole expence of teaching these boys, including their bonnets, &c. is not more than eighty guineas, or 14s. a-year, each.

In order to provide for this expence, the trustees diminished the number of boys in the blue-coat-school from 30 to 25; and at the same time extended the benefit of that school to a great increase of objects, by reducing the time of continuance

to two years, and by selecting the best behaved and most deserving boys of the *green-school* for all the vacancies in the *blue-coat-school*; so that twelve or fourteen of the best boys of the former school are annually placed upon the foundation: the consequence of which is, that there is hardly any poor boy in that city, but may obtain a place in the *blue-coat-school*, if he perseveres in a course of industry and good behaviour.

This is of the greatest importance; as it extends the benefit, not only of instruction, but of (what is much more efficacious) emulation and example, to almost every lad in Chester. The boys are now admitted at nine years of age into the *green-school*; upon the nomination of the subscribers, who appoint scholars in rotation, according to the amount of their contributions to the charity. At the end of two years these boys are publicly examined for the *blue-coat-school*: after which, if their merit does not entitle them to one of the vacancies on the foundation, they remain in the *green-school* two years more; and are then dismissed at an age proper to be placed out in service. But if their progress has been such as to entitle them to a vacancy in the *blue-coat-school*, they are clothed and maintained there for two years, and at the expiration of that period, if they have made a competent progress in reading, writing, and accounts, and (in case the sea is their object) in navigation, they are placed out, with an apprentice fee of three pounds each, in handiwork, the sea-service, or in some useful trade or occupation.

Upon the former plan the funds of this charity provided, in ten years, an education for seventy-five children: in the present mode, besides the increased motives for good behaviour and attention, 362 poor children of Chester receive an education during the same period. This has been attended with no additional expence: the degree of benefit, however, far exceeds any thing that could have been attained upon the former system; for the terms of succeeding to the *blue-coat-school*, offered equally to all, supplies that stimulating incentive to human exertion, without which the best-framed establishments lose their vital principle, and degenerate into visionary and noxious theory.

Similar attention has been paid to the female children in that town. It had been ascertained by Dr. Haygarth, and some others, who were in the habit of visiting the habitations of the poor of Chester, that the girls there, as in many other towns, were extremely destitute of useful employment; and that those from nine to thirteen years of age, in one parish, three-fourths could not sew at all, and not one of them so well as to make a single article of dress. They were equally ignorant of knitting and spinning; and so unskilful in the common occupations of life, as to be disqualified for domestic servants, and for most other offices in society, and to have very few means of earning an honest livelihood.

It was calculated that four schools of forty girls each, to be taught for four years, from the age of nine to thirteen years, in addition to a school already existing for maintaining and educating eight girls, would nearly provide for all the poor girls in Chester, who were unemployed, of a proper age for instruction, and in want of charitable aid for their education. It was therefore proposed that the girls should change their school every year, and (besides their being taught to read in all the schools, and attending the parish church twice on Sunday) that they should learn in the first year to knit, in the second to spin, in the third to sew, and in the fourth to wash and get up linen; the four schools being placed near the centre of the city, so that the scholars might, without inconvenience, go each year to a different school. In this manner it was calculated that, in the whole, the education of forty-two girls would be annually completed.

The knitting, spinning, and sewing schools had, from the time of their establishment in 1787, been regularly attended; and no difficulty had occurred in supplying work for the knitters and spinners, though there had some at first as to the sewing-school. In procuring employment for the school for washing and getting up linen, there has been very great difficulty; and in consequence this part of the plan was soon given up. The schools are now reduced to two, one for knitting, the other for sewing; these are very well supplied with work, and the children continue there for two years.

On their first appearance at school, the children come in but ill clothed, and not well behaved; but, in a short time, by their industry, and by the co-operating benevolence of the ladies who visit the school, they are not only improved in behaviour, but are supplied with uniform gowns and petticoats, as well as with several other articles of dress; all their clothes, except shoes and stockings, being made at the sewing-school.

The subscriptions were at first limited to five shillings each; though, among the more opulent, several persons of the same family were admitted as subscribers. They are at present not subject to limitation; and liberal donations have been made for supplying books, wheels, forms, and for other expences. A considerable benefit has accrued from connecting these girl-schools in some degree with the Sunday-schools of Chester:—for, as an encouragement to good behaviour, the most deserving girls in the Sunday-schools are regularly elected into the working-schools. This has a powerful and extensive effect in improving the morals and behaviour of all the girls in the Sunday-schools, and with them of almost all the female children in Chester.

It is not an unreasonable or unfounded presumption, that the extension of the schools at Chester will operate to improve the rising generation, in skill, industry, honesty, economy, sobriety, and in all those virtues which result from a proper and religious education, and which can contribute to an useful and happy life.—There are very few of these virtues that do not principally depend on education, and on the seeds sown in the mind during the early period of life. A very able writer has observed, that “drunkenness is the vice of an uncultivated mind:” and, in truth, with very few exceptions, this vice, in all its beastly deformity, will be found to be most prevalent among the ignorant and uninformed; among those who have had no means of improving or appreciating their faculties, and who, in respect of mental and moral improvement, can be placed but little above the brute creation.

In all those moral virtues, which are of such inestimable value through life—of industry and skill we say nothing, for it is obvious that industry and habit are their vital principle;—but in moral virtues, in fidelity, truth, justice, and integrity, every attainment is casual and accidental, all improvement deceitful and uncertain, except that which originates in principle, and whose basis firmly rests on the sure ground of a religious education.

The absurd prejudices that have existed against extending the common and general benefits of education to the children of the poor, and the extraordinary supposition, that an uneducated and neglected boy will prove an honest and useful man,—that a youth of ignorance and idleness will produce a mature age of industry and virtue,—are now in great measure exploded. Switzerland, and Scotland, and the northern counties of England, where the education and occupation of youth are particularly attended to, afford very gratifying evidence of the contrary position. The individuals of those counties are not only more industrious and more thriving, but, of all parts of Europe, peculiarly exempt from criminal habits.

If the revenues of all our charity-schools were applied as advantageously as those of the blue-coat-school, and the other

schools at Chester, it is probable that the funds would be sufficient to give to every individual in England, the same advantages of early instruction and good habits, as are enjoyed by our northern neighbours, and by the inhabitants of Switzerland. In order to produce this effect, some existing prejudices against removing ancient abuses, and (we are sorry to add) some degree of interest or patronage in the continuance of those abuses, must be given up; and the enquiry must be fairly and impartially entered into, how the good effects of every charity may be best attained, and most widely extended, without injustice to its original objects. There is hardly any charitable fund in England to which the example of Chester may not in some degree apply, and by the application of which, children may not be enabled to acquire those early and principal habits of life, without which wealth and power (and even liberty itself) are to the possessors of but little value; too frequently the source of ungoverned passions and criminal habits; pernicious at the same time to other members of society, and destructive to the welfare and existence of the community.

CHARLES-LE-GROS, emperor of the West in 881, king of Italy and Suabia, memorable for his reverse of fortune; being dethroned at a diet held near Mentz, by the French, the Italians, and the Germans, in 887: after which he was obliged to subsist on the bounty of the archbishop of Mentz. He died in 888.

CHARLES V. (emperor and king of Spain), was son of Philip I. archduke of Austria, and of Jane queen of Castile. He was born at Ghent, February 24, 1500, and succeeded to the crown of Spain in 1517. Two years afterwards he was chosen emperor at Frankfurt after the death of Maximilian his grandfather. He was a great warrior and politician: and his ambition was not satisfied with the kingdoms and provinces he possessed; for he is supplied, with reason, to have aspired at universal empire. He is said to have fought 66 battles, in most of which he was victorious. He took the king of France (Francis I.) prisoner, and sold him his liberty on very hard terms: yet afterwards, when the people of Ghent revolted, he asked leave to pass through his dominions; and though the generous king thus had him in his power, and had an opportunity of revenging his ill-treatment, yet he received and attended him with all pomp and magnificence. He sacked Rome, and took the Pope prisoner; and the cruelties which his army exercised there are said to have exceeded those of the northern barbarians. Yet the pious emperor went into mourning on account of this conquest; forbade the ringing of bells; commanded processions to be made, and prayers to be offered up, for the deliverance of the Pope his prisoner; yet did not inflict the least punishment on those who treated the holy father and the holy see with such inhumanity. He is accused by some Romish writers of favouring Lutheran principles, which he might easily have extirpated. But the truth is, he found his account in the divisions which that sect occasioned; and he for ever made an advantage of them, sometimes against the Pope, sometimes against France, and at other times against the empire itself. He was a great traveller, and made 50 different journeys into Germany, Spain, Italy, Flanders, France, England, and Africa. Though he had been successful in many unjust enterprises, yet his last attempt on Metz, which he besieged with an army of 100,000 men, was very just and very unsuccessful.

Victed at the reverse of fortune, which seemed to attend his latter days, and oppressed by sickness, which unfitted him any longer for holding the reins of government with steadiness, or to guide him with address, he resigned his dominions to his brother Ferdinand and his son Philip; and retreated to the monastery of St. Justus, near Placentia, in Estremadura.

When Charles entered this retreat, he formed such a plan of life for himself as would have suited a private gentleman of moderate fortune. His table was neat, but plain; his domesticities few; his intercourse with them familiar; all the cumbersome and ceremonious forms of attendance on his person were entirely abolished, as destructive of that social ease and tranquillity which he courted in order to sooth the remainder of his days. As the mildness of the climate, together with his delivery from the burdens and cares of government, procured him at first a considerable remission from the acute pains of the gout, with which he had been long tormented, he enjoyed, perhaps, more complete satisfaction in this humble solitude than all his grandeur had ever yielded him. The ambitious thoughts and projects which had so long engrossed and disquieted him, were quite effaced from his mind. Far from taking any part in the political transactions of the princes of Europe, he restrained his curiosity even from an enquiry concerning them; and he seemed to view the busy scene which he had abandoned with all the contempt and indifference arising from his thorough experience of its vanity, as well as from the pleasing reflection of having disentangled himself from its cares.

Other amusements, and other objects, now occupied him. Sometimes he cultivated the plants in his garden with his own hands; sometimes he rode out to the neighbouring wood on a little horse, the only one that he kept, attended by a single servant on foot. When his infirmities confined him to his apartment, which often happened, and deprived him of these more active recreations, he either admitted a few gentlemen, who resided near the monastery, to visit him, and entertained them familiarly at his table; or he employed himself in studying mechanical principles, and in forming curious works of mechanism, of which he had always been remarkably fond, and to which his genius was peculiarly turned. With this view he had engaged Turriano, one of the most ingenious artists of that age, to accompany him in his retreat. He laboured together with him in framing models of the most useful machines, as well as in making experiments with regard to their respective powers; and it was not seldom that the ideas of the monarch assisted or perfected the inventions of the artist. He relieved his mind at intervals with slighter and more fantastic works of mechanism, in fashioning puppets, which, by the structure of internal springs, mimicked the gestures and actions of men, to the no small astonishment of the ignorant monks, who, beholding movements which they could not comprehend, sometimes distrusted their own senses, and sometimes suspected Charles and Turriano of being in compact with invisible powers. He was particularly curious with regard to the construction of clocks and watches; and having found, after repeated trials, that he could not bring any two of them to go exactly alike, he reflected, it is said, with a mixture of surprise as well as regret on his own folly, in having bestowed so much time and labour in the more vain attempt of bringing mankind to a precise uniformity of sentiment concerning the intricate and mysterious doctrines of religion.

But in what manner soever Charles disposed of the rest of his time, he constantly reserved a considerable portion of it for religious exercises. He regularly attended divine service in the chapel of the monastery every morning and evening; he took great pleasure in reading books of devotion, particularly the works of St. Augustine and St. Bernard; and conversed much with his confessor, and the prior of the monastery, on pious subjects. Thus did Charles pass the first year of his retreat in a manner not unbecoming a man perfectly disengaged from the affairs of this present life, and standing on the confines of a future world, either in innocent amusements

which soothed his pains, and relieved a mind worn out with excessive application to business; or in devout occupations, which he deemed necessary in preparing for another state.

But, about six months before his death, the gout, after a longer intermission than usual, returned with a proportional increase of violence. His shattered constitution had not strength enough remaining to withstand such a shock. It enfeebled his mind as much as his body; and from this period we hardly discern any traces of that sound and masculine understanding which distinguished Charles among his contemporaries. An illiberal and timid superstition depressed his spirit. He had no relish for amusements of any kind. He endeavoured to conform, in his manner of living, to all the rigour of monastic austerity. He desired no other society than that of monks, and was almost continually employed in chanting with them the hymns of the missal. As an expiation for his sins, he gave himself the discipline in secret with such severity, that the whip of cords which he employed as the instrument of his punishment, was found, after his decease, tinged with his blood. Nor was he satisfied with these acts of mortification, which, however severe, were not unexampled. The timorous and distrustful solicitude which always accompanies superstition, still continued to disquiet him, and depreciating all that he had done, prompted him to aim at something extraordinary, at some new and singular act of piety that would display his zeal, and merit the favour of Heaven. The act on which he fixed was as wild and uncommon as any that superstition ever suggested to a disordered fancy. He resolved to celebrate his own obsequies before his death. He ordered his tomb to be erected in the chapel of the monastery. His domestics marched thither in funeral procession, with black tapers in their hands. He himself followed in his shroud. He was laid in his coffin with much solemnity. The service for the dead was chanted; and Charles joined in the prayers which were offered up for the rest of his soul, mingled his tears with those which his attendants shed, as if they had been celebrating a real funeral. The ceremony, clothed with sprinkling holy water on the coffin in the usual form, and, all the assistants retiring, the doors of the chapel were shut. Then Charles rose out of the coffin and withdrew to his apartment, full of those awful sentiments which such a singular solemnity was calculated to inspire. But either the fatiguing length of the ceremony, or the impression which this image of death left on his mind; affected him so much, that next day he was seized with a fever. His feeble frame could not long resist its violence; and he expired on the 21st of September, after a life of 58 years six months and 21 days.

CHARLES XII. King of Sweden, was born in 1682. By his father's will, the administration was lodged in the hands of the Queen-dowager Eleonora with five senators, till the young prince was 18: but he was declared major at 15, by the states convened at Stockholm. The beginning of his administration raised no favourable ideas of him, as he was thought both by Swedes and foreigners to be a person of mean capacity. But the difficulties that gathered round him, soon afforded him an opportunity to display his real character. Three powerful princes, Frederic king of Denmark, Augustus king of Poland and elector of Saxony, and Peter the Great, czar of Muscovy, presuming on his youth, conspired his ruin almost at the same instant. Their measures alarmed the council, they were for diverting the storm by negotiations; but Charles, with a grave resolution that astonished them, said, "I am resolved never to enter upon an unjust war, nor to put an end to a just one but by the destruction of my enemies. My resolution is fixed: I will attack the first who shall declare against me; and when I have conquered him, I

may hope to strike a terror into the rest." The old counsellors received his orders with admiration; and were still more surprised when they saw him on a sudden renounce all the enjoyments of a court, reduce his table to the utmost frugality, dressed like a common soldier, and, full of the ideas of Alexander and Cæsar, propose those two conquerors for his models in every thing but their vices. The King of Denmark began by ravaging the territories of the Duke of Holstein. Upon this, Charles carried the war into the heart of Denmark; and made such a progress, that the King of Denmark thought it best to accept of peace, which was concluded in 1700. He next resolved to advance against the King of Poland, who had blocked up Riga. He had no sooner given orders for his troops to go into winter-quarters, than he received advice, that Narva, where Count Horne was governor, was besieged by an army of 100,000 Muscovites. This made him alter his measures, and move towards the czar; and at Narva he gained a surprising victory, which cost him not above 2000 men killed and wounded. The Muscovites were forced to retire from the provinces they had invaded. He pursued his conquests till he penetrated as far as where the diet of Poland were sitting; when he made them declare the throne of Poland vacant, and elected Stanislaus their king: then making himself master of Saxony, he obliged Augustus himself to renounce the crown of Poland, and acknowledge Stanislaus by a letter of congratulation on his accession. All Europe was surprised with the expeditions finishing of this great negotiation, but more at the disinterestedness of the King of Sweden, who satisfied himself with the bare reputation of this victory, without demanding an inch of ground for enlarging his dominions. After thus reducing the King of Denmark to peace, placing a new king on the throne of Poland, having humbled the Emperor of Germany, and protected the Lutheran religion, Charles prepared to penetrate into Muscovy in order to dethrone the czar. He quickly obliged the Muscovites to abandon Poland, pursued them into their own country, and won several battles over them. The czar, disposed to peace, ventured to make some proposals; Charles only answered, "I will treat with the czar at Muscovy." When this haughty answer was brought to Peter, he said, "My brother Charles still affects to act the Alexander, but I flatter myself he will not in me find a Darius." The event justified him: for the Muscovites, already beaten into discipline, and under a prince of such talents as Peter, entirely destroyed the Swedish army at the memorable battle of Pultowa, July 8, 1709; on which decisive day Charles lost the fruits of nine years' labour, and of almost 100 battles! The king, with a small troop, pursued by the Muscovites, passed the Borithenes to Oczakow in the Turkish territories; and from thence, through desert countries, arrived at Bender; where the Sultan, when informed of his arrival, sent orders for accommodating him in the best manner, and appointed him a guard. Near Bender, Charles built a house, and intrenched himself; and had with him 1800 men, who were all clothed and fed, with their horses, at the expence of the grand-signior. Here he formed a design of turning the Ottoman arms upon his enemies; and is said to have had a promise from the vizier of being sent into Muscovy with 200,000 men. While he remained here, he insensibly acquired a taste for books: he read the tragedies of Corneille and Racine; with the works of Despreaux, whose fables he relished, but did not much admire his other works. When he read that passage in which the author represents Alexander as a fool and a madman, he tore out the leaf. He would sometimes play at chess: but when he recovered of his wound, he renewed the fatigues in exercising his men; he tired three

horses a-day; and those who courted his favour were all day in their boots. To dispose the Ottoman Porte to this war, he detached about 800 Poles and Cossacks of his retinue, with orders to pass the Neiffer, that runs by Bender, and to observe what passed on the frontiers of Poland. The Muscovite troops, dispersed in those quarters, fell immediately upon this little company, and pursued them even to the territories of the grand-signior. This was what the king expected. His ministers at the Porte excited the Turks to vengeance; but the Czar's money removed all difficulties, and Charles found himself in a manner prisoner among the Tartars. He imagined the sultan was ignorant of the intrigues of his grand-vizier. Poniatowsky undertook to make his complaints to the grand-vizier. The sultan, in answer, some days after, sent Charles five Arabian horses, one of which was covered with a saddle and housing of great riches; with an obliging letter, but conceived in such general terms as gave reason to suspect that the minister had done nothing without the sultan's consent: Charles, therefore, refused them. Poniatowsky had the courage to form a design of deposing the grand-vizier; who accordingly was deprived of his dignity and wealth, and banished. The seal of the empire was given to Numan Cuproughly; who persuaded his master that the law forbade him to invade the czar, who had done him no injury; but to succour the King of Sweden as an unfortunate prince in his dominions. He sent his majesty 800 purples, every one of which amounted to 500 crowns, and advised him to return peaceably to his own dominions. Charles rejected this advice, threatening to hang up the bashaws, and shave the beards of any Janissaries who brought him such messages; and sent word that he should depend upon the grand-signior's promise, and hoped to reconquer Poland as a conqueror with an army of Turks. After various intrigues at the Porte, an order was sent to attack this head of iron, as he was called, and to take him either alive or dead. He stood a siege in this house, with forty domestics, against the Turkish army; killed no less than 20 Janissaries with his own hand; and performed prodigies of valour on a very unnecessary and unwarrantable occasion. But the house being set on fire, and himself wounded, he was at last taken prisoner and sent to Adrianople; where the grand-signior gave him audience, and promised to make good all the damages he had sustained. At last, after a stay of above five years, he left Turkey; and, having disguised himself, travelled Wallachia, Transylvania, Hungary, and Germany, attended only by one person; and in 16 days' riding, during which time he never went to bed, came to Stralsund at midnight, November 21, 1714. His boots were cut from his swollen legs, and he was put to bed; where, when he had slept some hours, the first thing he did was to review his troops, and examine the state of the fortifications. He sent out orders that very day, to renew the war with more vigour than ever. But affairs were now much changed: Augustus had recovered the throne of Poland; Sweden had lost many of its provinces; and was without money, trade, credit, or troops. The kings of Denmark and Prussia seized the island of Rugen; and besieged him in Stralsund, which surrendered; but Charles escaped to Carlscroon. When his country was threatened with invasion by so many princes, he, to the surprise of all Europe, marched into Norway with 20,000 men. A very few Danes might have stopped the Swedish army; but such a quick invasion they could not foresee. Europe was yet more at a loss to find the czar so quiet, and not making a descent upon Sweden, as he had before agreed with his allies. This inaction was the consequence of one of the greatest designs, and at the same time the most difficult, of any that were ever formed by the imagination of man. In short, a scheme was set on foot for a reconciliation with the

czar; for replacing Stanislaus on the throne of Poland; and setting James the Second's son upon that of England, beside restoring the Duke of Holstein to his dominions. Charles was pleased with these grand ideas, though without building much upon them, and gave his minister leave to act at large. In the mean time, Charles was going to make a second attempt upon Norway in 1718; and he flattered himself with being master of that kingdom in six months; but he was killed at Frederichshall, a place of great strength and importance, which is reckoned to be the key of that kingdom, as he was examining the works.—This prince experienced the extremes of prosperity and of adversity, without being softened by the one, or disturbed for a moment at the other; but was a man rather extraordinary than great, and fitter to be admired than imitated. He was honoured by the Turks for his rigid abstinence from wine, and his regularity in attending public devotion. In religion he was a Lutheran, and a strong believer in predestination. He wrote some observations on war, and on his own campaigns from 1700 to 1709; but the MS. was lost at the unfortunate battle of Pulstowa.

CHARLES CAPE, a promontory of N. America, on the S.W. part of the strait entering into Hudson's Bay. Long. 75. 15. W. Lat. 62. 10 N.

CHARLTON, a village in Kent, on the edge of Blackheath, on the bow of an eminence that commands a fine view of the Thames. It is famous for an annual fair held here on St. Luke's day; it is called Horn Fair; horn wares of all kinds are sold; the mob wear horns on their heads; and all that licentiousness prevails which its name imports. Tradition traces the origin of this fair to the time of King John, who, being detected in an amour here, was obliged, it is said, to purchase his safety of the injured husband, by a grant of all the land from this place to Cuckold's Point; and he established the fair as the tenure. In this parish, on Blackheath, is Morden College, a noble institution for decayed merchants, founded by Sir John Morden, Bart. a Turkey merchant, several years before his death, which happened in 1708.

CHARLEVILLE, a borough of Ireland, in the county of Cork, 30 miles N. of Cork. Long. 8. 30. W. Lat. 52. 23. N.

CHARLEVILLE, a handsome town of France, in the department of the Ardennes and late province of Champagne. The streets are straight, and the houses of an equal height. Here is a magnificent square, and in the centre a handsome fountain. It is seated on the Moselle, near Mezieres, from which it is separated by a bridge and a causeway; 15 miles N.W. of Sedan, and 115 N.E. of Paris. Long. 4. 45. E. Lat. 49. 50. N.

CHARLEY, a town of Lancashire, with a market on Tuesday. It is seated near the spring-head of a rivulet called Chor, not far from the river Yarrow; six miles S.E. of Preston, and 203 N.W. of London. Long. 2. 45. W. Lat. 53. 38. N.

CHARMES, a town of France, in the department of the Vosges, and late province of Lorraine, seated on the Moselle, over which is a handsome bridge. It is eight miles E. of Mirecourt. Long. 6. 17. E. Lat. 48. 21. N.

CHARNWOOD, or CHARLEY FOREST, a rough open tract in the N.W. part of Leicestershire, and in the neighbourhood of Bardons Hills.

CHAROLLES, a town of France, in the department of Saône and Loire. It has a ruinous castle, and is seated on the river Reconc, 24 miles W.N.W. of Macon. Long. 4. 24. E. Lat. 46. 28. N.

CHASE, or CHACE, is also a place of retreat for deer and wild beasts (*Encycl.*). The following history of the English

chases is given by Mr. Pennant: "At first the beasts of chase had this whole island for their range; they knew no other limits than the ocean, nor confessed any particular master. When the Saxons had established themselves in the heptarchy, they were referred by each sovereign for his own particular diversion: hunting and war, in those uncivilized ages, were the only employ of the great; their active, but uncultivated minds, being susceptible of no pleasures but those of a violent kind, such as gave exercise to their bodies, and prevented the pain of thinking.

"But as the Saxon kings only appropriated those lands to the use of forests which were unoccupied, so no individuals received any injury: but when the conquest had settled the Norman line on the throne, this passion for the chase was carried to an excess, which involved every civil right in a general ruin: it superseded the consideration of religion even in a superstitious age: the village-communities, nay even the most sacred edifices, were turned into one vast waste, to make room for animals, the objects of a lawless tyrant's pleasure. The new forest in Hampshire is too trite an instance to be dwelt on; fugiatory laws were enacted to preserve the game; and in the reigns of William Rufus, and Henry I. it was less criminal to destroy one of the human species than a beast of chase. Thus it continued while the Norman line filled the throne; but when the Saxon line was restored under Henry II. the rigour of the forest laws was immediately softened.

"When our barons began to form a power, they claimed a vast, but more limited, tract for a diversion that the English were always fond of. They were very jealous of any encroachments on their respective bounds, which were often the cause of deadly feuds: such a one gave cause to the fatal day of *chevy-chace*; a fact which, though recorded only in a ballad, may, from what we know of the manners of the times, be founded on truth: not that it was attended with all the circumstances which the author of that natural but heroic composition hath given it; for, on that day, neither a *Percy* nor a *Douglas* fell: here the poet seems to have claimed his privilege, and mixed with this fray some of the events of the battle of *Otterbourne*.

"When property became happily more divided by the relaxation of the feudal tenures, these extensive hunting-grounds became more limited; and as tillage and husbandry increased, the beasts of chase were obliged to give way to others more useful to the community. The vast tracts of land, before dedicated to hunting, were then contracted; and, in proportion as the useful arts gained ground, either lost their original destination, or gave rise to the invention of *parks*. Liberty and the arts seem coeval; for when once the latter got footing, the former protected the labours of the industrious from being ruined by the licentious sportsman, or being devoured by the objects of his diversion: for this reason, the subjects of a despotic government still experience the inconveniences of vast wastes, and forests, the terrors of the neighbouring husbandmen; while in our well-regulated monarchy very few chases remain. The English still indulge themselves in the pleasures of hunting; but confine the deer-kind to parks, of which England boasts of more than any other kingdom in Europe. The laws allow every man his pleasure; but confine them in such bounds as prevents them from being injurious to the means of the community. Before the Reformation, the prelates seem to have guarded sufficiently against this want of amusement, the see of Norwich, in particular, being possessed, about that time, of thirteen parks.

CHATEL-CHALONS (*Encycl.*), erroneously spelt CHATEL-CHALLONS.

CHATHILLON-LES-COMBES, a town in the department of Ain and late province of Bresse, twelve miles W. of Bourg.

CHATILLON-SUR-INDRE, a town of France, in the department of Indre and late province of Berry, ten miles S. of Loches. Long. 0. 55. E. Lat. 47. 22. N.

CHATILLON-SUR-MARNE, a town of France, in the department of Marne and late province of Champagne, seventeen miles S. of Rheims. Long. 4. 5. E. Lat. 48. 58. N.

CHATOQUE, LAKE, a lake of North America, in the state of New York. It is the source of the river Conawongo, which runs into the Alleghany. The lower end of it, whence the river proceeds, is in lat. 42. 10. N. From the N.W. of this lake to Lake Erie is nine miles.

CHATTESWORTH, a village in Derbyshire, near the river Derwent, in the Peak, and reckoned one of its wonders. Here is the magnificent seat of the Duke of Devonshire. It is six miles from Chesterfield.

CHAUMONT, a town of France, in the department of Oise and late province of the Isle of France, thirty miles N.W. of Paris. Long. 2. 7. E. Lat. 49. 18. N.

CHEADLE, a town in Staffordshire, with a market on Saturday. It is seated in the most fertile part of the moorlands, twelve miles N.E. of Stafford. Long. 1. 56. W. Lat. 53. 0. N.

CHEAM, a village in Surrey; of which it is remarkable, that, between the years 1581 and 1624, of six of its rectors successively, five became bishops. Adjoining to this parish, is the site of the village of Cudington, or Cudington, near which Henry VIII. built the palace of Nonfuch, so much celebrated, by Camden and Hentzner, for its magnificence. It was a favourite residence of Queen Elizabeth; but being granted by Charles II. to the Dukes of Cleveland, the pulled down the house, and disparted the land. Cheam is thirteen miles S. by W. of London.

CHEBUKTO HARBOUR, in North America, near Halifax, in Nova Scotia. Long. 63. 18. W. Lat. 44. 45. N.

CHEDDER, a large village of Somersetshire, famous for its cheeses, which are the next best to Stilton cheese in England, and as large as those of Cheshire. It is three miles E. of Axbridge. Long. 2. 57. W. Lat. 51. 13. N.

CHEDWORTH, a village of Gloucestershire, four miles S.W. of North Leach, through which the river Coln runs to Fairford. It is situated on the declivity of two hills. In this parish, in 1760, a Roman bath was discovered. The Roman Fosse lies about two miles N.W. of this spot. There is a tumulus on a hill near this bath, with a remarkably large stone set upright on the top of it, on the removal of which great quantities of human bones were discovered.

CHEESE (*Encycl.*). Every country has places noted for this commodity: thus Cheshire and Gloucester cheese are famous in England; and the Parmesan cheese is in no less repute abroad, especially in France. This sort of cheese is entirely made of sweet cow-milk: but at Rochefort in Languedoc, they make it of ewes' milk; and in other places it is usual to add goats' or ewes' milk in a certain proportion to that of the cow. Parmesan is made in cheeses of 60, 80, 100, and even 180 pounds weight; the size depends on the number of cows in the possession of the farmer: those which weigh 60 or 80 pounds are considered most commodious for sale.

In warm weather, and when there is plenty of milk, they make cheese every day: in winter the milk will keep, and the cheese is only made every other day. In summer, the evening's milk is skimmed the next morning, that of the morning at about three o'clock in the afternoon, when the evening's milk is skimmed again, both are mixed together, and the farmer immediately proceeds to manufacture his cheese.

All the milk intended for one boiling is put together in a large copper cauldron, large enough to contain 1000 pounds, three feet five inches deep, and nearly of the form described

in the figure. The cauldron is suspended by its handle on a wooden crane, so that it can be taken from the fire and replaced at pleasure. The fire-place forms a kind of stove, between which and the cauldron the flame blazes freely; but the stove is open on one side, to leave a passage for the cauldron when it becomes necessary to turn it. The hearth, and even the bottom of the cauldron, are below the level of the earth, that the person employed in making the cheese may with ease plunge his hands when necessary to the very bottom.

When the milk is in the cauldron, the fire is kindled, the milk is heated to the temperature of about forty degrees, and kept stirring from the top to the bottom, in order that the temperature may be equally distributed through all parts of the mass. While the milk is thus heating, the cream is churned into butter.

When the milk has attained the proper temperature, the cauldron is removed from the fire, and a large wooden skreen is placed for the purpose of preventing the milk from receiving any further heat from the fire, and that no motion may be created by it in any part of the mass. They then wait five or six minutes to afford time for the calming of any internal motion, occasioned by the different temperatures of the several strata of milk; and when the whole is in a state of calm, the rennet is infused in the following manner.

They have, in a little vessel, a leaven; composed of milk curdled in the stomach of a calf, wheat-flour, and salt, all fermented together. Of this they take a small lump, about the size of a walnut, and tie it up in the corner of a napkin, which is plunged into the milk and squeezed out with the hand. The linen retains, like a sieve, all the substances in the rennet which will not dissolve; and when these substances only are left, the napkin is withdrawn, and the milk well stirred that the rennet may be equally distributed; that done, the whole mass is left to curdle without disturbance. In this interval they finish churning the butter.

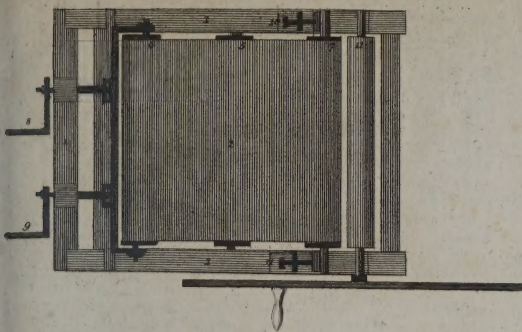
In three quarters of an hour, or an hour, the milk is curdled, which is made apparent when, on taking up some of it with a wooden spoon, at different places in the surface, it is perceived to have lost its fluidity. Then they take away the skreen, and replace the cauldron on the fire, to heat the milk anew, and carry its temperature to fifty degrees. The motive for this second heating is, to facilitate the separation of the curd, as hereafter mentioned. During the time it is on the fire it is kept continually stirring, for the purpose of dividing it. The kind of boiling which it now undergoes renders the curd more dense, and increases its specific weight. They then let it cool a little, and take away about a quarter of the thin milk, that the remainder may with less difficulty acquire the temperature of fifty degrees. They then keep stirring it continually, that all the curd may be divided into very small lumps. When the proper temperature is attained, they throw in a few pinches of saffron, for the mere purpose of colouring the cheese.

At this period the operation becomes extremely critical. The heating not only enables the masses of curd to adhere to each other, in the same manner as it hardens the white of eggs, but it enables the curd to separate itself from the milk after the mass is formed. It is probable that there is a nice limitation to be observed in this respect, which must not be exceeded, for the person employed in making of the cheese now frequently takes up handfuls of the curd, which he squeezes strongly together to ascertain whether it has acquired a proper consistency. When he is satisfied in this respect, the cauldron is again withdrawn from the fire, and the skreen replaced, or the fire is extinguished with water.

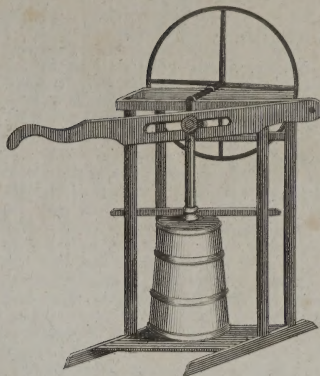
When the mass is no longer stirred, the curd soon precipitates itself. Then with large wooden vessels they take out

M^r Grant's Machine for Dyeing Cotton &c

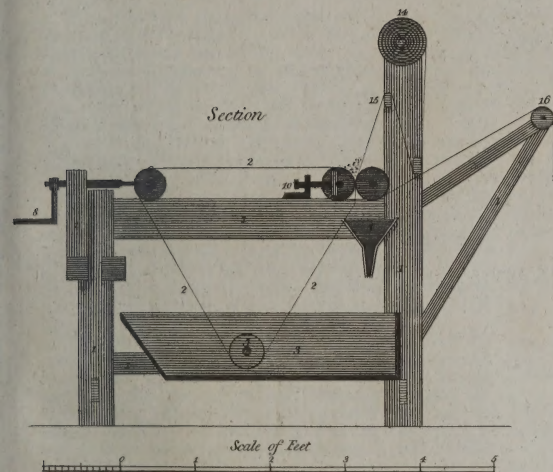
Horizontal Plan



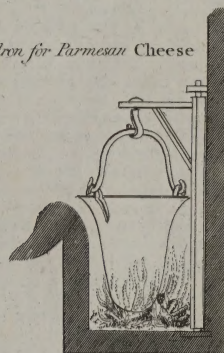
M^r C. Harland's Churn



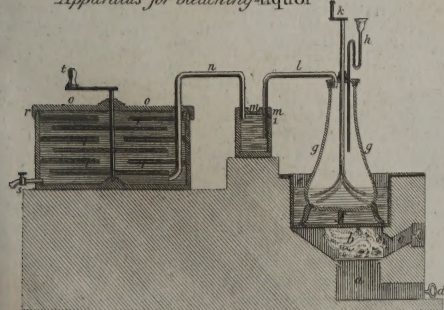
Section



Cauldron for Parmesan Cheese



Apparatus for bleaching-liquor



Door-Closer

Fig. 1.

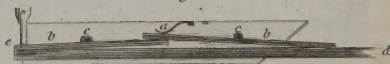
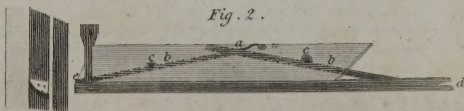


Fig. 2.



almost all the thin milk, and throw over the rest about two pailfuls of cold water, to decrease the heat, and permit the workman to thrust in his hands. Then, holding by his thighs to the brim of the vessel, he bends himself in, to reach the bottom with his hands; he quickly gathers all the curd together to one side of the cauldron, and passes a cloth under the curd, which he gathers together, grasping the four corners of the cloth. This mass is very heavy, and he could not draw it out immediately, but the assistants pour into the cauldron the milk they had previously taken out, and this enables him to raise, without much difficulty, the mass of curd to the surface. He then carries it away in the cloth, and places it in a round wooden form, without bottom, standing on an even solid table.

All this operation requires great readiness in the service, and even a great degree of habit; for the power of adhesion which the curd has acquired makes it harden speedily, and if it were permitted to assume a bad shape it would never afterwards lose it.

When the curd is placed in the form, the cheese has already acquired firmness, and will resist a strong pressure of the finger; it hardens very rapidly, and, without any external compression, squeezes out, by its own power of contraction, the greater part of the thin milk which is yet contained in it. The effect of this faculty would be to give the cheese a spherical form; but to flatten it at the ends, they place over it a round plate of wood, and a heavy stone. Thus it is left for the night; it cools, throws off the thin milk, and assumes the form it is intended to retain.

On the morrow they place a layer of salt on one of the flat sides of the cheese; the next day they turn it, and salt the opposite surface; and continue this alternate operation for forty days, when the salt will melt no longer. The use of this operation is not only to salt but to dry the cheese, that is, to extract from it all the milk which may have remained after the cheese had become cool, and could no longer contract itself.

When, after about forty days, the cheese has acquired the necessary qualities for keeping and sale, they scrape it with a flexible knife to take off the little soft incrustation on the surface, so that the soft cheese is seen on every side; the surface is then perfectly sleek, and they varnish it with a slight layer of linseed-oil; finally, they give to the convex surface only a red tint, made from vegetable substances alone, and the cheese is fit for sale.

The thin milk which has been replaced in the cauldron still contains a considerable quantity of curd, and even some ferous parts, which, though they did not curdle at first, ought not to be lost. The cauldron is replaced on the fire, and fresh rennet put into the milk; by these means a sufficient quantity of curd is obtained to make an inferior sort of cheese for family consumption. The milk which still remains serves to feed the live stock. See plate 20.

CHEESE-*Rennet*. See GALLIUM.

CHEIRANTHUS, STOCK-GILLIFLOWER, or *Wallflower*; a genus of the filiquosa order, belonging to the tetradynamia class of plants. The species are thirteen, but the following three are most worthy of notice: 1. The *cheiri* or common wallflower, with ligneous, long, rough roots; an upright, woody, abiding stalk, divided into many erect angular branches, forming a bushy head from one to two feet high, closely garnished with spear-shaped, acute, smooth leaves, and all the branches terminating in long erect spikes of numerous flowers, which in different varieties are yellow, bloody, white, &c. 2. The *incanus*, or hoary cheiranthus, with ligneous, long, naked, white roots; and upright, strong, woody, abiding

stem, from one to three feet high, branchy at top, adorned with long, spear-shaped, obtuse, hoary leaves; and the top of the stalk and all the branches terminated by erect spikes of flowers from one to two or three feet long, of different colours in different varieties. 3. The *annuus*, or ten-weeks-stock, with an upright, woody, smooth stalk, divided into a branchy head, twelve or fifteen inches high, garnished with spear-shaped, blunt, hoary leaves, a little indented, and all the branches terminated by long erect spikes of numerous flowers of different colours in different varieties.—The two first sorts are very hardy evergreen biennials or perennials; but the last is an annual plant, so must be continued by seed sown every year; and even the two first, notwithstanding their being perennial, degenerate so much in their flowers after the first year, that it will be proper also to raise an annual supply of them. The seeds are to be sowed only from the plants with single flowers; for the double ones bring no seeds to perfection. The seeds are to be chosen from such flowers as have five, six, or more petals, or from such as grow near to the double ones. They may be sown in the full ground in the spring, and may be afterwards transplanted. When fine doubles of the two first kinds are obtained, they may be multiplied by slips from the old plants.

CHEITORE, or OUDIPOUR, one of the principal of the Rajpoot states, in Hindoostan Proper. It consists, in general, of high mountains, divided by narrow valleys; or of plains environed by mountains, accessible only by narrow passes or defiles: in reality, one of the strongest countries in the world; yet having an extent of arable land sufficient for the support of a numerous population, and blessed with a mild climate, being between the 24th and 28th degrees of N. latitude: in fine, a country likely to remain for ever in the hands of its present possessors, and to prove the asylum of the Hindoo religion and customs. "Notwithstanding," says Major Rennell, "the attacks that have been made upon it by the Gaznavide, Pattan, and Mogul emperors, it has never been more than nominally reduced. Some of the fortresses, with which the country abounds, were indeed taken: but the spirit of independent nations does not reside in fortresses, nor are they to be conquered with them. Accordingly, every war on these people, even by Aurungzebe, ended in a compromise, or defeat, on the side of the assailants." The country, however, is now tributary to the Mahrattas.

CHEITORE, or Oudipour, a town, in a province of the same name, in Hindoostan Proper. It was the capital of the Rana, or chief prince of the Rajpoots, in the days of his greatness; and was a fortress and city of great extent, situated on a mountain; but it has been in ruins since the time of Aurungzebe in 1681. It is 120 miles S. by E. of Nagpore. Long. 74. 56. E. Lat. 25. 21. N.

CHEKAU, in natural history, the name of an earth found in many parts of the East Indies, and sometimes used by the Chinese in their porcelain manufactures. It is a hard and stony earth; and the manner of using it is this: they first calcine it in an open furnace, and then beat it to a fine powder. This powder they mix with large quantities of water: then stirring the whole together, they let the coarser part subside; and pouring off the rest yet thick as cream, they leave it to settle, and use the matter which is found at the bottom in form of a soft paste, and will retain that humidity a long time. This supplies the place of the earth called *hoache*, in the making of that elegant sort of china-ware which is all white, and has flowers which seem formed by a mere vapour within its surface. The manner of their using it is this: they first make the vessel of the common matter of the manufacture; when this is almost dry, they

paint upon it the flowers, or whatever other figures they please, with a pencil dipt in this preparation of the chekao; when this is thoroughly dry, they cover the whole vessel with the varnish in the common way, and bake it as usual. The consequence is, that the whole is white: but the body of the vessel, the figures, and the varnish, being three different substances, each has its own particular white; and the flowers being painted in the finest white of all, are distinctly seen through the varnish upon the vessel, and seem as if traced by a vapour only. The hoache does this as well as the chekao; and has besides this the quality of serving for making the porcelain ware either alone, or in the place of kaolin: the chekao has not this property, nor any other substance besides this hoache, which appears to be the same with our steatites or soap-rock.

CHEKE (Sir John), a celebrated statesman, grammarian, and divine, of an ancient family in the Isle of Wight, was born at Cambridge in the year 1524, and educated at St. John's College in that university; where, after taking his degrees in arts, he was first chosen Greek lecturer, and in 1540 professor of that language, with a stipend of 40*l.* a-year. In this station he was principally instrumental in reforming the pronunciation of the Greek language, which, having been much neglected, was imperfectly understood. About the year 1543 he was incorporated master of arts at Oxford, where, we are told, he had studied for some time. In the following year he was sent to the court of King Henry VIII. and appointed tutor for the Latin language, jointly with Sir Anthony Cooke, to Prince Edward, about which time he was made canon of the college newly founded in Oxford; wherefore he must have now been in orders. On the accession of his royal pupil to the crown, Mr. Cheke was first rewarded with a pension of 100 marks, and afterwards obtained several considerable grants from the crown. In 1550 he was made chief gentleman of the privy-chamber, and was knighted the following year; in 1552, chamberlain of the exchequer for life; in 1553, clerk of the council; and soon after secretary of state and privy-counsellor. But these honours were of short duration. Having concurred in the measures of the Duke of Northumberland for settling the crown on the unfortunate Jane Grey, and acted as her secretary during the nine days of her reign, on the accession of Queen Mary, Sir John Cheke was sent to the Tower, and stripped of the greatest part of his possessions. In September 1554 he obtained his liberty, and a licence from her majesty to travel abroad. He went first to Basil, thence to Italy, and afterwards returned to Strasburg, where he was reduced to the necessity of reading Greek lectures for subsistence. In 1556 he set out in an evil hour to meet his wife at Brussels: but, before he reached that city, he was seized by order of King Philip II. hoodwinked, and thrown into a waggon; and thus ignominiously conducted to a ship, which brought him to the Tower of London. He soon found that religion was the cause of his imprisonment; for he was immediately visited by two Romish priests, who piously endeavoured to convert him, but without success. However, he was at last visited by Fleckenham; who told him from the queen, that he must either comply or burn. This powerful argument had the desired effect; and Sir John Cheke accordingly complied in form, and his lands, upon certain conditions, were restored: but his remembrance soon put an end to his life. He died in September 1557, at the house of his friend Mr. Peter Osborne in Wood-street, London, and was buried in St. Alban's church. He left three sons, the eldest of whom, Henry, was knighted by Queen Elizabeth. He wrote, 1. A Latin translation of two of St. Chry-

ostom's Homilies. Lond. 1543, 4to. 2. The Hurt of Sedition. Lond. 1549, 1576, 1641. 3. Latin translation of the English communion service. Printed among Bucer's opuscula. 4. De pronunciatione Græcæ. Basil, 1555, 8vo. 5. Several letters published in his life by Strype; and a great number of other books.

CHEKIANG, a maritime province of China, to the W. of Pekin, one of the most fertile and trading provinces of that empire. It is interspersed with mountains, fruitful fields, rivers, and canals. The inhabitants are famous for making gold and silver broadened silks, which are very cheap; for they breed quantities of silk-worms. In the lakes of this country is to be found the golden fish, well known for its beauty, as also a tree which produces tallow. It contains eleven large cities, twenty-seven towns, and many populous villages.

CHE-KYANG, or TSEKIAN, a province of the empire of China, formerly the residence of the Chinese monarchs, and one of the most considerable in the whole empire. It is bounded on the south by Fo-kyen; on the north and west, by Kyang-nan, and Kyang-si; and on the east by the sea. It extends itself from the 27th to the 31st degree of north latitude, and from 116° to almost 120° of east longitude, according to the meridian of Paris. The climate of it is serene and healthy, and the inhabitants very numerous, amounting, according to their registers, to 4,525,700 men. The country is, exceedingly rich and fertile, beautifully variegated with well-cultivated mountains, fruitful valleys and plains; so that there is not a spot which is not turned to the best advantage. It is intersected by a multitude of rivers and canals; the last cut wide and deep, and lined on both sides with hewn stone. The plains on both sides have a communication with each other by a vast number of bridges, so that one may travel through the whole province either by land or water. A vast quantity of silk is manufactured in this province; which is here finer, more rich and curiously wrought with gold and silver, than in any other; and yet is so cheap, that a good silk suit will cost less than one of the most ordinary cloth in Europe. The tribute of silk paid to the emperor is said to amount to 370,466 pounds raw, and 2574 wrought, besides some other quantities of the finest, sent as a present to the court by the imperial barges. The province hath eleven capital cities, or cities of the first rank, and twenty-seven of the second and third rank; besides eighteen fortresses, most of them upon the sea-coasts, and large and populous enough to pass in other countries for considerable cities. The inhabitants are ingenious, polite, and courteous to strangers, but very superstitious.

CHELIDONIUM, CELANDINE, and HORNED or PRICKLY POPPY; a genus of the monogynia order, belonging to the polyandria class of plants. There are six species, none of which are remarkable for their beauty; but one of them, viz. the majus, is an article in the materia medica. It grows on old walls, among rubbish, and in waste shady places. The herb is of a bluish-green colour; the root of a deep red; and both contain a gold-coloured juice: their smell is disagreeable, the taste somewhat bitterish, very acrid, burning and biting the mouth; the root is the most acrid. The juice takes off warts; cures tetters, ring-worms, and the itch; and, diluted with milk, it consumes opaque white spots on the eye.—Horses, cows, goats, and swine, refuse to eat the herb.

CHELIDONIUS LAPIS, in natural history, a stone said by the ancients to be found in the stomachs of young swallows, and greatly cried up for its virtues in the falling-sickness; but, from their description, it appears to be only a

species of lycodontes, or bufonitæ. See LYCOKONTES, and BUFONITÆ.

CHELM, a town of Poland, capital of a palatinate of the same name. It is situated in the province of Red Russia. E. long. 23. 30. N. lat. 51. 25.

CHELMSFORD, the county town of Essex, situated on the river Chelmer, in E. long. 30. N. Lat. 51. 40. It sends two members to parliament.

CHELONE, in botany, a genus of the angiospermia order, belonging to the didymia class of plants. There are three species, *viz.* the *Glabra*, the *Hirsuta*, and the *Pentstemon*. They are natives of North America; and are herbaceous flowery perennials, with upright stalks two feet high, decorated with spear-shaped leaves, and beautiful spikes of monopetalous, ringent flowers, red, rose-coloured, blue, and purple. They flower from September to November, and are sometimes succeeded by ripe seeds in this country. They are very hardy plants, and may be propagated by seeds found in any soil or situation; but the two first multiply so fast by their creeping roots, that the seeds are seldom regarded.

CHELSEA, a fine village situated on the northern bank of the river Thames, a mile westward of Westminster, remarkable for a magnificent hospital of invalids and old decrepit soldiers; and a pleasure-house, called Ranelagh, to which a great deal of fine company resort in summer.

CHELTENHAM, or CHILTENHAM. See CHILTENHAM.

CHELUM, a river of Hindoostan Proper, being the westernmost of the five eastern branches of the river Indus. It rises above Cashmere, waters that city, and flowing through the province of the same name, in a S.E. direction, unites with the Indus below Moultan. This river is the famous Hydapes of Alexander.

CHEMISE, in fortification, the wall with which a bastion, or any other bulwark of earth, is lined for its greater support and strength: or it is the solidity of the wall from the talus to the stone-row.

Fire-CHEMISE, a piece of linen cloth, steeped in a composition of oil of petrol, camphor, and other combustible matters, used at sea to set fire to an enemy's vessel.

CHEMISTRY (*Encycl.*). In p. 479 of that article some mention is made of Mr. Woulfe's improvement in the receiver for distillation. To that as well as to what has been offered in this supplement under the article ACID, we wish to add the description of a chymical apparatus resembling that of Woulfe, and requiring no lute, by Mr. Girard. The ingenious apparatus of Woulfe, to which modern chemistry is so highly indebted, being attended with some slowness in the operation to which it is applied, the means of simplifying it have long been sought, and various forms have been contrived to produce this apparatus hermetically closed, and without lute. These, in general, are too difficult in the execution; but that offered by Girard to the National Institute of Paris may be put together or dismounted in a few seconds, and appears to be applicable to all circumstances.

In this construction nothing more is required, but to cause the bottles or vessels to be made at the glass-house with one of the necks A, provided with an internal AB, which is welded in the neck itself, by means of a projection or prominence in the glass, see plate 11. fig. 1. The opposite neck is first drawn out into a point or thin tube as usual; but afterwards, instead of breaking it off near the vessel to accommodate it to the subsequent fittings, it is left of the full length, and bended in such a manner that it terminates in the arc of a circle, which can be introduced into the tube AB. It is unnecessary to remark, that the tube AB₂ and the neck which is to be introduced, must

have the same curvature. This condition is very easily obtained by bending the tubes and the necks on the same cylinder of earth or wood.

It may here be readily understood, that the back or neck of the first bottle being introduced into the tube of the second, and passing further inwards than its extremity, and the interior tubes of each bottle being immersed in water, no gas can issue from the first vessel but by passing through its neck, and rising in the second through the ascertained fluid.

Fig. 2. represents another apparatus of Woulfe, which may be substituted instead of the other in case the operator reside at a distance from a glass-house. It is composed of wide-mouthed tubulated bottles. A tube is taken rather thick, and wide enough to contain another. In the upper part of this tube an enlargement must be made by blowing, and this part is to be fitted into the neck by grinding, in the same manner as stoppers are usually adjusted.

Another tube is then taken which can enter into the other with ease and freedom of motion. The extremity A of this tube is to be ground in the same manner, that it may be fitted in the neck of another bottle, and it is bended into the usual curve ABC. It is thus introduced into the tube EF, fig. 3. and the lower extremity D is turned upwards. Fig. 2. shews the manner of adjusting the apparatus, and it may be seen that it is hermetically closed, where the lower part of the large tube is plunged in the water.

The bending or curvature of the tubes and necks of the bottles is intended, as may be readily conceived, merely to answer the purpose of directing the bubbles of the gas which escape from the tube, so that they may not again enter the orifice from which they escaped. It is, therefore, unnecessary in an apparatus of any considerable magnitude, in which the neck is made to project an inch or more beyond the lower opening of the tube, for in this case the bubbles necessarily pass clear of this aperture.

Fig. 4. also exhibits another construction of this apparatus.

If an apparatus composed of a very long series of bottles were employed, there would be reason to fear that the gas contained in the first vessel, having a very strong resistance to overcome, might cause the fluid of this first bottle to rise in the tube and escape; but it would be very easy to remedy this inconvenience, either by using vessels of different sizes, or by putting a less quantity of fluid in the first than in the succeeding vessels.

The necessity of distilling the *oxygenated muriatic acid* on a large scale, has given rise to the invention of different kinds of apparatus more or less convenient. Some of these have been spoken of under the article BLEACHING. Berthollet has proposed matrasles with bent tubes, which convey the oxygenated muriatic acid to the pneumatic tub, in which the bubbles, traversing the water, are forced, by means of an agitator, to combine more or less with it. Pajot de Charmes recommends the use of tubulated retorts; but, besides these vessels have too dear, they do not answer the proposed end, since a portion of sulphuric acid not decomposed, and which injures the process, always passes into the water.

C. Widner, at Jouay, has arranged his apparatus in such a manner as to lose the least gas possible during the condensation: he receives the gas under a capsule inverted at the bottom of the apparatus; above these are two *tours de gouttière* also inverted, then another capsule above these; then two more *tours de gouttière*, and then another capsule, which terminates the apparatus. The disposition of this tub is such, that he places around in his laboratory several distilling apparatuses, which are going at the same time.

Apparatus constructed on similar principles are also in use at Glasgow and Manchester. Bourboulon-de-Bonneval has



likewise invented an apparatus consisting of several matrasles, ranged as in an aqua-fortis manufactory, the tubes of which are conveyed into a chamber containing concentrating tubs. His apparatus for the bleaching of paper is very ingenious, and deserves to be described. In the last place, others have arranged five or six large casks, like Woulfe's apparatus, in such a manner as to make each cask perform the functions of a tubulated flask. The bleachers in Ireland employ a kind of leaden alembic capable of containing forty gallons of water; a capacity more than sufficient to contain the charge, and to favour the swelling which takes place by the reciprocal action of the matters during the distillation. This alembic (see Plate 20.), of a conic form, and having a very broad base, rests in a balneum marie, in order that it may be subjected to progressive heat; and the neck is of such a height, that any sulphuric acid which happens to rise may fall back. The cover is perforated to afford a passage to the handle of an agitator, which serves to stir the matters at the bottom of the alembic: this agitator is of iron as well as its arms; but the iron is covered with a pretty thick plate of lead, that the acid may not attack it; the handle goes through a leather collar, to prevent the escape of the gas. The sulphuric acid, diluted with water, is introduced into the leaden apparatus by means of a small glass or leaden funnel, the tube of which is bent to guard against the reaction of the gas. The apparatus is also furnished with a condenser, into which the gas is made to pass. This vessel has several shelves and an agitator. The latter goes through a leather collar in the top of the condenser, passes down through the shelves, and is furnished with arms between each of the shelves; by which means the gas in its ascent is exposed to the action of the liquid in a state of great agitation, and has a long way to travel through it. (See the plate.) Mr. O'Reilly speaks of an apparatus which, in his opinion, is free from those faults which generally attend an apparatus of lead, which always becomes oxidated, and is at length destroyed. "This apparatus," says he, "consists of a series of conical matrasles with long necks, furnished with bent funnels as well as tubes, both of glass, which are conveyed into a common reservoir. This reservoir ought to be perforated in such a manner as to leave room for the introduction of a tube of a larger size (two inches), communicating with the first condensing cask or cylinder, made of white wood, twenty inches in diameter, bound round by hoops made tight with crews, and completely water-proof. Care must be taken to cover these hoops with a coating of japan, as it is called, or with oil paint, to prevent the oozings of the liquor from rusting them. The height of this cylinder must be seven or eight feet, and even more, if possible, in order to increase the pressure; and ought to have placed over it a large two-necked bottle deprived of its bottom, or a glass bell with two necks cemented to the upper edge of the cylinder. In one of these necks the large tube of the reservoir is introduced, and made to descend to the bottom of the cylinder. The air bubbles, as they are disengaged, being forced to traverse the fluid under a pressure equal to the height of the column of water, will combine with it until it be saturated; the second is also furnished with a leaden tube, the orifice of which is below the surface of the water; the superabundant gas passes through this tube, and, descending into the second cylinder of wood, similar in all respects to the preceding, saturates the water in it:—a third cylinder may be added, if judged necessary. By this arrangement the smallest portion of the gas cannot escape: care must be taken to apply a leaden cock at the bottom of each cylinder, in order to draw off the bleaching liquor as it is formed.

"The residuums, after the distillation of the oxygenated

muric acid, may be sold to earthen-ware manufacturers to be employed as a glazing for their coarse articles. The manganese contained in it gives it a blackish appearance, like that of bronze, which is far from being disagreeable to the eye. I have employed this glazing several times by way of trial; first fusing it with sand in a potter's furnace, throwing it into cold water to facilitate its division, and grinding it in a mill in order that it might be diffused in water. This glazing is attended with the advantage of being free from those dangerous qualities so common in all preparations made from the oxides of lead; but the most important object is the extraction of the soda from the sulphate of soda, which is formed in great quantity by the process, and remains in the residuum of the distillation.

"The first point is, to convert the sulphate of soda into an alkaline sulphuret. Malherbe and Athenas have succeeded in this, by employing iron as the intermediate substance: they mixed one part of charcoal dust with nine parts of the sulphate of soda, and exposed the mixture to the heat of a reverberating furnace: when the sulphuret entered into combustion, they added from three to five parts of old iron rendered as small as possible; and the whole being fused together, they obtained black paste, composed of iron, soda, sulphate of iron, &c. This mixture was lixiviated, and filtered through a basket filled with lime: it was then evaporated to dryness, and the residuum was calcined in a reverberated furnace. When soda of a superior quality is required, the washing and calcination must be repeated.

"Dizé and Le Blanc decomposed the sulphate of soda, by means of the carbonate of lime, in order to neutralize the alkali, by saturating it, at a very high temperature, with carbonic acid. Their process consists in taking two parts of sulphate of soda, dried to deprive it of its water of crystallization, two parts of well-ground chalk (carbonate of lime), and one part of charcoal powder, mixing them well in a muffled mortar, and then bringing the mixture to a white heat in a reverberated furnace: when the matter is fused it is stirred till the sulphur is consumed, and the ebullition and the jet of the flame produced by the hydrogen gas have ceased to appear. It is then taken from the furnace, and it may be lixiviated to obtain the soda very pure. In whatever manner the sulphate is decomposed, this object merits the greatest attention at bleach-fields, on account of the considerable degree of economy which results from the different manipulations. The ley of oxygenated muriatic acid will be obtained at little or no expence by bleachers, when they seriously set about extracting the soda from the sulphate formed during the distillation."

In whatever manner the muriatic acid gas may be distilled, the great object is to saturate the water with this aeriform fluid. Its action in bleaching is always stronger when employed alone than when in the state of combination with salts or earths, as in the subsequent operations. The volatility of the acid, however, is such, and the loss of the gas so enormous, that, when the thread of cloth is immersed, there is dissipated of it a quantity which may be estimated at about a third, at least, of the whole gas. The mixture of potash, indeed, renders the liquor inodorous; but besides this salt is expensive, and greatly weakens the deterfive quality of the liquor.

Mr. Rudd, of Manchester, has invented an apparatus for bleaching cloth, exceedingly simple in its construction, of small expence, and which contains the liquor in such a manner as to prevent the escape of the oxygenated muriatic acid gas. A consideration of no less importance in the arrangement of this apparatus is, the impossibility of the vapour injuring the health of the workmen.

CHENSI, a province in the N.W. part of China. It contains eight cities of the first rank, and 106 of the second and third. Besides many forts on the great wall. The air is to strangers temperate, and the inhabitants more civil and affable than others in the northern parts. The soil is fertile, and abounds in wheat and millet. They have also rhubarb, honey, wax, muls, cinabar, and coal-mines. They have a great number of deer, bears, wild bulls, and an animal resembling a tiger, whose skin is very curious. There are also muls-goats, and bats as large as hens, beside two or three other forts of animals quite unknown in Europe.

CHER, a department of France, including part of the late province of Berry. It receives its name from the river Cher, which rises in Auvergne, and watering Tours, &c. falls into the Loire, five miles above the mouth of the Indre. Bourges is the capital.

CHERSON, the capital of New Russia, in the government of Catharinenski. It is a new town, erected by the Empress Catharine II. on the north bank of the river Dnieper, 10 miles below the mouth of the Ingulec. It is not yet very large; but the church and many of the houses are built of stone, in a pretty taste. It is intended to be the principal mart of all the commodities of export and import. It has a dock for the construction of large vessels, from which several men-of-war and merchant ships have been already launched. It is supplied with fuel by reeds only, of which there is an inexhaustible forest in the shallows of the Dnieper, opposite the town. Rails, and even temporary houses, are made of them. They are tall and strong, and afford shelter to various kinds of aquatic birds, some of which are very beautiful. The fortifications are made, and the plantations formed, by malefactors, who amount to some hundreds. In 1787 the empress made a triumphant journey to this capital, and here met the Emperor Joseph II. Her intention, it is said, was to be crowned here queen of Taurica, and empress of the East. But the design, whatever it was, did not take place; and Catharine was content to have informed over one of the gates of the city, "Through this gate lies the road to Byzantium" In this place, in 1700, the celebrated Mr. Howard, so well known for his plans of reform of the different hospitals and prisons of Europe, fell a victim to his indefatigable humanity. Cherson is 50 miles E. of Oczakow. Long. 33. 10. E. Lat. 46. 5. N.

CHERZ, an ancient town of Poland, in Masovia, 15 miles from Warfaw. Long. 21. 8. W. Lat. 52. 1. N.

CHESHAM, a town in Bucks, with a market on Wednesday. It is 12 miles S.E. of Aylesbury, and 29 W. by N. of London. Long. 0. 36. W. Lat. 51. 42. N.

CHESTER, *West*, the capital of the county of Chester, in Pennsylvania. It is seated on the Delaware, and has a fine harbour. Long. 75. 27. W. Lat. 39. 54. N.

CHIARENZA, a sea-port of Turkey in Europe, in the Morea, opposite the island of Zante. Long. 21. 35. E. Lat. 37. 50. N.

CHIARO-MONTE, a town of Sicily, on a mountain, 25 miles W. of Syracuse. Long. 14. 59. E. Lat. 37. 3. N.

CHLAVERNA, *LACHETTO DI*, a small lake of the country of the Grisons, in Switzerland, near the town of the same name. The views of this lake are extremely wild and magnificent; surrounded as it is by barren rocks, craggy, and rising into spires sprinkled with snow. The bases of these dreadful precipices are lost in the dead and overshadowed water, dangerous on account of its malignant vapours, and affording no asylum, scarcely a landing-place, to the crews of those frail boats, which are caught unwarily in the violent storms to which it is subject.

Vol. X.

CHIEMSEE, a lake of Germany, in Bavaria, which contains a town of the same name, where there is a bishop's see. The island in which it stands is 17 miles in circumference, and lies 22 miles W.S.W. of Salzburg.

CHIERI, a fortified town of Piedmont, seated on the declivity of a hill, in a pleasant country, bounded on all sides by hills covered with vines. It is eight miles E. of Turin.

CHIETI, a town of the kingdom of Naples, capital of Abruzzo Citeriore, with an archbishop's see. It is seated on a mountain near the river Pescara, eight miles S.W. of Pescara. Long. 15. 7. E. Lat. 42. 20. N.

CHIGWELL, a village in Essex, near Epping Forest. Here is a free school, founded by Archbishop Harliffet, who had been vicar of this place. He was buried in the church; and his grave-stone was adorned with his figure in brass, in his pontifical robes. This, for the better preservation of it, has been fixed on the pedestal in the chancel. Chigwell is 10 miles N.E. of London.

CHIHRI, or *PORT-CHEER*, a town in Arabia Felix, with a harbour. It carries on a considerable trade. Long. 49. 25. E. Lat. 14. 40. N.

CHILKA, a lake in the Deccan of Hindoostan, which bounds the five Circars on the N. It lies on the coast of the bay of Bengal, and seems the effect of the breach of the sea over a flat sandy surface, whose elevation was something above the level of the country within. It communicates with the sea by a very narrow but deep opening, and is shallow within. It is 40 miles long from N.E. to S.W. and, in most places, 12 or 15 wide, with a narrow slip of ground between it and the sea. It has many inhabited islands in it. On the N.W. it is bounded by a ridge of mountains, a continuation of that which extends from the Mahanuddy to the Godavery River, and thence up the Circars toward the continent. To those who sail at some distance from the coast, this lake has the appearance of a deep bay; the slip of land not being visible.

CHIMAY, a town of France, in the department of the North and late province of Hainault. It is seated on the river Blanche, 20 miles S.S.W. of Charleroy. Long. 4. 15. E. Lat. 50. 0. N.

CHIMLEIGH, a town in Devonshire, with a market on Wednesday. It is almost surrounded by the river Dart, and is 21 miles N.N.W. of Exeter. Long. 3. 53. W. Lat. 50. 57. N.

CHIMNEY (*Encycl.*). In the description of the Staffordshire fire-place, the reference should have been to Plate 88 instead of 89.

CHIMNEY-SWEEPER, a miserable little wretch, scarcely human in his appearance or pretensions, employed in the drudgery of dislodging the soot from the chimneys of his employers. Of all the labours of the London Society for bettering the condition of the poor, none deserve more encomium than the methods taken to rescue this neglected and despised class of beings from perdition. We shall here give some account of what has been done, from their second volume of Reports. In August, 1798, a Sunday school, established at Kingston, was extended to the relief and instruction of the chimney-sweepers' boys in that place. They are, indeed, few in number, but they had been left (as in most parts of England those unfortunate boys are) without the means of cleanliness or of education, and without either example or instruction to induce religious or moral habits at that age which, wherever justice is done to the human character, ought to be the season of preparation for life.

They had been not only destitute of instruction, but in some degree, of clothing; and, when unemployed, were left

to wander, almost in a state of nature, excluded from the advantages of rational and Christian beings.—In order that they might be in proper condition to appear in the school, a lady of the neighbourhood, distinguished as much by her benevolence as her rank, clothed each of these poor objects in the following manner.

A jacket and pair of trowsers of coarse blue cloth	0	10	6
Two shirts	0	7	0
A pair of shoes	0	4	0
A hat	0	2	3
	<u>£</u>	<u>1</u>	<u>3</u> <u>9</u>

Besides this she sent to each chimney-sweeper's house,

A straw paillasse	1	2	0
A pair of blankets	0	17	0
A washing tub	0	6	6
	<u>£</u>	<u>2</u>	<u>5</u> <u>6</u>

and a weekly allowance of a quarter of a pound of soap.

The boys are always improving in their reading, and some of them are now beginning to read in the New Testament. They are acquiring habits of cleanliness and attention, and their manners and morals are already very greatly improved.

This school, or rather the part that respects chimney sweepers' boys, is under the direction of a committee of eight persons, together with a master and mistress appointed by them, in Brick-lane, Kingston.

OBSERVATIONS.—The above is stated for the consideration of the inhabitants of country towns; where a similar provision for these unfortunate objects might be very useful and effectually made, with very little expence or trouble. The remedy is so simple, and so easily applied, that the example needs only be given to be gradually adopted in most country towns in England.

To afford that degree of attention and relief, in London, which these boys are entitled to, in policy, as well as in justice, the provisions to be made for them will be rather more complicated, and will require some consideration. But there is no great difficulty in what is to be done. Protection and education during the period of apprenticeship, and the means of livelihood when that period expires at the age of sixteen, are all the essential parts of the plan. If these were attained, even in a qualified degree, the general condition of a chimney-sweeper's boy would not be a situation of more suffering and disadvantage, than that of persons in many other situations in life; and not subject to more hardship or danger, than the initiation into that dignified and honourable profession, from which the British nation does now derive so much security, and such distinguished glory; and in which the first families in this country are desirous of inscribing their children.

It would produce a material improvement in the condition of the chimney-sweeper's boy, and the character of the trade, if the practice of crying the streets was entirely discontinued, and if families could be induced, as in other trades, to employ those masters, whose characters are known in the neighbourhood. There is nearly as much reason for sending round the brick-layer's lad with his hod of mortar and a few bricks, screaming his master into that employment which neither his situation nor character would otherwise give him any pretension to, as the loading with his bag and implements of trade, a little child already suffering by dirt, hunger, cold, and the want of domestic comfort; and sending him to disturb the streets by his cries, till some unknown person calls him in, and employs him in his trade. How much better would it be that respectable men, like the benevolent Mr. Porter (to whose suggestions

the country are indebted for the institution of the society of master chimney-sweepers, which we shall presently notice), should be settled in every neighbourhood; their characters and conduct known; and that any orders for employment should be sent the day before, so that the master might arrange his boys' time for the ensuing day, in the same manner, and with the same regularity, as in other trades; instead of their being exhausted and destroyed, in the very act of applying for employment. If, indeed, it were in the power of every master to shew such boys as Mr. Porter's, we should have a succession of hardy and intrepid lads formed for the navy, and for those situations in which early habits of activity and enterprise are absolutely necessary.

It has been a principal object of Mr. Porter's life, that boys apprenticed to his trade should in future be protected and secured from those diseases, hardships, and dangers, for which he, by extraordinary energy of mind and body, and by the mercy of God, has been eminently preserved. With this view he has prepared, in concert with some others of his trade, a plan for its regulation; a brief detail of which will employ the remainder of this paper.

Mr. Porter commences his statement by a general approbation of the act for the relief of climbing boys, as far as the provisions extend; but observes, that those provisions are not complied with by a majority of the masters in the trade, either as to the clothing, lodging, or food of their apprentices:—That suffering and hardship are not necessarily incident to the trade, but arise merely from the want of proper internal regulations, which would soon remedy the evil. Their distresses, however, when they quit their masters, at the expiration of their apprenticeship, on attaining the age of 16 years, requires some contributory assistance from the public; they being then without money, without friends, and without the means or capacity of occupation. To provide a general system of relief, it is contrived, that the masters in the metropolis shall (with the contribution of an annual guinea from honorary members) form themselves into a friendly society for the protection of climbing boys during their apprenticeships; and for raising a fund to place out in occupations, at the age of 16, the boys of any of the members: the business of the society to be conducted by a committee, which shall be elected by and out of the honorary and other members; and from which a sub-committee of masters shall be appointed to inspect the bedding, clothing, and accommodation, of the apprentices of all masters belonging to the society, and to report whether they are comfortable to their indentures of apprenticeship, and to the regulations of the act; and to hear any complaints of the boys, to enquire as to apprenticeships, and to apply to the magistrates in those cases where the act of parliament remains unexecuted.

Such is the outline of a plan, which the society have since given more at length; and for the furtherance of which, by contributing as honorary members, the humanity, policy, and justice, of the public, have been referred to with some degree of success.

The nature of this humane institution will be best understood by the following copy of the articles of agreement, of the 19th of March, 1800, between several master chimney-sweepers within the liberties of Westminster and the Holborn division of the county of Middlesex, for forming a friendly society for the protection and instruction of their apprentices.

1st. It is hereby agreed that the said master chimney-sweepers do form themselves into a friendly society, for the protection and instruction of climbing boys during their apprenticeship; and to raise a fund, with the assistance of the honorary members of the said society, to give premiums with them to other trades, when their terms as chimney-sweepers

shall expire; in order to enable them to become useful to themselves and the community, and also to promote the general interest and credit of the trade.

2d. That all chimney-sweepers above 21 years of age, being housekeepers within the liberties of Westminster and county of Middlesex, and having one or more apprentices, be eligible as members of this society, and after election capable of being admitted, when they shall have signed these articles; and that the said society do consist of such members, so elected and admitted, and of such honorary members as are hereinafter mentioned.

3d. That this society do annually elect six members, masters in the trade, and six of the honorary members hereinafter mentioned, to be a committee, with the president, four vice-presidents, and treasurer, to conduct the affairs thereof: and that they meet at such hour and place as they shall from time to time appoint; and that any three of them constitute a board for the dispatch of business.

4th. That a general meeting of this society be held at two o'clock precisely, on the first Wednesday in the months of January, April, July, and October, in every year, to consider and approve the measures of the committee, and for other purposes.

5th. That this society do elect, by ballot, some member thereof to be treasurer, to receive the subscriptions, &c. of the members; which treasurer do give a security to such amount as the committee shall direct; and do pay all subscriptions and other monies received, into the banking-house of the society, to be entered with the names of the several subscribers, so as it may all pass through that account.

6th. That the committee have full permission, at all reasonable times of the day, to inspect the bedding, clothing, &c. of all apprentices belonging to the members of this society, to see whether they be according to the tenor of the indenture of such apprentices, and conformable to the regulations contained in the act of parliament, and also that they do make report thereof to the society at their general meetings.

7th. That it is the duty of every member of the committee, at all times, to hear the complaints of any apprentice in the trade, within the liberties of Westminster and county of Middlesex, and to summon before a magistrate any master or mistress who may violate the act of parliament made for the relief of climbing boys.

8th. That the society do place out each boy, who shall complete the whole term of his apprenticeship as a chimney-sweeper, to some other trade, not a chimney-sweeper, from the period when he shall be 16 years of age until he attain the age of 21; provided he does not enter into an engagement to continue with his master, or some other master of the trade, being a member of this society, during that time; and that the society do give a premium, not exceeding 10*l*., for that purpose.

9th. That this society give a gratuity, not exceeding 10*l*. to every person whose apprenticeship, as a chimney-sweeper, shall expire after the 1st day of July, 1800, in case he shall from that time continue in the sea service, or as an articulated servant to a member or members of this society, from the age of 16 to the age of 21; and that such gratuity be paid him within three months after his attaining the age of 21.

10th. That this society do take security from any person, to whom they may give a premium with an apprentice, that such apprentice shall not follow the trade or business of a chimney-sweeper, before he be 21 years of age.

11th. That this society will countenance no person whatsoever who shall have been on his own hands, or out of employ, any six months, from 16 to 21 years of age, except from such cause as the committee shall think reasonable.

12th. That this society give premiums to none but appren-

tices of the members of this society; but that it do, in other cases, lend its friendly aid to all chimney-sweepers' apprentices.

13th. That at any time when the money in the hands of the treasurer shall amount to 20*l*. he shall place the same, in the name of the society, in the banking-house of Messrs. Dorlet, Johnson, and Co. bankers, in New Bond-street, or at such other banking-house as the society, or the committee, may appoint.

14th. That all orders for the payment of money on account of the society, be signed by the chairman and two of the committee, at a general quarterly meeting.

15th. That every member in the trade, on admission into this society, pay the sum of 10*s*. 6*d*. and from the day of such admission pay the sum of 1*s*. per month, for every apprentice he or she may keep: such payment to be made once in every three months; and in case he or she shall leave any arrears unpaid, for more than three months after the time such respective sum or sums shall become due (he or she having had one calendar month's notice thereof), that then he or she shall be expelled the society, and the money paid by them forfeited for the benefit of the general fund.

16th. That all persons, not in the trade, contributing one guinea, or more, annually, or paying ten guineas at once to the funds of the society, be honorary members, and have a right to vote at all meetings thereof.

17th. That this society do annually choose a president, four vice-presidents, a treasurer, and twelve other members of the committee, for conducting the affairs of the society, at their general meeting, at two o'clock precisely, on the first Wednesday of the month of April, in every year; and (her Royal Highness the Duchess of Gloucester having been elected and declared the patroness of the society, and Mrs. Montague the vice-patroness, and the Lord-bishop of Durham the president of the society for the ensuing year) that the society do meet on the first Wednesday in the month of April next, to elect four vice-presidents, a treasurer, and six honorary members, and six members in the trade, to be, with the president, a committee for the ensuing year.

18th. That nothing be admitted as a law of this society, unless it be proposed at one meeting of the committee, approved of by the next, and confirmed at a general quarterly meeting of the society.

19th, and lastly. That the amount of all fines awarded by a magistrate to any member of this society, for any transgression against the act of parliament made for the relief of climbing boys, be paid into the hands of the treasurer for the general purposes of the society; and that the expenses of any complaint or proceedings before a magistrate, by order of the committee, be paid out of the funds of the society. In witness whereof the said parties have hereunder signed their respective names, the day and year first above written.

These articles have been signed by eighteen of the principal masters in the trade, and fifty-six chimney-sweepers' boys have been thereby placed under the care of the society; an example that we hope will be followed in other places.

CHINEY, a town of the Austrian Netherlands, on the confines of the bishopric of Liege, eight miles E. of Dinant. Long. 4. 57. E. Lat. 50. 18. N.

CHINSURA, a neat and pretty large town of Hindoostan Proper, in Bengal. It is a settlement of the Dutch, and is seated on the river Hoogly, nearly midway between Chandernagore, and the old town of Hoogly. It is very distinguishable at a considerable distance, and has a handsome appearance. It contains several good houses, and a church, with a little mole projecting into the river.

CHIRK, a village S. of Wrexham, in Denbighshire. It had formerly two castles, on the top of a hill, one of which

is still entire in many parts, and seems to have been a magnificent structure.

CHISLEHURST, a village of Kent, near Bromley. Here is Camden Place, the ancient seat of the Earl of Camden, and the residence of the celebrated antiquary of that name, who died here. Chislehurst was also the birth-place of Sir Nicholas Bacon and Sir Francis Walsingham. It is 11 miles S.E. of London.

CHISME, a sea-port of Natolia, on the strait that parts the continent from the isle of Scio. It was anciently called Cyflus, was celebrated by the great victory which the Romans gained here over the fleet of Antiochus, in the year 191 B.C. and has been recently distinguished by the total destruction of the Turkish fleet by the Russians in 1770.

CHISWICK, a village in Middlesex, on the Thames. Here is Chiswick-house, a celebrated villa of the Duke of Devonshire, built by the Earl of Burlington, after a design of Palladio. In the church yard is a monument to the memory of Hogarth, with an epitaph by Garrick. Chiswick is five miles W. by S. of London.

CHITRO, a town of Turkey in Europe, on the bay of Salonichi; the place where the mother, wife, and son of Alexander, were murdered by Cassander; and where Perseus king of Macedonia was defeated by the Romans. Long. 22. 35. E. Lat. 40. 20. N.

CHITTEDROOG, a town of the peninsula of Hindoostan, in the kingdom of Mysore, 117 miles N. by W. of Seringapatam. Long. 76. 15. E. Lat. 14. 3. N.

CHIVALRY (*Encycl.*). In addition to what has already been offered under this article, some obvious circumstances of agreement between the heroic and Gothic manners may be worth the reader's attention:

1. The military enthusiasm of the barons, is but of a piece with the fanaticism of the heroes. Hence the same particularity of description in the accounts of battles, wounds, deaths, in the Greek poet, as in the Gothic romance. Hence that minute curiosity in the display of their dresses, arms, and accoutrements. The minds of all men being occupied with war-like images and ideas, were much gratified by those details which appear cold and uninteresting to modern readers.

We hear much of knight-errants encountering giants, and quelling savages, in books of chivalry. These giants were oppressive feudal lords, and every lord was to be met with, like the giant, in his strong-hold or castle. Their dependents of a lower form, who imitated the violence of their superiors, and had not their castles, but lurking places, were the savages of romance. The greater lord was called a giant for his power; the less, a savage, for his brutality.

Another terror of the Gothic ages, was monsters, dragons, and serpents. Their stories were received in those days for several reasons: 1. From the vulgar belief of enchantments: 2. From their being reported on the faith of eastern tradition, by adventurers from the holy land: 3. In still later times from the strange things told and believed on the discovery of the new world.

In all these respects, Greek antiquity resembles the Gothic. For what are Homer's Læstrigons and Cyclops, but bands of lawless savages, with each of them a giant of enormous size at their head? And what are the Grecian Bacchus, Hercules, and Theseus, but knights-errant, the exact counterparts of Sir Lancelot, and Amadis de Gaul?

3. The oppressions which it was the glory of the knights to avenge, were frequently carried on, as we are told, by the charms and enchantments of women. These charms, we may suppose, are often metaphorical; as expressing only the blandishments of the sex. Sometimes they are taken to be real, the ignorance of those ages acquiescing in such conceits.

And are not these stories watched by those of Calypso and Circe, the enchantresses of the Greek Poet?

4. Robbery and piracy were honourable in both: so far were they from reflecting any discredit on the ancient or modern *redressers of wrongs*. What account can be given of this, but that, in the feudal times, and in the early days of Greece, when government was weak, and unable to redress the injuries of petty sovereigns, it would be glorious for private adventurers to undertake this work; and, if they could accomplish it in no other way, to pay them in kind by downright plunder and rapine?

5. Bastardy was in credit with both. They were extremely watchful over the chastity of their own women; but such as they could seize upon in the enemies' quarter, were lawful prize. Or if, at any time, they transgressed in this sort at home, the fault was covered by an ingenious fiction. The offspring was reputed divine. Their greatest heroes were the fruit of goddesses approached by mortals; just as we hear of the doughtiest knights being born of fairies.

6. With the greatest fierceness and savageness of character, the utmost generosity, hospitality, and courtesy, was imputed to the heroic ages. Achilles was at once the most relentless, vindictive, implacable, and the friendliest of men. We have the very same representation in the Gothic romances. As in those lawless times, dangers and distresses of all kinds abounded, there would be the same demand for compassion, gentleness, and generous attachments to the unfortunate, those especially of their own clan, as of resentment, rage, and animosity against their enemies.

7. Again, the martial games celebrated in ancient Greece, on great and solemn occasions, had the same origin, and the same purpose, as the tournaments of the Gothic warriors.

8. Lastly, the passion for adventures, so natural in their situation, would be as naturally attended with the love of praise and glory. Hence the same encouragement, in the old Greek and Gothic times, to panegyrics and poets. In the affairs of religion and gallantry, indeed, the resemblance between the hero and the knight is not so striking. But the religious character of the knight was an accident of the times, and no proper effect of his civil condition. And that his devotion for the fair sex should so far surpass that of the hero, is a confirmation of the system here advanced. For the consideration had of the females in the feudal constitution, will of itself account for this deference. It made them capable of succeeding to fiefs, as well as the men. And does not one see, on the instant, what respect and dependence this privilege would draw upon them?

It was of mighty consequence who should obtain the favour of a rich heiress. And though, in the strict feudal times, she was supposed to be in the power and at the disposal of her superior lord, yet this rigid state of things did not last long. Hence we find some distressed damsel was the spring and mover of every knight's adventure. She was to be rescued by his arms, or won by the fame and admiration of his prowess. The plain meaning of all which was this: That as, in these turbulent times, a protector was necessary to the weakness of the sex, so the courteous and valorous knight was to approve himself fully qualified for that purpose.

It may be observed, that the two poems of Homer were intended to expose the mischiefs and inconveniences arising from the political state of Old Greece: the *Iliad*, the dissensions that naturally spring up among independent chiefs; and the *Odyssey*, the insolence of their greater subjects, more especially when unrestrained by the presence of their sove-

reign. And can any thing more exactly resemble the condition of the feudal times, when, on occasion of any great enterprise, as that of the crusades, the designs of the confederate Christian states were perpetually frustrated, or interrupted at least, by the dissensions of their leaders; and their affairs at home as perpetually distressed and disordered by the rebellious usurpations of their greater vassals? Jerusalem was to the European, what Troy had been to the Grecian princes.

CHIVAS, a town of Piedmont, which has been several times taken and retaken. It is so advantageously situated near the river Po, that it is the key of Italy. It is 12 miles N.E. of Turin. Long. 7. 47. E. Lat. 45. 13. N.

CHIUSI, an episcopal town of Italy, in Tuscany, poorly peopled, on account of the unwholesome air, 35 miles S.E. of Sienna. Long. 10. 52. E. Lat. 43. 0. N.

CHIUTAYE, a town of Turkey in Asia, capital of Natolia Proper, and the residence of the Grand-signior before the taking of Constantinople. It is seated on the river Ayala, 75 miles E. of Bursa. Long. 30. 47. E. Lat. 39. 30. N.

CHOCZIM, a town of Moldavia, on the Dniester. It was taken by the Russians and Austrians in 1788, but restored to the Turks at the subsequent peace. It is 110 miles N.W. of Jassy. Long. 26. 25. E. Lat. 48. 46. N.

CHOISEY, a village of France, in the department of Oise, and late province of the Isle of France. It is three miles from Compiègne, on the river Aisne, in the fine forest of Compiègne, on which account here was a handsome royal hunting palace.

CHOLET, a town of France, in the department of Maine and Loire, and late province of Anjou, with a castle, 170 miles S.W. of Paris. Long. 0. 45. W. Lat. 47. 10. N.

CHONAT, an episcopal town of Hungary, capital of a country of the same name, on the Merich, 25 miles E. of Segedin. Long. 21. 4. E. Lat. 46. 20. N.

CHORGES, a town of France in the department of the Upper Alps, and late province of Dauphiny, burnt by the Duke of Savoy in 1692. It is 10 miles E. of Gap. Long. 6. 23. E. Lat. 44. 35. N.

CHOWLE, a small town of the Deccan of Hindoostan, on the coast of Malabar. It has a harbour for small vessels, and is fortified. It belongs to Portugal, and was formerly noted for its fine embroidered quilts and a good trade. It is 15 miles S. of Bombay. Long. 72. 45. E. Lat. 18. 42. N.

CHRISTIANOPLE, a strong sea-port of Sweden, on the Baltic, and capital of Blekingen. It is 13 miles N.E. of Carlskroon. Long. 15. 47. E. Lat. 56. 26. N.

CHRISTIANBURG, a fort of Africa, on the Gold Coast of Guinea, subject to the Danes. Long. 1. 55. E. Lat. 4. 10. N.

CHRONOLOGY (*Encycl.*). We record the following events in continuation of our former article:

1796 Amboyna taken by the English.—Amberg taken by the French.—Severe engagement between the Austrians and French at Lodi, in which the latter behaved most gallantly, and were successful.—Siege of Mantua raised by the French.—Swiss independence abolished by the French after a most gallant resistance.—Ceylon surrendered to the English.—Corfica having put herself under the protection of England, was relinquished to the French.—Minorca taken by the English.—Peace with France concluded by Naples and Sardinia.—War between England and Spain.

1797 A tribulation and some upright portions of Stonehenge fell after a frost.—Bank of England prohibited by

government from paying in specie.—Their 20s. and 2l. notes issued, and large quantities of stamped dollars brought into circulation.—The king's procession to St. Paul's church, to return thanks for a series of victories obtained by the English navy.—The most formidable mutiny ever known, and at a most critical period, in the British fleets at the Nore and at Portsmouth, headed by a desperado of the name of Parker, afterwards hanged with several others.—Penny pieces, of copper, first issued.—Revolution effected in Venice by the French.—Corfu seized by the French.—A contemptible French force landed in Wales.—Mantua surrendered to the French.—Trinidad taken by the English.—War between Austria and France terminated by the peace at Leoben.—Cisalpine republic founded by the French.—Ireland first invaded by the French republicans.—Venice ceded to Austria by the French.—Two millions and a half voluntarily contributed in Britain to support the war against the French.—Lewis XVIII. the French pretender, retired to Peterburgh.—The Pope driven out of Rome by the French, who brought about a revolution.—Piedmont relinquished by its sovereign to the French.—Alexandria taken possession of by the French.—The gates and sluices of the canal at Bruges blown up by the English, who, prevented from re-embarking by tempestuous weather, after a severe resistance, were made prisoners.—Malta and Egypt seized by a French force under Bonaparte.—Ireland in a state of rebellion, invaded by the French, who afterwards surrendered themselves prisoners.—Turin entered by the French.—War renewed between France, Naples, and Sardinia.—Habeas Corpus act suspended.—Inoculation of the cow-pox discovered and first practised in England.—Export of British manufactured goods 34 millions in value.—The national debt of England 397,087,674l.

1799 Coin in circulation forty-four millions.—Corfica relinquished by England and repossessed by the French.—The volunteer corps of London and its vicinity reviewed by the king.—Pope Pius VI. died a prisoner in France.—Acre preserved against repeated assaults of the French army in Egypt under Bonaparte, by Sir Sidney Smith.—Alexandria, Ancona, and other places in Italy, surrendered by the French to the Austro-Russian army.—Tippon Saib defeated and slain near Perispatum by the English.—The French republicans driven out of Italy by the Russian army under Suwarow.—The French dispossessed of Corfu by the Russians.—Holland unsuccessfully invaded by the British army under the Duke of York.—Leghorn entered by the French.—Naples taken by the French, and afterwards recovered.—The Dutch navy in the Texel surrendered to the British fleet under Admiral Mitchell.—Serlingapatam formed by the English under General Harris, and Tippon Sultan slain.—Tuscany seized and afterwards evacuated by the French.—Turin abandoned by the French.—War renewed between France and Austria.—Zurich evacuated by the French.—Income taxed in the British dominions.

1800 Ireland united to Great Britain.—Bread one shilling and ten-pence halfpenny the quarter loaf in London.—9,774 French Emigrants, clergy and laity,

in England.—The Royal Institution of Great Britain founded by charter.—Ineffectual conspiracy against the life of the First Consul of France.—War between France and Austria in Italy terminated, and was followed by the treaty of Lunéville.—Mr. Jefferson elected President of the United States of America.—The British army, under Sir Ralph Abercromby, landed at Aboukir, under prodigious disadvantages, and completely routed the “*invincible legion*” of Bonaparte.—Paul I. emperor of Russia, died.—War declared by Spain against Portugal.—A gallant and successful attack made on Copenhagen by a division of the English fleet in the Baltic, under Lord Nelson.—Hanover entered by the Prussian troops.—St. Eustatia surrendered to a British force.—A treaty of peace between Spain and Portugal signed at Badajoz.—The differences between England and Russia adjusted, and a convention signed.—The French, at Cairo, capitulated to the army under General Hutchinson.—A signal victory, gained over a greatly superior force, of French and Spanish ships, near Algiers.—A dreadful hurricane at Barbadoes.—Madeira taken possession of by a British force.—Alexandria, with the whole of the French forces, surrendered to the British and Turkish forces.—The French Emigrant bishops required by the Pope to surrender their sees to Bonaparte.—Preliminaries of Peace signed between England and France.—Peace between France and Portugal proclaimed at Paris.—Preliminaries of peace signed between France and Turkey.—A new constitution, after the French fashion, given to Holland.—The new constitution of Switzerland overthrown by a French party as not sufficiently conforming to the views of the First Consul.—Hanover evacuated by Prussia.—A dreadful inundation in Italy.—The intercourse between England and France re-established by Act of Parliament.

CHUDLEIGH, a town of Devonshire, with a market on Saturday. It is seated near the river Teigne, nine miles S. W. of Exeter, and 183 W. by S. of London. Long. 3. 39. W. Lat. 50. 38. N.

CHUNAR, a fort of Hindoostan Proper, in the province of Allahabad. It is seated on the Ganges, twenty miles above Benares, and is built on a rock, which is fortified all round by a wall, and towers at various distances. At the end, overlooking the river, is situated the citadel, which has formerly been strong. This fort is said to be of the highest antiquity, and originally built by the Hindoos. In the citadel is an altar, consisting of a plain black marble slab, on which the tutelary deity of the place is traditionally supposed to be seated at all times, except from sun-rise till nine in the morning, when he is at Benares; during which time, from the superstition of the Hindoos, attacks may be made with a prospect of success. Chunar has always been considered as a post of great consequence on the Ganges, from its insulated situation, projecting forward to a great extent, and being of considerable height. It was unsuccessfully attempted by the English in 1764: the next year, it was surrendered to them: they restored it to the Nabob of Oude at the subsequent peace; but, in 1772, it was finally ceded to the English, by that prince, in exchange for Allahabad. At this place is kept the magazine of ammunition and artillery for the brigade at Cawnpore. It is 385 miles N. W. of Calcutta. Long. 83. 50. E. Lat. 25. 10. N.

CHUNAUB, or **JENAU**, a river of Hindoostan Proper, one

of the five eastern branches of the Indus. It runs through Cashmere and Lahore, between the Chelum and the Ranvee. It is united with both these rivers at some distance above Moultan; and, at their confluence with the Indus, twenty miles W. of Moultan, they form a stream as large as that river. The Chunaub is the Acesines of Alexander.

CHURCH (*Encycl.*). To what has been said under this head it may not be improper to add the following representation of the state of the Church of England.

The religion of a country always engages the close attention of the enquiring observer. The government, laws, manners, and even literature of a people are often greatly affected by the nature and influence of their religious system. This observation forcibly applies to the country in which we live; and, therefore, a particular examination of the state of religion, or the exact condition of its national church, and that of the different sects which are removed from it, must be not only amusing, but useful. It is unnecessary to give an historical retrospect of the reformation in England, of the progress of the Anglican church from its establishment to the present time. Few persons are unacquainted with these points who have paid any attention to our national history. In two material articles only did our first reformers differ from their brethren on the Continent: I mean in adopting a national liturgy, and preserving the episcopal government of the church. These objects produced dissenters, who, from their hatred of popery, wanted to be as dissimilar to the church of Rome as possible. They pretended that their only motive for dissent was a desire of greater purity in church order and worship; and thence the name of *puritans* was given to them, which afterwards was lost in the term *nonconformists*, on account of their pertinaciously refusing the terms of conformity to the church. Within the last century, they have usually been called protestant dissenters, a moderate appellation, sanctioned by acts of parliament, and originally given at the time of the revolution, when the act of toleration was justly extended to them.

That revolution had a wonderful and extensive effect upon the church of England. Some of her most exemplary prelates, and most learned clergy, were thrust out from her service, because they could not bring their consciences to digest a new oath in violation of that which they had before solemnly and repeatedly taken. The convocation also, or that right which the clergy had for so many ages enjoyed, of meeting at the same time with parliament, to consult upon the state of the church, was taken away, or so far reduced as to become insignificant. From that period the ecclesiastical body lost its corporate powers, and fell into the general mass of society almost undistinguished, except by being exposed to peculiar calumny and contempt. Infidelity arose under the patronage of the highest personages, and the word *priestcraft* was invented by men of wit, in order to stigmatise all religion. Plays, novels, poems, and pictures, usually exhibited the figure of a *parson* in some contemptible manner, with a view to bring the order itself, and the religion of which they were ministers, into popular disesteem. It must be admitted, that the clergy were in a considerable degree the authors of their own disgrace, by adopting, in general, what was called a system of *moderation*, or a dereliction of the constituent principles and doctrines of the church. Too many of our most eminent divines, observing what strain of preaching, and what kind of opinions and conduct, best suited the men in power, gave way to the stream which led to elevated stations, rather than adhere to a system which they saw growing every day more and more unfashionable. The reader, unacquainted with the fact,

would almost question the truth of the assertion, that men who were not only known to have been adverse to the radical principles of the church of England, but had even written books against them, were advanced to high stations, and pushed on from one degree of preferment to another, as far as their own most sanguine wishes could aspire. While, on the other hand, their ablest antagonists, the founders and best of our divines, were suffered to remain in obscurity, unnoticed and unrewarded. It is an incontrovertible fact, and there is no reason for suppressing or qualifying it, that in the two reigns immediately preceding the present, a marked countenance was given to the latitudinarian divines of the establishment. We would not be understood to mean, that all who were elevated to episcopal thrones, or other dignities, were exactly of this description, but they were too generally such. The consequence of this was, that the character of the church of England lost ground considerably, because it was observed that her ministers generally slighted, or openly opposed, her principal doctrines. The style of preaching adopted in almost all pulpits was alike dry and unedifying; and the subjects discussed such as might with equal propriety have graced the mouth of a heathen moralist as a christian minister. Hence it was that those persons who had better conceptions of religion than the generality, and began to form serious notions upon Christianity, abandoned the churches, and betook themselves to the meeting-houses, where some regard was paid to the doctrines of the Gospel. At that period the dissenting interest flourished, because the greater part of its teachers adhered to the doctrinal principles of the reformation; and every man who has right sentiments of the importance of religious worship will wish to go where he can best be edified. Religious instruction and moral instruction are two distinct things; where the former is rightly enforced and explained, the latter follows as a natural inference. But if morals only are inculcated, religion may be considered as an article either absolutely unnecessary, or as merely indifferent. In this state of things scepticism and sectarianism spread themselves around with a powerful and extended force. Many great men saw the evil, but being inattentive to the cause, they failed in applying the proper remedy. Dr. Gibbon, the worthy bishop of London, in his pastoral letters, expressed himself with great energy and propriety on the increase of infidelity and licentiousness; but though he had the hand of an acute anatomist, he had not sufficient discernment to mark among the various sources the grand seat of the malady. About this time a sect of men arose, who, in the most irregular manner, but with the best intentions, produced a change in the religious aspect of the country, which has continued to the present day. We allude to the rise of the methodists at Oxford, of whom, and their proceedings, we shall say no more in this place, than that by calling the attention of men to the doctrinal principles of religion as the only effectual ground of moral practice, they met with uncommon success. They asserted, and with truth, that the clergy of the church of England had almost totally rejected the articles which they had subscribed, and professed their resolution to preach. These men justly maintained that in christianity *faith* was as necessary *as practice*, and that the latter is not truly religious unless it results from the former. So far the methodists were warranted by the church of which they were members, but in many other particulars they acted very reprehensibly. However, the progress they made, and the zeal which they manifested, opened the eyes of many divines of the establishment, and they became convinced of the necessity of preaching the peculiar doctrines of christianity as laid down in the confession of the church of England. At first these worthy men met with considerable opposition from their brethren, and con-

tempt from those who arrogated to themselves the high-sounding, but frivolous, appellation of rational christians. These divines were stigmatised with the nickname of *Hutchinsonians*, because they respected some of the opinions of *John Hutchinson*, a philosopher of an extraordinary cast, but who was no sectarist. Hutchinson was a great admirer of the Hebrew scriptures, and in the warmth of his admiration thought he had discovered in them all the principles of philosophy. He saw that the great mathematical philosophers of his time were either opposers of, or corruptors of, the christian truth, and this led him to adopt a system of scriptural philosophy, which, in his judgment, was clearly revealed in the writings of Moses. Whether he was right we shall not stay to enquire, but certain it is, that by bringing the study of the Hebrew scriptures into repute, the man did an inestimable service to the cause of christianity. Some Oxford divines were drawn by the writings of Hutchinson to study what had been too long neglected; and being zealous lovers of the church of England, they distinguished themselves by a firm adherence to her constituent principles and doctrines. They did not, like the *methodists*, erect a separate sect, although, like them, they suffered much obloquy from their brethren, and were counted little better than madmen by the world. Much contempt was thrown upon them even in their own university; and that of Cambridge, jealous of her philosophical and mathematical honours, treated these upstarts with most virulent animosity. It may be proper here to observe, that the controversy set on foot by the profound Warburton, in his *Divine Legation*, induced many to study the Hebrew scriptures, and this led them to the writings of Hutchinson, who certainly struck out many lights of admirable utility to the biblical student. The principal of those who adopted Hutchinson's opinions were Mr. George Horne (afterwards the seraphic bishop of Norwich), Dr. Patten, Dr. Wetherall (now dean of Hereford), Mr. William Jones, the late worthy rector of Nayland, and author of numerous publications, and Mr. William Romaine, whose praise is in all the churches. All these luminaries shone forth at Oxford, and by their example brought many theological students to a more rational direction of their academical labours. But Cambridge was not without some distinguished persons of the same stamp, the principal of whom was the late learned and truly primitive divine Mr. John Parkhurst. The contumely which first attended the revivers of primitive learning and religion at length grew weak, for the world saw that the objects of it were not only most exemplary in their lives, but scriptural in their religious views, and peculiarly edifying in their public labours. Their example stimulated others to exert themselves as zealous and active ministers of the church; and in the present reign men of this description have met with liberal encouragement from the higher powers. The jejune, flimsy, moral harangues, which had for so long a period disgraced the pulpits of the national churches, have been generally discarded. Our prelates have directed their clergy to preserve and manifest a doctrinal consistency. Hence it has happened that the dissenting interest has declined, and the churches which were wont to be empty are now crowded. Even the *methodists* have found it necessary to their interest to retain the liturgy of the church of England in their chapels, and the general appearance of conformity to its ceremonies, in order to preserve their congregations. Great attempts have been made during the reign of his present majesty to shake the foundations of the church, and the number and weight of her adversaries once appeared to be exceedingly formidable.

The first direct attack was made in 1772 by the petitioning clergy to effect an abolition of subscription to the thirty-nine articles. The struggle made on this occasion was very car-

rest, but the attempt proved abortive, and the church preserved her bast fortify. The dereliction of her ancient confession would be the loss of her most distinguishing and excellent characteristic. A trial was afterwards made in 1790, to procure a repeal of the corporation and test acts, in which the enemies of the national church were again foiled.

At present the appears to have little room for fear, provided the public peace is secured, and the is kept from any of those plausible innovations, which intriguing minds know so well how to mould and colour, and adapt to popular fancy, in order to effect their secret purpose. This shews how vigilant the governors and other friends of the establishment ought to be over her internal and external condition. Every thing should be done to encourage a learned and evangelical ministry. The people at large are observed to be pleased with divines of this description. This is a spirit which should be encouraged, and nothing can do it so effectually as giving countenance to men who are warm and animated in the cause of sound Christianity. But peculiar care seems to be necessary not to admit into the church offices a body of self-sufficient enthusiastic sectaries. Many lay-preachers who have flourished away in conventicles, have conceived an ambitious desire to get into the church, and it is to be lamented that, from want of sufficient enquiry on the part of our bishops, they have too often succeeded. This has brought an odium upon our establishment in many instances; and as it is an evil which still subsists, the caution cannot be too strongly or particularly enforced. At a time when the dissenting interest is evidently declining, little doubt can be entertained but that many of its ministers will endeavour to shelter themselves under the broad wing of the establishment. Men who have their private advantage at heart, will not, on account of small scruples, neglect an opportunity of preferment. But it is the duty of those who are at the head of the church to guard against the intrusion of interested pretenders. Some doubts may be entertained whether it is proper to admit to the pulpit and to the altar of the established church, men who have long been in habits of opposing her welfare, and weakening her influence; but if such an opinion should be thought too exclusive, it is not too much to assert, that such admissions ought only to take place on strict proof of sincere, affectionate, and disinterested attachment to the national establishment; with candour, and a display of talents calculated to aid the influence of the church, to weaken her enemies, and inspire and strengthen her real friends.

CATHOLIC CHURCH (*Encycl.*). Of the various religious bodies opposed to the church of England, the Roman-catholics are entitled to the first place on account of their antiquity. The time was, when their church was proudly dominant in this land; and when England formed one of the most valuable jewels in the tiara. Providence, which usually produces the most important and extensive benefits from the most trifling and unlikely incidents, effected the destruction of the pontifical authority by the instrumentalty of its most zealous defender. The infant that the Pope put a barrier in the way of Henry VIII. to hinder him from repudiating his consort, and marrying Anne Boleyn, this haughty monarch, who had hitherto approved himself a dutiful son of the church, repented the affront and shook off the papal yoke. A reformation begun from such motives, could not well be otherwise than violent. Sanguinary laws were enacted against all the advocates of the Pope's supremacy; and the monastic orders being annihilated, their lands were distributed among the rapacious courtiers. It cannot be supposed that such a stupendous change could take place without irritating the minds of those who were attached to the ancient superstition, especially at a time when gospel light was but feeble, when priestly absolu-

tions were looked upon as the cleansers of guilt, and the prayer of the church as effectual passports to heaven. It was natural enough for the catholics to feel a repentment at the usage they had met with, and for the clergy to labour earnestly in making converts. Nor is it to be wondered at that some struggles were made by them to regain their lost influence, and to restore the church which they had seen despoiled and mutilated. For this earnestness and zeal, the character of the age, and the circumstances in which they stood, may furnish some excuse; but it must be admitted that they manifested a spirit for which no plea can possibly be allowed; formed conspiracies of so atrocious a nature that all the ingenuity of man cannot palliate them; and had recourse to subtleties to carry on their schemes, irreconcilable to any system of morality, however weak or corrupted. In proportion as knowledge increased, the number of Roman-catholics lessened; and as the spread of truth was great during the eighteenth century, the interests of popery rapidly sunk. It must be allowed that other causes have concurred to produce this declension. The desire of civil distinctions and military employments led many persons to renounce the creed of their ancestors, and to embrace, at least nominally, the profession of protestantism. Others, having imbibed the fashionable philosophy of the French sceptics, soon threw off a religion which was not only troublesome, but in many respects degrading; as giving an authority to priests over the mind, which cannot but be very offensive to libertine spirits. To these circumstances we may well ascribe the low state into which the church of Rome has fallen with respect to this country. There can be little room to apprehend that ever the Roman-catholic profession will rise to a more distinguished appearance, or that its followers will become more numerous. Such fears were once indulged, and that by men from whom more liberality of sentiment might have been expected. A slavish obedience to priestly authority can never take place among persons possessing the advantages of even a common education, unless they have imbibed that principle with their mother's milk. The slightest acquaintance with the sacred writings will keep men from receiving doctrines and ceremonies, which are foreign to the divine word; and if they have a turn for scepticism, we may well suppose them still further remote from the superstitions of popery; on every ground, therefore, we may conclude, that the present waning of the church of Rome will end in a total obscuration. It is observable, that some of the ablest members of that church in this country are possessed of a truly liberal spirit. The catholic clergy in England are divided into two classes—the rigid and the moderate. The former maintain all the dogmata of Pope Pius's creed; all the decisions of the Tridentine council, without any abatement or qualification; and hold the authority of the pope to be supreme in all cases, and over all persons: they moreover reject from salvation, or the communion of Christ, all who do not belong to their particular church; in short, these catholics (improperly so termed), disregarding every principle of genuine benevolence, look down upon other Christians either with contempt or pity. The fact is, these persons do act with most consistency; because, if their church is infallible, which must be the fundamental principle of their creed, they dare not differ from the decisions which the aforesaid council has laid down; and all that is here stated, is perfectly agreeable to that council. However, there are not wanting many catholics, who call themselves dissenters, that hold different sentiments; and limit, in the first place, the pope's authority merely to spiritual matters; and even in these they will hardly allow him an absolute freedom from error. After this grand concession, it is not to be wondered at that these persons should give up many other articles. For instance, they ad-

mit the falvability of heretics and heathens dying unbaptized ; they plead for a general interpretation of the sacred word ; they deny the doctrine of transubstantiation in a gross sense ; they wish to have the cup allowed to the laity ; and give up many other matters of no little moment in the great difference between the Roman and Protestant churches. This party is visibly increasing, and that more particularly, in proportion as the general strength of the papal power decreases abroad ; the natural consequence of which must be, that the number of Roman-catholics will suffer a rapid diminution. When we consider the influence of such men as Mr. Huxley, Dr. O'Leary, and Mr. Berington, we can have little doubt but that even doctrinal popery will ultimately sink into nothing.

The outworks of their cause have been abandoned as untenable and useless ; and as they no longer lay the scriptures under a fort of interdict, but readily allow the laity to study them, the protestant interest must rise in consequence. Infidelity tends greatly to shake down the towers and battlements of the Roman church, but the knowledge of truth will sap its very foundations. It may be accounted among some of the prodigies of this wonderful period, that a priest of the Roman communion should have undertaken a translation of the scriptures into the vulgar tongue, in the preface and notes to which, he positively denies the inspiration of the writers. Dr. Geddes has far outdone Dr. Priestley in this respect. The Socinian champion, not knowing how to combat the authority of St. Paul, had recourse to this subterfuge, that he was not always under the divine direction, and that in many places he was an "inconclusive reasoner," because the doctor did not approve of his argument. Here, however, the doctor was merely serving the cause of his sect ; but Dr. Geddes has not such partialities. He gives up the authority of his church and his infallibility at once, by placing the sacred writings on a footing with the profane. Nay, he does not scruple to say, that the historians of the Bible are inferior, as writers, to Thucydides and Livy. What would have been the outcry if a clergyman of the church of England had advanced such assertions, and that too in a new version of the sacred books ? Would the bishops have been to blame if they had taken particular notice of the writer ? The man who endeavours to undermine the sacred scriptures can make but a sorry minister of the gospel. With what face can a man address his congregation, and confirm his arguments by an appeal to a book which they look upon as divine, and he regards as human ? Were such a case to happen in our church, it would be a matter of complaint if the person so offending should be permitted to exercise his ministry. And yet we do not find that public disapprobation of his conduct or sentiments has been made by Dr. Geddes's superiors and brethren. His undertaking and dreadful concessions tend to do more injury to revealed religion, than the impudent ribaldry of the ignorant Paine. It therefore by no means redounds to the honour of the Roman-catholic clergy, that they have suffered Dr. Geddes's daring attempt to injure their church in particular, and Christianity in general, without some open manifestation of their displeasure. God forbid that perfection, in any degree, should have an apologist, but the administration of justice is not perfection, and every society ought to declare against any of its members, who, by his writings, attacks the principles upon which that society is founded. If the church is all, and the Bible nothing, this behaviour of Dr. Geddes is not culpable ; but if it is the faith of the Roman-catholic church (as we have no doubt it is), that though the church is infallible, the scriptures were written by inspiration, then this silence with respect to one of their own body is highly censurable. We have dwelt the longer on this particular, because it forms

a curious article in the history of the English Roman-catholic church. We see, hence, what astonishing changes the lapse of a century produces, and particularly a revolution so extensive as that of France. The Roman church has been wounded in her vitals ; and though we pity the base treatment of the venerable Pius VI. and the undeserved sufferings of the Gallican clergy, yet it is impossible for a Protestant not to see in all this a direction super-human. The sacred predilections have been unfolded herein, and are evidently fulfilling every day ; so that the infidelity by which this is in a great part accomplished, must stagger and fall before the irresistible evidence of prophecy.

The author of the Pursuits of Literature, and some other writers, have complained of the encouragement which has been given to the Roman-catholic clergy in this country. But this is unmanly and ungenerous. There can be little reason to apprehend that popery will gain converts in this enlightened kingdom, and the catholics themselves can have no inducement to prompt them to make such. They can have no hopes of seeing their church recovering its ancient splendour, since even in Italy itself, the peculiar feat of its glory, the energy of their religious orders is extinguished. The fall of the Jesuits was the prelude to the destruction of the papal power, which followed very fast upon that memorable event.

The generous treatment which the persecuted clergy of France have met with here, cannot but affect their natures, and their long residence among us must have softened down what prejudices they may have once had against our religion. Should peace and order be restored in their country, a mutual good-will between the two nations must be the consequence, and then Protestantism there will greatly flourish. Infidelity is but of temporary duration. Men may be pleased with it for a short season, while their passions are violently exercised ; but in the cool hour of reflection, and at those periods when strength of mind is requisite, they will have recourse to religion, if it is calculated to support them, and is within their reach. We see, therefore, much ground for expecting a great outspread of religious truth over scepticism, heresy, and superstition of every kind ; nor is it, perhaps, too much to say, that this change will be materially affected by the extensive influence of our own country.

CHURCH-STRETTON, a town of Shropshire, with a market on Thursday. It is fourteen miles S. of Shrewsbury. Long. 2. 46. W. Lat. 52. 32. N.

CHURCHILL FORT, on the E. side of Hudson's Bay, in North America, the most northerly of those belonging to that company. Long. 94. 3. W. Lat. 58. 48. N.

CHURN (*Encycl.*) The inferiority of the churns in common use has induced several ingenious mechanics to exert their skill in contriving others, that would render the process of making butter less tedious and expensive. Of these we have already given some proofs, particularly in the description of Mr. Bowler's improved churn. We shall here present the reader with an account of a butter-churn, constructed on a new principle, by Mr. Harland, of Fenchurch-street, London.

The barrel-churn, delineated in Plate 20, is moved by the intervention of a multiplying wheel, to moderate its too violent motion. The head of the crank in the mortise (in the handle) effects the rotatory motion of the barrel with great facility. And if the barrel be fixed, and the axis (in the inside), to which the dashers are attached, be made to turn, the butter will be more speedily formed. A fly-wheel is also affixed, by means of which the agitation of the cream is necessarily performed in a more uniform manner ; and, consequently, the butter will be more perfectly separated from the whey.

As butter is often made in small quantities, and the vertical motion of the common churn is extremely fatiguing, we con-

sider these methods of applying the powers of mechanism, as valuable improvements. Hence we presume to recommend the preceding improved butter-churn to be generally introduced; for the facility and expedition, with which butter is thus obtained, will amply compensate the additional expence.

If a pump-churn be employed, it may be plunged a foot deep in a tub of cold water, and remain there during the whole time of churning, which will harden the butter in a considerable degree. This operation may be much facilitated by pouring into the churn a small quantity of distilled vinegar, which will produce butter in the course of one hour. Those who make use of a pump-churn, should endeavour to keep up a regular motion of the machine; and by no means admit any person to assist them, unless from absolute necessity: for, if the churning be irregularly performed, the butter will in winter go back; and, if the agitation be more quick, and violent in summer, it will cause the butter to ferment, and thus to acquire a very disagreeable flavour.—Where there are many cows, a barrel-churn is preferred; but unless it be kept very clean, the bad effects of it will be soon discovered in the butter. Particular care should also be taken to place it in a proper temperature, according to the change of the season; that is, to fix it in a warmer situation in the winter, and in the summer to expose it to a free current of air.

CHUSAN, an island on the E. coast of China, where the East-India company had once a factory. Long. 124. o. E. Lat. 30. o. N.

CIAMPA, a kingdom of Asia, bounded on the E. and S. by the Indian Ocean, on the N. by Cochinchina, and on the W. by Cambodia.

CILICIA (*Encycl.*). According to Josephus, Cilicia was first peopled by Tarhish the son of Javan, and his descendants, whence the whole country was named *Tarhis*. The ancient inhabitants were in process of time driven out by a colony of Phœnicians, who, under the conduct of *Cilix*, first settled in the island of Cyprus, and from thence passed into the country which, from the leader, they called *Cilicia*. Afterwards, several other colonies from different nations settled in this kingdom, particularly from Syria and Greece; whence the Cilicians in some places used the Greek tongue, in others the Syriac; but the former greatly corrupted by the Persian, the predominant language of the country being a dialect of that tongue. We find no mention of the kings of Cilicia after their settlement in that country, till the time of Cyrus, to whom they voluntarily submitted, continuing subject to the Persians till the overthrow of that empire; but governed to the time of Artaxerxes Mnemon, by kings of their own nation. After the downfall of the Persian empire, Cilicia became a province of that of Macedon; and, on the death of Alexander, fell to the share of Seleucus, and continued under his descendants till it was reduced to a Roman province by Pompey. As a provincial province, it was first governed by Appius Claudius Pulcher; and after him by Cicero, who reduced several strong holds on Mount Amanus, in which some Cilicians had fortified themselves, and held out against his predecessor. It was on this occasion that the division, formerly mentioned, into Trachæa and Campestris, took place. The latter became a Roman province; but the former was governed by kings appointed by the Romans, till the reign of Vespasian, when the family of Tracondementus being extinct, this part also made a province of the empire, and the whole divided into Cilicia *Prima*, Cilicia *Secunda*, and Isauria; the first took in all Cilicia Campestris, the second the coast of Cilicia Trachæa, and the last the inland parts of the same division. It is now a province of Asiatic Turkey; and is called *Caramania*, having been the last province of the Caramanian kingdom which held out against the Ottoman race.

That part of Cilicia called by the ancients *Cilicia Campestris*, was, if we believe Ammianus Marcellinus, one of the most fruitful countries of Asia; but the western part equally barren, though famous, even to this day, for an excellent breed of horses, of which 600 are yearly sent to Constantinople for the especial use of the grand-signior. The air in the inland parts is reckoned wholesome; but that on the sea-coast very dangerous, especially to strangers.

The rivers of any note are the Pyramus, which rises on the north side of mount Taurus, and empties itself into the Mediterranean between Iffius and Magarus; the Cydnus springs from the Antitaurus, passes through Tarsus, and dilembogues itself into the Mediterranean. It is famous for the rapidity of its stream, and the coldness of its waters, which proved very dangerous to Alexander the Great.

CIMBRI (*Encycl.*). This ancient Celtic nation, about 113 years before Christ, left their peninsula with their wives and children; and joining the Teutones, a neighbouring nation, took their journey southward in quest of a better country. They first fell upon the Boii, a Gaulish nation situated near the Hercynian forest. Here they were repulsed, and obliged to move nearer the Roman provinces. The republic being then alarmed at the approach of such multitudes of barbarians, sent an army against them under the consul Papirius Carbo. On the approach of the Roman army, the Cimbri made proposals of peace. The consul pretended to accept it; but having thrown them into a disadvantageous situation, treacherously attacked their camp. His perfidy was rewarded as it deserved; the Cimbri ran to arms, and not only repulsed the Romans, but, attacking them in their turn, utterly defeated them, and obliged the flattered remains of their forces to conceal themselves in the neighbouring forests. After this victory, the Cimbri entered Transalpine Gaul, which they quickly filled with slaughter and desolation. Here they continued five or six years; when another Roman army under the consul Silanus marched against them. This general met with no better success than Carbo had done. His army was routed at the first onset; in consequence of which, all Narbonne Gaul was exposed at once to the ravages of these barbarians.

About 105 years before Christ, the Cimbri began to threaten the Roman empire itself with destruction. The Gauls marched from all parts with a design to join them, and to invade Italy. The Roman army was commanded by the proconsul Cæpio, and the consul Mallius; but as these two commanders could not agree, they were advised to separate, and divide their forces. This advice proved the ruin of the whole army. The Cimbri immediately fell upon a strong detachment of the consular army commanded by M. Aurelius Scaurus, which they cut off to a man, and made Scaurus himself prisoner. Mallius being greatly intimidated by this defeat, desired a reconciliation with Cæpio, but was haughtily refused. He moved nearer the consul, however, with his army, that the enemy might not be defeated without his having a share in the action. The Cimbri, by this movement, imagining the commanders had made up their quarrel, sent ambassadors to Mallius with proposals of peace. As they could not help going through Cæpio's camp, he ordered them to be brought before him; but finding they were empowered to treat only with Mallius, he could scarce be restrained from putting them to death. His troops, however, forced him to confer with Mallius about the proposals sent by the barbarians: but as Cæpio went to the consul's tent against his will, so he opposed him in every thing; contradicted with great obliquity, and insulted him in the grossest manner. The deputies on their return acquainted their countrymen that the misunderstanding between the Roman commanders still subsisted; upon which the Cimbri attacked the camp of Cæpio, and the Gauls

that of Mallius. Both were forced, and the Romans slaughtered without mercy. Eighty thousand citizens and allies of Rome, with 40,000 servants and sutlers, perished on that fatal day. In short, of the two Roman armies only ten men, with the two generals, escaped to carry the news of so dreadful a defeat. The conquerors destroyed all the spoil, pursuant to a vow they had made before the battle. The gold and silver they threw into the Rhone, drowned the horses they had taken, and put to death all the prisoners.

The Romans were thrown into the utmost consternation on the news of so terrible an overthrow. They saw themselves threatened with a deluge of Cimbri and Gauls, numerous enough to over-run the whole country. They did not, however, despair. A new army was raised with incredible expedition; no citizen whatever who was fit to bear arms being exempted. On this occasion also, fencing-masters were first introduced into the Roman camp, by which means the soldiers were soon rendered in a manner invincible. Marius, who was at that time in high reputation on account of his victories in Africa, was chosen commander, and waited for the Cimbri in Transalpine Gaul: but they had resolved to enter Italy by two different ways; the Cimbri over the eastern, and the Teutones and other allies over the western Alps. The Roman general therefore marched to oppose the latter, and defeated the Ambrones and Teutones with great slaughter. The Cimbri, in the mean time, entered Italy, and struck the whole country with terror. Catulus and Sylla attempted to oppose them; but their soldiers were so intimidated by the fierce countenances and terrible appearance of these barbarians, that nothing could prevent their flying before them. The city of Rome was now totally defenceless; and, had the Cimbri only marched briskly forwards, they had undoubtedly become masters of it; but they waited in expectation of being joined by their allies the Ambrones and Teutones, not having heard of their defeat by Marius, till the senate had time to recal him to the defence of his country. By their order he joined his army to that of Catulus and Sylla; and upon that union was declared commander-in-chief. The Roman army consisted of 52,300 men. The cavalry of the Cimbri were no more than 15,000, but their foot seemed innumerable; for, being drawn up in a square, they are said to have covered thirty furlongs. The Cimbri attacked the Romans with the utmost fury; but, being unaccustomed to bear the heats of Italy, they soon began to lose their strength, and were easily overcome. But they had put it out of their power to fly; for, that they might keep their ranks the better, they had, like true barbarians, tied themselves together with cords fastened to their belts, so that the Romans made a most terrible havoc of them. The battle was therefore soon over, and the whole day employed only in the most terrible butchery. An hundred and twenty thousand were killed on the field of battle, and 60,000 taken prisoners. The victorious Romans then marched to the enemy's camp; where they had a new battle to fight with the women, whom they found more fierce than even their husbands had been. From their carts and waggons, which formed a kind of fortification, they discharged showers of darts and arrows on friends and foes without distinction. Then they first suffocated their children in their arms, and afterwards put an end to their own lives. The greatest part of them hanged themselves on trees. One was found hanging at a cart with two of her children at her heels. Many of the men, for want of trees and stakes, tied strings in running knots about their necks, and fastened them to the tails of their horses, and the horns and feet of their oxen. In order to strangle themselves that way; and thus the whole multitude was destroyed.

The country of the Cimbri, which, after this terrible cata-

strophe, was left a mere desert, was again peopled by the Scythians; who, being driven by Pompey out of that vast space between the Euxine and the Caspian sea, marched towards the north and west of Europe, subduing all the nations they met with in their way. They conquered Russia, Saxony, Westphalia, and other countries as far as Finland, Norway, and Sweden. It is pretended that Wodin their leader travelled for many countries, and endeavoured to subdue them only with a view to excite the people against the Romans; and that the spirit of animosity which he had excited operated so powerfully after his death, that the northern nations combined to attack it, and never ceased their incursions till it was totally subverted.

CIMBRISHAM, a sea-port of Schonen, in Sweden. Long. 15. 30. E. Lat. 56. 40. N.

CIRCARS, NORTHERN, five provinces on the bay of Bengal. They were originally denominated *Northern* from their position in respect to Madras, on which they depend. Of these Circars, Cicacole, Rajamundry, Ellore, and Condapilly, are in the possession of the English; and Gunttoo belongs to the Nizam of the Deccan. The first four occupy the sea-coast, from the Chilkla Lake, on the confines of Cattack, to the N. bank of the Kistna; forming a narrow slip of country 350 miles long, and from 26 to 75 broad. It is easily defensible against an Indian enemy, having mountains and extensive forests on one side, and the sea on the other; the extremities only being open. Its greatest defect is in point of relative situation to Bengal and Madras, it being 350 miles from the first, and 250 from the latter; so that the troops destined to protect it cannot be depended on, for any pressing service that may arise in either presidency. The English Circars had been ceded to the French, by the Nizam of the Deccan, in 1753; but they were conquered by Colonel Clive in 1759, and now produce an annual revenue of 360,000*l*. That of Gunttoo is 70,000*l*.

CIRCUMDUCTION, in Scots law. When parties in a suit are allowed a proof of allegiances; after the time limited by the judge for taking that proof is elapsed, either party may apply for circumduction of the time of proving; the effect of which is, that no proof can afterwards be brought, and the course must be determined as it stood when circumduction was obtained.

CIRENZA (*Encycl.*), erroneously spelt CIRENZIA.

CITTADELLA, a sea-port and capital of Minorca, on the W. side of that island. Long. 3. 34. E. Lat. 39. 54. N.

CITTA-DI-CASTELLO, a populous town of Italy, capital of a county of the same name, in Umbria, with a bishop's see. It is seated on the river Tiber, twenty-seven miles S.W. of Urbino. Long. 12. 18. E. Lat. 43. 32. N.

CITTA-NUOVA, a town of Italy, in the marquise of Ancona, seated on the sea-shore, and containing sixteen churches and convents, within its walls, besides fifteen without. It is ten miles from Loreto. Long. 13. 46. E. Lat. 43. 16. N.

CITTA-NUOVA, a small sea-port of Istria, in the territory of Venice, with a bishop's see, sixty miles E. of Venice. Long. 14. 2. E. Lat. 45. 36. N.

CITTA-NUOVA-COTTONERA, a fortified town in the island of Malta, including the port of St. Margarita.

CITTA-VITTORIOSA, or IL BORGO, a strong town in the island of Malta, seated on a narrow neck of land in the harbour, to the left of Valetta, from which, on each side of the town, runs a broad canal inclosing the town, and forming an excellent harbour. It is defended by the castle of St. Angelo, on a high rock, joined to the town by a bridge. Long. 14. 34. E. Lat. 35. 54. N.

CIVITA, TURCHINO (*Encycl.*). On the south-east side of Civita Turchino runs the ridge of a hill which unites it to

Corneto. This ridge is at least three or four miles in length, and almost entirely covered with artificial hillocks, called by the inhabitants *monti rotti*. About twelve of these hillocks have at different times been opened; and in every one of them have been found several subterranean apartments cut out of the solid rock. These apartments are of various forms and dimensions: some consist of a large outer room, and a small one within; others of a small room at the first entrance, and a large one within: others are supported by a column of the solid rock left in the centre, with openings on every part. The entrance to them all is by a door about five feet high, by two and a half broad. Some of them have no light but from the door, while others seem to have had a small light from above, through a hole of a pyramidal form. Many of these apartments have an elevated port that runs all round the wall, being a part of the rock left for that purpose. The moveables found in these apartments consist chiefly of Etruscan vases of various forms: in some indeed have been found some plain sarcophagi of stone, with bones in them. The whole of these apartments are stuccoed, and ornamented in various manners: some indeed are plain; but others, particularly three, are richly adorned, having a double row of Etruscan inscriptions running round the upper part of the walls, and under them a kind of frieze of figures in painting: some have an ornament under the figures, which seems to supply the place of an architrave. The paintings seem to be in fresco; and in general resemble those which are usually seen upon Etruscan vases; though some of them are perhaps superior to any thing as yet seen of the Etruscan art in painting. In general they are flight, but well conceived; and prove, that the artist was capable of producing things more studied and better finished; though in such a subterranean situation, the delicacy of a finished work would in a great measure have been thrown away. It is probable, however, that among the immense number of these apartments that yet remain to be opened, many paintings and inscriptions may be found sufficient to form a very useful and entertaining work.

CLAIR, Sr. a lake of North America, half way between the lakes Huron and Erie, about ninety miles in circumference. It receives the waters of the great lakes Superior, Michigan, and Huron, and discharges them through the strait called Detroit, into lake Erie.

CLAMECI, a town of France, in the department of Nièvre and late province of Nivernois. Before the late revolution, the chapel of an hospital in the suburb was the provision for the bishopric of Bethlehem, founded in 1180, when Guy count of Nevers gave an asylum, in this place, to a Latin bishop of Bethlehem, who had been driven from the Holy Land by the Saracens. Clameci is seated at the confluence of the Beuvron and Yonne, 112 miles S. by E. of Paris. Long. 3. 36. E. Lat. 47. 28. N.

CLAPHAM, a village in Surrey, containing many handsome villas, which chiefly surround a beautiful common. In the old parish church, divine service is performed at funerals only; an elegant new church having been erected on the common, but without an adjoining cemetery. Clapham is three miles S.W. by S. of London.

CLARA, Sr. a small island of South America, in Peru, in the bay of Guaiquil, seventy miles S.W. of Guaiquil. Long. 82. 20. W. Lat. 2. 20. S.

CLARENDON, a village three miles E. of Salisbury, where Henry II. summoned a council of the barons and prelates, in 1164, who enacted the laws called the Constitutions of Clarendon; and here were two palaces built by King John.

CLARENS, or **CHATILLARD**, a village of Switzerland, in the Pays de Vaud, celebrated as the principal scene of Rousseau's *Eloïse*. It is delightfully situated, not far from Vevey,

on an eminence, whose gentle declivity slopes gradually toward the lake of Geneva. It commands a view of that majestic body of water, its fertile borders, and the bold rocks and Alps of Savoy. The adjacent scenery consists of vineyards, fields of corn and pasture, and rich groves of oak, ash, and Spanish chestnut trees. "Although the situation and environs," says Mr. Coke, "harmonize with the animated scenery in the *Eloïse* of Rousseau, yet the castle by no means accords with the description in the same work. The traveller sees an oblong building with ancient towers and a pantheone roof; in the inside, a large hall that looks like a prison; and the whole bears rather the antiquated appearance of a feudal mansion, inhabited by some turbulent baron, than the residence of the elegant and impassioned Julia."

CLARINETTE, or **CLARINET**, a kind of trumpet made of box-wood, whole tube is narrower and its tone acuter than that of the common trumpet. A patent was lately granted to Messrs. Goulding and Co. of Pall-Mall, for an improved clarinet. The patentees line the instrument with a timed brass tube calculated to preserve the wood and improve the tone. To remedy the inconvenience from the leatherings of the keys being spoiled and out of order; they line the holes with a metal tube, ground to perfect flatness at the outside orifice, and rendered air-tight by a properly contrived stopper.

CLARKE (Samuel), D. D. a preacher and writer of considerable note in the reign of Charles II. was, during the inter-regnum, and at the time of the ejection, minister of St. Bennet Pank in London. In November 1660, he, in the name of the Presbyterian ministers, presented an address of thanks to the king for his declaration of liberty of conscience. He was one of the commissioners of the Savoy; and behaved on that occasion with great prudence and moderation. He sometimes attended the church as a hearer and communicant; and was much esteemed by all that knew him, for his great probity and industry. The most valuable of his numerous works are said to be his *Lives of the Puritan Divines* and other persons of note, twenty-two of which are printed in his *martryology*; the rest are in his *Lives of sundry Eminent Persons* in this latter Age, folio; and in his *Marrow of Ecclesiastical History*, in folio and quarto. He died in 1680.

CLARKE (Samuel), the son of the former, was fellow of Pembroke-hall, in Cambridge; but was ejected from his fellowship for refusing to take the engagements, as he was also afterwards from his rectory of Grendon in Buckinghamshire. He applied himself early to the study of the Scriptures; and his annotations on the Bible, printed together with the sacred text, is highly commended by Dr. Owen, Mr. Baxter, and Dr. Calamy. He died in 1701, aged seventy-five.

CLAUBERGE (John), a learned professor of philosophy and divinity at Duisburg, was born at Solingen in 1622. He travelled into Holland, France, and England, and in each country obtained the esteem of the learned. The Elector of Brandenburg gave him public testimonies of his esteem. He died in 1665. His works were printed at Amsterdam in two volumes 4to. The most celebrated of these is his treatise entitled *Logica vetus et nova*, &c.

CLAUDE (John), a Protestant divine, born in the province of Angoumois in 1619. Mef. de Port Royal using their utmost endeavours to convert M. de Turenne to the Catholic faith, presented him with a piece calculated to that end, which his lady engaged Mr. Claude to answer; and his performance gave rise to the most famous controversy that was ever carried on in France between the Roman-catholics and Protestants. On the revocation of the edict of Nantz, he retired to Holland, where he met with a kind reception, and was honoured with a considerable pension by the Prince of Orange. He died in 1687; and left a son Isaac Claude, whom he lived to see

minister of the Walloon church at the Hague, and who published several excellent works of his deceased father.

CLAUDE, *St.* a handsome town of France, in the department of Jura and late province of Franche Comté, with a bishop's see. It is seated between three high mountains, on the river Lison, and owes its origin to a celebrated abbey, built in the year 425, in this then barren and uninhabited country. This abbey had the pious privilege of legitimating bastards, and could confer nobility and pardon criminals, till the year 1742, when it was erected into a bishopric, and its Benedictine monks were metamorphosed into noble canons. The cathedral is extremely elegant. Great numbers of pilgrims have flocked hither, to visit the remains of the body of St. Claude, which they pretend are yet uncorrupted. In this city are many public fountains with large basins. It is 35 miles N.W. of Geneva. Long. 6. 18. E. Lat. 46. 24. N. From Mount St. Claude, which forms part of Mount Jura, is a fine prospect over Switzerland and Savoy, the lake and town of Geneva, and the Pays de Vaud.

CLAUDIUS (Claudius) (*Encycl.*). It is not agreed of what country he was a native; but he came to Rome in the year of Christ 365, when he was about thirty years old; and there insinuated himself into Stilicho's favour; who being a person of great abilities both for civil and military affairs, though a Gothic by birth, was so considerable a person under Honorius, that he may be said for many years to have governed the western empire. Stilicho afterwards fell into disgrace, and was put to death; and it is more than probable that the poet was involved in the misfortunes of his patron, and severely persecuted in his person and fortunes by Hadrian, an Egyptian by birth, who was captain of the guards to Honorius, and succeeded Stilicho. There is reason, however, to think that he rose afterwards to great favour; and obtained several honours both civil and military. The Princess Serena had a great esteem for Claudian, and recommended and married him to a lady of great quality and fortune in Lybia. There are a few little poems on sacred subjects, which through mistake have been ascribed by some critics to Claudian; and so have made him be thought a Christian. But St. Austin, who was contemporary with him, expressly says, that he was a Heathen. The time of Claudian's death is uncertain, nor do we know any further particulars of his life than what are to be collected from his works, and which we have already related above. He is thought to have more of Virgil in his style than all the other imitators of that poet.

CLAUDIUS I. Roman emperor, *A.D.* 41. The beginning of his reign was very promising; but it was soon discovered that little better than an idiot filled the throne, who might easily be made a tyrant: accordingly he became a very cruel one, through the influence of his empress, the infamous Messalina: after her death, he married his niece Agrippina, who caused him to be poisoned to make way for Nero, *A.D.* 54.

CLAUDIUS II. (Aurelius), surnamed *Gothicus*, signified himself by his courage and prudence under the reigns of Valerian and Julian; and on the death of the latter was declared emperor in 268. He put to death Aureolus, the murderer of Galienus; defeated the Germans; and in 269 marched against the Goths, who ravaged the empire with an army of 300,000 men, which he at first harassed, and the next year entirely defeated: but a contagious disease, which had spread through that vast army, was caught by the Romans; and the emperor himself died of it a short time after, aged fifty-six. Pollio says that this prince had the moderation of Augustus, the virtue of Trajan, and the piety of Antoninus.

CLEAR, CAPE, a promontory of a little island on the S. of Ireland. Long. 11. 10. W. Lat. 51. 18. N.

VOL. X.

CLEBURY, a town of Shropshire, with a market on Thursday. It is seated on the river Lea, twenty-eight miles S.E. of Shrewsbury. Long. 2. 23. W. Lat. 52. 21. N.

CLEMENS ROMANUS, bishop of Rome, where he is said to have been born; and to have been fellow-labourer with St. Peter and St. Paul. We have nothing remaining of his works that is clearly genuine, excepting one epistle, written to quiet some disturbances in the church of Corinth; which, next to holy writ, is esteemed one of the most valuable remains of ecclesiastical antiquity.

CLEMENS Alexandrianus, so called to distinguish him from the former, was an eminent father of the church, who flourished at the end of the second and beginning of the third centuries. He was the scholar of Pantaenus, and the instructor of Origen. The best edition of his works is that in two vols. folio, published in 1715 by Archbishop Potter.

CLEMENT V. (Pope), the first who made a public sale of indulgences. He transplanted the holy see to Avignon in France; greatly contributed to the suppression of the knights templars; and was author of a compilation of the decrees of the general councils of Vienna, styled *Clementines*. He died in 1314.

CLEMENT VII. (Julius de Medicis), Pope, memorable for his refusing to divorce Catharine of Arragon from Henry VIII; and for the bull he published upon the king's marriage with Anne Boleyn; which, according to the Romish authors, lost him England. He died in 1534.

CLEMENT XIV. (Francis Laurentius Ganganelli), the late pope's predecessor, was born at St. Angelo in the duchy of Urbino, in 1705; and chosen pope, though not yet a bishop, in 1769; at which time the see of Rome was involved in a most disagreeable and dangerous contest with the house of Bourbon. His reign was rendered troublesome by the collision of parties on the affairs of the Jesuits; and it is pretended that his latter days were embittered by the apprehensions of poison. Though this report was probably apocryphal, it is said that he often complained of the heavy burthen which he was obliged to bear; and regretted, with great sensibility, the loss of that tranquillity which he enjoyed in his retirement when only a simple Franciscan. He was, however, fortunate in having an opportunity, by a single act, to distinguish a short administration of five years in such a manner as will ever prevent its sinking into obscurity. His death was immediately attributed to poison, as if an old man of seventy, loaded with infirmities and disorders, could not quit the world without violence. His proceedings against the Jesuits furnished a plausible pretence for this charge; and the malevolence of their enemies embellished it with circumstances. It even seems as if the ministers of those powers who had procured their dissolution did not think it beneath them to countenance the report; as if falsehood was necessary to prevent the revival of a body which had already sunk in its full strength, under the weight of real misconduct. The charge was the more ridiculous, as the pontiff had undergone a long and painful illness, which originally proceeded from a suppression of urine, to which he was subject; yet the report was propagated with the greatest industry: and though the French and Spanish ministers were present at the opening of his body, the most horrible circumstances were published relative to that operation. It was confidently told that the head fell off from the body, and that the stench poisoned and killed the operators. It availed but little that the operators shewed themselves alive and in good health, and that the surgeons and physicians proved the falsehood of every part of the report. Clement XIV. appears to have been a man of a virtuous character, and possessed of considerable abilities. He died much regretted by his subjects.

61

CLEORULUS, son of Evagoras, and one of the Grecian sages; he was valiant, a lover of learning, and an enemy to vice. Flourished about 560 years before Christ.

CLERAC, or **CLAIRAC**, a town of France, in the department of Lot and Garonne, and late province of Guenre. It is seated on the river Lot, ten miles from Agen. Long. o. 33. E. Lat. 44. 20. N.

CLERGY, BENEFIT OF. This ancient privilege having been treated too concisely in our original article, we here propose to treat the subject more at length.

After trial and conviction of a criminal, the judgment of the court regularly follows, unless suspended or arrested by some intervening circumstance; of which the principal is *benefit of clergy*: a title of no small curiosity as well as use; and concerning which, therefore, it may not be improper to enquire, 1. Into its original, and the various mutations which this privilege of the clergy has sustained; 2. To what persons it is to be allowed at this day; 3. In what cases; 4. The consequences of allowing it.

1. *Clergy, the privilegium clericale*, or (in common speech) the benefit of clergy, had its original from the pious regard paid by Christian princes to the church in its infant state, and the ill use which the popish ecclesiastics soon made of that pious regard. The exemptions which they granted to the church were principally of two kinds: 1. Exemption of places consecrated to religious duties from criminal arrests; which was the foundation of sanctuaries: 2. Exemption of the persons of clergymen from criminal process before the secular judge in a few particular cases; which was the true original and meaning of the *privilegium clericale*.

But the clergy increasing in wealth, power, honour, number, and interest, soon began to set up for themselves; and that which they obtained by the favour of the civil government, they now claimed as their inherent right, and as a right of the highest nature, indefeasible, and *jure divino*. By their canons, therefore, and constitutions, they endeavoured at, and where they met with early princes, obtained, a vast extension of those exemptions; as well in regard to the crimes themselves, of which the list became quite universal, as in regard to the persons exempted, among whom were at length comprehended, not only every little subordinate officer belonging to the church or clergy, but even many that were totally laymen.

In England, however, although the usurpations of the pope were very many and grievous, till Henry VIII. totally exterminated his supremacy, yet a total exemption of the clergy from secular jurisdiction could never be thoroughly effected, though often endeavoured by the clergy; and therefore, though the ancient *privilegium clericale* was in some capital cases, yet it was not universally, allowed. And in those particular cases, the use was, for the bishop or ordinary to demand his clerks to be remitted out of the king's courts as soon as they were indicted: concerning the allowance of which demand there was for many years a great uncertainty; till at length it was finally settled in the reign of Henry VI. that the prisoner should first be arraigned; and might either then claim his benefit of clergy by way of declinatory plea, or, after conviction, by way of arrest of judgment. This latter way is most usually practised, as it is more to the satisfaction of the court to have the crime previously ascertained by confession or the verdict of a jury; and also it is more advantageous to the prisoner himself, who may possibly be acquitted, and so need not the benefit of his clergy at all.

Originally the law was held that no man should be admitted to the benefit of clergy, but such as had the *habitus et tonsuram clericalem*. But, in process of time, a much wider and more comprehensive criterion was established; every one that could

read (a great mark of learning in those days of ignorance and her sister superstition) being accounted a clerk, or *clericus*, and allowed the benefit of clerkship, though neither initiated in clerkship, nor trimmed with the holy tonsure. But when learning, by means of the invention of printing, and other concurrent causes, began to be more generally diffused than formerly; and reading was no longer a competent proof of clerkship, or being in holy orders; it was found that as many laymen as divines were admitted to the *privilegium clericale*; and therefore by statute 4 Hen. VII. c. 13, a distinction was once more drawn between mere lay scholars, and clerks that were really in orders. And, though it was thought reasonable still to mitigate the severity of the law with regard to the former, yet they were not put upon the same footing with actual clergy; being subjected to a slight degree of punishment, and not allowed to claim the clerical privilege more than once. Accordingly the statute directs, that no person, once admitted to the benefit of clergy, shall be admitted thereto a second time, until he produces his orders: and, in order to distinguish their persons, all laymen who are allowed this privilege, shall be burned with a hot iron in the brawn of the left thumb. This distinction between learned laymen and real clerks in orders was abolished for a time by the statutes 28 Hen. VIII. c. 1, and 32 Hen. VIII. c. 3; but is held to have been virtually restored by statute 1 Edw. VI. c. 12, which statute also enacts, that lords of parliament and peers of the realm may have the benefit of their peerage, equivalent to that of clergy, for the first offence (although they cannot read, and without being burnt in the hand), for all offences then clergyable to commoners, and also for the crimes of housebreaking, highway-robbery, horse-stealing, and robbing of churches.

After this burning, the laity, and before it the real clergy, were discharged from the sentence of the law in the king's courts, and delivered over to the ordinary, to be dealt with according to the ecclesiastical canons. Whereupon the ordinary, not satisfied with the proofs adduced in the profane secular court, felt himself formally to make a purgation of the offender by a new canonical trial; although he had been previously convicted by his country, or perhaps by his own confession. This trial was held before the bishop in person, or his deputy; and by a jury of twelve clerks: and there, first, the party himself was required to make oath of his own innocence; next, there was to be the oath of twelve compurgators, who swore they believed he spoke the truth; then, witnesses were to be examined upon oath, but on behalf of the prisoner only; and lastly, the jury were to bring in their verdict upon oath, which usually acquitted the prisoner; otherwise, if a clerk, he was degraded, or put to penance. A learned judge in the beginning of last century remarks, with much indignation, the vast complication of perjury and subornation of perjury in this solemn farce of a mock trial: the witnesses, the compurgators, and the jury, being all of them partakers in the guilt: the delinquent party also, though convicted in the clearest manner, and conscious of his own offence, yet was permitted, and almost compelled, to swear himself not guilty; nor was the good bishop himself, under whose countenance this scene was transacted, by any means exempt from a share of it. And yet, by this purgation, the party was restored to his credit, his liberty, his lands, and his capacity of purchasing a fresh, and was entirely made a new and an innocent man.

This scandalous prostitution of oaths, and the forms of justice, in the almost constant acquittal of felonious clerks by purgation, was the occasion, that, upon very heinous and notorious circumstances of guilt, the temporal courts would not trust the ordinary with the trial of the offender, but delivered

over to him the convicted clerk; *absque purgatione faciendo*: in which situation the clerk convict could not make purgation; but was to continue in prison during life, and was incapable of acquiring any personal property, or receiving the profits of his lands, unless the king should please to pardon him. Both these courses were in some degree exceptionable; the latter perhaps being too rigid, as the former was productive of the most abandoned perjury. As therefore these mock trials took their rise from factious and popish tenets, tending to exempt one part of the nation from the general municipal law, it became high time, when the reformation was thoroughly established, to abolish so vain and impious a ceremony.

Accordingly the statute 18 Eliz. c. 7. enacts, that, for the avoiding such perjuries and abuses, after the offender has been allowed his clergy, he shall not be delivered to the ordinary as formerly; but, upon such allowance, and burning of the hand, he shall forthwith be enlarged and delivered out of prison; with proviso, that the judge may, if he thinks fit, continue the offender in gaol for any time not exceeding a year. And thus the law continued unaltered for above a century; except only, that the statute 21 Jac. I. c. 6. allowed, that women convicted of simple larcenies under the value of 20s. should (not properly have the benefit of clergy, for they were not called upon to read, but) be burned in the hand, whipped, or stocked, or imprisoned for any time not exceeding a year. And a similar indulgence by the statutes 3 and 4 W. and M. c. 9. and 4 and 5 W. and M. c. 24. was extended to women guilty of any clergyable felony whatever; who were allowed once to claim the benefit of the statute, in like manner as men might claim the benefit of clergy, and to be discharged upon being burned in the hand, and imprisoned for any time not exceeding a year. All women, all peers, and all male commoners who could read, were therefore discharged in such felonies absolutely, if clerks in orders; and for the first offence upon burning in the hand, if lay; yet all liable (except peers), if the judge saw occasion, to imprisonment not exceeding a year. And those men who could not read, if under the degree of peerage, were hanged.

Afterwards, indeed, it was considered, that education and learning were no extenuations of guilt, but quite the reverse; and that if the punishment of death for simple felony was too severe for those who had been liberally instructed, it was, *à fortiori*, too severe for the ignorant also. And thereupon, by statute 5 Anne, c. 6. it was enacted, that the benefit of clergy should be granted to all those who were entitled to ask it, without requiring them to read by way of conditional merit. And, experience having shewn that so universal a lenity was frequently inconvenient, and an encouragement to commit the lower degrees of felony; and that though capital punishments were too rigorous for these inferior offences, yet no punishment at all (or next to none, as branding or whipping) was as much too gentle; it was enacted by the same statute, 5 Anne, c. 6. that when any person is convicted of any theft or larceny, and burnt in the hand for the same, he shall, at the discretion of the judge, be committed to the house of correction or public work-house, to be there kept to hard labour for any time not less than six months, and not exceeding two years; with a power of inflicting a double confinement in case of the party's escape from the first. And it is also enacted by the statutes 4 Geo. I. c. 11. and 6 Geo. I. c. 23. that when any persons shall be convicted of any larceny, either grand or petit, or any felonious stealing or taking of money or goods and chattels, either from the person or the house of any other, or in any other manner, and who by the law shall be entitled to the benefit of clergy, and liable only to the penalties of burning in the hand, or whipping, the court, in their

discretion, instead of such burning in the hand, or whipping, may direct such offenders to be transported to America for seven years; and if they return, or are seen at large in this kingdom within that time, it shall be felony without benefit of clergy.

In this state does the benefit of clergy at present stand; very considerably different from its original institution: the wisdom of the English legislature having, in the course of a long and laborious process, extracted, by a noble alchemy, rich medicines out of poisonous ingredients; and converted, by gradual mutations, what was at first an unreasonable exemption of particular popish ecclesiastics, into a merciful mitigation of the general law with respect to capital punishments.

From the whole of this detail, we may collect, that however, in times of ignorance and superstition, that monster in true policy may for a while subsist, of a body of men residing in a state, and yet independent of its laws, yet when learning and rational religion have a little enlightened men's minds, society can no longer endure an absurdity so gross, as must destroy its very fundamentals. For, by the original contract of government, the price of protection by the united force of individuals, is that of obedience to the united will of the community. This united will is declared in the laws of the land: and that united force is exerted in their due, and universal, execution.

II. We are next to enquire, to what persons the benefit of clergy is to be allowed at this day: and this must chiefly be collected from what has been observed in the preceding article. For, upon the whole, we may pronounce, that all clerks in orders are, without any branding, and of course without any transportation (for that is only substituted in lieu of the other), to be admitted to this privilege, and immediately discharged, or at most only confined for one year; and this as often as they offend. Again, all lords of parliament, and peers of the realm, by the statute 1 Edw. VI. c. 12. shall be discharged in all clergyable and other felonies provided for by the act without any burning in the hand, in the same manner as real clerks convict: but this is only for the first offence. Lastly, all the commons of the realm, not in orders, whether male or female, shall, for the first offence, be discharged of the punishment of felonies, within the benefit of clergy, upon being burnt in the hand, and suffering discretionary imprisonment; or, in case of larceny, upon being transported for seven years, if the court shall think proper.

III. The third point to be considered is, for what crimes the *privilegium clericale*, or benefit of clergy, is to be allowed. And it is to be observed, that neither in high treason, nor in petit larceny, nor in any mere misdemeanors, was it indulged at the common law: and therefore we may lay it down as a rule, that it was allowable only in petit treason, and capital felonies; which for the most part became legally entitled to this indulgence, by the statute *de clero*, 25 Edw. III. stat. 3. c. 4. which provides, that clerks convict for treason or felonies, touching other persons than the king himself or his royal majesty, shall have the privilege of holy church. But yet it was not allowed in all cases whatsoever: for in some it was denied even in common law, viz. *infidiatio viarum*, or lying in wait for one on the highway; *depopulatio agrorum*, or destroying and ravaging a country; and *combussio domorum*, or arson, that is, burning of houses; all which are a kind of hostile acts, and in some degree border upon treason. And further, all these identical crimes, together with petit treason, and very many other acts of felony, are ousted of clergy by particular acts of parliament.

Upon the whole, we may observe the following rules. 1. That in all felonies, whether new created, or by common law, clergy is now allowable, unless taken away by act of par-

flament. 2. That where clergy is taken away from the principal, it is not of course taken away from the accessory, unless he be also particularly included in the words of the statute. 3. That when the benefit of clergy is taken away from the offence (as in case of murder, buggery, robbery, rape, and burglary), a principal in the second degree, being present, aiding and abetting the crime, is as well excluded from his clergy as he that is a principal in the first degree: but, 4. That where it is only taken away from the person committing the offence (as in the case of stabbing, or committing larceny in a dwelling-house), his aids and abettors are not excluded, through the tenderness of the law, which hath determined that such statutes shall not be taken literally.

IV. Lastly, We are to enquire what the consequences are to the party, of allowing him this benefit of clergy. We speak not of the branding, imprisonment, or transportation; which are rather concomitant conditions, than consequences, of receiving this indulgence. The consequences are such as affect his present interest, and future credit and capacity: as having been once a felon, but now purged from that guilt by the privilege of clergy; which operates as a kind of statute pardon. And we may observe, 1. That, by his conviction, he forfeits all his goods to the king; which, being once vested in the crown, shall not afterwards be restored to the offender. 2. That, after conviction, and till he receives the judgment of the law by branding or the like, or else is pardoned by the king, he is, to all intents and purposes, a felon; and subject to all the disabilities and other incidents of a felon. 3. That, after burning or pardon, he is discharged for ever of that, and all other felonies before committed, within the benefit of clergy; but not of felonies from which such benefit is excluded: and this, by statutes 8 Eliz. c. 4. and 18 Eliz. c. 7. 4. That, by the burning, or pardon of it, he is restored to all capacities and credits, and the possession of his lands, as if he had never been convicted. 5. That what is said with regard to the advantages of commoners and laymen, subsequent to the burning in the hand, is equally applicable to all peers and clergymen, although never branded at all. For they have the same privileges, without any burning, to which others are entitled after it.

CLERY, a village in France, nine miles S.W. of Orleans, once famous for the pilgrimages to our lady of Clery. Here was the tomb of that monster Lewis XI. who appeared, in white marble, as the faint and the patriot king!

CLEYBROOK, **GREAT** and **LITTLE**, two villages in Leicestershire, on the N.W. side of Lutterworth, supposed to have been a part of Cleycester, situated one mile to the W. which was a flourishing city of the Romans, and where their bricks and coins have been frequently found.

CLIFFE, a town of Northamptonshire, with a market on Tuesday; 30 miles N.E. of Northampton, and 88 N.N.W. of London. Long. 0. 37. W. Lat. 52. 33. N.

CLIFTON, a village of Westmoreland, three miles from Penrith, remarkable for a skirmish between the king's forces and the rebels in 1745, in which the latter had the advantage.

CLIFTON, a village in Gloucestershire, near Bristol, noted for the hot-well in its neighbourhood, upon the Lower Avon, at the foot of St. Vincent's rock.

CLISSA, a fort of Dalmatia, taken from the Turks by the Venetians. It is seated on a craggy mountain, near which is a narrow valley between two steep rocks, through which the road lies from Turkey to Dalmatia. It is six miles N. of Spalato. Long. 17. 31. E. Lat. 44. 10. N.

CLISSON, a town of France, in the department of Lower Loire and late province of Bretagne, on the river Seure, 12 miles S. of Nantz. Long. 1. 28. W. Lat. 47. 1. N.

CLITHERO, a borough in Lancashire, with a market on Saturday. It is seated near Pendil Hill, and is 36 miles S.E. of Lancaster, and 213 N.N.W. of London. Long. 2. 21. W. Lat. 53. 54. N.

CLOSET, a well-known convenience in a house; calculated to deposit safely small articles of domestic economy, or consumption, till they are wanted for use.

Water-Closet, a modern invention, by means of which the vilest of animal functions may be performed in a decent and cleanly manner, and without giving offence to the feelings of others. The following is the specification of the patent granted to Mr. Binns, of Great Barlow-street, Mary-le-bone, for a machine or apparatus, answering the several purposes of a portable water-closet, a bidet, and easy chair, which together are comprised in one third of the space or room occupied by portable water-closets now in use; and which, from its lightness and size, is particularly calculated for travelling or for camps or ships.

"The object of my invention," says Mr. Binns, "is, to remove the complaint made against a portable water-closet (heretofore invented and manufactured by me), on account of its being too bulky for frequent removals, and to increase the utility of these machines, by the addition of a bidet-pan. In my former portable-closets, the back, enclosing the water-cistern, was vertically fixed upon the seat or lower part of the case; in my present invention, the back shuts down upon the seat in the manner of a lid, and thus not only reduces its size to one-third of the dimensions of the former ones, but also renders it more convenient for travelling, and less liable to be injured. This important advantage of folding down the back of the closet upon the seat, I obtain by different means, viz.

"First, By a screw-jointed tube, as particularly delineated in figs. 6 and 7 (see Plate 21.). This tube consists of two angular parts, made of brass or any other proper materials: the end of one part is inserted and secured in the bottom of the water cistern, and the end of the other part is attached to the basin, in the common way of manufacture. The two parts of the tube are firmly connected, by the one screwing into the other, as may be seen in the above-mentioned figures, and serve as a joint for the back to turn upon, in being folded down upon the seat. When the back of the closet is raised, the screw of the tube is perfectly close or home, the extremity of the female screw pressing against a small collar of leather which surrounds the shoulders of the male screw; but when the back is folded down upon the seat, the screw, as being the joint or hinge, relaxes a quarter turn.

"Secondly, By a jointed tube varying from the above, only in being a cock-joint instead of a screw, as described in fig. 7.

"Thirdly, By a sliding-jointed tube of two parts, each forming a curve of a quarter of a circle, as represented in fig. 5, where the back of the closet is shown in the progress of being shut down upon the seat, to exhibit more clearly the manner in which the tube acts. The two parts of the tube are joined to the cistern and basin as the preceding ones, but not so advantageously, for this tube cannot act as a joint or hinge, and requires an accuracy in the manufacture. The above three jointed tubes are applicable to many kinds of machinery.

"Fourthly, By a leather or other flexible or jointed tube, attached to the bottom of the water-cistern and to the side of the basin. The object of my invention may also be obtained, by varying and differently combining the several means hereinbefore described; but I prefer the first or screw-jointed tube, which includes more advantages than can be derived from any of the other methods. These tubes I generally manufacture in brass, or in what is known by the name of cock-metal. The manner in which the bidet-pan is added to the closet, is

WATER CLOSET.

Fig. 1.

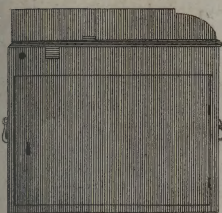


Fig. 2.

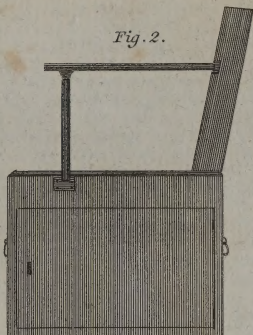


Fig. 4.

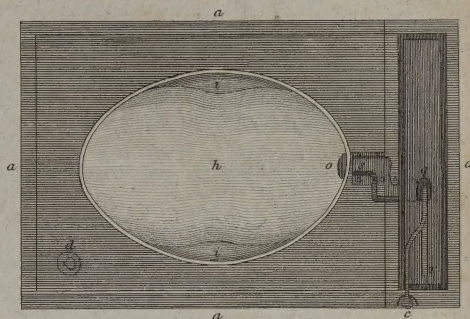


Fig. 5.

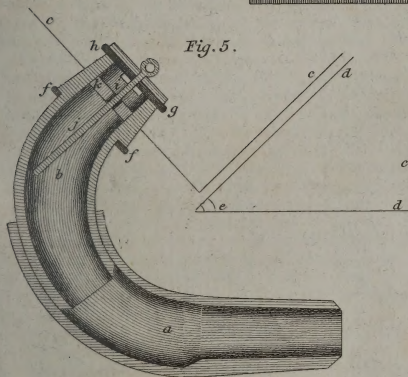


Fig. 6.

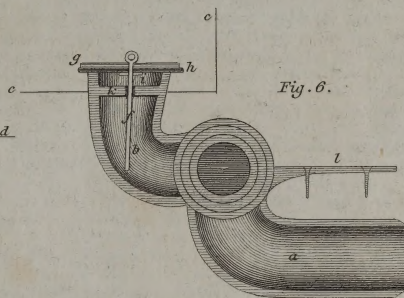


Fig. 7.

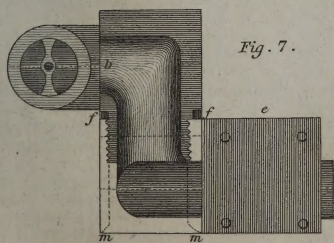


Fig. 8.

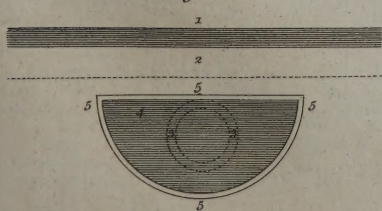
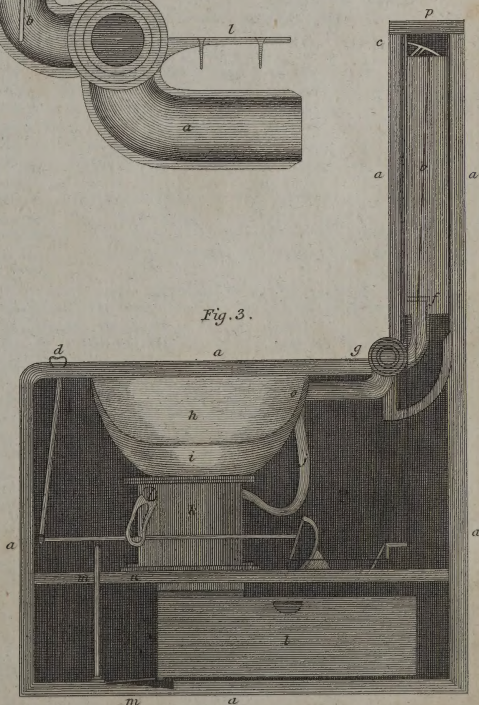
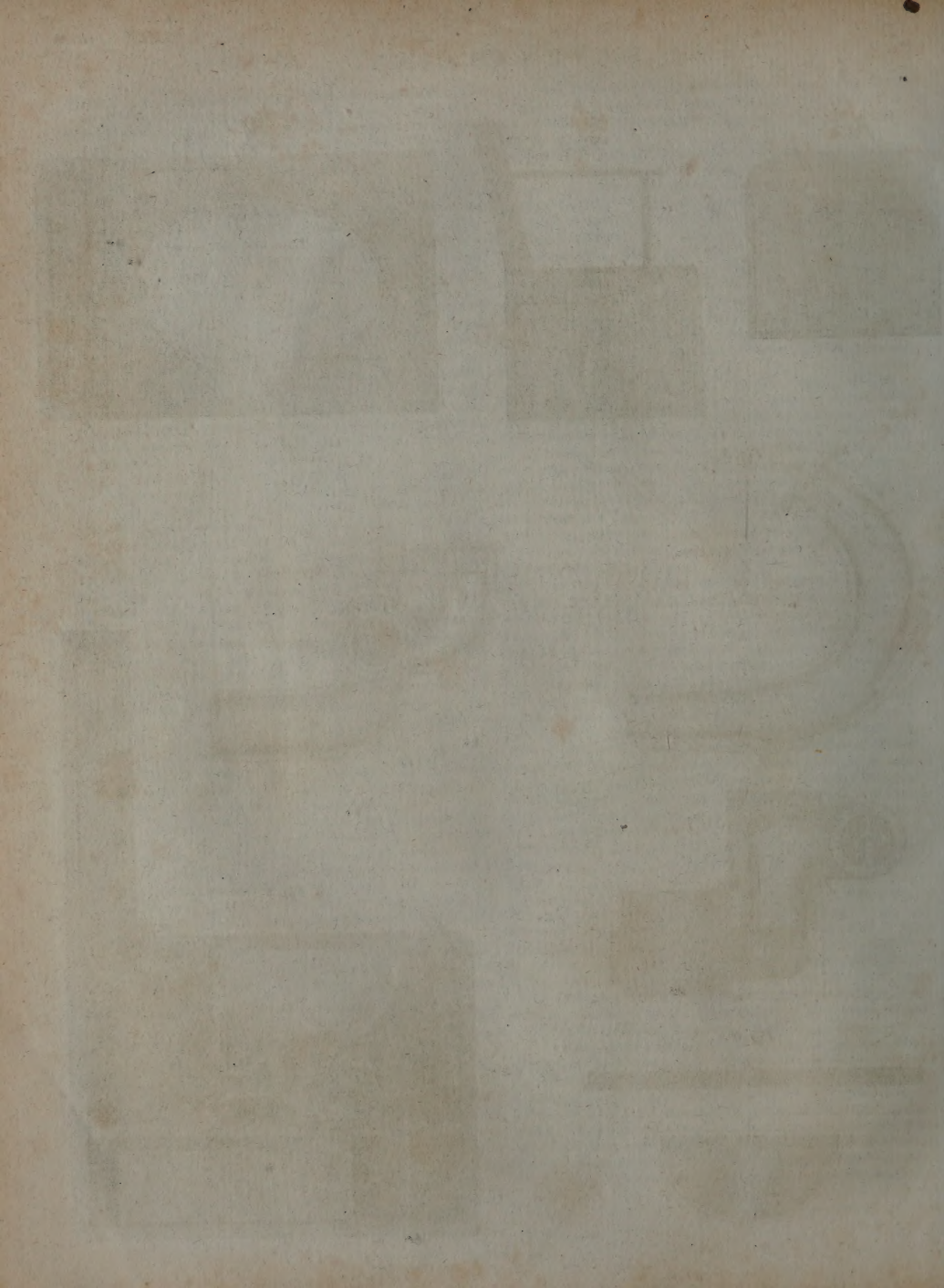


Fig. 3.





to simple and obvious, as scarcely to require any other explanation than a reference to figs. 3, 4, and 8. The rim at each end of the bidet-pan rests on the front and back edge of the seat of the closet, immediately over the basin, and is supplied with water from the closet cistern, either by a separate aqueduct from the cistern, or by the same channel through which the water is admitted into the closet basin; and for this purpose an aperture is made in the upper part of the back end of the bidet-pan, sufficiently large to admit the fan of the pan leading into the basin. The latter method I deem best. The pans I usually manufacture in copper, and japan them; but they may be made of other materials, though none are, in my opinion, so well adapted to the purpose as japanned copper.

"In the figures which are annexed to elucidate this specification, I have exhibited and described the whole closet, which contains many parts that are not new, and cannot be considered as included in my present patent. The parts which I claim as my invention, and for which the patent is granted, are the folding down of the back of the closet upon the seat, or by having the back to engage and disengage, whereby the back may be laid down on the seat; or by folding or laying down the back of the closet upon the seat in any manner whatsoever; but more particularly by the different means herein-before described; the screw-jointed tube; the cock-jointed tube; the sliding tube; the tube made of leather, or any other flexible material; the application of the bidet-pan to the water-closet, and the arms or handles to make it serve as an easy chair. These arms or handles are in two parts, joined by a screw near the angle; and one part of the arm, when joined or screwed together, is attached or fixed to the seat of the closet, and the other to the back by means of sliding fastenings; by which means these arms are made to engage and disengage, for the different purposes the closet may be used for; and also for the convenience of packing in the internal part of the closet in travelling."

Explanation of the figures.—Fig. 1. A side view of the water-closet with the back shut down.

Fig. 2. A side view of the closet, with the back raised and secured by two brass arms which slide into the back and seat: for convenience in packing, these arms separate at the angle or elbow. On this side of the bottom of the closet is shewn the door which is opened whenever the soil pan is removed.

Fig. 3. The same view on an enlarged scale. The side of the case is omitted for the purpose of exhibiting the mechanism. *a.* The frame or case containing the mechanism. *b.* The water-cistern in the back of the closet. *c.* The lever which raises the valve *f*, for the purpose of admitting water through the jointed tube into the basin or bidet-pan. This lever is raised either by drawing up the handle *d*, on the seat, or by pressing the thumb on the extremity of the lever, as appears more plainly at *c*, in fig. 4. In doing the former, not only water is admitted into the basin or bidet, but also the water in the basin is at the same time discharged into the soil-pan below, by means of the tumbler *e*, which opens a valve at the bottom of the basin; but a pressure on the lever at the top of the back produces only a single motion for discharging water out of the cistern. *g.* The screw-jointed tube more particularly described in figs. 6 and 7. *h.* The bidet-pan, which rests at each end upon the edge of the seat over the basin (see also figs. 4 and 8). *i.* The closet basin. *j.* The water-pipe. *k.* The trench-pan. *l.* The soil-pan which contains the foul water, &c. discharged by the basin. The mouth of this pan is closely attached to the pipe at the bottom of the trap, by the angular lever *m*, which is raised and secured by the brass spring catch *n*. When the pan is to be removed, a slight pressure on the knob of the catch

disengages the lever, and the pan which is supported by *h*. In drawing out the soil-pan to discharge its contents, a lid is secured on the mouth of it to prevent the escape of any offensive effluvia in the removal. *o.* The fan at the end of the pipe or tube for admitting water into the basin and bidet-pan. *p.* The top of the back is a lid, which is opened whenever the cistern is supplied with water. The other parts of the figure are either too obvious or too well known to require explanation.

Fig. 4. A view of the seat of the closet, and of the top of the back when the lid is open. *q.* The aperture through which the water is poured into the cistern. *r.* The spring of the lever *c*. *s.* The brass plate affixed to the lower part of the screw-jointed tube, and which is secured to the seat by four screws as a joint. The other references are explained by the same letters in fig. 3.

Fig. 5. A section of the sliding curved tube. *a.* The lower or external part of the tube, which is attached to the basin. *b.* The upper or internal part of the tube, inserted in the bottom of the cistern. *c.* These lines delineate the bottom and front side of the water-cistern. *d.* An outline of the fore-part of the back, and of the seat of the closet. *e.* The joint which connects the back of the closet with the seat. *f.* A collar of leather, against which the shoulder of the upper part of the tube and the extremity of the lower one press, when the tube is closed by the back of the closet being erect. *g.* The valve in the upper or internal part of the tube, for retaining the water in the cistern. *h.* The leather lining to the valve. *i.* The screw which binds the leather to the valve. *j.* A wire to regulate the valve in its motions. In the upper part of this wire is affixed another, which communicates to the lever at the top of the water-cistern. *k.* A fixed bar in which the regulator of the valve moves.

Fig. 6. A vertical section of the screw-jointed tube. *l.* A brass plate affixed to the lower part of the tube, and which is screwed down upon the seat, as appears in fig. 4. The other references are explained by those of the preceding figure.

N. B. This section is not in a direct line, but a combination of three, as shewn by the transverse dotted lines in the following figure.

Fig. 7. A horizontal section of the screw or cock-jointed tube. *m.* The vertical dotted lines point out the variation, in connecting the two parts of the tube by a cock-joint instead of a screw. The other references are explained by those in figs. 5 and 6.

In this section the upper part of the tube is more highly coloured than the lower one, for the purpose of delineating more obviously the outline of the two parts.

Fig. 8. A vertical view of the back part of the bidet-pan when fixed, as in fig. 4.

1. The upper part of the edge of the seat of the closet above the bidet-pan.

2. The rim of the end of the bidet-pan resting on the edge of the seat, which for that purpose is bevelled from the dotted line upwards.

3. The water-pipe or tube at the back of the fan.

4. The fan which disperses the water from all parts of its curvature; an improvement by which the bottom as well as the sides are completely washed.

5. The edges of the aperture in the back part of the bidet-pan, for admitting the fan. These edges of the aperture closely join to the internal surface of the basin, and thus include the whole of the fan in the bidet-pan, when it is placed upon the seat of the closet, as represented in fig. 4.

There are water-closets on other principles, but the above seems to be calculated for every convenience that can be desired
CLOUD, Sr. a town of France, four miles from Paris,
6 K

feated on the river Seine. Here was lately a magnificent royal palace, gardens, cascade, &c.

CLOVIS I. the real founder of the French monarchy. For he was the first conqueror of the several provinces of Gaul possessed before his time by the Romans, Germans, and Goths: these he united to the then scanty dominions of France, removed the seat of government from Soissons to Paris, and made this the capital of his new kingdom. He died in 511, in the 46th year of his age, and 31st of his reign.

CLUSE, a town of Savoy, in the territory of Faucigny; seated on the river Arve, 22 miles S.E. of Geneva. Long. 6. 29. E. Lat. 45. 57. N.

CLWYD, a celebrated vale of Denbighshire, extending from its upper end to the sea above 20 miles; its breadth varying from three to eight, according to the approach or recess of the high mountains inclosing it, through which, in different parts, are gaps formed by nature for entrances. This delightful spot is in a high state of cultivation, even far up the ascent of the hills, and is full of towns, villages, and gentlemen's seats. A river of the same name runs along this vale, the inhabitants of which are remarkable for retaining their vivacity to a very late period of life.

CLWYD, a river of Denbighshire, which rises in the middle of the county, and taking a compass to the S.E. turns to the N.W. and having entered Flintshire, falls into the Irish Sea.

CLYDESDALE, a wild district in the S. part of Lanarkshire in Scotland. Amid the mountains here, particles of gold have sometimes been found washed down by the rains and streams of water; but this tract is chiefly remarkable for producing metals of inferior worth. "Nothing," says Mr. Pennant, "can equal the gloomy appearance of the country round. Neither tree, nor shrub, nor verdure, nor picturesque rock, appears to amuse the eye. The spectator must plunge into the bowels of these mountains for entertainment." The veins of lead lie mostly N. and E. and their thickness, which seldom exceeds 40 feet, varies greatly in different parts. The scanty pasture here feeds some sheep and cattle; but those in the neighbourhood of the mines, sometimes perish by drinking the water in which the lead ore has been washed; for this ore communicates a deleterious quality to the water, though that liquid acquires no noxious taint from remaining in leaden pipes and cisterns, unless the water contain acid.

COADUNATÆ (*Encycl.*). Erroneously spelt **COADUNATE**.

COALS (*Encycl.*). To what has been said under that article, we wish to add the following observations and experiments on the formation and properties of pit-coal, by Mr. Eglesfield Smith.

"Pit-coal," says he, "is a black, compact, brittle, and infusible substance; of a moderate hardness, and laminated structure, more or less shining, but incapable of taking any great degree of polish. It is generally found below the surface of the earth, where it lies in nearly horizontal strata, sometimes many yards thick. When distilled it yielded the following products:

"One hundred ounces of pit-coal, distilled in a strong heat, gave fourteen ounces and a half of liquid, and fifty-nine ounces of cinder; the rest was evolved in the form of an air, which, caught in bladders and glasses, upon examination seemed to be in part composed of true hydrogen, as it inflamed and went off with a degree of explosion when mixed with the atmospheric air; whether azotic or other gas was evolved at the same time I could not determine.

"The liquid obtained from the coal by distillation had its surface covered with an empyreumatic oil, which seemed more or less fluid according to the degree of heat used in the distillation.

"In the middle of the receiver was a reddish fluid of an

acid taste, and which seemed loaded with oil. At the bottom was found a thick tenacious substance like tar.

"I shall now endeavour to prove that pit-coal is a vegetable substance oxygenated to a certain degree. But how the immense mountains of this substance which are found in the bowels of the earth are formed cannot easily be conceived: they cannot be produced by the decay of a few forests upon its surface, which they say have been buried by earthquakes or other changes which have taken place in it; a cause more proportionate to the magnitude of the effect is required.

"From the prints of shells and fishes which are found in the different strata of coal, its formation has been evidently submarine, and it is to the sea that we are to look for the immense produce of vegetable matter which is required for its formation. This, together with what is brought into it by rivers, being broken by the waves and currents, and heaped together, is covered with sand, and becomes decomposed.

"Wood, when it has been buried under the surface of the earth for a length of time, acquires the hardness and brittleness of pit-coal in a great degree; and we often find pieces of coal which have the annular lines of the wood strongly marked upon them. A piece of oak, when dried and distilled, produced the following results, which will be found to be nearly the same with those obtained from the pit-coal, though differing in their qualities.

"An hundred ounces of the heart of the oak, when dried, produced on distillation thirty-nine ounces of liquid, and thirty-four of charcoal, the rest being dissipated in the form of inflammable air.

"On the surface of the liquid floated an oil nearly the same as that obtained from the pit-coal. The liquid had an acid taste, and turned slips of paper, tinged blue by the purple acid, to a red colour. At the bottom of the receiver was found a tenacious substance, the same as was produced from the pit-coal, only differing in being more fluid. Other woods yielded the same substances, but the harder the wood it yielded more of the oil; and that oil was more or less thick according to the degree of heat used in the distillation.

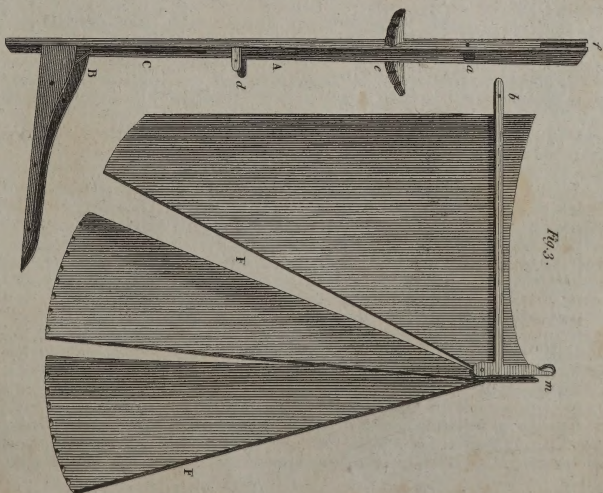
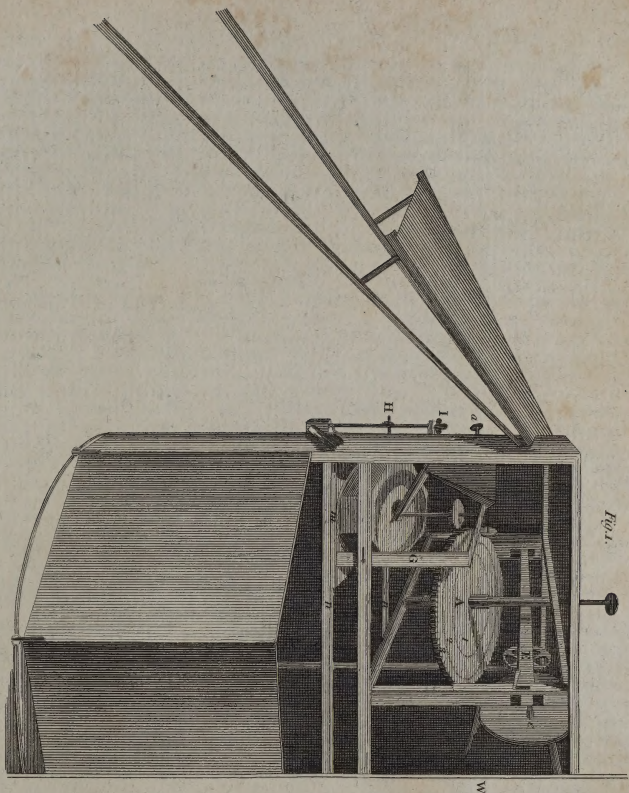
"The following experiments will shew further how nearly pit-coal and wood are allied to each other.

"I took half an ounce of pit-coal, and having reduced it to a fine powder, poured upon it two ounces of the oil of turpentine: by applying to it a heat a little above that of boiling water, I dissolved the whole into a mass or fluid like that of tar, but more transparent.

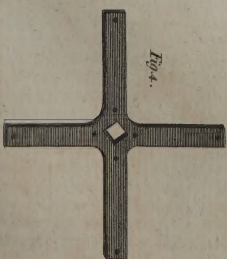
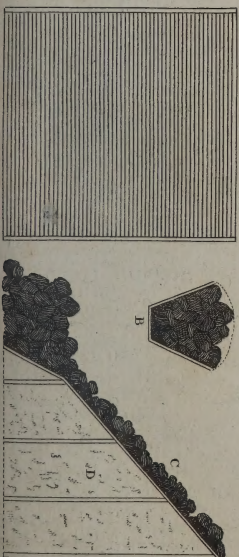
"I then took an ounce of charcoal, and treated it in the same manner, but I found it would not dissolve, but remained swimming in small particles in the fluid. I added to the fluid forty drops of sulphuric acid, and still no solution took place. I then poured into it a quarter of an ounce of strong nitrous acid, and a violent inflammation ensued. This mixture I afterwards kept in a sand-bath of moderate heat for near half an hour, and upon examination I found the residue quite dissolved, and resembled that procured from the pit-coal so much, that it was impossible to distinguish the one from the other. I treated some pounded pit-coal in the same manner as I had done the charcoal, saving the circumstance of putting it into the sand-bath, and the only difference in the result was, that it resembled pitch more than the former, being of a thicker consistence.

"I then inflamed some oil of turpentine by means of the nitrous acid, and I found that the residue was a kind of tar, resembling the residue obtained from the foregoing experiments. I shall endeavour to explain how these solutions took place.

"The first experiment was to try whether or not pit-coal was a bitumen, or a resinous substance, which is proved by its being completely soluble in the oil of turpentine. The second



M. Chabannes' Machine for Separating Coals.



experiment shews, that charcoal is an oxygenated wood, but not sufficiently oxygenated to become soluble in the oil of turpentine, till by the addition of the nitrous acid it becomes completely soluble like bitumen and charcoal, and thereby shews that it nearly resembles those substances.

"The *third* experiment shews, that the nitrous acid does not alter pit-coal, otherwise than by thickening it.

"The *fourth* experiment shews, that oil of turpentine, when oxygenated to a high degree, becomes a sort of bitumen, or rather petroleum.

"From the above we see how nearly wood and pit-coal are allied to each other; and that wood, when treated chemically, will yield the same products as pit-coal.

"I shall now shew how this process takes place in the bowels of the earth. The quantities of vegetable matter which have been collected together, either by the violence of floods or other convulsions of nature, becoming in time covered with a vegetable sward, which continues to increase until it entirely excludes the air, while lying in this state undergoes a degree of fermentation, during which the vegetable matter attracts the oxygenating principle from the water, and becomes thereby highly oxygenated. The slowness of this process gives the wood a greater degree of attraction for the oxygen, which is, perhaps, assisted by the exclusion of the air. The inflammable principle of the water, or the hydrogen, is evolved, and forms that air which is so troublesome to miners.

"Iron and sulphur are formed during this decomposition of vegetable matter, which accounts for the formation of pyrites, which are so often found in coal-mines.

"From the large quantities of inflammable air which are let loose in the decomposition of vegetable substances, we may, in some measure, account for the continual showers which woody and marshy countries are subject to, and why dry and sandy countries are generally without them. Hence we may likewise account for thunder being so common in hot woody countries. In these countries, vegetables soon putrify and decay; and the large quantities of inflammable air which must be necessarily evolved during their decay, mixing with the oxygen of the air, and fired by electricity, explode and fall down in rain, and again serve for the growth and nourishment of plants. In this process of vegetation the inflammable principle of the water is absorbed by the plant, while the oxygen is evolved, and serves, by purifying the exhausted atmosphere, to support animal life."

The combustion of this valuable fuel has been promoted, and its use economized, by a variety of excellent inventions. The following is the specification of a patent granted to Mr. Chabannes, of Welbeck-street, London, for a machine for separating coals, and a composition for making small-coal into cakes or bricks to be used for fuel.

"Coals, consisting of great and small mixed together, such as are usually bought in the pool in the river Thames for consumption in the cities of London and Westminster, and their environs, are to be discharged or thrown upon grates or gratings of the description herein-after contained, which grates or gratings are to be fixed either horizontally or on an inclined plane; and, by means of such discharge, and throwing of the said coals, the small coals will be separated from the large. The grates or gratings are to be constructed either of wood or metal, and are to be of any length or breadth suited to the place where they are fixed, and to have bars at a distance from each other not less than a quarter of an inch, nor more than an inch and an half. The form of these grates or gratings is particularly described in Plate 22. The composition is to consist of the small coals so separated as above mentioned from the large coals, and a small quantity of earth, clay, cow-dung, tar, pitch, broken glass, sulphur, saw-dust, oil-cakes, tan, or wood, or of

any other combustible ingredient, to be mixed together and ground with a wheel in water in a wooden vessel. The composition, together with the water, is then to be conveyed by pipes, or any other conductor, into pits or holes of any dimensions, made for that purpose, to be lined with tiles or bricks cemented together with water, except in the centre, where a drain or watercourse is to be cut below the pit or hole, and such drain or watercourse is to be covered over with uncemented tiles, by which means the water will pass off into the drain or watercourse, and leave the composition in the pit or hole. The composition is then to be moulded into brick-cakes or balls, and put on a frame to dry; and when dry is fit for use as fuel."

Reference to the plate.—A. Plan of the grate or grating. B. Vessel in which the coals are raised from the barge, and from whence they are thrown on the grate or grating to separate them. C. The profile of the grate or grating with the coals running on it. D. is the stage where the small coal is received.

COALLIER, a vessel employed to carry coals from one port to another; chiefly from the northern parts of England to the capital, and more southerly parts, as well as to foreign markets. This trade is known to be an excellent nursery for seamen; although they are often found, from the constitution of their climate, not to be so well calculated for southern navigation.

COB, a kind of mud-wall. In those parts of England where stone is scarce, it is usual to make walls and houses of mud, or, as it is called in Devonshire, *cob*; which is a composition of earth and straw, wetted up somewhat like mortar, but well beat and trod together. When a wall is making, after being raised to a certain height, it is allowed time to pitch or settle before the work is resumed. Some value themselves on their skill in building with this composition; the price, when materials are found, is generally in Devonshire 3s. per perch of 16½ feet; but a stone foundation costs more. Houses built with this, being covered with thatch, are very dry and warm: a cob-wall, if in a good situation, will last 50 or 60 years or more. When pulled down, they are used as manure, and new earth employed to rebuild with.

COBHAM, a village in Surrey, remarkable for Paine's Hill, the seat and beautiful gardens of the late Mr. Hopkins. Cobham is 19 miles S.W. by W. of London.

COCA, a town of Old Castile, in Spain, seated among mountains; and near it is a strong castle for state prisoners.

COCHIEIM, a town in the electorate of Treves, formerly imperial; seated on the Moselle, 25 miles S.W. of Coblenz. Long. 7. 2. E. Lat. 50. 12. N.

COCHIN-CHINA (*Encyc.*). Little of the history of this kingdom is known: what follows depends entirely on the credit of M. le Poivre, a French traveller.—About half a century before the French first arrived in these distant regions, a prince of Tonquin, as he fled from his sovereign, by whom he was pursued as a rebel, had, with his soldiers and adherents, crossed the river, which serves as a barrier between Tonquin and Cochin-China. The fugitives, who were warlike and civilized men, soon expelled the scattered inhabitants, who wandered about without any society or form of government, and founded a new kingdom, which soon grew rich and populous. During the reign of the first six kings, no nation could be happier than the Cochin-Chinese. Their monarchs governed them as a father does his family, establishing no laws but those of nature, to which they themselves were the first to pay obedience. They honoured and encouraged agriculture, as the most useful employment of mankind; and required from their subjects only a small annual free-gift to defray the expense of their defensive war against the Ton-

quines, who were their enemies. This imposition was regulated by way of poll-tax, with the greatest equity. Every man, able to till the ground, paid to the prince a small sum proportioned to the strength of his constitution, and the vigour of his arm : and nothing more.

Cochin-China continued happy under these princes for more than a century ; but the discovery of gold-mines put a stop to these mild regulations. Luxury immediately took place. The prince began to despise the simple habitation of his ancestors, and caused a superb palace to be built, a league in circumference, surrounded with a wall of brick on the model of that of Pekin, and defended by 1600 pieces of cannon. Not content with this, he would needs have a winter palace, an autumn palace, and a summer palace. The old taxes were by no means sufficient to defray these expences ; new ones were devised ; and oppression and tyranny every-where took place. His courtiers, to flatter their prince, gave him the title of the *king of heaven*, which he still continues to assume. When speaking of his subjects, he styles them his *children*, but by no means behaves as if he was their father : for our author informs us, that he has seen whole villages newly abandoned by their inhabitants, who were harassed with toil and insupportable exactions ; the necessary consequence of which was, that their lands returned to their former uncultivated state.

M. le Poivre represents the Cochinchinese as gentle, hospitable, frugal, and industrious. There is not a beggar in the country ; and robbery and murder are absolutely unknown. A stranger may wander over the kingdom from one end to the other (the capital excepted), without meeting with the slightest insult. He will be every-where received with the most eager curiosity, but at the same time with the greatest benevolence. A Cochinchinese traveller, who has not money sufficient to defray his expences at an inn, enters the first house of the town or village he arrives at, and waiting the hour of dinner, takes part with the family, and goes away when he thinks proper, without speaking a word, or any person's putting to him a single question.

The country of Cochin-China is much of the same temperature with that of Tonquin ; though rather milder, as lying nearer the sea. Like Tonquin, it is annually overflowed, and consequently fruitful in rice, which requires no other manure than the mud left by the inundations. They have sugar-canes, and the same kinds of fruits common to other parts of India. The country produces no grapes, and therefore they drink a liquor brewed from rice. They have vast woods of mulberry-trees, which run up as fast as our hemp. Their silk is stronger than that of China, but not so fine. They have the best timber in the world, particularly a sort which abounds in the mountains, and is called the *incorruptible tree* ; because it never rots under earth or water, and is so solid that it serves for anchors. There are two kinds, black and red. The trees are very tall, straight, and so big that two men can scarce fathom them. They have also, on the mountains of the Kemois, a tree of the most fragrant scent, which is supposed to be the same with lignum aloes. This, being reckoned the best product of the country, is engrossed by the king, and is sold from five to 16 ducats per pound. It is highly valued both in China and Japan, where the logs of it are sold for 200 ducats a-pound, to make pillows for the king and nobility ; and among those Indians which continue to burn their dead, great quantities of it are used in the funeral piles. The young trees, called *aquila*, or eagle-wood, are every one's property, which makes the old ones, called *calamba*, so scarce and dear. They have oak, and large pines, for the building of ships ; so that this country is of the same use to China, that Norway is to Britain. In general, they have the same kind of trees and plants that are to be met with in Tonquin.

They have mines of gold, as well as diamonds ; but the last they do not value so highly as pearl. They also esteem their coral and amber very much. In all the provinces there are great granaries filled with rice, in some of which that grain is kept upwards of 30 years. One of the greatest rarities in these parts, especially in grand entertainments, is a ragout made of the eatable birds-nests, which some say are found only in Cochin-China, and others in four islands that lie south of its coast. See BIRDS-NESTS.

The merchants of Cambodia, Tonquin, China, Macao, Manila, Japan, and Malacca, trade to Cochin-China with plate, which they exchange for the commodities of the country. The Portuguese are the most favoured here of any Europeans. The Cochinchinese themselves, not being inclined to travel, seldom fall out of sight of their own shore, but purchase many trifles from foreigners at great rates, particularly combs, needles, bracelets, glass pendants, &c. They are very fond of our hats, caps, girdles, shirts, and other clothes ; and, above all, set a value on coral. The country is said to have 700 miles of coast, with many large inlets of the sea, and above 60 convenient landing places ; which, however, according to Captain Hamilton, are but seldom visited by strangers.

COCCINELLA (*Encyel.*). Under that head we have given the natural history of that valuable insect called COCHINEAL ; but having referred to it in our treatise on DYEING, it is highly necessary to speak of its qualities in that respect. The following account is drawn from the celebrated Berthollet.

Two sorts of cochineal are gathered at Mexico ; the *sylvestris*, there known by the Spanish name of *grana sylvestra*, and the fine, or *grana fina*, called also *Mesquite*, from the name of a province of Mexico, and which are bred upon the nopal. The first is smaller, and covered with a cottony down, which increases its weight, with a substance which is useless in dyeing ; an equal weight of it therefore gives less colour, and is of a lower price than the fine cochineal ; but these disadvantages are perhaps compensated by its being reared with greater facility, and at less expence, and even by the effects of its down, which enables it the better to resist rain and storms.

The cochineal *sylvestris*, when bred upon the nopal, loses part of its tenacity, and some of its cotton, and acquires double the size it has on the other species of opuntia. It is therefore probable that it would be improved by a continued attention to the rearing of it, and would approach more and more to the fine cochineal.

M. Thieri de Menonville was led by his patriotic spirit and personal courage, to expose himself to imminent danger, in going to observe the mode of rearing the cochineal in Mexico, in order to obtain from thence that valuable production, where-with he might enrich the colony of St. Domingo. He brought back with him both species of cochineal, and nopals, the kind of opuntia which affords the best food for insects.

Upon his return, he employed himself in the cultivation of the nopal and different kinds of opuntia, and in rearing the two species of cochineal ; but death cut off that excellent citizen, and the fine cochineal soon perished.

When he returned to St. Domingo, he discovered the cochineal *sylvestris* upon a kind of opuntia called *pereskia*, or *patte de tortue*, which grows there. This discovery did not remain unprofitable : M. Bruley employed himself successfully in rearing this species of cochineal ; he communicated it to the Cercle des Philadelphes (now the Royal Society of Arts and Sciences at Cape François), who do not lose sight of that object, and have published a posthumous work of M. Thieri de Menonville, which contains very minute instructions

with regard to every thing that respects the cultivation of the nopal, and the other species of opuntia that may be substituted for it more or less successfully, for breeding or rearing the cochineal.

Two months after the females which have been reserved are found upon the nopal, the young cochineals are observed to issue from them; and then is the proper season for gathering them: they are killed by immersion in boiling water. The hot iron plates or ovens which are sometimes employed may injure the cochineal by being too hot. When taken out of the water, they are carefully dried by free exposure to the sun. They lose nearly two-thirds of their weight in drying.

When the fine cochineal is dry, it must be passed through a sieve sufficiently coarse to allow it to go through, but capable of retaining the down and cotton of the larvæ of the males. These are kept apart and sold separately, or with the coccinella sylvestris.

Fine cochineal, which has been well dried and properly kept, ought to be of a gray colour inclining to purple. The gray is owing to a powder which covers it naturally, a part of which it still retains: the purple tinge proceeds from the colour extracted by the water in which it has been killed.

Cochineal will keep a long time in a dry place. Hellot says, that he tried some, one hundred and thirty years old, and found it produced the same effect as new.

It has been pretty generally supposed, that cochineal owes its colour to the nopal on which it lives, the fruit of which is red. But M. Thieri de Menonville observes, that the juice which supplies it with nutriment is greenish; and that it can live and propagate its species on such kinds of opuntia as do not bear red fruit.

The decoction of cochineal is of a crimson colour, inclining to violet. A small quantity of sulphuric acid made this liquor assume a red colour, inclining to yellow, and a small quantity of a beautiful red precipitate was formed. Muriatic acid produced nearly the same change in the colour, but no precipitate. Solution of tartar changed the liquor to a yellowish red. A little precipitate of a pale red colour formed slowly: the supernatant liquor remained yellow, but on pouring in a little alkali, it became purple. The small quantity of precipitate was quickly dissolved by the alkali, and the solution was purple. Solution of tin formed a rose-coloured precipitate with the yellow liquor.

Solution of alum brightened the colour of the infusion, and gave it a redder hue: a crimson precipitate was formed, and the supernatant liquor retained a crimson colour, somewhat reddish. Alum and tartar mixed, produced a brighter colour, more lively, and inclining to a yellowish red. A precipitate was formed, but much less abundant, and much more pale, than in the preceding experiment. Solution of tin produced a copious sediment of a beautiful red. The liquor remaining above it was as clear as water, and suffered no change of colour on adding alkali.

Having poured in a solution of tartar, and after that, solution of tin, a precipitate of a rose colour inclining to black was formed more quickly than in the foregoing experiment; and, though solution of tin in excess was added, the supernatant liquor remained a little yellow.

Solution of muriat of soda rendered the colour somewhat deeper, but did not make the liquor turbid. Ammoniacal muriat gave a purple tinge, without occasioning any precipitate. Sulphat of soda produced no perceptible change in the liquor.

Having boiled a little cochineal with half its weight of tartar, the liquor was more inclining to red, and had a colour much less deep than that obtained from an equal quantity of cochineal without tartar: but the former gave a more abundant precipitate with solution of tin, and its colour was more

rosy: so that tartar favours the solution of the colouring part of the cochineal: for, though the colour of the solution is less deep, the precipitate produced from it by solution of tin, is of a deeper and more rosy hue. This experiment deserves notice, in judging of the influence of tartar in dyeing scarlet.

Sulphat of iron formed a brown violet precipitate. The supernatant liquor remained clear, with a tinge of feuillemort. Sulphat of zinc formed a deep violet precipitate. The supernatant liquor remained clear and colourless. Acetate of lead produced a purple violet precipitate, less deep than the preceding. The supernatant liquor remained limpid. Sulphat of copper produced a violet sediment, which formed slowly. The liquor remained clear, and of a violet colour.

If the extract which decoction of cochineal affords on evaporation be digested in alcohol, the colouring part dissolves, and leaves a residuum of the colour of wine-ices, of which fresh alcohol cannot deprive it. This residuum, analyzed by fire, affords the common products of animal substances.

The alcohol of cochineal, leaves, on evaporation, a transparent residuum of a deep red, which, when dry, has the appearance of a resin. This also, if distilled, yields the products of animal substances; which shews, that the colouring matter is an animal production.

Yet the decoction of cochineal does not easily putrefy, as some was kept more than two months, both in an open vessel and in a bottle corked. At the end of that time, the former shewed no signs of putrefaction: the latter had a slight putrid smell. The first grew turbid in a few days, and left a brown violet sediment on the filter: the second preserved its transparency a long time, and probably lost it only from the effect of an incipient putrefaction, or rather of a slight combustion, produced by means of a little oxygen, probably united with the red particles of the cochineal. The colour of each had become crimson: but that of the former was more weak, because a greater part of the colouring matter had precipitated, in consequence of the effects produced on it by the air, agreeably to the principles established before.

M. Berthollet compared the coccinella sylvestris of Mexico, and some which had been cultivated at St. Domingo, and sent over by Mr. Bruley, with the masticque cochineal. The decoction of the sylvestris has the same hue as that of St. Domingo. This inclines more to crimson than that of masticque: but the precipitates obtained from it, either by solution of tin or by alum, are perfectly equal in colour to those from the masticque cochineal; and to these precipitates the stuffs with which they combine owe their colour.

To determine the proportion of colouring matter detained in decoctions of different cochineals, M. Berthollet employed oxygenated muriatic acid. Of each of the three cochineals above mentioned, he boiled an equal weight for an hour, rendering the circumstances with regard to each as nearly similar as possible. Having filtered the decoctions, he poured them into separate graduated glass cylinders, and added to them oxygenated muriatic acid, from the same bottle, till they were all reduced to the same yellow hue. The quantities of acid which indicated the proportions of the colouring matter were found to be nearly as follows: for the cochineal of St. Domingo, eight; for the sylvestris, eleven; for the masticque, eighteen.

It appears, then, that the cochineal of St. Domingo is not only greatly inferior to the masticque, but even to the sylvestris of Mexico; and in fact it is much smaller and more downy; but these disadvantages ought not to abate the zeal of those who are engaged in its cultivation.

The observations of M. Thieri de Menonville have already proved, that the coccinella sylvestris loses its down, and in-

creases in size, by a succession of breeds carefully attended to, though at first he was obliged to use nopalæ not come to the proper growth. There is every reason to hope, therefore, that the St. Domingo cochineal may, by assiduous care, be brought to equal, or perhaps surpass, the sylvestris of Mexico; but should it always remain inferior with respect to the quantity of its colouring matter, this would be by no means a sufficient reason to neglect a substance so valuable in dyeing.

It has been seen, that the cochineal of St. Domingo is not inferior to the malleque, as to the quality of its colour. If then the down with which it is covered prove detrimental, in operations on a large scale, to the beauty of scarlet, the lustre of which is so easily injured, it might be advantageously employed either for scarlet in half grain or for crimson, and other shades which are less delicate than that, which is the brightest of all colours.

To form an idea of the utility of which cochineal may be to St. Domingo, possessed of so many rich productions, is difficult. M. Thieri de Monville considers it as a valuable resource for those parts of the island, the unfruitful soil of which is not adapted to the other produce; and for those colonists who are unable to support the expence attending the cultivation of other crops. Mr. Bruley speaks still more favourably of the advantages to be expected from the culture of cochineal: but the Cercle des Philadelphes is more reserved, and thinks, that the point is not yet to be decided upon.

The attempts that have been made deserve so much the more to be pursued and encouraged, as they have for their object an important branch of commerce, and as enlightened industry has great advantages over ignorant indolence, it will be found less difficult perhaps to naturalize cochineal, at least in hot countries, than it was to naturalize silk-worms.

A distinguishing characteristic between cochineal and madder, may be observed in the manner in which they are acted on by reagents. Both receive a yellow colour from acids: but if the colouring matter of cochineal be separated by a substance which precipitates it from the acid liquor, it reappears, with its natural colour little altered; whilst that of madder, treated in the same manner, retains a yellow or fawn tinge. Hence mordants abounding in acid, as solution of tin, are much more successfully employed with cochineal than with madder. The cause of this probably is, that the colouring matter of madder united with oxyd of tin retains a portion of acid, whilst that of cochineal combined with it retains none, or a much smaller quantity.

COCKER, a river which rises in the S. of Cumberland, and flowing through the lakes of Buttermere, Cromack-water, and Lowes-water, joins the Derwent, below Cockermouth.

CODOGNO, a town of Italy, in the duchy of Milan, near the confluence of the Adda and Po, 33 miles E. of Pavia. Long. 10. 49. E. Lat. 45. 6. N.

COGGESHAL, a town in Essex, with a market on Saturday. It is seated on the river Blackwater, and has a manufactory of bays. It is 43 miles E.N.E. of London. Long. 0. 47. E. Lat. 51. 52. N.

COGNATE, in Scots law, any male relation through the mother.

COGNITIONIS CAUSA, in Scots law. When a creditor charges the heir of his debtor to enter, in order to constitute the debt against him, and the heir renounces the succession, the creditor can obtain no decret of constitution of that debt against the heir; but only a decret subjecting the *hereditas jacens*, or the estate which belonged to the debtor, to his diligence: and this is called a decret *cognitionis causa*.

COHESION (*Encycl.*). This power was first considered by Sir Isaac Newton as one of the properties essential to all matter, and the cause of all that variety we observe in the texture of different terrestrial bodies. He did not, however, ab-

solutely determine that the power of cohesion was an immaterial one; but thought it might possibly arise, as well as that of gravitation, from the action of an ether. His account of the original constitution of matter is as follows: "It seems probable, that God in the beginning formed matter in solid, massy, impenetrable, moveable particles; of such sizes, figures, and other properties, and in such proportion to space, as might be conduced to the end for which he formed them: and that these primitive particles being solid, are incomparably harder than any porous bodies composed of them; even so very hard as never to wear or break in pieces; no ordinary power being able to divide what God himself made one at the first creation. While the particles continue entire, they may compose bodies of one and the same nature and texture in all ages; but should they wear away, or break in pieces, the nature of all things depending on them would be changed. Water and earth composed of old worn particles and fragments of particles, would not now be of the same texture with water and earth composed of entire particles in the beginning. And therefore, that nature may be lasting, the changes of corporeal things are to be placed in the various separations and new associations and motions of these permanent particles; compound bodies being apt to break, not in the midst of solid particles, but where these particles are laid together and touch in a few points." It seems further, "That these particles have not only a *vis inertiae*, accompanied with such passive laws of motion as naturally result from that force; but also that they are moved by certain active principles, such as that of gravity, and that which causeth fermentation and the cohesion of bodies. These principles are to be considered not as occult qualities, supposed to result from the specific forms of things, but as general laws of nature by which the things themselves are formed; their truth appearing to us by phenomena, though their cause is not yet discovered."

The general law of nature, by which all the different bodies in the universe are composed, according to Sir Isaac Newton, is that of attraction: i. e. "Every particle of matter has an attractive force, or a tendency to every other particle; which power is strongest in the point of contact, and suddenly decreases, inasmuch that it acts no more at the least sensible distance, and at a greater distance is converted into a repellent force, whereby the parts fly from each other. On this principle of attraction may we account for the cohesion of bodies, otherwise inexplicable.

"The smallest particles may cohere by the strongest attractions, and compose bigger particles of weaker virtue; and many of these may cohere, and compose bigger particles, whose virtue is still less; and so on for divers successions, until the progression end in the biggest particles, on which the operations in chemistry, and the colours of natural bodies, depend; and which, by cohering, compose bodies of a sensible magnitude. If the body is compact, and bends or yields inward to pressure without any sliding of its parts, it is hard and elastic; returning to its figure with a force arising from the mutual attraction of its parts. If the parts slide from one another, the body is malleable or soft. If they slip easily, and are of a fit size to be agitated by heat, and the heat is great enough to keep them in agitation, the body is fluid; and if it be apt to stick to things, it is humid; and the drops of every fluid affect a round figure by the mutual attractions of their parts, as the globe of the earth and sea affects a round figure from the mutual attraction and gravity of its parts.

"Since metals dissolved in acids attract but a small quantity of the acid, their attractive force reaches but to a small distance. Now, as in algebra, where affirmative quantities cease, there negative ones begin; so in mechanics, where attraction ceases, there a repulsive virtue must succeed. That there really is such a virtue seems to follow from the reflex-

tions and inflections of the rays of light; the rays being repelled by bodies in both these cases without the immediate contact of the reflecting or inflecting body. The same thing seems also to follow from the emission of light; a ray, as soon as shaken from off a body by the vibrating motion of the parts of the body, and got beyond the reach of attraction, being driven away with exceeding great velocity: for that force which is sufficient to turn it back in reflection may be sufficient to emit it. From the same repelling power it seems to be that flies walk upon the water without wetting their feet; that the object-glasses of long telescopes lie upon one another without touching; and that dry powders are difficultly made to touch one another so as to stick together, without melting them or wetting them with water, which, by exhaling, may bring them together.

"The particles of all hard homogeneous bodies which touch one another, cohere with a great force: to account for which, some philosophers have recourse to a kind of hooked atoms, which in effect is nothing else but to beg the question. Others imagine, that the particles of bodies are connected by the rest, *i. e.* in effect by nothing at all; and others, by conspiring motions, *i. e.* by a relative rest among themselves. For myself, it rather appears to me, that the particles of bodies cohere by an attractive force, whereby they tend mutually to each other."

From this account of the formation and constitution of bodies, we can conclude nothing, except that they are composed of an infinite number of little particles, kept together by a force or power; but of what nature that power is, whether material or immaterial, we must remain ignorant till further experiments are made. Some of the Newtonian philosophers, however, have positively determined these powers to be immaterial. In consequence of this supposition, they have refined upon attractions and repulsions, that their systems seem not far from downright scepticism, or denying the existence of matter altogether. A system of this kind we find adopted by Dr. Priestley, from Messrs. Boscovich and Michell, in order to solve some difficulties concerning the Newtonian doctrine of fire. "The easiest method (says he) of solving all difficulties, is to adopt the hypothesis of Mr. Boscovich, who supposes that matter is not impenetrable, as has been perhaps universally taken for granted; but that it consists of physical points only, endued with powers of attraction and repulsion in the same manner as solid matter is generally supposed to be: provided therefore that any body move with a sufficient degree, of velocity, or have a sufficient momentum to overcome any powers of repulsion that it may meet with, it will find no difficulty in making its way through any body whatever; for nothing else will penetrate one another but powers, such as we know do in fact exist in the same place, and counterbalance or over-rule one another. The most obvious difficulty, and indeed almost the only one that attends this hypothesis, as it supposes the mutual penetrability of matter, arises from the idea of the nature of matter, and the difficulty we meet with in attempting to force two bodies into the same place. But it is demonstrable that the first obstruction arises from no actual contact of matter, but from mere powers of repulsion. This difficulty we can overcome; and having got within one sphere of repulsion, we fancy that we are now impeded by the solid matter itself. But the very same is the opinion of the generality of mankind with respect to the first obstruction. Why, therefore, may not the next be only another sphere of repulsion, which may only require a greater force than we can apply to overcome it, without disordering the arrangement of the constituent particles; but which may be overcome by a body moving with the amazing velocity of light.

"This scheme of the immateriality of matter, as it may be

called, or rather the mutual penetration of matter, first occurred to Mr. Michell on reading *Baxter on the immateriality of the soul*. He found that this author's idea of matter was, that it consisted as it were of bricks cemented together with immaterial mortar. These bricks, if he would be consistent with his own reasoning, were again composed of less bricks, cemented likewise by an immaterial mortar; and so on *ad infinitum*. This putting Mr. Michell upon the consideration of the several appearances of nature, he began to perceive that the bricks were so covered with this immaterial mortar, that if they had any existence at all, it could not possibly be perceived: every effect being produced, in nine instances of ten certainly, and probably in the tenth also, by this immaterial, spiritual, and penetrable mortar. Instead therefore of placing the world upon the giant, the giant upon the tortoise, and the tortoise upon he could not tell what, he placed the world upon itself."

Other philosophers have supposed the powers both of gravitation and cohesion to be material; and to be only different actions of the ethereal fluid, or elementary fire. In support of this it hath been urged, that before we have recourse to a spiritual and immaterial power as the cause of any natural phenomenon, we ought to be well assured that there is no material substance with which we are acquainted, that is capable of producing such effects. In the present case, we are so far from having such assurance, that the contrary is manifest to our senses. One instance of this is in the experiment with the *Mageburg hemispheres*, as they are called. These are two hollow hemispheres of brass, exactly fitted to one another, so as to form one globe when joined together, without admitting any air at the joining. In this state, if the air within them is exhausted by means of a pump, they will cohere with such force, if they are five or six inches diameter, as to require a weight of some hundreds of pounds to separate them. The pressure of the atmosphere, we see, is in this case capable of producing a very strong cohesion: and if there is in nature any fluid more penetrating, as well as more powerful in its effects, than the air we breathe, it is possible that what is called the attraction of cohesion may somehow or other be an effect of the action of that fluid. Such a fluid as this is the element of fire. Its activity is such as to penetrate all bodies whatever: and in the state in which it is commonly called fire, it acts according to the quantity of solid matter contained in the body. In this state, it is capable of dissolving the strongest cohesions observed in nature: but whatever is capable of dissolving any cohesion, must necessarily be endued with greater power than that by which the cohesion is caused. Fire, therefore, being able to dissolve cohesions, must also be capable of causing them; provided its power is exerted for that purpose. Nor will it seem at all strange that this fluid should act in two such opposite ways, when we consider the different appearances which it assumes. These are three, *viz.* fire, or heat, in which it consumes, destroys, and dissolves: light, in which it seems deprived of all destructive or dissolvent power, and to be the most mild, quiet, and placid being in nature. The third state of this element is, when it becomes what is called the *electric fluid*; and then it attracts, repels, and moves bodies, in a vast variety of ways, without either burning or rendering them visible by its light. In this state it is not less powerful than in either of the other two; for a violent shock of electricity will displace and tear in pieces the most heavy and solid bodies. The seeming capricious nature of this fluid, however, probably renders it less suspected as the cause of cohesion, than it otherwise would be, were the attractions regular and permanent, which we observe it to occasion. But here we must observe, that the fluid has an existence in all bodies before the experiments are tried.

which make its effects visible to us, and was acting in them according to its settled and established laws. While acting in this manner it was perfectly invisible; and all we can do is, to produce some little infringement of these regular laws according to which it commonly acts. In some cases, however, the electrical attractions produced by art are found to be pretty permanent and strong. Thus, Mr. Symmer, in some experiments with silk stockings, found their attraction so strong, that it required upwards of 15 pounds weight to separate them from each other; and this attraction would continue for more than an hour. In plates of glass, too, he observed a remarkable cohesion when electrified. In the *Philosophical Transactions* for 1777, we find this hypothesis taken notice of, and in some measure adopted, by Mr. Henry. "Some gentlemen (says he) have supposed that the electric matter is the cause of the cohesion of the particles of bodies. If the electric matter be, as I suspect, a real elementary fire inherent in all bodies, that opinion may probably be well founded: and perhaps the folding of metals, and the cementation of iron, by fire, may be considered as strong proofs of the truth of their hypothesis."

On this last hypothesis we must observe, that if the electric or any other fluid is supposed to be the cause of the attraction of cohesion universally, the particles of that fluid must be destitute of all cohesion between themselves; otherwise we should be at as great a loss to account for the cohesion of these particles, as for that of terrestrial matter. Philosophers, indeed, do not suppose any cohesion between the particles of the electric fluid themselves; it is generally believed that the particles of this fluid are repulsive of one another, though attracted by all other matter. If this is a fact, we cannot suppose the electric fluid to be the cause of cohesion. The probability or improbability of the hypothesis just mentioned must greatly depend on its being ascertained whether the particles of the electric fluid do really repel one another, and attract all other kinds of matter, or not; but for this we must refer to the article *ELECTRICITY*.

COIMBETTORE, a province and town of the peninsula of Hindoostan, in the kingdom of Mysore. It was taken by General Meadows, January 22, 1790, but retaken by a detachment of Tippoo Sultan's army, in October 1791; and confirmed to him by the peace of 1792. It is 100 miles S. by E. of Seringapatam. Long. 77. 10. E. Lat. 10. 5. N.

COIN (*Encycl.*), differs from money as the species from the genus. Money is any matter, whether metal, wood, leather, glass, horn, paper, fruits, shells, or kernels, which have currency as a medium in commerce. Coin is a particular species, always made of metal, and struck according to a certain process called coining.

The precise epocha of the invention of money is too ancient for our annals; and, if we might argue from the necessity and obviousness of the thing, must be nearly coeval with the world.

Whether coins be of equal antiquity, may admit of some doubt; especially as most of the ancient writers are so frequent and express in their mention of leathern-moneys, paper-moneys, wooden-moneys, &c. Some, however, notwithstanding this, are of opinion, that the first moneys were of metal: the reasons they give, are the firmness, neatness, cleanliness, durability, and universality of metals; which, however, do rather conclude they ought to have been so, than that they actually were so.

In effect, the very commodities themselves were the first moneys, *i. e.* were current for one another by way of exchange; and it was the difficulty of cutting or dividing certain commodities, and the impossibility of doing it without great loss, that first put men on the expedient of a general medium. See *EXCHANGE*.

COLDING, a town of Denmark, in North Jutland, remarkable for its bridge, over which all the oxen and cattle pass, that go from Jutland into Holstein, and they pay a small toll. Here is a royal palace, containing a magnificent suite of 190 rooms, which have not been furnished since the time of Frederic III. The harbour is two miles in circumference, and deep enough for ships of the largest burthen. Colding, which is situated at the extremity of a bay of the Little Belt, is fifty miles S. by E. of Wiborg. Long. 10. 15. E. Lat. 55. 35. N.

COLDINGHAM, a barren heathy moor on the borders of Scotland. It is only remarkable for a convent formerly filled with most heroic nuns; who, to preserve themselves inviolate from the Danes, cut off their lips and noses; and thus rendering themselves objects of horror, were, with their Abbess Ebba, in 870, burnt in the monastery by the disappointed savages.

COLDSTREAM, a small market-town, on the Tweed (over which is a handsome bridge), in the county of Berwick, in Scotland. It had a famous monastery; and here General Monk raised the two battalions, now known by the name of the Coldstream Regiment of Guards. Long. 2. 5. W. Lat. 55. 36. N.

COLEBROOK DALE, on the banks of the Severn, in Shropshire, is a winding glen, between two vast hills, which break into various forms, being all thickly covered, and forming beautiful sheets of hanging woods. Here are the most considerable iron works in England. "The noise of the forges, mills, &c." says Mr. Young, "with all their vast machinery, the flames bursting from the furnaces, with the burning of coal, and the smoke of the limekilns, are altogether horribly sublime." Two bridges entirely made of cast-iron, which have been thrown over the Severn, give these scenes a still nearer resemblance to the ideas in romance. There is also, in the dale, a remarkable spring of fossil tar, or petroleum, which has yielded a vast quantity of that substance; but it is now much diminished. A work, for obtaining a similar kind of tar, from the condensed smoke of pit-coal, has been erected in the dale.

COLES (Elisha), author of the well-known Latin and English dictionary, was born in Northamptonshire about the year 1640; and was entered at Magdalen College, Oxford, which he left without taking a degree; and taught Latin to young people, and English to foreigners, in London, about the year 1663. He afterwards became an usher in Merchant-tailors' school; but for some great fault, no-where expressly mentioned, he was forced to withdraw to Ireland, from whence he never returned. He was, however, a good critic in the English and Latin tongues; and wrote several useful books of instruction in his profession.

COLESHILL, a town in Warwickshire, with a market on Wednesday. It is seated on the side of a hill, on the Coln, over which is a stone bridge. It is eleven miles N.W. of Coventry. Long. 1. 35. W. Lat. 52. 32. N.

COLESHILL, a village four miles W. of Rickmansworth, in Herts, and in a part of that county which is insulated in Bucks. It was the birth-place of the poet Waller.

COLFORD, a town of Gloucestershire, with a market on Tuesday. It is fourteen miles N. of Hereford. Long. 2. 40. W. Lat. 51. 48. N.

COLIGNI (Gaspard de), admiral of France, was born in 1516. He signalized himself in his youth, in the reigns of Francis I. and Henry II. and was made colonel of infantry and admiral of France in 1552. Henry II. employed him in the most important affairs; but after the death of that prince he embraced the reformed religion, and became the chief of the Protestant party: he strongly opposed the house of Guise,

and rendered this opposition so powerful, that it was thought he would have overturned the French government. On the peace made after the battles of Jarnac and Montcontour, Charles IX. deluded Coligni into security by his deceitful favours; and though he recovered one attempt on his life, when he attended the nuptials of the prince of Navarre, yet he was included in the dreadful massacre of the Protestants on St. Bartholomew's-day 1572, and his body treated with wanton brutality by a misguided Popish populace.

COLLE, an episcopal town of Italy, in Tuscany, ten miles N.W. of Sienna. Long. 11. 7. E. Lat. 43. 16. N.

COLLEGE (*Encycl.*). To the account of different colleges given in our original article, we have to add that of the

Veterinary COLLEGE, the establishment of which does honour to the present reign, reflects infinite credit on its patrons, and certainly merits the sanction and support which have been so liberally conferred upon it.

This college was founded in 1792, for the medical cure and treatment of horses, and for the purpose of instructing pupils in veterinary medicine and surgery.

Mr. St. Bel, an ingenious Veterinarian, who had distinguished himself in France by his skill in the veterinary art, was appointed professor, and the institution was under the direction of a president and twenty-four governors, chosen from the nobility and gentlemen who were zealous in promoting so beneficial a plan. A forge and stabling for fifty horses, with every convenience, were built at Pancras, about two miles on the north side of London. A handsome theatre was also erected, with a museum and dissecting rooms for the purpose of giving lectures to the pupils, and teaching them practical anatomy. A medical committee of assistance was appointed, who undertook to examine the pupils, and grant them certificates when they had acquired sufficient knowledge of the art, to enable them to practise it with success.

The liberal support afforded the institution by the anatomical and medical professors of London, does them great honour, and cannot be too warmly acknowledged by the pupils: they generously allow them to attend their lectures gratis, from which their progress is considerably promoted, and their knowledge greatly improved. The following is the present list of the committee who examine the pupils after their veterinary education is finished, and also suggest or superintend the experiments made at the college for the improvement of the art.

Dr. Fordyce	Dr. Baillie	Mr. Home
Mr. Cline	Mr. Abernethy	Mr. Houlston
Mr. Cooper	Dr. Babington	Dr. Relph.

M. St. Bel died soon after the college had been established, and was succeeded by Mr. Coleman, who has greatly contributed to the improvement of the art, by his extensive knowledge of anatomy and physiology, as well as by his attention to the pupils.

An annual subscriber of two guineas has the privilege of sending two horses to the college when sick or lame, where they receive every medical assistance that may be required, the proprietor paying only for keep. By paying twenty guineas at once, this advantage is made perpetual. For several years parliament has annually contributed to the support of this institution, and his majesty has been pleased to grant commissions in the army to those who qualify themselves in the art, which has tended very materially to its promotion, as well as to render it respectable.

A considerable number of veterinary surgeons have been examined and approved of by the medical committee, who have granted to each a regular *diploma*, under which they now practise in different parts of the kingdom.

COLLEGE of Surgeons, London. The Incorporated Com-

Vol. X.

pany of Surgeons having by an accident lost their charter, the different members were, in 1800, after some struggles with an associated body of surgeons practising pharmacy, re-united by a new charter, under the title of the *Royal College of Surgeons in London*. The new establishment, though in some respects an improvement of the old system, has, nevertheless, some of the defects of the latter.

COLLIER (Jeremy), a learned English nonjuring divine, born in 1650, and educated in Caius College, Cambridge. He had first the small rectory of Ampton, near St. Edmund's Bury, in Suffolk; which in six years he resigned, to come to London, in 1685, where he was made lecturer of Gray's-Inn: but the change of government that followed, soon rendered the public exercise of his function impracticable. He was committed to Newgate for writing against the revolution; and again, for carrying on a correspondence which that change of events made treasonable; but was released both times, without trial, by the intervention of friends. It is observable that he carried his scruples so far, as to prefer confinement to the tacit acknowledgment of the jurisdiction of the court by accepting his liberty upon bail. Suitably to these principles, he next acted a very extraordinary part with two other clergymen of his own way of thinking, at the execution of Sir John Friend and Sir William Perkins for the assassination plot; by giving them solemn absolution, and by imposition of hands: absconding for which, he continued under an outlawry to the day of his death in 1726. These proceedings having put a stop to his activity, he employed his retired hours rather more usefully in literary works. In 1698 he attempted to reform our theatrical entertainments, by publishing his Short view of the immorality and profaneness of the English stage; which engaged him in a controversy with the wits of the time: but as Mr. Collier defended his censures not only with wit, but with learning and reason, it is allowed that the decorum observed, for the most part, by succeeding dramatic writers, has been owing to his animadversions. He next undertook a translation of Moreri's great Historical and Geographical Dictionary; a work of extraordinary labour, and which appeared in 4 vols. folio. After this he published an Ecclesiastical History of Great Britain, chiefly of England, in two vols. folio; which is allowed to be written with great judgment, and even with impartiality. He was besides engaged in several controversies, which his conduct and writing gave rise to, not material to mention. In Queen Anne's reign, Mr. Collier was tempted, by offers of considerable preferment, to a submission; but, as he was a nonjuror upon principle, he could not be brought to listen to any terms.

COLLINS (Anthony), a polemical writer, born at Helfton near Hounslow in the county of Middlesex in 1676, was the son of Henry Collins, a gentleman of about 1500. a-year. He was first bred at Eaton College, and then went to King's College, Cambridge, where he had for his tutor Mr. Francis Hare, afterwards bishop of Chichester. He was afterwards a student of the Temple; but not relishing the law, soon abandoned that study. He was an ingenious man, and author of several curious books. His first remarkable piece was published in 1707, An Essay concerning the Use of Reason in Propositions, the Evidence whereof depends on human Testimony. In 1702 he entered into the controversy between Mr. Clark and Mr. Dodwell, concerning the immortality of the soul. In 1713 he published his discourse on free-thinking; which made a prodigious noise. In 1715 he retired into the county of Essex, and acted as a justice of peace and deputy lieutenant for the same county, as he had done before for that of Middlesex and liberty of Westminster. The same year he published a Philosophical Essay concerning human Liberty. In 1718 he was chosen treasurer of the county

of Essex; and this office he discharged with great honour. In 1724 he published his Historical and critical Essay on the 39 Articles. Soon after, he published his Discourse of the Grounds and Reasons of the Christian Religion; to which is prefixed An Apology for free Debate and Liberty of Writing; which piece was immediately attacked by a great number of writings. In 1726 appeared his Scheme of literal Prophecy considered, in a View of the Controversy occasioned by a late Book entitled, A Discourse of the Grounds, &c. In this discourse he mentions a MS. dissertation of his to shew the Sibylline oracles to be a forgery made in the times of the primitive Christians, who, for that reason, were called *Sibyllists* by the Pagans; but it never appeared in print. His Scheme of literal Prophecy was replied to by several writers; and particularly by Dr. John Rogers in his Necessity of divine Revelation asserted. In answer to which, our author wrote A Letter to the Reverend Dr. Rogers, on Occasion, &c. His health began to decline some years before his death, and he was very much afflicted with the stone, which at last put an end to his life at his house in Harley-square in 1729. He was interred in Oxford chapel, where a monument was erected to him, with an epitaph in Latin. His curious library was open to all men of letters, to whom he readily communicated all the assistance in his power; he even furnished his antagonists with books to confute himself, and directed them how to give their arguments all the force of which they were capable. He was remarkably averse to all indecency and obscenity of discourse; and was, independent of his scepticism, a sincerely good man.

COLLINS (John), an eminent accountant and mathematician, born in 1624, and bred a bookeller at Oxford. Besides several treatises on practical subjects, he communicated some curious papers to the Royal Society, of which he was a member, which are to be found in the early numbers of their Philosophical Transactions: and was the chief promoter of many other scientific publications in his time. He died in 1683; and about twenty-five years after, all his papers coming into the hands of the learned William Jones, esq. F.R.S. it appeared that Mr. Collins held a constant correspondence for many years with all the eminent mathematicians; and that many of the late discoveries in physical knowledge, if not actually made by him, were yet brought forth by his endeavours.

COLLINA (*Encycl.*), placed erroneously between the articles *COLLATINA* and *COLLATION*.

COLLUMPTON, a town of Devonshire, with a market on Thursday. It is seated on a river near the sea, ten miles N. of Exeter, and 150 W. by S. of London. Long. 3. 29. W. Lat. 50. 54. N.

COLN, a river of Essex, which rises near Clare in Suffolk, and passing by Halstead and Colchester, empties itself into the German Ocean, between Mersey Island and the main land. In the salt-water inlets and pools, at the mouth of this river, are bred the famous Colchester oysters.

COLN, a river which rises near Sevenhampton in Gloucestershire, flows S.E. to Fairford, and falls into the Thames at Lechlade.

COLN, a river which rises in Herts, and dividing Middlesex from Bucks, fall into the Thames above Staines.

COLOMB, St. a town in Cornwall, with a market on Thursday. It is seated on a hill, at the bottom of which is a river, which falls into the sea at a small distance. It is ten miles W. of Bodmin. Long. 4. 52. W. Lat. 50. 30. N.

COLOMBOTZ, a castle of Turkey in Europe, in Bulgaria, on a hill, under which is the strong pass of Urania.

COLOOR, a diamond mine of the peninsula of Hindoostan, near the fort of Condavir, in the Guntoor Circar.

COLUBER (*Encycl.*), erroneously spelt **COLUBE**.

COLUMBANUS (St.), a Latin poet, was born in Ireland in 560. He retired from the world, and lived a solitary life in the mountains of Wales for some years. He next went over to France and built a monastery; but, being exiled from that country, he travelled to Italy, where he founded the abbey of Bobbio, and died in it in 615.

COLUMNA, a town of the Russian empire, in the government of Moscow, with an archbishop's see; fifty miles S.E. of Moscow. Long. 38. 25. E. Lat. 55. 5. N.

COMACCHIO, an episcopal town of Italy, in the Ferrarese. The air is bad, for which reason it is inhabited by a few fishermen only. It is twenty-seven miles S.E. of Ferrara. Long. 12. 10. E. Lat. 44. 45. N.

COMACHIO, a lake of the Ferrarese, in Italy, between the two mouths of the river Po; and about ten miles in circumference; but dry in several places. On one side of this lake the town of the same name is built.

COMANA, a sea-port of South America, the capital of New Andalusia, in Terra Firma. It is defended by a strong castle. Long. 64. 20. W. Lat. 10. 10. N.

COMANAGOTTA, a town of South America, in Terra Firma, ten miles W. of Comana. Long. 64. 40. W. Lat. 10. 10. N.

COMB ABBEY, a village in Warwickshire, three miles from Coventry, once famous for a rich abbey. The church is demolished; but the abbey, with some modern improvements, is the seat of Lord Craven.

COMB-MARTIN, a town of Devonshire, with a market on Tuesday. It is seated on the Bristol Channel, where it has an inlet which runs through the town. It is seven miles E. of Ilfracombe. Long. 4. 2. W. Lat. 51. 13. N.

COMBER, or **CUMBER** (Thomas), an eminent divine, born at Westram in Kent, in 1645, was educated at Cambridge; created doctor of divinity; and, after several preferments in the church, was made dean of Durham. He was chaplain to Anne princess of Denmark, and to King William and Queen Mary. He was author of several works, viz. 1. A scholastical History of the primitive and general Use of Liturgies. 2. A Companion to the Altar. 3. A brief Discourse upon the Offices of Baptism, Cathedrism, and Confirmation. He died in 1699, aged fifty-five.

COMENIUS (John Amos), a grammarian and Protestant divine, born in Moravia in 1592. He was eminent for his design to introduce a new method of teaching languages; for which purpose he published some essays in 1616, and had prepared some others, when the Spaniards pillaged his library, after having taken the city of Fulneck, where he was minister and master of the school. Comenius fled to Lesna, a city of Poland, and taught Latin there. The book he published in 1631, under the title of *Janua Linguarum reſerata*, gained him a prodigious reputation, inasmuch that he was offered a commission for regulating all the schools in Poland. The parliament of England desired his assistance to regulate the schools in that kingdom. He arrived at London in 1641; and would have been received by a committee to hear his plan, had not the parliament been taken up with other matters. He therefore went to Sweden, being invited by a generous patron, who settled a stipend upon him that delivered him from the fatigues of teaching; and now he employed himself wholly in discovering general methods for those who instructed youth. In 1657 he published the different parts of his new method of teaching. He was not only taken up with the reformation of schools, but he also filled his brain with prophecies, the fall of Antichrist, Millennium, &c. At last Comenius took it into his head to address Lewis XIV. of France, and to send him a copy of the prophecies of Drabicius; insinuating that it was to this monarch God promised the empire of the world. He

became sensible at last of the vanity of his labours, and died in 1871.

COMETEAU (*Encycl.*). Erroneously spelt COMETAN.

COMO, the largest lake in Italy, in the duchy of Milan. It is 88 miles in circumference, but is not above six miles over in any one part.

COMMANDINUS (Frederic), born at Urbino in Italy, and descended from a very noble family, in the 16th century. To a vast skill in the mathematics, he had added a great knowledge in the Greek tongue, by which he was well qualified to translate the Greek mathematicians into Latin. Accordingly he translated and published several, which no writer till then had attempted; as Archimedes, Apollonius, Euclid, &c.

COMMISSARY-COURT, in Scotland, a court originally constituted by the bishops for executing in their name an usurped jurisdiction; and was anciently called the bishop's-court, *cursu Christianitatis*, or consistorial court. This court was modelled by Queen Mary at the reformation, and continues to this day.

COMMIXTION, in Scots law, is a method of acquiring property, by mixing or blending together different substances belonging to different proprietors.

COMMODIANUS (Gazeus), a Christian author in the 4th century, who wrote a work in Latin verse, entitled *Instructio*; the moral of which is excellent, but the verse extremely heavy. M. Davies published a fine edition of it, in 1711, at the end of Minucius Felix.

COMMONTY, in Scots law, sometimes signifies land belonging to two or more common proprietors; sometimes a heath or muir though it should belong in property to one, if there has been a promiscuous possession upon it by pasturage; and the act in 1695 mentions commonities belonging in property to the king and the royal boroughs.

COMMENA (Ann) (*Encycl.*). Erroneously spelt COMMENA. COMPIEGNE, a handsome town of France, in the department of Oise and late province of the Isle of France. It is seated near an extensive forest, at the confluence of the Aisne and Oise. Here is a palace, in which the kings of France often resided. The Maid of Orleans was taken prisoner here in 1430. It is 45 miles N.E. of Paris. Long. 2. 55. E. Lat. 49. 25. N.

CONANT (Dr. John), a learned English divine, born in 1608. He took his degrees at Exeter College, Oxford; was, by the parliament, constituted one of the assembly of divines, though he seldom, if ever, sat with them; and in 1657 was admitted vice-chancellor of the university. On the restoration he was one of the commissioners, and assisted at the conferences in the Savoy; but was deprived by the act of uniformity: after eight years he was confirmed, and was made arch-deacon of Norwich, and prebendary of Worcester. In 1686 he lost his sight; and died in 1693; leaving a number of admired sermons, afterwards published in six volumes.

CONCAN, a low tract of country, on the W. coast of the Deccan of Hindoostan. From this tract rises abruptly that stupendous wall of mountains called the Gats. It is subject to the Mahrattas, and lies between 15° and 20° N. lat.

CONCATENATION, a term chiefly used in speaking of the mutual dependence of second causes upon each other.

CONDAVIR, a fort in the peninsula of Hindoostan, the principal post of Guntoor, one of the five Northern Circars. It is strongly situated on a mountain, 16 miles W. of Guntoor, and 20 from the S. bank of the Kistna.

CONDEDO, a cape of North America, in Yucatan, 100 miles W. of Merida. Long. 91. 27. W. Lat. 20. 50. N.

CONDORE, the capital of a number of islands, in the Indian Ocean, which lie in 8. 40. N. lat. 60 miles S. by E.

from the mouth of the river Cambodia. The mangoes grow on trees, as large as apple-trees: the fruit is of the size of a small peach, and when ripe, has a pleasant smell and taste. Pickled mangoes are now well known in England. The inhabitants are small in stature, well shaped, and of a dark olive complexion; their faces are long, with black straight hair, small black eyes, high noses, thin lips, white teeth, and little mouths. They are very poor, and their chief employment is getting tar out of the trees. When any ships arrive, they will bring their women on board and offer them to the sailors. They have a little idol temple, built of wood, and thatched like their houses, which are very mean. The English East-India company had a settlement here in 1702; but the factors falling out with the natives, most of them were murdered, and the rest driven thence in 1705. Long. 117. 26. E. Lat. 2. 40. N.

CONEOLENS, a town of France, in the department of Charente, and late province of Angoumois, on the river Vienne, 30 miles N.E. of Angoulême. Long. 0. 43. E. Lat. 46. 55. N.

CONFUSION of Tongues. By this phrase is generally understood that miraculous interposition of the Deity mentioned in the book of Genesis, to cause mankind to desist from their attempt to build the tower of Babel, and to make them separate, and divide themselves into different nations.

It hath been much disputed whether there were more languages than one before the flood; and many arguments have been adduced by learned men on both sides. This question, however, it is easy to see, can never be determined; but whether it was so or not, it is plain there must have been but one for some time after the flood, as all mankind were descended from one family. As to the confusion of tongues and dispersion of mankind, it is an event mentioned by profane as well as the sacred historians. They write that mankind used one and the same language till the overthrow of the tower of Babylon; at which time a multiplicity of tongues was introduced by the gods: whereupon wars ensued, and those whose speech happened to be intelligible to one another, joined company, and seized the countries they chanced to light upon.

With regard to the manner, however, in which this confusion was effected, there is a great variety of sentiments. Several learned men, prepossessed with an opinion that all the different idioms now in the world did at first arise from one primitive language to which they may be reduced, and that the variety which we find among them is no other than what must naturally have taken place in so long course of time, have thence been induced to believe that there were no new languages formed at the confusion, but that the most that was done at that time was only to fet the builders of Babel at variance with one another by creating a misunderstanding among them. This some imagine to have been effected without any immediate influence on their language; which seems contrary to the words and obvious intention of the sacred historian. Others have imagined it brought about by a temporary confusion of their speech, or rather of their apprehensions, causing them, while they continued together, and spake the same language, yet to understand the words differently. A third opinion is, that a variety of inflexions was introduced, and perhaps some new words, which disturbed and perverted the former manner of expression. But this, though it might occasion different dialects, yet could not create new languages; and seems not to answer the intention of Moses, which was to inform us not only how mankind were at first dispersed into so many nations, but to account for their different languages; a thing very difficult if not impossible to be done, without having recourse to the immediate interposition of divine power. For though time, intercourse with foreign nations, commerce, the

invention and improvement of arts and sciences, and the difference of climates, cause very considerable alteration in languages, yet the utmost effect we can imagine them to have will not come up to the point in question. Upon the whole, therefore, it seems most probable, that on the confusion at Babel there were new languages formed; and that these languages were the roots of all others that are, that have been, or that will be spoken while the world remains.

In what manner these new languages were formed, is a matter not easy to be determined. From the manner in which this event is related by Moses, some have concluded that God effected it by immediately inducing an oblivion of their former tongue, and instantaneously infusing others into their minds. The Jews imagined this to be done by the ministry of angels, 70 of whom descended with God, and were each of them set over a nation, to whom they taught a peculiar language; but that the ancestors of the Jewish nation retained the primitive language. Others have supposed, that God did no more than cause them to forget their old language, leaving them to form new ones in the best manner they could; but this must have taken up some time, and could but ill have answered the necessities of mankind; and the way in which Moses expresses himself seems to imply that it was done instantaneously.

As to the number of different languages formed at this time, we are no less in the dark than as to the manner in which they were formed. It is most probable, that the languages of the chief families were fundamentally different from each other, and that the sub-languages or dialects within each branch, for the sake of immediate intercourse, had a mutual affinity, some more, and some less, according as they settled nearer or further from each other; which was sufficient to bring about the designs of God, divide mankind into distinct societies, and open a new scene of Providence, by which his wisdom might display itself in the government of the world.

CONGLETON, a town of Cheshire, with a market on Saturday. It is seated on the river Dane, and a large mayor town, though it has nothing but a chapel of ease, the church being two miles distant. It has a manufactory of leather gloves; and a more considerable one in silk, there being a large silk-mill, which employs 700 hands. It is seven miles from Macclesfield, and 164 N.W. of London. Long. 2. 10. W. Lat. 53. 8. N.

CONGRUITY (*Encycl.*). In order to give a full view of the secondary relations, spoken of in our original article, we shall trace them through some of the most considerable primary relations. The relation of a part to the whole, being extremely intimate, demands the utmost degree of congruity; even the slightest deviation is disagreeable.

Examples of congruity and incongruity are furnished in plenty by the relation between a subject and its ornaments. A literary performance intended merely for amusement, is susceptible of much ornament, as well as a music-room or a play house; for in gaiety, the mind hath a peculiar relish for show and decoration. The most gorgeous apparel, however improper in tragedy, is not unsuitable to opera-actors: the truth is, an opera, in its present form, is a mighty fine thing; but as it deviates from nature in its capital circumstances, we look not for nature or propriety in those which are accessory. On the other hand, a serious and important subject admits not much ornament; nor a subject that of itself is extremely beautiful: and a subject that fills the mind with its loftiness and grandeur, appears best in a dress altogether plain.

To a person of a mean appearance, gorgeous apparel is unsuitable; which besides the incongruity has a bad effect; or by contrast it shews the meanness of appearance in the

strongest light. Sweetness of look and manner, requires simplicity of dress, joined with the greatest elegance. A stately and majestic air requires sumptuous apparel, which ought not to be gaudy, nor crowded with little ornaments. A woman of consummate beauty can bear to be highly adorned, and yet shews best in a plain dress:

For loveliness

Needs not the foreign aid of ornament,
But is when unadorn'd, adorned the most.

Thomson's Autumn, 208.

Congruity regulates not only the quantity of ornament, but also the kind. The ornaments that embellish a dancing-room ought to be all of them gay. No picture is proper for a church, but what has religion for its subject. All the ornaments upon a shield ought to relate to war; and Virgil, with great judgment, confines the carvings upon the shield of Æneas to the military history of the Romans: but this beauty is overlooked by Homer; for the bulk of the sculpture upon the shield of Achilles, is of the arts of peace in general, and of joy and festivity in particular: the author of Telemachus betrays the same inattention, in describing the shield of that young hero.

In judging of propriety with regard to ornaments, we must attend, not only to the nature of the subject that is to be adorned, but also to the circumstances in which it is placed: the ornaments that are proper for a ball, will appear not altogether so decent at public worship; and the person ought to dress differently for a marriage-feast and for a burial.

Nothing is more intimately related to a man, than his sentiments, words, and actions; and therefore we require here the strictest conformity. When we find what we thus require, we have a lively sense of propriety: when we find the contrary, our sense of impropriety is not less lively. Hence the universal distaste of affectation, which consists in making a shew of greater delicacy and refinement than is suited either to the character or circumstances of the person.

Congruity and propriety, wherever perceived, appear agreeable; and every agreeable object produceth in the mind a pleasant emotion: incongruity and impropriety, on the other hand, are disagreeable; and of course produce painful emotions. These emotions, whether pleasant or painful, sometimes vanish without any consequence; but more frequently occasion other emotions, which we proceed to exemplify.

When any slight incongruity is perceived, in an accidental combination of persons or things, as of passengers in a stage-coach, or of individuals dining at an ordinary; the painful emotion of incongruity, after a momentary existence, vanisheth without producing any effect. But this is not the case of propriety and impropriety: voluntary acts, whether words or deeds, are imputed to the author; when proper, we reward him with our esteem; when improper, we punish him with our contempt. Let us suppose, for example, a generous action suited to the character of the author, which raises in him and in every spectator the pleasant emotion of propriety: this emotion generates in the author both self-esteem and joy; the former when he considers his relation to the action, and the latter when he considers the good opinion that others will entertain of him: the same emotion of propriety produceth in the spectators esteem for the author of the action; and when they think of themselves, it also produceth, by means of contrast, an emotion of humility. To discover the effects of an unsuitable action, we must invert each of these circumstances: the painful emotion of impropriety generates in the author of the action both humility and shame; the former when he considers his relation to the action, and the latter when he considers what others will think of him: the same emotion of improp-

propriety produceth in the spectators contempt for the author of the action; and it also produceth, by means of contrast, when they think of themselves, an emotion of self-esteem. Here then are many different emotions, derived from the same action considered in different views by different persons; a machine provided with many springs, and not a little complicated. Propriety of action, it would seem, is a chief favorite of nature, when such care and solicitude is bestowed upon it. It is not left to our own choice; but, like justice, is required at our hands; and, like justice, is enforced by natural rewards and punishments: a man cannot, with impunity, do any thing unbecoming or improper; he suffers the chastisement of contempt inflicted by others, and of shame inflicted by himself. An apparatus so complicated, and so singular, ought to rouse our attention: for nature doth nothing in vain; and we may conclude with great certainty, that this curious branch of the human constitution is intended for some valuable purpose.

A gross impropriety is punished with contempt and indignation, which are vented against the offender by corresponding external expressions: nor is even the slightest impropriety suffered to pass without some degree of contempt. But there are improprieties, of the slighter kind, that provoke laughter; of which we have examples without end, in the blunders and absurdities of our own species: such improprieties receive a different punishment, as will appear in what follows. The emotions of contempt and of laughter occasioned by an impropriety of this kind, uniting intimately in the mind of the spectators, are expressed externally by a peculiar sort of laugh, termed a *laugh of derision* or *scorn*. An impropriety that thus moves not only contempt but laughter, is distinguished by the epithet of *ridiculous*; and a laugh of derision or scorn is the punishment provided for it by nature. Nor ought it to escape observation, that we are so fond of inflicting this punishment as sometimes to exert it even against creatures of an inferior species: witness a turkeycock swelling with pride, and strutting with displayed feathers; a ridiculous object, which in a gay mood is apt to provoke a laugh of derision.

We must not expect, that these different improprieties are separated by distinct boundaries: for of improprieties, from the slightest to the most gross, from the most risible to the most serious, there are degrees without end. Hence it is, that in viewing some unbecoming actions, too risible for anger, and too serious for derision, the spectator feels a sort of mixed emotion, partaking both of derision and of anger; which accounts for an expression, common with respect to the impropriety of some actions, that we know not whether to laugh or be angry.

It cannot fail to be observed, that in the case of a risible impropriety, which is always slight, the contempt we have for the offender is extremely faint, though derision, its gratification, is extremely pleasant. This disproportion between a passion and its gratification, seems not conformable to the analogy of nature. In looking about for a solution, we must reflect upon what is laid down above, that an improper action not only moves our contempt for the author, but also, by means of contrast, swells the good opinion we have of ourselves. This contributes, more than any other article, to the pleasure we have in ridiculing follies and absurdities; and accordingly, it is well known, that they who put the greatest value upon themselves are the most prone to laugh at others. Pride, which is a vivid passion, pleasant in itself, and not less so in its gratification, would singly be sufficient to account for the pleasure of ridicule, without borrowing any aid from contempt. Hence appears the reason of a noted observation, That we are the most disposed to ridicule the blunders and absurdities of others, when we are in high spirits; for in high spirits, self-conceit displays itself with more than ordinary vigour.

With regard to the final causes of congruity, and impropriety; one, regarding congruity, is pretty obvious, that the sense of congruity, as one principle of the fine arts, contributes in a remarkable degree to our entertainment. Congruity, indeed, with respect to quantity, coincides with proportion: when the parts of a building are nicely adjusted to each other, it may be said indifferently, that it is agreeable by the congruity of its parts, or by the proportion of its parts. But propriety, which regards voluntary agents only, can never be the same with proportion: a very long nose is disproportioned, but cannot be termed *improper*. In some instances, it is true, impropriety coincides with disproportion in the same subject, but never in the same respect; for example, a very little man buckled to a long toledo: considering the man and the sword with respect to size, we perceive a disproportion; considering the sword as the choice of the man, we perceive an impropriety.

The sense of impropriety with respect to mistakes, blunders, and absurdities, is happily contrived for the good of mankind. In the spectators, it is productive of mirth and laughter, excellent recreation in an interval from business. But this is a trifle in respect of what follows. It is painful to be the subject of ridicule; and to punish with ridicule the man who is guilty of an absurdity, tends to put him more upon his guard in time coming. Thus even the most innocent blunder is not committed with impunity; because, were errors licensed where they do no hurt, inattention would grow into a habit, and be the occasion of much hurt.

The final cause of propriety as to moral duties, is of all the most illustrious. To have a just notion of it, the moral duties that respect others must be distinguished from those that respect ourselves. Fidelity, gratitude, and the forbearing injury, are examples of the first sort; temperance, modesty, firmness of mind, are examples of the other: the former are made duties by the sense of justice; the latter, by the sense of propriety. Here is a final cause of the sense of propriety, that must rouse our attention. It is undoubtedly the interest of every man, to suit his behaviour to the dignity of his nature, and to the station allotted him by Providence; for such rational conduct contributes in every respect to happiness, by preserving health, by procuring plenty, by gaining the esteem of others, and which of all is the greatest blessing, by gaining a justly-founded self-esteem. But in a matter so essential to our well-being, even self-interest is not relied on: the powerful authority of duty is superadded to the motive of interest. The God of nature, in all things essential to our happiness, hath observed one uniform method: to keep us steady in our conduct, he hath fortified us with natural laws and principles, which prevent many aberrations, that would daily happen were we totally surrendered to so fallible a guide as is human reason. Propriety cannot rightly be considered in another light, than as the natural law that regulates our conduct with respect to ourselves; as justice is the natural law that regulates our conduct with respect to others. We call propriety a law, not less than justice; because both are equally rules of conduct that ought to be obeyed: propriety includes this obligation; for to say an action is proper, is in other words, to say, that it *ought* to be performed; and to say it is improper, is, in other words, to say that it ought to be forborne. It is this very character of *ought* and *should* that makes justice a law to us; and the same character is applicable to propriety, though perhaps more faintly than to justice: but the difference is in degree only, not in kind; and we ought, without hesitation or reluctance, to submit equally to the government of both.

But it must, in the next place, be observed, that to the sense of propriety, as well as of justice, are annexed the sanctions of rewards and punishments; which evidently prove the one to

be a law as well as the other. The satisfaction a man hath in doing his duty, joined with the esteem and good-will of others, is the reward that belongs to both equally. The punishments also, though not the same, are nearly allied; and differ in degree more than in quality. Disobedience to the law of justice, is punished with remorse; disobedience to the law of propriety, with shame, which is remorse in the lower degree. Every transgression of the law of justice raises indignation in the beholder; and so doth every flagrant transgression of the law of propriety. Slighter improprieties receive a milder punishment: they are always rebuked with some degree of contempt, and frequently with derision. In general, it is true, that the rewards and punishments annexed to the sense of propriety, are slighter in degree than those annexed to the sense of justice: which is wisely ordered, because duty to others is still more essential to society, than duty to ourselves; for society could not subsist a moment, were individuals not protected from the headstrong and turbulent passion of their neighbours.

CONINGTON, a village in Huntingdonshire, near Sliton, at the head of the river which forms Ug-mere, Brick-mere, and Whittefeam-ere. It has the ruins of a castle; and in a pool, just by the village, was found the skeleton of a fish, near 20 feet long, in a perfect state, six feet below the surface of the ground.

CONISTON MERE, a considerable lake of Lancashire, in the hundred of Furness. It affords plenty of char.

CONNER (Bernard), a learned physician, was born in the county of Kerry, in Ireland, about the year 1666. Having determined to apply himself to the study of physic, he went to France, and resided some time in the university of Montpellier. Afterwards he went to Paris; where he obtained great skill in medicine, anatomy, and chemistry. From thence he travelled to Venice, with the two sons of the high-chancellor of Poland; and then taking a tour through great part of Germany, went to Warlaw, where he was made physician to King John Sobieski. In 1695 he came to England, read a course of lectures in London and Oxford, and became member of the Royal Society and College of Physicians; afterwards, being invited to Cambridge, he read public lectures there, and made various experiments in chemistry. He has rendered himself memorable for a philosophical and medical treatise in Latin, entitled, *Evangelium Medici*, i. e. "The Physician's Gospel;" tending to explain the miracles performed by Christ, as natural events, upon the principles of natural philosophy. He wrote also a history of Poland; and died in 1698, aged 32.

CONQUET, a handsome town of France, in the department of Finistère, and late province of Bretagne, with a good harbour and road. It is 12 miles W. of Brest. Long. 4. 41. W. Lat. 48. 23. N.

CONRAD II. elected Emperor of Germany in 1004. He was obliged to take the field against most of the German dukes who had revolted from him; and he put Earnest duke of Suabia under the ban of the empire. This being one of the earliest instances of such a proscription, the formula is inserted here for its singularity. "We declare thy wife a widow, thy children orphans; and we fend thee, in the name of the devil, to the four corners of the world." It was in the reign of this prince that the German fiends became hereditary. He died in 1039.

CONRAD III. Emperor of Germany in 1138. The Duke of Bavaria opposed his election, and being put under the ban of the empire, and deprived of his duchy, he could not survive his disgrace. The margrave of Austria was ordered by the emperor to take possession of Bavaria; but Welfi, uncle to the deceased duke, attacked him, and was defeated near the castle of Winburgh: the battle fought upon this occasion is

famous in history, as having given rise to the party-names of Guelphs and Gibbelines, afterwards assumed, in Italy. The parole of the day with the Bavarians was *Welfi*, from the name of their general; that of the Imperialists *Werlingen*, from a small village where Frederic duke of Suabia, their commander, had been nursed: by degrees their names served to distinguish the two parties; and the Italians, who could not accustom themselves to such rough words, formed from them their Guelphs and Gibbelines. He died in 1152.

CONRAD of Lichtenau, or Abbas Uipergenensis, was author of an universal chronology from the creation to 1229, continued by an anonymous writer to Charles V. He collected a fine library, and died about the year 1240.

CONRADIN, or **CONRAD junior**, son of Conrad IV. was acknowledged emperor by the Gibbelines, who received him in triumph at Rome: but Pope Alexander IV. had published a crusade against this orphan; and Urban VII. his successor, gave the empire to Charles of Anjou, brother to Lewis IX. king of France: and the unfortunate youth, though powerfully supported, even by the Turks, lost a battle, in which he was taken prisoner, and was beheaded, by order of his base opponent, publicly at Naples in 1239, in the 18th year of his age. In him ended the race of the dukes of Suabia, which had produced several kings and emperors.

CONSTANTINE, emperor of the East in 1002, left the care of the empire to his wife Helena, who loaded the people with taxes, and sold all the offices in church and state to the highest bidders; while the emperor employed himself in reading, writing, and the fine arts, till he became as good an architect and painter, as he was a bad prince. He wrote several biographical and geographical works, which would have done honour to his name, if he had not neglected his duty to compose them. He died in 959.

CONSTANTINE (Dracofes), the son of Emmanuel Paleologus, was placed on the throne by Sultan Amurath in 1448. But Mahomet II. his successor, resolving to dethrone him, laid siege to Constantinople by sea and land, and took it by assault in 1453, after it held out 58 days. The unfortunate emperor seeing the Turks enter the breaches, threw himself into the midst of the enemy, and was cut to pieces; the children of the imperial house were massacred by the soldiers; and the women reserved to gratify the lust of the conqueror: and thus terminated the dynasty of the Constantines, 1123 years after its establishment at Constantinople.

CONSTANTINE (Robert), a learned physician, born at Caen, taught polite literature in that city; and acquired great reputation by his skill in the Greek language, in history, and in medicine. He died in 1603, aged 103. He wrote a dictionary in Greek and Latin, and other works, which are esteemed.

CONSTANTINOW, a town of Poland, in Volhinia, on the river Seluza, 62 miles N.E. of Kamienieck. Long. 27. 20. E. Lat. 49. 58. N.

CONVALESCENT, a person in a progressive state of recovery, after a fit of sickness, by which his strength and flesh have been greatly reduced. The poor, who cannot, with propriety, be continued in the public hospitals after the disease is at an end, endure much distress on that account. In the year 1791 a society was established by some of the governors of the London hospital, for patients of that charity, whose relief was not within its general regulations. There had been many cases of servants, artisans, and labourers, who had received the benefit of the hospital; but, upon being discharged, had no service or employment ready for them, or, if there had been such, were not sufficiently recovered, in point of health and strength, to resume their places or employment. There had been cases of amputation or of some chirological operation, where the parties were disabled from exercising

their former occupations. Some instances had occurred of young female patients, who by distrefs had been driven to pawn or sell their clothing, and were peculiarly exposed to temptation; of persons whose families had been suffering for want of support: of others belonging to remote parts of the kingdom, or to Ireland, who when discharged from the hospital, were, by lameness or weakness, rendered incapable of getting home without charitable assistance. There were some instances where the means of a journey to the charitable establishment at Bath, or to the sea, or the immediate supply of linen, of clothes, or of a truss, might have saved a fellow-creature from distrefs, and restored him in health to his family.

For the relief of these, and of other persons not within the provisions of hospitals, the Samaritan Society was established; and the following regulations were adopted, which we give at length, because they may be of use in forming similar societies:—"1st. A donation of five guineas shall be a qualification for a member for life.—2d. A donation of one guinea shall be a qualification of an annual member.—3d. A general court shall be held half-yearly, on the last Wednesdays in February and August, and shall consist of not less than five members.—4th. A treasurer, and a committee, to consist of not less than twelve members besides the treasurer, shall be annually elected at the general court in February: two of the committee shall go out annually, and two other members be chosen in their place.—5th. A committee shall be held every Tuesday, at 12 o'clock; and shall consist of not less than two members.—6th. Qualified persons shall be proposed at one committee, and voted for at the next.—7th. The committee shall appoint one or more visitors; who shall make enquiries of the officers, or other persons in the hospital, concerning the distrefsful circumstances of the patients, and report to the next committee accordingly.—8th. No recommendation from any person whatever, whether a member of the society or not, shall be regarded further than as it may be explanatory of the distrefs of the object under consideration, and as it may thence assist the committee in their proceedings.—9th. The proceedings of the society shall be exactly recorded; together with the names of all persons relieved, their age, place of nativity, parish, occupation, whether they are married or single, the state of their family, or any circumstance claiming the particular consideration of the society, as well as the relief granted.—10th. The names of, at least, two members of the committee, by order of the committee, shall be subscribed to drafts upon the treasurer.—11th. An exact account of the receipts, disbursements, and fund, of the society, shall be laid before every committee; which shall audit and sign the same, and send an abstract thereof annually to every member.—12th. The treasurer, and two other members, appointed at a general court, shall be trustees for investments in the funds.—13th. All legacies and donations, above one guinea, shall be added to the invested fund, which shall be inviolable.—14th. The expenditure of each year shall by no means exceed the annual income arising from the interest of the invested fund, and those donations which do not exceed one guinea; nor shall any debts be incurred, so as to anticipate the receipts of the society.—15th. Rules for the government of the society, shall be approved by one general court, and confirmed by the next; the members being informed of every approved regulation, at least six days before the general court, at which its confirmation shall be considered.—16th. At general courts and committees, questions shall be determined by a majority, the chairman having a casting vote; and if a ballot should be demanded by two members, it shall be proceeded upon immediately.—17th. The treasurer, the assembled committee, or

any five members of the society, shall have power to call extraordinary general courts."

The society consists of about 50 annual subscribers of one guinea each, and about 70 members for life, who have given donations of 5 guineas each. From the first institution of the society in 1791, to 5th September, 1798, as many as 221 distrefsed persons have been relieved, and put in a course of livelihood, who must otherwise have been driven to beggary, if not to criminal courses, for subsistence.

In March 1795 the society had the satisfaction to find that the good effects of this establishment had been experienced by many poor patients in the London hospital; who, after they had been cured of their diseases, and were in a state of convalescence, had been supplied with necessaries, and enabled to return home, and renew their occupations. The benefit had not been less to their wives and families; to whom occasional and seasonable relief had been administered, during the sickness and confinement of the patient. The utility and propriety of the charity seemed to be now unequivocally established. The committee therefore determined to recommend it as an appendage not only to every hospital, but also to every county gaol; in the latter instance, as the means, not merely of preserving delinquents from distrefs, but of restoring them to character, and to habits of occupation; there being frequent instances that persons, though not yet confirmed in vicious courses, might otherwise have been driven back to the commission of crimes, for the mere protraction of existence.

A circumstance which contributed very much to the establishment of this society deserves to be mentioned, as it exemplifies the cases which have been relieved by it. One of the members of this society passing along the Uxbridge road, observed a man of very decent appearance, reclined on a bank by the way side, with a pair of crutches near him. His account of himself was (and we have no reason whatsoever to question the truth of it), "that he was a Gloucestershire manufacturer; that he had been a short time in London, where he had the misfortune to break his leg, and had been admitted a patient into an hospital; that his leg had been very well set, and all proper care had been taken of him; and, upon his discharge that morning, some gentleman, he said, had kindly given him a shilling, on part of which he had subsisted so far; that he was going to his parish in Gloucestershire, but had not the means of paying for his carriage in the waggon." This story was not related in vain.—We leave it to the reader's consideration, what course of life remained to this poor man (had he not unexpectedly met with friendly assistance) but to beg,—to steal,—or to perish.

Amidst the great variety of charities, for which this age and kingdom are distinguished, it is extraordinary, that the provision, which is the subject of this article, should have experienced so little attention; and it is the more surprising, because upon the first institution of the charities, which were intended to provide for part of the inconveniences from the abolishing of monasteries, the utility of such an establishment appears to have been strongly impressed on the minds of the original projectors. In the declaration made to the privy-council, by the citizens of London, in the reign of Edward the Sixth, concerning the uses to which Bridewell, and the two other great foundations of Christ's and St. Thomas's hospitals, were to be applied, one of the three objects of Bridewell is expressed to be, "for the sore and the sick when they be cured;" in order that they may be protected and employed until their entire recovery: and "not be suffered to wander as vagabonds in the commonwealth, as they had been accustomed."

This part, however, of the original intentions of the projectors of that institution has not been yet carried into effect, as a committee of the governors of that hospital is now sitting, for the purpose of enquiring "whether, and by what means, the estates and revenues of the house of Bridewell can be appropriated with greater effect than at present to the benefit of its original and proper objects." The following is a short extract from three of a series of propositions, made by one of the members of the committee, and since printed by their order, and entered as resolutions on their minutes.

"That there are many deserving and necessitous persons, who, at the time of their being discharged from hospitals, are without the power of labour, or the means of support; and who, for want of that establishment which was one of the original objects of Bridewell, have been driven to solicit the charity of the public, as street beggars. That, such is the infirmity of human nature, they who have first discovered a successful and easy trade, are not likely, of themselves, to discontinue it, and to return to a course of labour; and, if the pauper does not receive charitable relief in his distress, he is sometimes induced to prey upon the public for his subsistence; and, to use the language of the rules of the house of Bridewell drawn up in 1557, *being set at liberty in the highways, is made of a sick beggar a whole thief.*" These persons, it is to be observed, will require, and that only for a short time, an asylum, where, being many of them artisans instructed in a trade, and almost all of them habituated to employment, their earnings would in general be more than what the cost of their diet, if economically managed, would amount to: and there is reason to hope, that the number of persons wanting this relief, would very soon be diminished by the proper application of it; and that the hospitals in the metropolis would be thereby greatly relieved; as it is a known fact that many patients, for want of the means of *entire recovery* of health and strength on quitting one hospital, have soon been obliged to apply for admission even into another."

CONVERSANO, a town of the kingdom of Naples, with a bishop's see, 10 miles from the gulf of Venice, and 12 S.E. of Bari. Long. 17. 6. E. Lat. 41. 20. N.

CONWAY, VALE OF, a long and narrow tract of Carnarvonshire. It is equally romantic and beautiful; affords rich pasturage, corn-fields, and groves; and forms a pleasing contrast to the bleak region of Snowdon frowning above it.

CONWAY, a river of North Wales, which flows through the vale of the same name, along the whole eastern border of Carnarvonshire, and enters the Irish Sea at the town of Conway.

COOK'S RIVER, a large river of North America, which flows into the N. Pacific Ocean. It was discovered by Captain Cook in 1778. As he left a blank for its name, it was filled up, after his death, by direction of the late Earl of Sandwich. This river was traced as high as lat. 61. 30. N. long. 150. 0. W. which is above 70 leagues from its mouth.

COOK'S STRAIT, a strait in the S. Pacific Ocean, dividing the two large islands of which New Zealand is composed: it is about four or five leagues broad.

COOPER (Samuel), a very eminent English miniature painter, born in 1609, and bred under the care of his uncle John Holkins. He derived, however, his principal excellence from a study of the works of Van Dyck, in whose time he lived; inasmuch that he was commonly styled "Van Dyck in little." His pencil was chiefly confined to the head, in which with all its dependences, especially the hair, he was inimitable; but if he descended lower, his incorrectness was notorious. He died in 1672; and his pieces are universally admired all over Europe, selling for

incredible prices.—He had a brother, Alexander, likewise a good miniature painter, who became limner to Christiana queen of Sweden.

COOPER (Thomas), a pious and learned prelate in the reign of Queen Elizabeth, was born at Oxford about the year 1517. He was educated in the school adjoining to Magdalen College, of which he was a chorister; where also, in 1539, he was elected probationer, and fellow in the following year. About the year 1546, quitting his fellowship, he applied himself to the study of physic, in 1556 took the degree of bachelor in that faculty, and practised as physician at Oxford. Being inclined to the Protestant religion, probably this was only a prudent suspension of his final intentions, during the Popish reign of Queen Mary: for, on the accession of Elizabeth, he resumed the study of divinity; became a celebrated preacher, was made dean of Christ-church, and vice-chancellor of the university, having accumulated the degrees of bachelor and doctor in divinity. In 1569 he was made dean of Gloucester; and, the year following, bishop of Lincoln: whence, in 1584, he was translated to the see of Winchester; in which city he died on the 20th of April, 1594, and was buried in the cathedral there, on the fourth side of the choir. The several writers who have mentioned Dr. Cooper, unanimously give him the character of an eloquent preacher, a learned divine, and a good man. He had the misfortune, while at Oxford, to marry a lady whose gallantries became notorious: nevertheless he would not be divorced from her; knowing that he could not live without a wife, he did not choose "to charge his conscience with the scandal of a second marriage."—He wrote, 1. the Epitome of Chronicles from the 17th year after Christ, to 1540, and thence after to 1560. 2. the *Thesaurus lingue Romanæ et Britannicæ*. This dictionary, which is an improvement upon Elyot's, was much admired by Queen Elizabeth, who thenceforward determined to promote the author. 3. A brief exposition of such chapters of the Old Testament as usually are read in the church, at common prayer, on Sundays throughout the year. 4. An admonition to the people of England. 5. Sermons.

COOPER'S HILL, a fine hill in Surrey, celebrated by Sir John Denham's poem of the same name. Its base extends along the edge of the famous Runnymede; its summit is crowned by the beautiful spot called Englefield-green; and it lies 19 miles W. by S. of London, on the road from Egham, through Windsor Great Park, to Reading.

COOS, an island in the Archipelago, 66 N.W. of Rhodes, subject to the Turks. Long. 27. 44. E. Lat. 37. 1. N.

COPILOWATS, a large town of Turkey in Europe, in Bulgaria. Long. 36. 35. E. Lat. 46. 40. N.

COPORIA, a town of Ingria, in the Russian government of Petersburg, at the mouth of a river of the same name. Long. 29. 0. E. Lat. 59. 34. N.

COQUET, a river of Northumberland, which crosses the centre of that county, and enters the sea at Warkworth. Celebrated for its ancient castle and hermitage.

CORAH, or CORAHJEHEMABAD, a small city of Hindoostan Proper, in the Doab, or country between the Ganges and Jumna, subject to the Nabob of Oude. It is 60 miles S.S.W. of Lucknow. Long. 79. 45. E. Lat. 26. 5. N.

CORAM (Captain Thomas), a gentleman remarkably distinguished by his humanity, was born about the year 1668, and spent the early part of his life in the station of master of a vessel trading to our colonies. Afterwards residing in the eastern part of the metropolis, among seafaring people, where business often obliged him to come early in

the city and return late, he frequently saw young children exposed in the streets through the indigence or cruelty of their parents. This excited his compassion, and induced him to project the foundation of an hospital for foundlings. In this humane design he laboured with indefatigable diligence for seventeen years; and, by his application procured a number of the nobility and gentry to patronise and carry the scheme into execution, and at length obtained the royal charter for it. He was also highly instrumental in promoting the trade of America, by procuring a bounty upon naval stores imported from our colonies. He was likewise eminently concerned in settling on foot the colonies of Georgia and Nova Scotia. His last charitable design, in which he lived to make some progress, was a scheme for uniting the North-American Indians more closely to the British interest, by an establishment for the education of Indian girls. In short, he spent the greatest part of life in labouring for the public, and experienced a fate too common in those who devote their talents to such laudable purposes; being at last indebted for subsistence to the voluntary subscriptions of some public-spirited persons, at the head of whom was the late Frederick prince of Wales. Captain Coram died in 1751: and was interred, at his own desire, in a vault under the chapel of the Foundling Hospital.

CORBACH, a town of Germany, in the principality of Waldeck, ten miles N.W. of Waldeck. Long. 8. 58. E. Lat. 51. 20. N.

CORBECK, a town of the Austrian Netherlands, in Brabant, three miles S. of Louvain. Long. 4. 49. E. Lat. 50. 50. N.

CORBELL, a town of France, in the department of Seine and Oise and late province of the Ile of France, divided into two by the Seine, seventeen miles S. of Paris. Long. 2. 26. E. Lat. 48. 33. N.

CORBY, a town of Germany, on the confines of Westphalia, with a famous abbey, whose abbot is a sovereign prince. It is seated upon the river Weser. Long. 9. 30. E. Lat. 51. 50. N.

CORDOVA, a town of South America, in the province of Tucuman, with a bishop's see, 180 miles from St. Jago. Long. 62. 5. W. Lat. 32. 10. S.

CORDUS (Valerius), a learned botanist, was the son of Ericus Cordus, a physician and poet of Germany. Having learnt the languages, he applied himself to the study of botany: in the prosecution of which, he examined the mountains of Germany, and travelled into Italy; but, being wounded in the leg by a kick of a horse, died at Rome in 1544. He wrote Remarks on Dioscorides, and other works.

CORINNA, a Grecian lady, celebrated for her beauty and poetic talents, was born at Theffu, a city of Boeotia, and was the disciple of Myrtis, another Grecian lady. Her verses were so esteemed by the Greeks, that they gave her the name of the lyric muse. She lived in the time of Pindar, about 495 years before Christ; and is said to have gained the prize of lyric poetry from that poet: but Pausanias observes that her beauty made the judges partial.

CORITA, a town of Spain, in Leon, twenty-three miles E. of Salamanca. Long. 5. 49. W. Lat. 41. 5. N.

CORK (*Encycl.*). To our brief account of this city we add an extract from an account of a society established there for bettering the condition of the poor.

On the 22d of March, 1799, a meeting of some of the most respectable characters in Cork was held, for the purpose of forming a society, in that city, for bettering the condition of the poor. It was preceded by an address to the inhabitants of the city and neighbourhood of Cork, dated the 20th of February, referring to what has been done by the English

society, to the effects produced at Hamburgh, and to the unwearied and successful labours of Count Rumford at Munich; and observing (what may be very general in its application) that the charities at Cork, by the mode of relief they have held out, have rather tended to encourage idleness and beggary, and have increased, instead of diminishing, the number of distressed objects in that place. Feeling the difficulties of the attempt, yet confiding in the axiom, that though all may not be effected, yet no well-directed effort of benevolence can be entirely lost, the author, the Reverend Thomas Dix Hincks, proposed the formation "of a society, in imitation of that in London, but adapted to their own peculiar situation; hoping that by procuring, and, when approved of, recommending such plans as have been found successful in England, they may contribute to their adoption in that city and neighbourhood."

At the meeting, held on the 22d of March, it was resolved, that the society be immediately formed; and that the general object of it should be to collect information respecting the circumstances and situation of the poor in that city and neighbourhood, and the most effectual means of meliorating their condition; and to communicate this information to the public, in order than any comforts and advantages which the poor enjoy in other parts of the British empire, might be extended to that part in as great a degree as peculiar circumstances will admit. And as it had been found impossible, notwithstanding the large sums bestowed, to relieve all the distress that might occur in that large city, it appeared desirable that particular attention should be paid to all plans of economy, so as to extend the benefits of charitable institutions to as great a number as possible.

It was further resolved, that "the society do ever keep in view the principle, that the best relief the poor can receive, is that which comes from themselves; and that the most effectual method of improving their condition is by the encouragement of industry and prudence.—That the business of the society be transacted by a committee chosen annually.—That this committee be empowered to correspond with any other society, having a similar object; to purchase any books, which are calculated to give them information on the subject; and to print any plan which they think deserving of the public attention.—That the committee be also empowered to offer such rewards for good conduct, as the state of the funds will admit, so as to awaken the attention of the poor, to what will promote their best interests.—That the committee consist of a president, five vice-presidents, and twenty-six members, including the treasurer and secretary, to be chosen at an annual meeting of the subscribers.—That no plan be printed, or any expence incurred, without the approbation of at least five members of the committee assembled in a regular manner.—That the committee meet once each month for the transaction of business.—That a sub-committee, chosen out of the general committee, and consisting of seven members of the general committee, do meet once a-week (that week excepted in which the general committee assemble), for the purpose of examining reports, and preparing plans for the inspection of the general committee.—That every subscriber be entitled to attend the meetings of the general or sub-committee, and to give his opinion, but not to have a vote on the decision of any question.—And that every member subscribe half a guinea annually, to defray the expences of the society."

The number of members already exceeds 120, and includes the most respectable inhabitants of the city of Cork. The Lord-bishop of Cork is the president. The vice-presidents are, Dr. Moylan (the titular bishop of Cork), the Honourable Dean St. Lawrence, Sir Samuel Rowland, Mr. Sergeant Chatterton, and Mr. Anderson.

One of their first objects is to encourage the establishment

of friendly societies, upon a general plan, which may require very few, if any, meetings of the subscribers. For this purpose the increase of honorary members, and the holding out every possible advantage to the other members, have appeared to be necessary.

It is essential to the permanent peace and welfare of Ireland, to introduce among the poor in that kingdom a proper and useful system of education,—habits of cleanliness,—a taste for the comforts of life, as applied, to food, habitation, and clothes;—and to promote the reciprocity of kindness and mutual good-will among the different classes of life; so as to give the mass of the people more interest in the established order of society, and more incitement to industry and exertion, and to connect them by a closer and more secure bond with the welfare and happiness of Ireland.

This can only be effected by the co-operation of the other ranks of society in that kingdom: and such a co-operation would be very greatly promoted by the formation of institutions like that which reflects so much honour on the patriotism and public spirit of the city of Cork.

It must give infinite satisfaction to see a Protestant and a Roman-catholic bishop uniting in a friendly and benevolent co-operation, for the religious and moral improvement, and for the temporal welfare and comfort, of their united flocks. If this example be followed throughout Ireland, it may produce the best effects, not only in meliorating the character and condition of the poor, but in removing religious prejudices, and in promoting Christian charity, between the Catholics and Protestants in that country.

Another institution well worthy of an account in this place is that of a friendly society, formed in 1799, by the assistance of the Cork society for bettering the condition of the poor.

The objects of this friendly society are confined to a providory fund for the support of the subscribing members in sickness, and old age, and for their decent interment. Circumstances have prevented the extension of it to widows and children. Persons however of all ranks and descriptions, and of both sexes, residing within the limits of the city of Cork, above the age of fifteen and under that of fifty, are admissible into this society.

The subscriptions are to be paid upon admission, and during life to be continued monthly, by each member, as follows:

Under thirty years of age,	1s. 1d.
Above thirty, and under forty,	1 4
Above forty, and under fifty,	1 9

Persons who by their age would come within one of the two last classes, are admissible into that immediately below it, on payment of one guinea and a half upon admission.

The funds of the society are open to augmentation by the contributions of the benevolent, and by prescribed forfeits in the members; viz. for neglect in payment of their monthly subscription, three pence for the first, and six-pence halfpenny for the second omission—for soliciting charity, two shillings and eight-pence halfpenny—and for intoxication, whilst receiving relief from the society, three shillings and three pence.

As the funds of the society are in the nature of shares, every member during sickness is entitled to relief for each share, and proportionably for half a share, which he or she shall have in the fund by a weekly allowance; and members above sixty, preferring an annuity to weekly payments, in sickness or infirmity, are entitled to progressive annuities during their natural lives, according to their ages. At sixty years of age, to an annuity of five pounds;—at seventy years of age, of seven pounds ten shillings;—at eighty years, of ten pounds; and at the age of ninety years or upwards, to an annuity of twelve pounds a-year for life. In case of death, each member is entitled to a specific sum for the expence of his or her funeral.

The regulations of the society state exceptions to relief, and authorise exclusion from the society. In the first case, among other specified instances, no member shall be entitled to relief for any disease, distemper, or infirmity, which he or she may have had, when admitted a member; nor for any distemper contracted by lewdness; nor for any lameness, misfortune, or accident, occasioned by quarrelling, rioting, drunkenness, or gaming; nor if imprisoned on a charge of treason, or felony, until legally acquitted of the same.

The penalty of exclusion is inflicted on members who shall attempt to take any advantage, by dissembing any sickness or infirmity, or by using any kind of fraud towards the society; or who shall neglect to pay his or her monthly payments for three successive months, or, in case of default, the prescribed forfeits; or who shall be a notorious drunkard or gambler; or who shall be criminally convicted. In any of which cases the person is to forfeit his or her title or claim to any part of the funds of the society.

Every person wishing to become a member of this society, must produce a certificate of his or her character, according to a prescribed rule: and every person admitted a member must, at the time of admission, subscribe an obligation, containing a promise and declaration, in all things well and truly to fulfil, keep, and observe, the rules, orders, and regulations of the society, and to promote its interest to the utmost of his power.

The funds of the society are vested in trustees, consisting of the president, vice-presidents, and committee, for the time being, of the society established in the city of Cork, "for bettering the condition and increasing the comforts of the poor." The direction of the society is vested in twenty-one persons, to be appointed annually by the trustees, from among the subscribing members of the "society for bettering the condition of the poor," or from among any other public institution for the benefit of the poor, who, together with the treasurer and honorary members of this friendly society, are constituted the directors thereof.

The rules and regulations for the government of this society are calculated effectually to guard against the inconveniences to which associations of this nature are sometimes liable. There are no meetings of the existing members; nor can the dissolution of the society, or any distribution of its funds, fraudulent in itself, and contrary to the true meaning of the regulations, take place, but under such restrictions as exclude the possibility of any derangement of the society, or the misapplication of its funds. The regulations are equally calculated to provide for the health, and to secure and improve the morals and good conduct, of the members of the society. A certificate of character is a prescribed title for admission. The regular payment of the monthly contributions is enforced by forfeits; whilst the penalty of exclusion applies equally to prevent successive failures in payment, and to check immoral conduct. In the respectability of the gentlemen who have voluntarily undertaken the office of trustees and directors, the members of this friendly society have a solid security, that their interests will be well managed, and the laws of the association duly enforced for the benefit of all the members.

We have given a place to these accounts in the hope of being the instruments of similar good in other parts of a country where such associations are greatly wanted.

CORMENTIN, a fortress on the Gold Coast of Guinea, belonging to the Dutch. Below it is the town, which is large and populous. Long. o. 15. W. Lat. 5. 30. N.

CORMERY, a town of France, in the department of Indre and Loire and late province of Touraine. It had recently a rich Benedictine abbey, and is seated on the Indre, eight miles from Tours. Long. o. 28. E. Lat. 47. 30. N.

CORN (*Encycl.*). There are several species of corn, such as wheat, rye and barley, millet and rice, oats, maize and lentils, peas, and a number of other kinds, each of which has its usefulness. But of these scarcely any possess such highly nutritive qualities as **MATZG** or **Indian CORN**. See the article **ZEA**.

Count Rumford, in his fifth essay, published in 1796, took considerable pains to draw the attention of the public to this very important article of diet. Indian corn is produced in abundance and of the best quality in British America. It is capable of being ground into meal like any other grain, and in this state admits of various kinds of culinary preparation. One simple and obvious way of using it is, to mix it with wheat, rye, or barley, in making bread; in which case the proportion of one-half may be employed. It makes an excellent and cheap family pudding, when mixed with molasses and a little salt*, and boiled in a bag; and may be enriched and accommodated to different tastes by the intermixture of sliced apples or small fruits. If a good quantity is made at once, it may be very conveniently cut in slices and fried; these Indian puddings not being the worse for several days' keeping.

Whether the making and vending this kind of pudding in its plain state to the poor, along with meat soup, would be a means of rendering bread unnecessary, or whether thickening the soup with Indian meal might be made to answer the same salutary purpose with less trouble, are subjects worthy of consideration with those who superintend the public kitchens. As the Indian meal requires long boiling to free it from its raw taste, the latter mode appears, in fact, to promise the greater advantages; though it is likely the poor themselves would prefer "solid pudding," even at an additional charge, to a diet approaching so much to the fluid state.

But the most economical way of preparing Indian meal appeared to be the stirring it into a quantity of water, so as to make hasty-pudding, in which state it is eaten and universally approved in America, where its nutritious qualities are reckoned superior even to those of wheat. The manner in which this is done is the following:

A quantity of water, with an adequate proportion of salt diffused in it, being put on the fire, repeated handfuls of Indian meal are gradually stirred into it, so as to make an uniform mixture. As the contents of the pot approach to a boiling state they become thicker and thicker, and at last, by a due regulation of the proportion of meal, and constant stirring, the pudding becomes sufficiently solid to keep the implement with which it is stirred, upright, when plunged into the middle of the kettle. Half an hour's further boiling finishes the process.

This pudding, however, is scarcely favourable enough to make a meal without some kind of sauce; and this perhaps may make it a less eligible mode of first introducing Indian corn to the notice of the poor as an article of diet. Count Rumford, indeed, who made the experiment, shews, by the following statement, that, with even this disadvantage, a comfortable meal may be made at the trifling expence of five farthings.

1 lb. 1 $\frac{1}{2}$ oz. of pudding	Farthings
Sauce, consisting of butter, molasses, and vinegar	2 $\frac{1}{2}$
	2 $\frac{3}{4}$

In Italy, where this kind of pudding is in great popular esteem, it is very commonly eaten without any sauce, under the name of *polecia*: surely the poor of this country, by gradual steps, and especially by the example of their superiors (which, by the way, is very material), may be led to avail

themselves of so great a benefit, and be taught to relish, in a country liable to occasional deficiencies in the produce of grain, as well as to considerable temporary changes in the price of other necessaries of life, some of those kinds of food which are known to be highly acceptable to the inhabitants of distant climates.

CORN-GRINDING Machine, an invention for which a patent has been granted to Mr. Barratt, of Gedling, in the county of Nottingham. In the specification it is said to be a more simple, concise, and cheap method of grinding corn, or other grain, than has been hitherto used. It is either moveable or immovable, and intended to be worked by water, wind, horses, hand, or otherwise.

"This mill," says the inventor, "may be conveniently erected in a garden or croft, wherever the wind has access, and is so light as to be capable of being turned by the hand, or the sails may occasionally be affixed in a horizontal position to the upright shaft; and on taking down the shed over the mouth-hopper, the power of a horse may be applied when the wind fails. It will perhaps be necessary, on this occasion, to have the wheel A, Plate 22. fig. 1. enlarged, which may be readily effected by screwing on an additional wheel in quadrants or octants, as may be preferred. The whole apparatus may be conveniently fixed on a centre, with a gudgeon at each end, to the gable end of a house, barn, or granary, a peculiar provision being planned in the sails for that purpose. It will appear obvious, that its internal construction is suited to any power which may be substituted for the sails; and it will be superfluous to hint to a workman, how hand-mills may be connected with the crown and spur-wheels at the same time to grind malt, split beans, cut hay, straw, &c.

"Fig. 1. A is a crown and spur wheel; it has three concentric circles, 1, 2, 3, with teeth adapted to the spur-wheel above, on the mill-shaft, the teeth in the second being higher than the first, and in the third higher than the second, to meet the elevation of the mill-shaft above the plane of the crown-wheel. These circles are called the speed-wheels, serving to increase the velocity of the stones, or to preserve it when the velocity of the wind decreases. This wheel may be dispensed with, with one or two pair of stones, the nut on the spindle being made contrate instead of spur, and immediately connected with the spur-wheel, affixed to the axis of the mill by means of a sliding box A (fig. 2.), and screwed in its position by the screw S (fig. 2.), by which it is adapted to each of the concentric circles, as the crown-wheel is required to move faster or slower. C is the brake-wheel, which retards or stops the motion of the sails by its friction with the wedge W. (See for its position on the axis fig. 2.) D is a circular plate of cast-iron, belonging to, and being part of, the iron axis of the mill-shaft, or the upright axis of the crown-wheel. Upon this plate, on the continuation of the spindle (see d, fig. 2.), is placed the cross fig. 4. to which it is fastened by four screws passing through the four holes of both; and the extremity of the arm of each fall into which the said cross is inserted at the slot f (fig. 3.), and secured by another screw and moveable iron bandages. E is the gallows, which supports the gudgeon of the mill-shaft, which, moving on a centre at the small end, permits the spur-wheel to be thrown in or out of gear by means of the wedge at the other end. The stones moved by the nut s are placed in a box in the frame G, fixed on a platform m, which, sliding on the rails n, n, the spindle is thrown out of gear by the screw H passing through the iron rod,

* Three pounds of Indian meal stirred into five pints of boiling water, with the addition of one ounce of salt and three fourths of a pound of molasses, the whole tied loosely in a bag and boiled six hours, makes ten pounds of pudding at an expence of less than 1d. per pound. See Count Rumford's 3d essay, p. 264.

which, by the screw I, raises or depresses the bridge-tree, *a* is an iron axis, with small wheels at each end, for turning a lifting machine.

"Fig. 3. is the sail-arm, into which, at the mortise *a*, is put the supporting arm D, at its end *b*, and secured by a peg: the fixed part of the sail E falls into the slot C, and is kept in its position by the guards *d*, and a peg in the groove B. The two other fan-fails F, F, slide on each side of the fixed one, moving on a centre at the narrow extremity, and, when expanded to the wind, are kept in their positions by pegs in the same groove catching in the notches at the other extremity: these fails are made of thin boards. When the fails are affixed to a gable-end, whence it will occasionally be necessary to catch the wind on opposite sides of the sail, the ledge *c* is attached to each fail-arm into the nicks, on which falls the spring *m* of the adjoining fail, by which means the fails are turned to opposite degrees of obliquity. The frame of the machinery, as depicted in the specification, turns on castors, on a circular base."

The patentee has erected a mill, of the above description, at his house at Gedling, near Nottingham, and has various models, open for the inspection of such persons as may wish to see them. These mills may be adapted to be worked either by rivulets or the wind: in the latter case they may be erected on the stem of a standing tree, or the gable end or corner of a house, barn, or other building, in any of which situations the whole apparatus for grinding, &c. may be contained within the attic or other room.

The price of the above mills, adapted to gable ends, to work only one pair of grey stones, of not more than thirty inches diameter, is thirty-five guineas; if with a preparation for other machinery three guineas more. Those to be erected on the ground, adapted either for wind or water, will be from forty-five to sixty guineas; and if two pair of stones, dimensions as above, from fifteen to twenty guineas extra; if of larger sizes, the price will advance in proportion.

The mills on the ground may be made either portable or immovable, on posts, and when boarded forms a complete house, under the works, for the miller, and a receptacle for his flour.

These mills, according to the size of the stones, will turn off as much work as any mills on the old construction. The prices mentioned are exclusive of any water-works, carriage, or fixing.

CORNARIUS, or **HAGUENBOT** (John), a celebrated German physician, born at Zwickow in Saxony. His preceptor, made him change his name of Hagenbot to that of Cornarius, under which he is most known. At twenty years of age he taught grammar, and explained the Greek and Latin poets and orators to his scholars; and at twenty-three, was licentiate in medicine. He found fault with most of the remedies provided by the apothecaries; and observing, that the greatest part of the physicians taught their pupils only what is to be found in Avicenna, Rhazes, and the other Arabian physicians, he carefully sought for the writings of the best physicians of Greece, and employed about fifteen years in translating them into Latin, especially the works of Hippocrates, Aëtius, Æginetus, and a part of those of Galen. Meanwhile he practised physic with reputation at Zwickow, Frankfurt, Marburg, Nordhausen, and Gena, where he died of an apoplexy in 1558, aged fifty-eight. He also wrote some medicinal treatises; published editions of some poems of the ancients on medicine and botany; and translated some of the works of the fathers, particularly those of Basil, and a part of those of Epiphanius.

CORNET, a castle on the island of Guernsey. Long. 2. 40. W. Lat. 49. 30. N.

CORNETO, a town of Italy, in the patrimony of St. Peter, with a bishop's see, seated on the river Marta, three miles E. of the sea, and thirty-seven N.W. of Rome. Long. 11. 53. E. Lat. 42. 15. N.

CORNUS (Encycl.). The second species, namely, the *cornus sanguinea*, bloody-twig, or common dog-wood, hath been found capable of yielding an oil applicable to some useful purposes. The following account is taken from the *Annales de Chimie*.

"The *cornus sanguinea* of Linneus," says Citizen Marqueron, of Strasburg, who writes that article, "is a shrub so much esteemed by ornamental gardeners, for embellishing clumps of trees, both on account of its beautiful form, and the fine red colour which its branches and leaves assume towards the close of the summer, bears a berry, which, when ripe, is of a blackish colour, whose utility, both for the purposes of medicine and the arts, has never hitherto been properly estimated."

"The greasy unctuous appearance which these berries exhibit when crushed between the fingers, led me to imagine that they might contain an oil, which certainly must possess some useful properties. Well persuaded of this truth, that none of nature's productions are without their use, I prevailed upon Citizen Chevreul, botanical gardener at Molsheim, in the department of the Lower Rhine, where this shrub grows in great abundance, to collect a quantity of its berries."

"Ten kilogrammes of these berries were collected and spread out in a garret, not for the purpose of drying them, but in order that they might acquire a softer consistence: in this state they were reduced to a paste, and subjected to the press, where, without the application of heat, two litres were obtained, of a greasy unctuous liquid, possessing a degree of viscosity similar to that of oil, of a green, though very pellucid, colour; it was perfectly homogeneous, and exhibited all the physical properties of a real oil, without possessing either a disagreeable smell or taste, which determined Citizen Chevreul and me to eat a salad prepared with it, which we did several times without experiencing any bad effects from it. These properties, however, not being sufficient to demonstrate that this liquid was really an oil, I undertook the task of subjecting it to various experiments, of which the result is as follows:

"A drop of this oily liquid, when let fall into a vessel filled with water, extended itself over its surface in a very fine pellicle, which reflected the prismatic colours."

"Wishing to know whether it were possible to deprive this oily substance of its green colour, I washed it with cold and hot water, the water being charged with sulphate of alumine, powdered slate, charcoal-powder, &c. All these different means were of no effect, the liquids above mentioned did not receive any new tinge, and the green colour of the oil remained always the same."

"Alcohol was also employed. This menstruum having assumed a greenish tinge, I imagined that I should be able thereby to extract the colouring matter of the oily liquid; for which purpose I added a portion of this alcohol, tinged as above mentioned, to a certain quantity of water. The mixture immediately became white, and some drops of oil swam at the top. I evaporated, in a distilling apparatus, another portion of this coloured alcohol: the alcohol which I thus obtained was colourless, and there remained behind a quantity of oil, of the same colour as before: the alcohol therefore owed its colour only to the solution of a portion of the oil, and not to the separation of the colouring principle."

"Sulphur combined completely with this oil: with the aid of caloric, there resulted from this combination a real balfam of sulphur, of a fine deep red colour, verging upon the brown and of an extremely feid smell."

"Potash, soda, and ammowia, formed with this oil real soaps, possessing different degrees of solidity.

"The concentrated sulphuric acid, combined with this oil, produced a real acid soap, of a yellowish colour, and the appearance of a resin.

"The nitric and muriatic acids exhibited no perceptible operation upon the oil, when applied to it in the cold way, excepting that they assumed a slight greenish tinge.

"Nitric acid, when heated with this oil, caused it to assume a solid consistence, and a yellow colour, perfectly resembling that of yellow pomatum; during the ebullition there took place a considerable swelling in the mass, an extrication of nitrous gas, &c. The theory of this operation being perfectly well known, it will be unnecessary to explain it in this place.

"Not having been able to procure nitrous acid, it was impracticable for me to ascertain the inflammability of this oil by the acids.

"By boiling for some time upon litharge, this oil acquired the ficative property, which rendered it fit for being employed in painting, a property which it possessed before its oxygenation, but in a less degree than afterwards.

"By continuing the ebullition, the oxyde of lead was disoxydated, and entirely dissolved; and the mixture acquired a consistence and brown colour, perfectly resembling that of the brown diachylon (*onguent de la mère*).

"I repeated the same experiment, taking care to add water, and constantly stir the liquid, in the manner which is practised in preparing the *diapalma* plaster; by which means I obtained a substance of a good consistence, and a colour perfectly resembling that of the *Empl. de vigo cum mercurio*: this colour having made me believe that I had failed to obtain a plaster, which I imagined ought to be of a whitish colour, I repeated the experiment several times with all possible attention; and every time I obtained a plaster of the same colour. The theory of plasters having been very well explained by Citizen Deyeux, it may be dispensed with in this place. I exposed a quantity of this oil to the contact of the atmospheric air: after some time it was found to have acquired a somewhat greater degree of consistence.

"The same experiment was repeated, but with the addition of water, and the observance of all the precautions directed by Citizen Berthollet: at the end of a month the oil had acquired a solid consistence, and a white colour, similar to that of wax.

"Wishing, finally, to know of what utility this oil might be for domestic purposes, I poured it into a lamp with cotton wicks, which being lighted threw out a bright light, without any perceptible smoke or smell: the same lamp, with wicks of the same kind, was successively filled with oil of olives and rape seed oil: the latter burnt two hours, the olive-oil two hours and a quarter, and the oil of the *cornus sanguinea* two hours and a half.

"If we add to these facts, the property of congealing, which belongs to this oil, we shall have all the characters of the oil of the *cornus sanguinea*.

"From these experiments, which are all that I have had it in my power to make, I am authorised to conclude, that the oily juice obtained by expression from the *cornus sanguinea* is a real oil, possessing certain properties that may render it useful in the arts, commerce, and perhaps in medicine. I also think that it ought to be placed, according to Fourcroy's principles, in the second class, which comprehends the ficative oils, which speedily grow thick, are not congealed by the action of the cold, take fire with nitrous acid alone, and form with sulphuric acid resinous compositions.

CORO, a town of South America, in Terra Firma, seated at the bottom of the gulf of Venezuela, 50 miles W. of La Guaira. Long. 70. 0. W. Lat. 11. 0. N.

Voz. X.

COROMANDEL (*Encycl.*). This eastern coast of the peninsula on this side the Ganges, is bounded on the north by Golconda, on the east by the bay of Bengal, on the south by Madura, and on the west by Bimnagar. This coast so much resembles that of Orixá, that the Abbé Raynal chooses to consider them as one, and gives to both the general name of *Coromandel*. Here an excessive heat reigns from the beginning of May to the end of October. It begins at nine in the morning, and continues till nine in the evening. During the night it is allayed by a sea-breeze from the south-east; and most commonly this refreshing gale begins at three in the afternoon. The air is less inflamed during the rest of the year, though in all seasons it is very hot. It rains almost continually during the months of November and December. This immense tract is covered with a parched sand for the extent of two miles, and sometimes only one mile along the coast.

This country was at first neglected by the Europeans for many reasons. It was separated by inaccessible mountains from Malabar, where these bold adventurers endeavoured to settle themselves. Spices and aromatics, which were the principal objects of their attention, were not to be found there. In short, civil dissensions had banished from it tranquillity, security, and industry. At that period the empire of Bimnagar, to which this vast country was subject, was falling to ruin. The governments of Visapour, the Carnatic, Golconda, and Orixá, threw off their dependence, and assumed the title of kings. Those of Madura, Tanjore, Mysore, Gingi, and some others, likewise usurped the sovereign authority, though they retained their ancient title of *Naiak*. This revolution had just happened when the Europeans appeared on the coast of Coromandel. The foreign trade was at that time inconsiderable; it consisted only of diamonds from Golconda, which were carried to Calicut and Surat, and from thence to Ormus or Suez, whence they were circulated through all Europe and Asia. Masulipatan, the richest and most populous city of these countries, was the only market that was known for linens; they were purchased at a great fair annually holden there by the Arabian and Malayan vessels that frequented that bay, and by caravans arrived from distant parts. The linens were exported to the same places with the diamonds. The fondness for the manufactures of Coromandel which began to prevail here, inspired all the European nations trading to the Indian seas with the resolution of forming settlements there. They were not discouraged either by the difficulty of conveying goods from the inland parts of the country, where there was no navigable river; by the total want of harbours, where the sea, at one season of the year, is not navigable; by the barrenness of the coasts, for the most part uncultivated and uninhabited; or by the tyranny and fluctuating state of the government. They thought that silver would be industriously fought after; that Pegu would furnish timber for building, and Bengal, corn for subsistence; that a prosperous voyage of nine months would be more than sufficient to complete their ladings; and that by fortifying themselves they should be secure against the attacks of the weak tyrants that oppressed these countries.

The first European colonies were established near the shore. Some of them obtained a settlement by force: most of them were formed with the consent of the sovereigns; and all were confined to a very narrow tract of land. The boundaries of each were marked out by a hedge of thorny plants, which was their only defence. In process of time fortifications were raised; and the security derived from them, added to the lenity of the government, soon increased the number of colonists. The splendor and independence of these settlements several times raised the jealousy of the princes in whose dominions they were formed; but their attempts to demolish

them proved abortive. Each colony increased in prosperity in proportion to the riches and the wisdom of the nation that founded it. None of the companies that exercised an exclusive privilege beyond the Cape of Good Hope had any concern in the trade of diamonds. This was always left to private merchants, and by degrees fell entirely into the hands of the English, or the Jews and Armenians that lived under their protection. At present this grand object of luxury and industry is much reduced. The revolutions that have happened in India have prevented people from resorting to these rich mines; and the anarchy in which this unhappy country is plunged, leaves no room to hope that they will be again attended to. The whole of the commercial operations on the coast of Coromandel is confined to the purchase of cottons. The manufacturing of the white cottons bought there, differs so little from ours, that it would be neither interesting nor instructive to enter into a minute description of it. The process used in making their printed cottons, which was at first servilely followed in Europe, has since been rendered more simple, and brought to greater perfection by our manufacturers. The painted cottons which are bought there, we have not yet attempted to imitate. Those who imagine we have been prevented from undertaking this branch merely by the high price of labour among us, are mistaken. Nature has not given us the wild fruits and drugs necessary for the composition of those bright and indelible colours which constitute the principal merit of the Indian manufactures; nor has she furnished us with the waters that serve to fix them. The Indians do not universally observe the same method in painting their cottons; either because there are some niceties peculiar to certain provinces, or because different soils produce different drugs for the same uses. We should tire the patience of our readers were we to trace the slow and painful progress of the Indians in the art of painting their cottons. It is natural to believe that they owe it to length of time, rather than to the fertility of their genius. What seems to authorize this conjecture is, that they have stopped in their improvements, and have not advanced a single step in the arts for many ages; whereas we have proceeded with amazing rapidity. Indeed, were we to consider only the want of invention in the Indians, we should be tempted to believe, that, from time immemorial, they have received the arts they cultivate from some more industrious nation; but when it is remembered that these arts have a peculiar dependence on the materials, gums, colours, and productions of India, we cannot but be convinced that they are natives of that country. It may appear somewhat surprising that cottons painted with all sorts of colours should be sold at so moderate a price, that they are almost as cheap as those that have only two or three. But it must be observed, that the merchants of the country sell to all the companies a large quantity of cottons at a time; and that the demand for cottons painted with various colours makes but a small article in their assortments, as they are not much esteemed in Europe.

Though cottons of all sorts are in some degree manufactured throughout the whole country of India, which extends from Cape Cormorin to the banks of the Ganges; it is observable, that the fine sorts are made in the eastern parts, the common ones in the centre, and the coarse ones in the most western parts. Manufactures are established in the European colonies, and upon the coast: they are more frequent at the distance of five or six leagues from the sea, where cotton is more cultivated, and provisions are cheaper. The purchases made there are carried 30 or 40 leagues further into the country. The Indian merchants settled in the European factories have always the management of this business. The quantity and quality of the goods wanted are settled with these people: the price is fixed according to the patterns:

and, at the time the contract is made, a third or a fourth part of the money agreed on is advanced. This arrangement is owing to the necessity these merchants themselves are under of advancing money to the workmen, by the partners or agents who are dispersed through the whole country; of keeping a watchful eye upon them, for fear of losing what they have advanced; and of gradually lessening the sum, by calling for the cottons as fast as they are worked off. Without these precautions, nothing could be depended on in an oppressive government, where the weaver cannot work on his own account, either because his circumstances will not permit, or because he dares not venture to discover them for fear of exactions. The companies that have either success, or good management, constantly keep the stock of one year in advance in their settlements. By this method they are sure of having the quantity of goods they have occasion for, and of the quality they choose, at the most convenient time: not to mention that their workmen and their merchants, who are kept in constant employment, never leave them. Such nations as want money and credit cannot begin their mercantile operations till the arrival of their ships. They have only five or six months at most to execute the orders sent from Europe. The goods are manufactured and examined in haste; and they are even obliged to take such as are known to be bad, and would be rejected at any other time. The necessity they are under of completing their cargoes, and fitting out their vessels before hurricanes come on, leaves no room for nicety of inspection. It would be a mistake to imagine that the country agents could be prevailed upon to order goods to be made on their account, in hopes of selling them without a reasonable advantage to the company with whom they are engaged. For, besides that the generality of them are not rich enough to embark in so large an undertaking, they would not be certain of finding their account in it. If the company that employ them should be hindered by unforeseen accidents from sending the usual number of ships, these merchants would have no vent for their commodities. The Indians, the form of whose dresses requires different breadths and lengths from those of the cottons fabricated for our use, would not purchase them; and the other European companies would be provided, or certain of being provided, with whatever the extent of their trade required, and their money enabled them to purchase. The plan of procuring loans, which was contrived to remedy this inconvenience, never has, nor can be useful. It has been a custom, time immemorial, in India, for every citizen who borrows money, to give a written instrument to his creditor. This deed is of no force in a court of judicature, unless it is signed by three witnesses, and bears the day of the month, and the year when it was made, with the rate of interest agreed upon by the parties. If the borrower fails to fulfil his engagements, he may be arrested by the lender himself. He is never imprisoned, because there is no fear of his making his escape. He would not even eat, without obtaining leave of his creditor. The Indians make a three-fold division of interest: one kind they call *vice*; another neither *vice* nor *virtue*; and a third, they say, is *virtue*. The first is four per cent. a month; the second two; and the third one. The last is, in their opinion, an act of beneficence that only belongs to the most heroic minds. Yet, though the Europeans, who are forced to borrow, meet with this treatment, it is plain they cannot avail themselves of the indulgence without being involved in ruin.

The foreign trade of Coromandel is not in the hands of the natives. In the western part, indeed, there are Mahomedans known by the name of *Chalias*, who, at Naur, and Porto-Novo, send out ships to Acken, Merguy, Siam, and the Eastern coast. Besides vessels of considerable burthen employed in these voyages, they have smaller embarkations for the coasting trade for Ceylon, and the pearl fishery. The Indians of

Mañilapatán turn their attention another way. They import from Bengal white calicoes, which they dye or print, and sell them again at the places from whence they had them, at 33 or 40 per cent. advantage. Excepting these transactions, which are of very little consequence, the whole trade is vested in the Europeans, who have no partners but a few Banians and Armenians settled in their colonies. The quantity of calicoes exported from Coromandel to the different parts of India, may be computed at 3500 bales. Of these the French carry 800 to Malabar, Mocha, and the Isle of France; the English, 1200 to Bombay, Malabar, Sumatra, and the Philippine Islands; and the Dutch 1500 to their different settlements. Except 500 bales destined for Manila, each of the value of 100 guineas, the others are of such an ordinary kind that they do not exceed 30 guineas at prime cost; so that the whole number of bales do not amount to more than about 150,000.

Coromandel furnishes Europe with 9500 bales; 800 of which are bought by the Danes, 2500 by the French, 3000 by the English, and 3200 by the Dutch. A considerable part of these calicoes are dyed blue, or striped blue and red for the African trade. The others are fine muslins, printed calicoes, and handkerchiefs from Mañilapatán, or Palacate. It is proved by experience that each of these bales costs only about 42l. sterling; consequently they ought to bring in to the manufactory where they are wrought, near 360,000l. The payments are not entirely made in specie, either in Europe or Asia; we give in exchange, cloths, iron, lead, copper, coral, and some other articles of less value. On the other hand, Asia pays with spices, pepper, rice, sugar, corn, and dates. All these articles taken together may amount to about 210,000l.; and from this calculation it follows, that Coromandel receives annually from Europe about 300,000l. in money. The British, who have acquired the same superiority on this coast that they have elsewhere, have formed on it several settlements.

CORON, a sea-port of Turkey in Europe, in the Moræa. It is seated on a bay, 15 miles S.E. of Modon. Long. 21. 30. E. Lat. 36. 50. N.

CORPORATION (*Encycl.*). Having in that article noticed the several species of corporations, we here purpose to consider, 1. How corporations in general may be created, 2. What are their powers, capacities, and incapacities. And, 3. How they may be dissolved. We shall in this follow Judge Blackstone.

I. Corporations, by the civil law, seem to have been created by the mere act, and voluntary association, of their members; provided such convention was not contrary to law, for then it was *illicitum collegium*. It does not appear that the prince's consent was necessary to be actually given to the foundation of them; but merely that the original founders of these voluntary and friendly societies (for they were little more than such) should not establish any meetings in opposition to the laws of the state.

But in England the king's consent is absolutely necessary to the erection of any corporation, either implied or expressly given*. The king's implied consent is to be found in corporations which exist by force of the common law, to which our former kings are supposed to have given their concurrence; common law being nothing else but custom, arising from the universal agreement of the whole community. Of this sort are the king himself, all bishops, parsons, vicars, churchwardens, and some others; who, by common law, have

ever been held (as far as our books can shew us) to have been corporations, *virtute officii*; and this incorporation is so inseparably annexed to their offices, that we cannot frame a complete legal idea of any of these persons, but we must also have an idea of a corporation, capable to transmit his rights to his successors, at the same time. Another method of implication, whereby the king's consent is presumed, is as to all corporations by prescription, such as the city of London, and many others, which have existed as corporations, time whereof the memory of man runneth not to the contrary; and therefore are looked upon in law to be well created. For though the members thereof can shew no legal charter of incorporation, yet, in cases of such high antiquity the law presumes there once was one; and that by the variety of accidents which a length of time may produce, the charter is lost or destroyed. The methods by which the king's consent is expressly given, are either by act of parliament or charter. By act of parliament, of which the royal assent is a necessary ingredient, corporations may undoubtedly be created: but it is observable, that most of those statutes which are usually cited as having created corporations, do either confirm such as have been before created by the king; as in the case of the college of physicians, erected by charter to Hen. VIII. which charter was afterwards confirmed in parliament; or, they permit the king to erect a corporation *in futuro* with such and such powers; as is the case of the bank of England, and the society of the British fishery. So that the immediate creative act is usually performed by the king alone, in virtue of his royal prerogative.

All the other methods therefore whereby corporations exist, by common law, by prescription, and by act of parliament, are for the most part reducible to this of the king's letters patent, or charter of incorporation. The king's creation may be performed by the words "*creamus, erigimus, fundamus, incorporamus*," or the like. Nay it is held, that if the king grants to a set of men to have *gildam mercatoriam*, "a mercantile meeting or assembly," this is alone sufficient to incorporate and establish them for ever.

The king (it is said) may grant to a subject the power of erecting corporations, though the contrary was formerly held: that is, he may permit the subject to name the persons and powers of the corporation at his pleasure; but it is really the king that erects, and the subject is but the instrument: for though none but the king can make a corporation, yet *qui facit per alium, facit per se*. In this manner the chancellor of the university of Oxford has power by charter to erect corporations; and has actually often exerted it in the erection of several matriculated companies, now subsisting, of tradesmen subservient to the students.

When a corporation is erected, a name must be given to it; and by that name alone it must live, and be sued, and do all legal acts.

II. After a corporation is so formed and named, it acquires many powers and rights, which we are next to consider. Some of these are necessarily and inseparably incident to every corporation; which incidents, as soon as a corporation is duly erected, are tacitly annexed of course. As, 1. To have perpetual succession. This is the very end of its incorporation: for there cannot be a succession for ever without an incorporation; and therefore all aggregate corporations have a power necessarily implied of electing members in the room of such as go off. 2. To sue, or be sued, implead, or be impleaded, grant or receive, by its corporate name, and do all other

* Cities and towns were first erected into corporate communities on the Continent, and endowed with many valuable privileges, about the 11th century (Robert. Cha. V. i. 30); to which the consent of the feudal sovereign was absolutely necessary, as many of his prerogatives and revenues were thereby considerably diminished.

acts as natural persons may. 3. To purchase lands, and hold them, for the benefit of themselves and their successors: which two are consequential to the former. 4. To have a common seal. For a corporation, being an invisible body, cannot manifest its intentions by any personal act or oral discourse: it therefore acts and speaks only by its common seal. For, though the particular members may express their private consents to any act, by words, or signing their names, yet this does not bind the corporation: it is the fixing of the seal, and that only, which unites the several assents of the individuals, who compose the community, and makes one joint assent of the whole. 5. To make by-laws or private statutes for the better government of the corporation; which are binding upon themselves, unless contrary to the laws of the land, and then they are void. But no trading company is with us allowed to make by-laws, which may affect the king's prerogative, or the common profit of the people, under penalty of 40*l.* unless they be approved by the chancellor, treasurer, and chief justices, or the judges of assize in their circuits: and, even though they be so approved, still, if contrary to law, they are void. These five powers are inseparably incident to every corporation, at least to every corporation aggregate: for two of them, though they may be practised, yet are very unnecessary to a corporation *sole*: viz. to have a corporate seal to testify his sole assent, and to make statutes for the regulation of his own conduct.

Corporations have a capacity to purchase lands for themselves and successors; but they are excepted out of the statute of wills; so that no devise of lands to a corporation by will is good; except for charitable uses, by statute 43 Eliz. c. 4. which exception is again greatly narrowed by the statute 9 Geo. II. c. 36. And also, by a great variety of statutes, their privilege even of purchasing from any living grantor, is much abridged; so that now a corporation, either ecclesiastical or lay, must have a licence from the king to purchase, before they can exert that capacity which is vested in them by the common law: nor is even this in all cases sufficient. These statutes are generally called the statutes of *mortmain*. See *MORTMAIN*.

The general duties of all bodies politic, considered in their corporate capacity, may, like those of natural persons, be reduced to this single one:—that of acting up to the end or design, whatever it be, for which they were created by their founder.

III. How corporations may be dissolved. Any particular member may be disfranchised, or lose his place in the corporation, by acting contrary to the laws of the society, or the laws of the land: or he may resign it by his own voluntary act. But the body politic may also itself be dissolved in several ways: which dissolution is the civil death of the corporation: and in this case their lands and tenements shall revert to the person, or his heirs, who granted them to the corporation: for the law doth annex a condition to every such grant, that if the corporation be dissolved, the grantor shall have the lands again, because the cause of the grant faileth. The grant is indeed only during the life of the corporation; which may endure for ever: but, when that life is determined by the dissolution of the body politic, the grantor takes it back by reversion, as in the case of every other grant for life. The debts of a corporation, either to or from it, are totally extinguished by its dissolution; so that the members thereof cannot recover, or be charged with them, in their natural capacities: agreeably to that maxim of the civil law, "*si quid universitatis debetur, singulis non debetur; nec, quod debet universitas, singuli debent.*"

A corporation may be dissolved, 1. By act of parliament,

which is boundless in its operations. 2. By the natural death of all its members, in cases of an aggregate corporation. 3. By surrender of its franchises into the hands of the king, which is a kind of suicide. 4. By forfeiture of its charter, through negligence or abuse of its franchises; in which case the law judges that the body politic has broken the condition upon which it was incorporated, and thereupon the incorporation is void. And the regular course is to bring an information in nature of a writ of *quo warranto*, to enquire by what warrant the members now exercise their corporate power, having forfeited it by such and such proceedings. The exertion of this act of law, for the purposes of the state, in the reigns of King Charles and King James II. particularly by seizing the charter of the city of London, gave great and just offence; though, perhaps, in strictness of law, the proceedings in most of them were sufficiently regular: but the judgment against that of London was reversed by act of parliament after the revolution; and by the same statute it is enacted, that the franchises of the city of London shall never more be forfeited for any cause whatsoever. And, because by the common law corporations were dissolved, in case the mayor or head officer was not duly elected on the day appointed in the charter, or established by prescription, it is now provided, that for the future no corporation shall be dissolved upon that account; and ample directions are given for appointing a new officer, in case there be no election, or a void one, made upon the charter or prescriptive day.

CORRADINI *de Sezza* (Peter Marcellinus), a learned civilian and cardinal, born at Sezza in 1678, acquired the esteem and confidence of Clement XI. and died at Rome in 1743. He was the author of a learned and curious work entitled *Verus Latium profanum & sacrum*, 2 vols. folio; and a history of Sezza, in 4to.

CORRADO (Sebastian), an Italian grammarian of the 16th century, taught the Greek and Latin tongues at Reggio, where he formed an academy of polite literature; and at length removed to Bologna, in order to be professor of those languages. He wrote several works, the most esteemed of which are, *Questura in qua Ciceronis Vita refertur*, an excellent performance; and, *De Lingua Latinâ*. He died in 1556.

CORREGIO, a town of Italy, capital of a territory of the same name, in the duchy of Modena, with a castle, 9 miles N.E. of Reggio. Long. 11. 12. E. Lat. 44. 46. N.

CORREZE, a department of France, containing the late province of Limosin. Tulle is the capital.

CORSHAM, or COSHAM, a town in Wilts. The Saxon king, Ethelred, had a palace here. Edmund earl of Cornwall, in the reign of Edward I. obtained a charter for a market; and the inhabitants still enjoy some privileges granted them by Richard, his predecessor. Their chief support is the woollen manufacture, here being some considerable clothiers. This place is four miles S.W. of Chippenham.

CORSICA, an island in the Mediterranean, 88 miles in length, and 40 in breadth. The air is unwholesome, and the land hilly, full of stones, and poorly cultivated; however, the valleys produce wheat, and the hills, olives, figs, grapes, almonds, and chestnuts. They have horses also, of a fiery nature. There are mines of iron, and a great deal of fish and coral on the coast. In the middle, is the mountain Gradaccio, where there are two lakes near each other, whence proceed the two principal rivers. A ridge of mountains divides the island into two parts, the N. and S. The capital is Bastia. It belonged to the Genoese; but the natives having been for many years in revolt against them, that

state surrendered its right to France, of which Corfica is now a department. Long. 9. 0. E. Lat. 42. 0. N.

CORSOER, a town of Denmark, on the W. side of the Isle of Zealand, on a small peninsula, on the Great Belt, which separates Zealand from Funen. It has a good harbour for light vessels, and is defended by a citadel. Long. 11. 12. E. Lat. 55. 12. N.

CORSTORPHIN, a village of Scotland, three miles W. of Edinburgh, situated on the declivity of a beautiful hill, and noted for its cream.

CORTE, a town of Corfica, with a strong castle, 27 miles S.W. of Bastia.

CORTIS, a town of Germany, in the bishopric of Liege, 10 miles N.E. of Ramillies. Long. 4. 59. E. Lat. 50. 46. N.

CORVO, the smallest island of the Azores, having only about 600 inhabitants, who cultivate wheat and feed hogs. Long. 31. 5. W. Lat. 39. 42. N.

CORYATE (Thomas), a very extraordinary personage, who seems to have made himself famous by his whimsical extravagancies, was the son of a clergyman, and born at Oldcombe in Somersetshire in 1577. He acquired Greek and Latin at Oxford; and coming to London, was received into the household of Henry prince of Wales. If Coryate was not over-witty himself, he got acquainted with the wits of that time, and served to exercise their abilities, having more learning than judgment. He was a great peripatetic; for, in 1608, he took a long journey on foot; and after he returned, published his travels under the following strange title, *Crudities hastily gobbled up in five months Travels in France, Savoy, Italy, Rhetia, Helvetia, some parts of High Germany, and the Netherlands*, Lond. 1611, 4to. In 1612 he set out again, with a resolution to spend ten years in travelling: he went first to Constantinople; and after travelling over a great part of the East, died of a flux at Surat in the East-Indies. Some of the accounts of his peregrinations are to be found in the accounts of Purchas's Pilgrimages.

CORYVREKAN, a dangerous whirlpool on the W. coast of Scotland, between the isle of Scarba and the N. point of that of Jura. It is so named from a young Danish prince, who perished in this place. As the tide advances, this unfathomable gulf, of which the dreadful vortex extends above a mile in circuit, begins to boil up; and, at full sea, its numerous eddies form watery pyramids, which rise into the air, and bursting with the noise of thunder, whiten the subjacent waves with foam. Many smaller whirlpools and rapid currents are found in the neighbourhood; dangerous, however, to those only who are strangers to the coast.

COSLIN, a town of Germany, in Prussian Pomerania, 10 miles E. of Colberg.

COSNE, a town of France, in the department of Nièvre, and late province of Nivernois. Anchors for ships are forged here; and its cutlery and gloves are much esteemed. It is seated at the confluence of the Loire and Noain, 88 miles S. of Paris. Long. 3. 6. E. Lat. 47. 23. N.

COSIMBAZAR, a small city of Hindoostan Proper, in Berghal. It has been at all times the residence of the different European factors; this being the centre of their trade. It is seated on an island in the western arm of the Ganges, 110 miles N. of Calcutta. Long. 85. 22. E. Lat. 23. 40. N.

COSTAGNAZZAR, the highest mountain of Turkey in Europe, in Romania, anciently called Hæmus.

COSTUME (*Encycl.*). Those antiquaries who have treated of the ancient Irish costume, should have consulted the old French satirist, the Sieur d'Auvray, in whose work, entitled the *Banquet*

des Muses, ou Recueil de toutes les Satyres, Yambes, Macarades, &c." (Rouen. duod. 1623), among many other curious passages, are the following allusions to the mantles of the true or aboriginal Hibernians:

"Il jugeoit à l'œil et au pas
Les filles d'amoureux appas,
Comme les Laquais aux mandilles,
Aux mantes les vrais Irelandois,
Aux chapeaux longs les Albanais,
Et les Espagnols aux roupilles."—p. 324.

"Un chapelet pour avoir bonne grace,
Un pelisson, un capot d'Irlandois," &c.—p. 336.

On the subject of our old English dresses, one of the most curious passages we recollect, is to be found in a work where few readers would expect it:—Fuller's *Pilgrimage-Sight of Palestine*: folio, 1662; book 4. ch. 6. Speaking of the various habits and ornaments of the Jews, he noticed the changes they underwent, and in a digression, says, "For instance, it would pose a good antiquary to describe the exact fashion of *hardlots, gits, haketons, paltocks, tabards, court-pieces, chevefailes, and gipiers*: barbarous names, which may seem to carry a spell or conjuration in the mention of them. Yet all these were kinds of garments commonly used in England, some four hundred years ago. Yea, pride, playing in all ages upon conceited opinions of decency, hath infinitely varied the fashion of all apparel; custom of our ancestors appearing antick to us, as our fashion (perchance) will seem incredible to posterity. Who would believe that ever our English, some four hundred years since, wore shoes pointed and picked more than a finger long, crooking upwards (called crackowes), resembling the devil's claws, which were fastened to the knees with chains of gold, and silver? Or, that about the reign of King Henry the Fifth, man grew so excoffive in that kind, that it was fain to be ordered by proclamation, that none should wear their shoes broader at the toes than six inches?"

COTE D'OR, a department of France, containing part of the late province of Burgundy. Dijon is the capital.

COTELERIUS (John-Baptist), fellow of the Sorbonne, and king's Greek professor, was born at Nîmes in Languedoc in 1627. He made a collection of the fathers who lived in the apostolic age, which he published at Paris in two volumes folio in 1672; all reviewed and corrected from several MSS. with a Latin translation and notes. He also published *Monumenta Ecclesiæ Græcæ*, in 3 vols. being a collection of Greek tracts out of the king's and M. Colbert's libraries, and which had never been published before: to these he added a Latin translation and notes. He intended a further prosecution of this work; but his intense studies broke his constitution, and deprived him of life in 1686. Besides his great skill in languages and ecclesiastical antiquities, Cotelierius was remarkable for his probity and candour.

COTES (Roger), an excellent mathematician of the 18th century. He early discovered an inclination to the mathematics; and, at 17 years of age, was admitted a pensioner of Trinity College, Cambridge. In 1706 he was appointed professor of astronomy in the professorship founded by Dr. Plume, archdeacon of Rochester, being chosen the first in that chair for his great merit and learning. In the year 1713, at the request of Dr. Richard Bentley, he published at Cambridge, in quarto, a second edition of Sir Isaac Newton's "Principia," with all the improvements which the author had annexed thereto; to which he prefixed an excellent *Preface*. He prepared several useful books for the public; and wrote *A Description of the great Meteor* which appeared on the 6th of March, 1716, published

in the Philosophical Transactions. He lived but a little while to carry on the discourses for which he was eminently qualified; dying in the prime of his age in 1716, to the great regret of all the lovers of the sciences.

COTES DU NORD, a department of France, so named from its northerly maritime position, and containing part of the late province of Bretagne. St. Brioux is the capital.

COTTAGER, the lowest description of peasant in England; so called from his usual residence being in a Cot, or Cottage, situated on some waste, or by the road side.

During the late scarcity, various efforts were made by the society in London for bettering the condition of the poor (see SOCIETY, *Supp.*), to assist this useful class of agricultural labourers, many of whom were burthened with large families. From their Reports we extract the following account of a cottage and garden near Tadcaster, by Thomas Barnard, &c.

"Two miles from Tadcaster," says he, "on the left-hand side of the road to York, stands a beautiful little cottage, with a garden, that has long attracted the eye of the traveller. The flip of land is exactly a rood, inclosed by a cut quick hedge; and containing the cottage, fifteen apple-trees, one green-gage, and three wincefour plum-trees, two apricot-trees, several gooseberry and currant bushes, abundance of common vegetables, and three hives of bees; being all the apparent wealth of the possessor. The singular neatness and good order that marked every part of this little domain, and some circumstances respecting the owner, which had been mentioned to me by Dr. Burgh of York, made me anxious to obtain the history of the cottager and his family. In the end of May, 1797, I called there in my way from York; but found the house and the gate of the garden locked. In the road to Tadcaster, however, I met his wife, laden with a basket of provisions from the market; and engaged her to find her husband, who was at work about a mile off, and to send him to me at the inn at Tadcaster. When he arrived he very willingly gave me his history, as follows—

"His name is Britton Abbot: his age sixty-seven, and his wife's nearly the same. At nine years old he had gone to work with a farmer; and being a steady careful lad, and a good labourer, particularly in what is called talk-work, he had managed so well, that before he was 22 years of age, he had accumulated near 40*l.* He then married, and took a little farm at 30*l.* a-year; but before the end of the second year he found it prudent, or rather necessary, to quit it; having already exhausted, in his attempt to thrive upon it, almost all the little property that he had heaped together. He then fixed in a cottage at Poppleton; where, with two acres of land, and his common right, he kept two cows. Here he had resided very comfortably; as a labourer, for nine years, and had six children living, and his wife preparing to lie in of a seventh, when an inclosure of Poppleton took place; and the arrangements made in consequence of it, obliged him to seek for a new habitation, and other means of subsistence for his family.

"He applied to Squire Fairfax, and told him that, if he would let him have a little bit of ground by the road-side, 'he would shew him the *fashions* on it.' After enquiry into his character, he obtained of Mr. Fairfax the ground he now occupies; and with a little assistance from the neighbours, in the carriage of his materials, he built his present house; and planted the garden, and the hedge round it, which is a single row of quick, thirty-five years old, and without a flaw or defect. He says he cut it down six times successively when it was young. Mr. Fairfax was so much pleased with the progress of his work, and the extreme neatness of his place, that he told him he should be rent free. His answer deserves to be remembered: 'Now,

fir, you have a pleasure in seeing my cottage and garden neat; and why should not other fquires have the same pleasure, in seeing the cottages and gardens as nice about them? The poor would then be happy; and would love them, and the place where they lived; but now every little nook of land is to be let to the great farmers; and nothing left for the poor, but to go to the parish?'

"He has had seven children; six of whom attained to man's estate; and five are now living, and thriving in the world. His son has a little farm near Hemley Moor; one of his daughters is the wife of a joiner at York; another, of the occupier of a little farm at Kelfield; a third, of a labouring man, who has a little land of his own, near Duifield; the fourth is the wife of a labourer, who has built a cottage for himself at Tadcaster, and wants nothing (as the father observed) but a bit of ground for a garden. Britton Abbot says he now earns 12*s.* and sometimes 15*s.* and 18*s.* a-week, by hoeing turnips by the piece; setting quick, and other talk-work; but, 'to be sure,' he added, '*I have a grand character in all this country.*' He gets from his garden, annually, about forty bushels of potatoes, besides other vegetables; and his fruit, in a good year, is worth from 3*l.* to 4*l.* a-year. His wife occasionally goes out to work; the allo spins at home, and takes care of his house and garden. He says they have lived very happy together for forty-five years.—To the account that I have given, it may be needless to add, that neither he, nor any part of his family, has ever had occasion to apply for parochial relief.

"Though my visit was unexpected, and he at the latter end of his Saturday's work, his clothes were neat and sufficiently clean; his countenance was healthy and open; he was a little lame in one leg, the consequence of exposure to wet and weather. He said he had always worked hard and well; but he would not deny but that he had loved a mug of good ale when he could get it. When I told him my object in enquiring after him, that it was in order that other poor persons might have cottages and gardens as neat as his, and that he must tell me *all his secret*—how it was to be done, he seemed extremely pleased, and very much affected; he said, 'nothing would make poor folks more happy, than finding that *great folks thought of them*;' that he wished every poor man had as comfortable a home as his own; not but that he believed there might be a few *thriftless fellows*, who would not do good in it.

"I asked him whether he had not a cow. He said he had had one, and she had died; and having no other place but the lane to keep his cow, he had not attempted to get another.—'Could you get land, if you had a cow?'—He thought he could.—'Supposing then (I added) a cow could be bought for 2*l.* and you could rent it on the terms of paying down 3*l.* 10*s.* immediately; and then 3*l.* 10*s.* at the end of each year during three years; and that the cow was to be yours at the end of the three years, if she lived, and you paid your rent regularly:—Do you think such a bargain would answer for you?'—Yes, he said, he was sure it would very greatly; and there were few cottages to whom it would not be a very great advantage; especially where they had a family of children. I told him to enquire whether he could get a little land; and I would have some more talk with him about it, when I came down in August.

"The history of Britton Abbot appears to me to merit attention. At the time of the inclosure of Poppleton, when he had six young children living, and his wife preparing to lie in of the seventh, his whole little system of economy and arrangement was at once destroyed; his house, his garden, his little field, taken from him; and all his sources of wealth dried up. With less success in his application for the rood of land, the

spot in which his industry was to be exerted, and (in justice to him it must be added) with less energy than he possesses, he might have gone with his family into a workhouse; and, from that hour, have become a burthen to the public, instead of being one of its most useful members. Observe for a moment the effects of his well-directed industry. Without any parochial aid, he has raised six of his seven children, to a state of maturity; and has placed them out respectably and comfortably in the world. Five of them are now living, in the middle period of life; and he continues, at the age of sixty-seven, a good working labourer; happy in his own industry and good management, and in the beauty and comfort of his cottage, and the extreme fertility of his garden.

"Britton Abbot possesses a degree of energy and spirit, that we must not expect to find in every cottager. If, however, the poor do not exert themselves, and have not so much forethought and management as might be wished, the fault is less in them, than in the system of our poor laws, and in the manner in which they are executed. Were they properly and universally encouraged to industry and economy, we should soon find thriving and happy cottagers in every part of the kingdom. Let only a tenth of the money, now spent in workhouses, in what is usually called '*the relief of the poor*,' be applied in assisting and encouraging them to thrive and be happy in their cottages, the poor's rate will be lessened, and, a national saving made both in labour and food*. The labourer is capable of more exertion, and is maintained for less than half the expence, in his cottage than in a workhouse. In his cottage he has his family around him, he has something he can call his own, he has objects to look forward to, and is the master of his own actions.—*Domestic connections, property, liberty, the hope of advancement*, those master springs of human action, exist not in a workhouse.

"It is the misfortune of this country, that the well-disposed and industrious poor do not receive sufficient aid or encouragement. They find no distinction made between them and the idle and profligate; except this—that *the idle and profligate are maintained in part at their expence*. As the law is too frequently executed, the cottager, though poor himself, is regularly assisted for the relief of the poor; but he receives no benefit from the fund, no assistance towards the support of himself and his family, unless he is reduced to absolute want, and presents himself hopeless at the door of the workhouse.

"The evil has been greatly increased by the ninth of George I. which authorises the farming of the poor, and refuses relief to those who will not submit to reside in the workhouse. It is, in consequence, the interest of the farmer of the workhouse, to keep it in such a condition, that (to use Mr. Parry's words) 'the honest and industrious labourer, who has brought up a large family with credit, and who from misfortune is poor, and from age past his labour, will submit to be half starved, rather than take up his abode amid such wretchedness and profligacy.' By these means workhouses become objects of terror to the honest and industrious, and at the same time the favourite resort of the dissolute and abandoned; the dirt, the waste, the disorder, the want of regulation, and the *undistinguishing treatment* of the worst and best characters, being as gratifying to them, as they are irksome and disgusting to the well-disposed poor.

"Let us consider what must be the effect of this system on the cottager.—Tenant to the farmer who has taken his cottage over his head, he is aware that his new landlord will require as much rent as he can contrive to pay. He has a young and increasing family; and, when times are at the best, he often finds it as much as he can do to go on, from one day to another, in their support. He can hardly expect that during the severity of the winter, the high price of bread, or the visitation of sickness, his earnings will always, and at all seasons, continue equal to the necessities of his family. If the hour of adversity arrives, he knows the rule of his parish, that '*no assistance is to be given to the labourer, while he possesses any thing of his own*;' and that what, with much labour and self-denial, he shall have saved, must all be exhausted and spent, before his claim to parochial relief can be admitted. It may be well to consider what incitement he has to thrift and forethought. Can we confidently answer for ourselves, that, so circumstanced, we should act even as well, and look as much to futurity, as he does; or that we should not be made more sensuallists by dependency? It is perfectly clear, that we should not spend every penny, that could be spared from the daily nourishment of our families, in self-indulgence at an ale-house?

"Happy should I be, if I could make use of the history of Britton Abbot, to obtain for the labourer encouragement to imitate the energy of his industry. Of the different modes of aiding and animating the poor, none would have more tendency to raise them above the want of parochial aid, than that of enabling them progressively to follow his example, in such a manner, that the most deserving might in their turn become the owners of comfortable cottages and productive gardens; a measure which seems to be peculiarly called for by the present condition of the dwellings of the poor. It is a melancholy fact that, in most parts of England, their habitations are not only comfortable and devoid of accommodation, but insufficient in number; and that honest and industrious families are frequently driven into the workhouse, merely for the want of cottages in their parish.

"If the custom of setting apart ground for them to build upon were to obtain generally, and in a manner to induce and enable them to take the benefit of it, it would assist in gradually correcting this national and increasing evil, and in supplying that useful class of men with proper habitations.—It would have other very important effects. It would diminish the calls for parochial relief; it would encourage and improve the good habits of the poor; it would attach them to their parishes, and give them an increased interest and share in the property and prosperity of their country. The land required for each cottage and garden, need not be more than a rood; the value of which would bear no possible comparison to that of the industry to be employed upon it. The quarter of an acre that Britton Abbot inclosed, was not worth a shilling a year. It now contains a good house and a garden, abounding in fruit, vegetables, and almost every thing that constitutes the wealth of the cottager. In such inclosures, the benefit to the country, and to the individuals of the parish, would far surpass any petty sacrifice of land, to be required. *Five unsightly, unprofitable, acres of waste ground would afford habitation and comfort to twenty such families as Britton Abbot's*.

"In order to encourage the exertions of the labourer, I

* This experiment would be easily tried. Suppose the poor's rate of the parish so applied to be 6ool. a-year; and that 6ol. a-year of the rate were to be annually employed in assisting the most industrious and deserving labourers to become possessors of cottages and cows: I am confident that the poor's rate of that parish would be greatly diminished in a few years; probably to half its present amount. The difference between a law that encourages the poor to exertion, and one that attempts to compel them to it, is, that in the first you have the co-operation of the millions of the people who are to be objects of the law; in the second, all the labour is thrown on the *unfortunate and unsuccessful persons*, who are to attempt to execute it.

should hope that this would be conceded to me, that the rood of land, inclosed for his cottage and garden (on condition of a house being erected) be held in fee simple; and that, so long as a parishioner, labouring generally within his parish, continued owner and occupier, such cottage and garden should, by parliamentary authority, be exempt from rent, taxes, rates, tithes, and all burthens whatsoever. It would be an important object to keep these little freeholds in the hands of the labourers of the parish; so that they might be transmitted from father to son, like those little estates, which we contemplate with so much pleasure in Borrodale. If, therefore, the exemption from rent, taxes, &c. continued no longer than while the cottage was both the property and residence of a parishioner, generally working within his parish, it would not be of half as much value to any other person, as to him for whom it was originally intended; and if in some instances they got into other hands, they would soon return again into the possession of the labouring parishioners.

"As the means of promoting industry and good conduct among the poor, I should hope that a preference would be given to 'industrious parishioners, members of friendly societies,' and that the character of the man, the number of his children, and other circumstances, would induce the farmers to give him the carriage of his materials, and his other neighbours to help him with a pecuniary subscription. The annual sum of 10l. or 20l. so collected in a parish, and impartially and publicly given as a premium to the most deserving labourer in that parish (either to assist him in erecting his cottage, or to enable him to purchase his cow), would produce a great effect on the good habits of the poor; and, while it rewarded merit, would stimulate others to follow the example.

"It would have other important effects.—It would greatly diminish parish rates*; for he who possesses a freehold cottage and garden, or a cow, has seldom, if ever, occasion to apply for parochial relief. By attaching the cottager to his own parish, it would secure to the farmer a certain supply of labourers, and would equalize, and keep down, the price of labour, now much enhanced by the disposition to wander about, in quest of the highest wages and the easiest work; a disposition which has occasioned a considerable waste in the produce of national labour. But this would not be all. Freehold cottages and gardens do not only attach the owners to their country, but are also the surest pledges and securities for their conduct. The cottager, who has property, is habituated to set a higher value on himself and on his character, and seems to be of a superior order of men. Besides this, the addition, which these little freeholds might make to the industry, morals, and produce of a country, would be an object of consideration in this respect; that the cottager, who had a garden and a little property of his own, has always before him a *pleasurable object of industry* for his leisure time; whereas, he who has none, is driven to the ale-house by the same *unhappy necessity*, that

impels idle young men to the gaming table;—the want of occupation.

"In the mode which I suggested to Britton Abbot, of his renting the cow, he would acquire a gradually increasing interest in her; so as to make him anxious for her preservation, but not such as to involve him deeply, in case of her death, or to give him a right to dispose of her. In this way, the sum of 11. † would be sufficient to constitute a *perpetual fund*, in any parish, for supplying the *annual premium* of a cow for some industrious and well-disposed labourer, as long as the landlord will consult his own interest, and afford the means of feeding her. Whether this object is to be attained by annexing ground to the cottages, or by letting to the cottager an adjutment for his cow, or by supplying him with pasture, and a certain quantity of hay ‡, at an annual rent; or by making it one of the conditions on which the farmer takes his farm, that he shall keep his cottager's cow at a limited price;—whatever mode is to be adopted, will depend much on the circumstances of the country.—There is hardly any part of England, however, in which the cottager's cow may not be provided for, by one or other of these means; or by another mode, which I should prefer, when practicable, as the right which it would give the poor man would be *unalienable*;—and that is, inclosing and improving from the waste §, cow pastures of ten or twelve acres each; the exclusive benefit whereof, the cottagers of the parish should enjoy at a small rent; which (after providing for fences, &c.) might go as a fund for supplying the poor of the parish with fuel. Such inclosures would be extremely gratifying and beneficial to that useful class of men, the labouring poor. The stock on them should be limited; and a preference given to labourers working within the parish, in proportion to their families, their industry, and character.

"I have only to add, that my friend's history contains in it a strong proof, that, the cottager is benefited by the supply of a garden and of land for his cow, while he continues a *labourer*; yet, if more land is added, just enough to constitute him a *little farmer*, with a very small capital, and to make him forego his profit and advantage as a labourer, his means of life, instead of being improved by the acquisition of land, are prejudiced. No persons earn a harder or more precarious living, or do less good with their land, than very small farmers. The condition of a labourer, who has a well-stocked garden, a couple of cows, a pig, and just ground enough to keep them, is affluence, compared with the lot of him, who attempts to live as a farmer, on a small quantity of ground, not sufficient to maintain him as a farmer, though abundantly adequate to its object, if divided among several labourers."

The following extract from an account of the advantages of cottagers keeping cows, also by Mr. Bernard, will still further prove how possible it is to rescue this industrious class of labourers from want and misery.

"A late visit into Rutlandshire," says the author, "has

* Landlords and farmers, who with their own poor's rates reduced, would do well to enquire into the amount of the poor's rates in those parishes, where labourers have gardens and cows. One annual rate of sixpence in the pound has proved fully adequate to the relief of the poor in such a parish. See the Earl of Winchelsea's letter, and some other reports, on the advantages of cottages renting land.

† Upon supposition that the price of the cow were 12l. the donor of such a fund would have to advance 8l. 10s. the first year, 5l. the second, and 1l. 10s. the third; after which the rest of 3l. 10s. paid for three years, for each cow, would produce, in future, 12ol. 10s. a-year; being (with 3l. 10s. originally paid by the cottager) 21. more than would purchase a cottager's cow every year after. The additional 21. a-year would, I presume, be sufficient to insure, for the year, the landlord's interest in the cows.

‡ Mr. Burdon's cow pastures are closes of sixteen acres, for twelve cows each: he allows each cottager two loads of hay; making the hay in small stacks of four loads each, so that one stack serves two cottagers. He finds the system answer, both as to the improvement of ground, and the amount of rent. I can only say, that when I was at Castle Eden, I thought his cottagers' hay-stacks and cows the most pleasing ornaments of a very beautiful place.

§ This plan has been adopted in the Iwer inclosure bill now before parliament. 31st May, 1800.

given me an opportunity of acquiring more minute and correct information, respecting the circumstances and situation of the cottagers keeping cows, in the four parishes of Hambleton, Egleton, Greetham, and Burley-on-the-Hill. I give the result of my enquiries; and I give it with more precision and detail than I otherwise should, as I am very desirous of enabling land-owners to ascertain whether, in their own peculiar instances, it will not answer for them to follow the example of what has been done in that neighbourhood. At the same time I beg leave to anticipate the observation, that in arable countries, where there is a scarcity of grafs land, and in those districts where, from vicinage or a peculiar market, grafs land bears a rent above its intrinsic value, it may not be practicable to supply cottagers with pasture for a cow, without some sacrifice on the part of the landlord.

"Among the tenants of this part of the estate, there are 80 cottagers who keep cows. Of those who possess cows, there are 22, each of whom has only one cow; 35 who have each 2 cows, 13 who have 3, 7 who have 4, and 3 who have 5 cows each; making in all 174 cows. Of these cottagers, about a third part have all their land in severally; the rest of them have the use of a cow-pasture in common with others; most of them possessing a small homestead, adjoining to their cottage; every one of them having a good garden, and keeping one pig at least, if not more. Without any exception they pay for their land the same rent as a farmer would, and not more.

"The estate is tithe-free.—In Hambleton there is a close of 114 acres, which is let in 108 cow-gates, at one guinea each; of these, 74 are let to cottagers, and the remaining 34 (not having been as yet applied for by cottagers) are for the present let to farmers. The tenants have the right of feeding, each four sheep, instead of a cow, for each cow-gate; and the farmers generally so use their holdings, which is more for their own convenience, as well as for the general benefit of the pasture. Each of the cottagers has also an acre or more of homestead near his cottage, for which he pays a farmer's rent.

"At Egleton there is a cow-pasture of only 30 acres, which is let in 26 cow-gates, each at 50 shillings. These are all occupied by cottagers, who have also small homesteads near their houses, to supply them with hay.—In the parish of Burley, the mode of providing for some of the cottagers' cows is different: a close of 11 acres and a half is divided into two equal parts, and the whole jointly occupied by four cottagers. One half is every alternate year held in four several parts by a marked boundary, each mowing his own part for hay; the other half is a cow-pasture for the four cottagers. They have each a right of putting in a cow and two sheep in the pasture part, during the summer, and of feeding a cow and four sheep upon the whole in the winter. The benefit of the sheep feeding they can let to a farmer at a guinea and a half a-year. Besides this, they have grafs and hay for one cow; for rent they pay 4l. 10s. a-year each, and in poor's rates and other levies, 5s. a-year, making in the whole 4l. 15s.; from which, after deducting 1l. 11s. 6d. (which their sheep feeding is worth), there remains 3l. 3s. 6d. rent and taxes, for the support of their cow.

"The accommodation that the cottager has for his cow in Greetham, is not so beneficial to him. A pasture-field of 35 acres of indifferent land, worth about 10s. an acre, is held as a joint pasture by 14 cottagers; each of whom has a right to pasture a cow in it. For their winter provision they have each of them an arable field of six acres, in which they grow some clover and sainfoin. This is by no means so advantageous to them as grafs land: under these circumstances, however, they

are very glad to have the land, and always pay their rent with great regularity.

"I said that the cottagers paid a farmer's rent for their land, and not more; but I ought to add, that the whole of the estate is let at moderate rents. The reader may find by calculation, that in Hambleton the land produces, per acre, nearly 20s.; in Egleton, about 23s.; and in Burley, 31s. per acre; the difference being occasioned partly by the difference of time, when the closes were respectively let at their present rents, and partly by some difference in the quality of the land.

"The cottagers who keep cows are almost all of them labourers in husbandry: there are, however, among them, some widows and daughters of deceased labourers, and some men who work as country carpenters, or in similar trades. I can add, that of all the rents of the estate, none are more punctually paid, than those for the cottagers' land. The steward informs me that there has never been an instance of an arrear, or of a delay in payment, even for a few days.

"When I state that the land is let at, and not under, a fair, moderate rent, I do not mean to be understood to say, exactly the same of the cottages; which are comfortable and habitable buildings, in good repair, neatly kept, and regularly white-washed; and yet pay no more rent, than the ruinous and miserable hovels in England usually do.

"The reader may, perhaps, wish to know how the cottager is at first set up with a cow. As an example, I will give the history of one man, who had a wife and several children, and was last year likely to be burthened to the parish. It was agreed that the only remedy that promised relief to the parish in this case, was the cottager's cow. His landlord supplied him with land at a fair rent, and made his cottage and out-buildings comfortable. He asked assistance of his neighbours: in the mansion-house he collected about two or three guineas; among the farmers, by gift or loan, he obtained some handsome additions; he purchased his cow, took possession of his land, and is now doing very well.—About eight years ago another labourer with a large family was supplied with a cow, and land, in the same manner. He has since bred up his large family without any parochial assistance, and is now possessed of two cows, the second purchased wholly from his savings. Two others were provided with cows and land in the like manner, about four years ago, and have gone on very well.

"The greater part of the cottagers have more than one cow. The fact is, that in every instance, as soon as the cottager has got a cow, all the efforts of his family are directed to the attainment of the means to purchase another, and another; so that some of them, who began very lately with only one, have now five cows. The only inconvenience to be apprehended from such an increase in their property, is, that they may be induced to look to the produce of their cows and gardens, for the sole support of themselves and family, and cease to depend on their daily labour for their support; being transformed into little starving farmers, from opulent thriving labourers. But the fact is directly the reverse.—Such are the beneficial effects of early and steady habits of industry, that these proprietors of cows are the most steady and trusty labourers. As a proof of the effects of this system in promoting industry and frugality, I give the history of one of them, Christopher Love, of Hambleton; who is now 75 years of age, and has for 53 years back kept three cows; and nevertheless has gone regularly every summer, for 50 years past, to harvest-work in Cambridgeshire: because he is more in request there, and receives better wages, than he would at home. He has bred up a family of nine children in great comfort, and is now well and in good health himself, and has been in Cambridgeshire this

preceding harvest; but thinks he shall go no more, as the family for whom he used to work are all dead, or removed.

"I saw one instance among them of a man who was bringing up and supporting nine children, all healthy, well fed, clean, and neatly dressed. A little child under four years of age was asked if he could spin? 'No, she was too little, but she could knit.' Her sister (said the mother, pointing to another girl, between five and six years of age) spins very well; she got a prize for spinning this year, and brought home a premium of the value of six shillings in clothing."

"The education of their children to husbandry, to the management of cattle and of a dairy, and to every occupation that can fit them for the service of a farmer, is a very important advantage of this system: and if there were no other benefit to be derived from it, but that of adopting, and habitually preparing, the rising generation for the most useful and necessary employment in the island, this alone would produce an abundant compensation for any effort, or attention, that has been, or may be, directed to the subject. They are not only stout, healthy, clean, well clothed, and educated in regular and principled habits of life, but they are used to almost every part of their business from the earliest period of life; every inhabitant of the cottage being, from infancy, so interested in their cow, their pig, their sheep, and their garden, as to imbibe, at a very early age, all the material information and habits requisite in those subjects."

"The cottagers in that country eat barley, or mixed, bread; and they prefer it, for a reason which one of them gave me; that not only they can afford to have more of it, but can also add a little bit of meat to dress with the vegetables from the garden. This makes in the aggregate a very important amelioration of the condition of the cottager:—bread, butter, cheese, plenty of milk, and vegetables, and some meat to mix with their other food, compose, altogether, a table of diet unknown to many English cottagers, and extremely conducive to health, strength, and civilized habits of life. It is no inconsiderable convenience to the inhabitants of that neighbourhood, that these cottagers are enabled to supply them, at a very moderate price, with milk, cream, butter, poultry, pig-meat, and veal: articles which, in general, are not worth the farmer's attention, and which, therefore, are supplied by speculators, who greatly enhance the price on the public."

These facts are accompanied with the following pertinent observations,

"In preparing this detail," says Mr. Bernard, "I have endeavoured to give every circumstance as coldly and correctly as I could; being aware that, in practical information, precision is of the utmost importance. I will not, however, presume to say, that in what I have written, I have been entirely uninfluenced by the pleasure of seeing the English cottager what, in a free, a prosperous, and enlightened country, he ought to be—*thriving, industrious, and happy.*"

"What has been stated will probably suggest to the reader, that the welfare of the cottager depends more on the improved resources and habits of life, than on any increase or superabundance of wages. In countries where the wages are the highest, without any improved system of management and economy among the poor, the condition of the cottager is very inferior to that in many places, where the wages of labour are lower, but the means and habits of life superior. Mechanics, who earn from a guinea to two guineas a-week, in London, in Manchester, and other places, and who depend upon the neighbouring shop for the necessities of life, and (to use a common expression) *live from hand to mouth*, do in general possess a less degree of domestic comfort, and enjoy a less proportion of the advantages of civilized life, than many cottagers. The expli-

cation is obvious. The mechanic, who with his family exists in a lodging, without any advantage or impulse tending to domestic economy, and who earns, by a species of *flight of hand* in his trade, very high wages, applies what is barely necessary, in a weekly payment, to the baker and other tradesmen, for the support of the family; the rest goes to the club, or the alehouse, or is lost in intervals between labour: while the labourer and his family, who have the power and inducement to thrift and management, direct every effort to the improvement of their circumstances, and the increase of their comforts."

"It will, to the latest period of my life, be a source of enviable satisfaction to me, if what is said in this and the other report of the society, shall have the effect of awakening the attention of the land owner to an object so interesting and essential to him, as the situation of his industrious labourers; whose comforts and means of life he may greatly increase, not only without any immediate loss, but with a real and accumulating benefit to himself and his property; as he would soon find that by improving the condition of his dependents, and by exciting industry among them, he would proportionally increase the value of his estate. It would, indeed, be an act not only of benevolence and justice, but of wisdom and prudence, whether he directed his views to his own insulated property, or to the general welfare of the community.—Viewed in a political light, the labourer who has property, however small,—a cow, a pig, or even the crop of his garden,—has an interest in the welfare and tranquility of his country, and in the good order of society. He who has no property, is always ready for novelty and experiment; and though gibbets and halters may for a time deter him from criminal and atrocious acts, yet no motive exists to fix him in virtuous habits, or to attach him to that national prosperity in which he has no part, and to that constituted order of property, which excludes him from all possession."

"There is another consideration, suggested by the present high price of wheat corn. Those measures for the relief and subsistence of the poor, which are now essential to their existence in many other parts of the kingdom, are unnecessary in the neighbourhood of Burley. The cottager who is in the habit of using barley in bread, who keeps a pig, perhaps two, and has plenty of milk and vegetables, possesses within himself almost all the means of life; and feels very little inconvenience from that which, without the charitable aid and attention of the opulent, would oppress and overwhelm the labourer whose existence depends on a mere pecuniary stipend. With such means of life, he is less affected by the present high price of bread than almost any other individual: the dearth of provisions produces not much variation in his circumstances; except by delaying, for a very short time, the desired period of his purchasing another cow; and by retarding his progressive thrift, and the improvement of his little property, for the benefit and hereditary succession of his wife and children."

"In the facility of execution, and in the permanence of effect, a very material difference exists between measures taken for the improvement of the cottager's means of life in *his own cottage*, and for the increase of his resources and incitements to thrift and industry, and those for the support and conduct of all public charities and establishments for the relief of the poor. The latter require an unattainable continuance of exertion, and an unending succession of disinterested care and attention: the former executes itself. The latter provide for the maintenance and relief of helpless and hopeless dependents: the former produces the *restoration* of health and strength.—When the cottager has acquired, and feels the benefit of, his new means and habits of life, his own exertions, his own attentions, will provide for the continuance of the blessings of his family, as long as

his landlord will protect him in the enjoyment of his cottage and ground. He requires, in this instance, no subsequent labour or attention, on the part of his benefactor, to prevent the return of indigence and misery; whereas it demands the continuance of unwearied exertions in all public establishments, to conduct them properly, for the solace and relief of existing wretchedness.

"In all that has been done by the Earl of Winchelsea for his cottagers, though there has been much attention paid, and much disposition on his part to make a very considerable sacrifice, if requisite, for their benefit, yet in fact, and with the single exception which I have stated as to his cottages, so far from any loss or expence being incurred by him, a considerable and permanent improvement has been made upon his estate, without any reduction in the immediate profit.—While the land let to the cottager is let at the same rent, as that which the farmers occupy, the country is enriched and improved by an industrious and thriving tenantry, and the poor's rates reduced almost to nothing. The labourers' children are at the same time so bred up, and so accustomed to regular habits of employment, as to be very little burthen to their parents, and to be a great improving benefit to the estate.—The land-owner should keep in mind, that if the labourer is reduced to indigence, his support, which had been derived from his own exertions, must, in future, be drawn from the land. The farmer, indeed, *nomi- nally* pays the poor's rate; but it is *really and ultimately defrayed by the landlord*; whose estate, by the increase and accumulation of poor's rate, is deteriorated in value, and diminished in rental: while, on the contrary, by a different system—by promoting the welfare, and encouraging the energy of the cottager—the land-owner might have lessened the poor's rate and augmented the value and rental of the land.

"I do not mean to assert that the English cottager, narrowed as he now is in the means and habits of life, may be immediately capable of taking that active and useful station in society, that is filled by those who are the subjects of this paper. To produce so great an improvement in character and circumstances of life, will require time and attention. The cottager, however, of this part of the county of Rutland, is *not of a different species from other English cottagers*; and if he had not been protected and encouraged by the landlord, he would have been the same helpless and comfortless creature that we see in some other parts of England. The farmer (with the assistance of the steward) would have taken his land; the creditor, his cow and pig; and the workhouse, his family.

"As I am disposed to flatter myself, that some of my readers, who have landed property adapted to the experiment, *may be induced to try this mode of improving their estates*, I shall suggest what occurs to me as the method of proceeding; premising that in this, and every thing else which the landlord may think fit to do for the benefit of his cottagers, he should be extremely careful not to make them the subjects of jealousy, or dislike, to either the farmer or shopkeeper; on whose goodwill to them, in spite of every attention of the landlord, much of their comfort and well-being will depend, particularly in winter, when the presence of a friend and protector is most wanted. I should therefore recommend him, at first, to follow the example of Mr. Burdon, and to begin with a close or two of the ground in his own occupation. Let him then select two or three of his most thriving and industrious labourers, and inform each of them, that he is disposed to accommodate him with a little ground, at a moderate rent, if he can contrive to get a cow, and his wife can manage her: adding the offer of a small loan or donation towards it. The introduction of so novel a system may possibly require some aid and attention at first; and it may be proper that the poor's rate on their ground should be kept down, as low as may fairly be; but as soon as two or three cottagers have succeeded, and it is known that

upon land becoming vacant in future, the cottager will be considered as well as the farmer, though not to his injury or inconvenience; and that, upon the occupier of any little farm of 20 or 30 acres being obliged, as they frequently are, to abandon a losing concern, the landlord would, in some instances, be disposed to apply the ground for the accommodation of five or six of the most deserving and thriving labourers; the farmers would soon be reconciled to a system which must in its nature operate to lower the poor's rate, and to diminish the burthen of the poor;—the character of the cottager would be invigorated;—his spirit, his industry, his economy, would be all put in action; and a very essential improvement would take place in the state and neighbourhood."

To place this subject in a stronger point of view, we add the following excellent observations on the means of enabling a cottager to keep a cow from the produce of a small portion of arable land, by Sir John Sinclair, bart. M. P.

"In several parts of the kingdom, as in Lincolnshire, Rutlandshire, &c. which are calculated for grazing, it is not unusual to give industrious cottagers as much land as will enable them to keep a cow, and sometimes two, or more, besides other stock; and it appears from the communications of Lord Winchelsea and others to the Board of Agriculture, from the publications of the Society for bettering the Condition of the Poor, and from a late interesting work printed by Mr. Arthur Young, that such a system is productive of the happiest consequences. It is supposed, however, to be totally inapplicable to an arable district. I trust that such an opinion will not be admitted without full consideration. Indeed, so far as I can judge, this advantageous system is to the full as well adapted for the one district as for the other. It requires unquestionably more labour on the part of the cottager, and of his family; at the same time, the occupation of so great an extent of ground is not so necessary in arable as in grazing countries; a circumstance, in various respects, extremely material.

"In arranging the following plan (which the reader will please to consider merely as furnishing an outline, to be perfected by further discussion and experiment), it is proposed to keep in view the following principles:

"1. That the cottager shall raise, by his own labour, some of the most material articles of subsistence for himself and his family.

"2. That he shall be enabled to supply the adjoining markets with the smaller agricultural productions. And,

"3. That both he and his family shall have it in their power to assist the neighbouring farmers, at all seasons of the year, almost equally as well as if they had no land in their occupation.

"It can hardly be questioned, that if it were practicable to have a number of cottagers of that description in every parish, it would promote, in various respects, the interests of the public.

"I. *Extent of land necessary.*—Unless the experiment were fairly tried, it is impossible to state exactly the extent of arable land requisite to enable a cottager to raise the articles generally necessary for the subsistence of himself and family; and to keep a cow, some pigs, and poultry. Much must depend on the natural richness of the soil; (though, under the management about to be proposed, almost any soil would, in time, become fertile); on the nature of the climate; on the size of the cow; on the industry of the cottager; on the age and number of his family, &c. But I should imagine that three statute acres and a quarter of good arable land, worth from 20s. to 30s. per acre, would be sufficient. It is proposed that the three acres shall be under a regular course of cropping. The quarter of an acre ought, if possible, to be converted into an orchard; where the cow might occasionally pasture, and where a pond ought to be kept in good order, that it may have plenty of water at command. Were the land of a

quality fit for lucerne, perhaps two acres and a quarter might be sufficient.

"II. *Stock and instruments of husbandry.*—It is evident that so small an extent of land as either two or three acres, under cultivation, excludes all idea of ploughing; and, indeed, unless the cottager shall manage the whole in the simplest and cheapest manner, there is an end to the whole system. It would require, indeed, four or five acres to keep a single horse, and the expence of purchasing horses, or even oxen, ploughs, and other instruments of husbandry, must be far beyond the abilities of a cottager; whereas with a spade, a hoe, a rake, a scythe, a sickle, and a flail, which are all the instruments really necessary, he is perfectly competent to the management of his little farm.

"III. *Course of crops, &c.*—The three acres proposed to be cultivated should be divided into four portions, each consisting of three roods, under the following system of management:

	Roods.
Under potatoes two roods, under turnips one	3
Under winter tares two roods, spring tares one	3
Under barley, wheat, or oats	3
Under clover, with a mixture of rye grafs	3
Total 12	

"Other articles besides these might be mentioned, but it seems to me of peculiar importance to restrict the attention of the cottager to as few objects of cultivation as possible.

"It is proposed that the produce of the two roods of potatoes shall go to the maintenance of the cottager and his family; and that the rood of turnips should be given to the cow in winter and during the spring, in addition to its other fare.

"The second portion sown with tares (the two roods of potatoes of the former year to be successively sown with winter tares, and the turnip rood with spring tares), might partly be cut green, for feeding the cow in summer and autumn; but, if the season will permit, the whole ought to be made into hay for the winter and spring feed, and three roods of clover cut green for summer food.

"The third portion may be sown either with barley, wheat, or oats, according to the soil or climate, and the general custom of the country. The straw of any of these crops would be of essential service for littering the cow, but would be still more useful, if cut into chaff, for feeding it.

"The fourth portion, appropriated to clover and rye grafs, to be cut green, which, with the assistance of the orchard, will produce, on three roods of land, as much food as will maintain a cow and her calf for five months, namely, from the end of May, or beginning of June, when it may be first cut, to the first of November, besides some food for the pigs. It is supposed that an acre of clover and rye grafs, cut green, will produce 20,000lbs. weight of food for cattle. Three roods, therefore, ought to yield 15,000lbs. weight. A large cow requires 120lbs. weight of green food per day; a middling sized cow, such as a cottager is likely to purchase, not above 90lbs.; consequently, in five months, allowing 1320lbs. weight for the calf and the pigs, there will remain 13,680lbs. for the cow. Were there, however, even a small deficiency, it would be more than compensated by the rood of land proposed to be kept in perpetual pasture as an orchard.

"IV. *Mode in which the family may be maintained.*—It is calculated that three roods and eight perches of potatoes will maintain a family of six persons for about nine months in the year; but, according to the preceding plan, it is proposed to have but two roods under that article; for however valuable potatoes are justly accounted, yet some change of food would

be acceptable, and the cottager will be enabled, from the produce of the cow, and by the income derived from his own labour, and from that of his family, to purchase other wholesome articles of provision.

"V. *Manner in which the stock may be kept.*—It appears from the preceding system of cropping, that ten roods of land, or two acres and a half, are appropriated to the raising of food for the cow in summer and winter, besides the pasture of the orchard; and unless the season should be extremely unfavourable, the produce will be found not only adequate to that purpose, but also to maintain the calf for some time, till it can be sold to advantage. It is indeed extremely material, under the proposed system, to make as much profit of the calves as possible, as the money thus raised will be a resource, enabling the cottager to replace his cow when a new one must be purchased.

"For the winter provision of the cow, which is the most material, because summer food can be more easily procured, there is the produce,

"1. Of about three roods of tares made into hay.

"2. Of three roods of straw, deducting what may be necessary for litter; and if dry earb be put in the cow's hovel, and removed from time to time to the dunghill, little or no litter will be necessary.

"3. Of one rood of turnips.

"The whole will be sufficient for seven months in the year, namely, from the 1st November to the 1st June; and during the remaining five months, the pasture of the orchard, some of the winter tares, and the produce of three roods of clover and rye grafs, will not only suffice, but will furnish a surplus for the calf, if it is kept for any length of time, and some clover for the pigs.

"The inferior barley, potatoes, &c. will of course be given to the pigs and the poultry.

"VI. *Value of the produce.*—The land thus managed will certainly produce, by means of the extra industry of the family, and at a small expence, a most important addition to the income which the cottager may derive from his ordinary labour. For instance:

	per Ann.
1. The orchard (after the trees become fruitful)	£. 1 10 0
will probably yield	
2. Three roods of turnips and potatoes	4 0 0
3. Eighteen bushels of barley, at 4s.	3 12 0
4. The cow and calf	7 0 0
5. Hogs	3 0 0
6. Poultry and eggs	2 0 0

Total £. 21 2 0

"Where wheat can be raised instead of barley, the profit would be still more considerable. Opinions will differ much regarding the value put on each article; but that is of little consequence, as the total cannot be accounted too high.

"VII. *Time required for cultivating the land.*—The quantity of land intended to be cultivated, will not materially interfere with the usual labour of the cottager. It will only require to be dug once, and is then fit to be cropped. It is proposed that only nine roods shall be annually cultivated (the remaining three roods being under clover and rye grafs), and nine roods may be dug in the space of about 558 hours, or at the rate of 62 hours per rood. This might be done at by-hours (more especially when the family of the cottager shall be somewhat advanced, and consequently more able to furnish assistance); but supposing that the digging, manuring, harvesting, &c. will require twenty entire days per annum in addition to the by-hours, and allowing sixty days for Sundays and holidays, there will remain 285 days for the ordinary hand labour of the cottager, which, at 1s. 6d. per day, would

amount to 2 *l.* 7s. 6d.; the earnings of the wife and children may, at an average, be worth at least 4 *l.* per annum more. This is certainly a low calculation, considering how much may be got during the hay and corn harvests; but even at that moderate estimate, the total income of the family will be as follows:

1. Produce of the farm	-	-	£. 21	2	0
2. Labour of the cottager	-	-	21	7	6
3. Earnings of the family	-	-	4	0	0

Total £. 46 9 6

"VIII. Buildings.—It is impossible to calculate the expence of building a cottage, as so much depends upon its size, the place where it is situated, the materials of which it is composed, the price of labour in the country, and a variety of other circumstances. On this important subject, much useful information is contained in the first volume of the Communications published by the Board of Agriculture. But it is proper to observe that no expensive additional buildings will be necessary in consequence of the proposed system. A shed or hovel for the cow cannot occasion any very heavy charge, and a small barn, of the simplest and cheapest construction, may be of use, not only for threshing the crop, but also for securing the hay, and making it to more advantage, in case the season should prove unfavourable: if the corn is put up in small stacks, the barn may be made of very moderate dimensions.

"IX. Rent, and Balance of Income.—The rents of cottages and of land vary to much in different parts of the kingdom, that it is difficult to ascertain an average. But if the cottage shall be slated at 3 *l.* per annum, the land at 2s. per acre, and the orchard at 10s. the whole will not exceed 7 *l.* 15s. The cottager will also be liable to the payment of some taxes, say to the amount of 1 *l.* 5s. more. Hence the total deductions would be about 9 *l.* leaving a balance in favour of the cottager of 3 *l.* 9s. 6d. Considering the cheap rate at which he is furnished with a quantity of potatoes, equal to several months' consumption, and with milk for his children, surely, with that balance, he can find no difficulty not only in maintaining himself and family in a style of comfort, but also in placing out his children properly, and laying up a small annual surplus, that will render any parish assistance, whether in sickness or old age, unnecessary; and thus he will be enabled to preserve that manly and independent spirit which it so well becomes a British cottager to possess.

"Advantages of the proposed system.—I shall now endeavour briefly to explain some of the advantages which may be looked for with confidence from the proposed system.

"1. In the first place, the land possessed by the cottager would be completely cultivated, and rendered as productive as possible. The dung produced by the cow, the pigs, &c. would be amply sufficient for the three roads under turnips and potatoes; which would afterwards produce, 1. Tares, 2. Barley, and 3. Clover; with a mixture of rye-grass, in regular succession, without any additional manure. The barley should yield at least eighteen bushels, besides three bushels for seed; and if wheat or oats are cultivated, in the same proportion. The milk, deducting what may be necessary for the calf, and for the cottager's family, might be sold in its original state, if there shall be a market for it, or converted into butter, for the purpose of supplying the neighbouring towns or villages. Such cottagers, also, might certainly send to market both eggs and poultry.

"2. It is hardly possible to suggest a measure more likely to promote the benefit of a numerous and valuable body of people. The system of keeping cows by cottagers, which has been found so advantageous in the grazing districts, may thus be extended over the whole kingdom; and, indeed, if the

above plan is found to answer, in place of four or five acres employed in feeding a single cow, it would be much better, even in the grazing counties, to restrict the land to a smaller quantity, under a tillage mode of management; for thus not only the cow, but also the cottager himself, and his family, would, in a great measure, be maintained by a less surface of soil.

"3. It is of infinite consequence to establish the practicability of this system, as the means of removing a most unfortunate obstacle to the improvement of the country. It is well known to be the only popular objection to the inclosure of our wastes and commons, that, while uninclosed, a number of cottagers are enabled to keep cows by the means of their common rights, and that their cows disappear when the commons are inclosed. But if so small a portion of land as 3 $\frac{1}{2}$ acres, when improved and properly cultivated, can enable a cottager to keep a cow even to more advantage than with a right of common; which can hardly be doubted, as he is enabled to provide winter as well as summer food; there is an end to that obstacle to improvement. Indeed, if sufficient attention be paid to the principles above detailed, the situation of the cottager, instead of being deteriorated, would be materially bettered by the inclosure; and his rising family would be early accustomed to habits of industry, instead of idleness and vice.

"I shall conclude with asking," says Sir John Sinclair, "if any one can figure to himself a more delightful spectacle than to see an industrious cottager, his busy wife, and healthy family, living in a comfortable house, rented by himself, cultivating their little territory with their own hands, and enjoying the profits arising from their own labour and industry; or whether it is possible for a generous landholder to employ his property with more satisfaction, or in a manner more likely to promote, not only his own, but the public interest, than in endeavouring to increase the number of such cottagers, and encouraging, by every means in his power, the exertions of so meritorious and so important a class of the community?"

Plan of the proposed Cottage Farm, pointing out the Rotation of Crops in the different Lots.

Cottage.		The Orchard, or perpetual Pasture.		Pond.
Lot A. 3 Roads. 2 Roads Potatoes 1 Road Turnips		Lot B. 3 Roads. 2 Roads Winter Tares 1 Road Spring Tares		
1. Year {		1. Year {		
Lot C. 3 Roads.		Lot D. 3 Roads.		
1. Year—Barley, Wheat, or Oats		1. Year—Clover and Rye-grass.		
The Rotation of Crops for four Years.				
Year	Lot A.	Lot B.	Lot C.	Lot D.
1	Potatoes and Turnips	Winter and Spring Tares	Barley, Wheat, or Oats	Clover and Rye-grass
2	Winter and Spring Tares	Barley, Wheat, or Oats	Clover and Rye-grass	Potatoes and Turnips
3	Barley, Wheat, or Oats	Clover and Rye-grass	Potatoes and Turnips	Winter and Spring Tares
4	Clover and Rye-grass	Potatoes and Turnips	Winter and Spring Tares	Barley, Wheat, or Oats

The rotation then begins as at first. Let D might continue in natural grass the first season, to diminish the labour of that year.

The exact period when the different crops shall be dug for, or sown, cannot be ascertained, because it varies so much in different counties, and depends upon the seasons; but, according to the above rotation, the labour of digging for the various crops is diversified as much as possible, so as not to interfere materially with the other occupations of the cottager. At no period would it be necessary for him to dig more than two rods in a month; and both he and his family will labour with much more satisfaction and dispatch when they work for themselves than for another. In case of necessity, the cottager might hire some of his neighbours to assist him in digging, which would be much better than hiring a plough. If a cottager under this system could not work as a common daily labourer, he might, at least, answer as a useful labourer by the piece.

COTTON (Encycl.). Is separated from the seeds of other extraneous matter by a process called *Batting*; for an account of a machine, or mill, lately invented for that purpose, see the article *BATTING* in this supplement. The following is a specification of the patent granted to Mr. Greatrix, of Hulme, near Manchester, callico printer and dyer; for a new invented process and method of dyeing and staining colours upon cotton, linen, and mixed goods.

"To dye a black upon cotton, linen, and cotton and linen mixed," says the inventor, "I take tar, iron liquor of the very best quality, adding to each gallon thereof, three quarters of a pound of fine flour, and by boiling bring it to the consistency of a thin paste. I put the liquor or paste above mentioned into the tub marked No. 3, belonging to the machine used in this process, a section and horizontal plan of which, with reference to, and description of, the several parts whereof, is herewith annexed. (See Plate 20.) The goods intended to be dyed are wound upon the roller No. 14, and passed through the liquor or paste above mentioned, betwixt the two rollers 7 and 12; thereby completely staining or dyeing the whole mass or body of the cloth. I pass them into a very hot stove or drying-house till dry. I take cows-dung, put it into a large copper of water about scalding hot, and mix it well together, through which I pass the piece of cloth until it be thoroughly softened. Note: the quantity of dung, and the time necessary in this process, depend upon the substance of the cloth, and the quantity of the paste or liquor imbibed in it. I take and wash the goods, so dunged, extremely well in water. I take a quantity of madder, or logwood, or sumach, or any two of them, or all of them mixed together, as the strength of the cloth and nature of the colour may require, and put them into a copper, or tub of hot water; then enter the goods before mentioned into this liquor, and keep rinsing or moving them therein, until I have brought them up to the strength of colour required. I have the goods again well washed and dried. Note, for dyeing black, it will be proper to pass the goods a second time through the above operations; adding more or less of the dyeing-woods as before. Note also, that if, after the above operations and the shade of colour is too full, or too much upon the red hue, it will be necessary to give them a little sumach, and then run them through a liquor made from iron and ewler, or alder bark. Another method of dyeing black: I take common iron liquor, and add three quarters of a pound of fine flour, and by boiling bring it to the consistency of a thin paste; or, instead of flour, I add glue or linseed, or gum, or any two, or all of them mixed together, till it is brought to a proper thickness. I then pass the goods through the machine, and follow the before-mentioned operations. To dye olives, bottle greens, purples, browns, cinna-

mons, or snuffs, I take common iron liquor, or common iron liquor with alum dissolved in it, or common iron liquor with alum and saccharum saturni dissolved therein, in quantity of each according to the shade of colour wanted, made into a paste or liquid, by adding flour, gum, glue, linseed, or one or more of them as before. I then put the liquor or paste above mentioned into the tub marked No. 3, belonging to the machine before described, and pass the goods so intended to be dyed through the machine in the same manner I have described for dyeing black. I take them from the machine, and hang them up in a very cool room, where they remain till thoroughly dry. I take cows-dung, put it into a large copper of hot water, and mix it well together; through which I pass the cloth or goods until thoroughly softened, the quantity of dung and time requisite, being proportioned as before. The goods after this process being well washed, I take a quantity of liquor made from madder, logwood, sumach, fustic, brazil, woad, quercitron bark, peach wood, or other woods, to produce the colour wanted, or any two, or more of them; and, in case I see it necessary, I dilute this liquor with water, according to the shade or fullness of colour I want to dye. I then work the goods through this liquor very well; after which I pass them through cold or warm water, according to the colour, the proper application of which is well known to dyers, adding a little alum, copperas, or Roman vitriol, or two or more of them, first dissolved in water. I then wash them off in warm water, and dry them. Note, if the colour is not sufficiently full, I repeat the same operations till it is brought to the shade required. To dye crimson, red, orange, or yellow, I take red liquor, such as is generally made from alum, saccharum saturni, or such-like ingredients, and dilute it with water, according to the strength or shade of colour I want to dye, bringing it to the consistency of a paste or liquid, as before described. Then pass the cloth through the machine; which being dried in a cool room, pass it through the operations of dunging and washing as before. I take a quantity of liquor, made from cochineal, madder, peach-wood, brazil, logwood, woad, fustic, sumach, or any two or more of them proportioned in strength to the shade or colour I want to dye, and work the goods through this liquor very well, till I have brought them to the shade of colour required; after which I wash them in cold or warm water, and dry them."

Description of the machine. No. 1, The frame. 2, The cloth or hatting which conveys the paste or liquor to the piece of cloth intended to be dyed. 3, The tub made to contain the paste. 4, Another tub, which receives the superfluous liquor or paste from the piece, and conveys it into No. 3. 5, 6, and 7, are three rollers, round which the hatting runs; passing through the tub of liquor, No. 3. 8, and 9, two screws, for the purpose of tightening the hatting. 10, and 11, two screws which press the roller No. 7, against the roller No. 12, betwixt which the piece passes. 12, A roller on which the fly-wheel No. 13 is fixed, which puts the machine in motion. 13, The fly-wheel. 14, The roller on which the piece is wound. 15, The piece passing through the liquor, and betwixt the rollers 7, and 12. 16, Another roller, which draws the piece from the machine, by a strap worked from a pulley, on the roller No. 12.

COTTON-MILLS (Encycl.). It has been the practice of many parishes, particularly of the metropolis, to send the children of the poor to be employed in these manufactories, for the most part, very greatly to the injury of their health and morals. That this, however, is not uniformly the case, appears from the following extract from an account of Mr. Dale's cotton-mills at New Lanark, in Scotland, published in the Reports of the Society in London for bettering the Condition of the Poor.

The cotton-mills at New Lanerk in the county of Lanerk in Scotland, are situate on a beautiful and romantic amphitheatre, near the high road between Carlisle and Glasgow. The rapid stream of the Clyde supplies that abundance of water, which is the powerful operator of the machinery. For the purpose of conveying and directing its power, a subterraneous aqueduct is cut for many hundred yards through the solid rock. The first mill, in length 154 feet, was originally erected in 1785; and, having been burnt down, was rebuilt in 1789. The second is exactly of the same dimensions; the third is 130 feet, and the fourth 156 feet, in length.

The two first mills contain 12,000 spindles for spinning water twist; the other two are occupied by jennies, for spinning mule yarn.—The village of New Lanerk owes its existence to the erection of these mills. It consists of neat substantial houses; forming two streets about half a mile in length, and broad, regular, and clean. Near the centre of the village are the mills; and opposite to them, a neat mansion, the occasional residence of Mr. Dale, the proprietor, and of his principal manager. The village, consisting chiefly of Highlanders from the counties of Argyle, Caithness, and Inverness, contains about 1,500 inhabitants; of whom all who are capable of work are employed in and about the mills. Of these, there are 500 children who are entirely fed, clothed, and educated by Mr. Dale. The others lodge with their parents in the village, and have a weekly allowance for their work.

The healthy and pleasurable appearance of these children has frequently attracted the attention of the traveller. Peculiar regulations, adopted by Mr. Dale for the preservation of the health and morals of those under his protection, have made this striking difference between his manufactory and many other similar undertakings in this kingdom; so that while some other mills must be regarded as seminaries of vice, and sources of disease, those at Lanerk are so peculiarly exempt from these objections, that out of near 3,000 children employed in these mills during a period of twelve years, from 1785 to 1797, only fourteen have died; and not one has been the object of judicial punishment.

In order to supply that first necessary of life, pure and fresh air, the windows of the manufactory are frequently opened; and in summer there are air holes left under every other window.—Cleanliness is another great object of attention. The children wash themselves before they go to work, and also after it before they appear in the schools. The floors and the machinery are washed once a-week with hot water; and the ceilings and walls, twice a-year, with unslaked lime.—The children who reside in the house, and who have their maintenance in lieu of wages, are lodged in six large airy apartments. The boys and girls are kept *diffinitely* apart; not only in the hours of rest and refreshment, but during the time of occupation.—They sleep on cast-iron bedsteads, the bed-tick filled with straw, which is changed regularly every month. The bedrooms are swept, and the windows thrown open every morning, and kept open all the day. Many of the children have contrived to provide themselves with boxes with locks; in which they keep their books and their little property. Their upper clothing in summer is cotton, which is washed once a fortnight. In winter the boys are dressed in woollen; and, as well as the girls, have dresses (suits for Sundays).

For dinner they have seven ounces each of fresh beef with barley broth, or alternately five ounces of cheese; and a plentiful allowance of potatoes, or barley bread. This part of the table diet is seldom varied; except in winter by a dinner of fresh herrings, as a change. Their breakfast and supper consist of oatmeal porridge, with the addition of milk in summer; and, during the winter, with a sauce made of molasses and beer.

Seven o'clock is the hour of supper; soon after which *(for that pernicious practice, called night-work, is entirely excluded from these mills)* the schools commence, and continue till nine o'clock. Mr. Dale has engaged three regular masters, who instruct the lesser children during the day. In the evening they are assisted by seven others, one of whom teaches writing. There is likewise a woman to teach the girls sewing, and another person who occasionally gives lessons in church music. The masters preside over the boys' dinner table. On Sundays they conduct them to the place of divine worship; and, in the evening of Sunday, attend to assist and improve them, by religious and moral instruction.

In the year 1791, a vessel carrying emigrants to America, from the isle of Skye, was driven by stress of weather into Greenock, and about 200 persons were put on shore in a very destitute situation. Mr. Dale offered them all immediate employment; which the greater part accepted. Soon after he notified to the people of the Highlands and the Hebrides, the degree of encouragement which he would give to families at the cotton mills; and undertook to provide houses for 200 families. These were finished in 1793: in consequence of which a considerable number of Highlanders have taken up their residence at New Lanerk. Several families also, who were last year driven from Ireland, have found immediate employment here.

"Amid the numerous variety of cotton mills," says Mr. Bernard, "that have been erected in this kingdom, I sincerely wish it were in my power to shew many examples like those of Mr. Dale's mills at Lanerk. Some few of these manufactories have been distinguished for attention to health and cleanliness, and many of them for very curious mechanism, and ingenious inventions, by which the operations are produced and facilitated; but I have not had the good fortune to find in any (though I doubt not but it may exist in some instances) that proper degree of attention, which ought to be paid to the morals and instruction of the children. *Where boys and girls are indiscriminately employed at all hours, not only of the day, but of the night, and are mingled together without any advantage of education, without benefit of religious instruction or moral principle, and without any friend to advise or protect them, can we be astonished at their plunging in a very early age, and almost during childhood, in every wretched and disgusting species of debauchery? Can we be surprised that our numerous and crowded manufactories should be the nurseries of thieves and prostitutes; sent out at an early age to their own ruin, and to the annoyance of the kingdom, and of every individual of which it is composed?*"

"Such, however, is the present spirit and speculation of this country, that wherever the demon of gain raises his banner, talents and exertion are sure to follow it. Cotton mills are as yet but in their infancy. Whilst great profits and immense fortunes are to be made by them, we know they must rapidly increase; and it is too obvious that, without public attention, they must be destructive of the moral and religious principles of the great mass of the people. The effect of this species of abridgment of labour is so great, that 100 persons in a cotton mill, will do more spinning, and that of ten times the fineness, and of a superior quality, to what can be produced by 3000 of the very best spinners by hand. In consequence of this, cotton mills have almost entirely deprived the cottager's wife and children of their means of domestic industry. The profit of spinning by hand is so reduced, that whole districts of cottagers' families have been obliged to give it up, and apply for relief to the parish.

"Our national and individual increase of wealth, from the manufacture of cotton, has been attended with so much injury to the health and morals of the poor, and is so utterly

destructive of that which constitutes the essential and fundamental virtue of the female character, that if I am not permitted to suggest a doubt, whether it would not have been better for us that cotton mills had never been erected in this island, I may at least express an anxious wish, that such regulations may be adopted and enforced, as shall diminish, if not entirely remove, the injurious and pernicious effects which must otherwise attend them.

"With this view I will lay before the reader an outline of some regulations, which, impelled by zeal, but very little presuming on personal knowledge of the subject, I venture to submit to the consideration of the public: meaning to apply my observations, not merely to cotton mills, but to all other manufactories under similar circumstances; and particularly to those, in which children are engaged as apprentices.

"In the first place, I conceive that some general and public attention ought to be paid to the moral and religious improvement of so numerous a class of our fellow-subjects: and that the most essential parts of their education ought not entirely to depend on the caprice, or disposition, of their respective masters; especially as many of them have been apprenticed by lots from distant counties, and have been deserted by those, whose duty it was to have protected them. In addition to this, something should also be done for the benefit of these children, to instruct and prepare them to support themselves in life, without thievery and prostitution, when the period of their apprenticeship expires at the age of sixteen.

"It seems to me to be also expedient that the age and conditions of apprenticeship be regulated;—that the hours of work be limited, and night-work (so destructive to health and morals) entirely excluded;—that a total separation take place between the boys and the girls;—that the works be liable to the periodical inspection of the magistrates, who should have power to order the regular white-washing and cleaning, and the warming and ventilating of the work-rooms; and who should receive quarterly or monthly reports, from each manufactory, of the number, the health, and the respective ages, of all the apprentices and other persons employed there.

"Such are the regulations, which, upon a cursory view of the subject, appear to be proper, and to have a tendency to meliorate the condition, and to preserve the morals, of these unfortunate and neglected children. Other correctives and remedies may probably occur to those who possess more practical knowledge of the subject. At present I have only to add that, as far as my enquiries have extended, I have reason to be satisfied, that almost all the owners of cotton mills will concur in thinking, that the preceding, or some similar, regulations ought to be enforced by the legislature, for the protection of the children employed in those mills. In order therefore that something practicable and effectual may be done, without injury to the interest of the manufacturers, I would suggest that the outline of any regulations proposed to be adopted, should be first communicated to them, so that they might state any objections, or amendments; and after a proper attention shall have been paid to their observations, I venture boldly to express my confidence, that the measures will have the support of every one, who desires to promote the welfare and happiness of his fellow-creatures, and the essential interests of virtue, morality, and religion, in this favoured country."

COUCY, a town of France, in the department of Aisne, nine miles N. of Soissons. Long. 3. 13. E. Lat. 48. 30. N.

COVERDEN, a town of the United Provinces, in Overijssel, with a fortress in the marshes, strong both by nature and art. It is thirty-five miles N.E. of Deventer. Long. 6. 35. E. Lat. 52. 46. N.

COULAN, or QUILON, a country of the peninsula of

Hindooftan, on the coast of Malabar. The inhabitants are generally Gentooes, with some Christians of St. Thomas. The capital is of the same name, where the Dutch have a settlement. Long. 75. 30. E. Lat. 8. 30. N.

COUSERANS, a late province of France, lying along the river Satat, and forming, with Foix, the department of Arrège.

COUTRAS, a town of France in the department of Dordogne, and late province of Périgord; seated on the Dordogne, twenty miles N.E. of Bourdeaux. Long. 0. 3. W. Lat. 40. 4. N.

COW (Encycl.). For proofs of the advantage which the poor cottager may derive from keeping a cow. See the article COTTAGER in this supplement.

COWBRIDGE, a small but neat town of Glamorganhire, with a market on Tuesday. It is called by the Welch Pont-Van, from the stone bridge over the river, which soon after falls into the sea. The streets are broad and paved; it is governed by two bailiffs, twelve aldermen, and twelve common-council; and here the assizes for the county are held. It is twelve miles W. of Cardiff, and 176 W. of London. Long. 3. 33. W. Lat. 51. 28. N.

COWPER (William), a modern poet of distinguished and original genius, was born in 1732, at Berkhamstead in Hertfordshire. His father, the rector of the parish, was John Cowper, D.D. nephew to Lord Chancellor Cowper. Mr. Cowper was educated at Westminster school, and at that seminary he acquired the classical knowledge and correctness of taste for which it is celebrated, but without any portion of the confident and undaunted spirit which is supposed to be one of the most valuable acquisitions derived from great schools to those who are to push their way in the world. It appears, indeed, from his poem, entitled Tirocinium, that the impressions made on his mind from what he witnessed, were of the most unfavourable kind, and gave him a permanent dislike to the system of public education. As through family interest the honourable and lucrative place of clerk to the House of Lords had been provided for him, he was entered at the Temple for the study of the law, in order to qualify him for it. In this situation his manners were amiable and decent; and though it is probable that he did not refuse to indulge in those pleasures which are usual among young men similarly situated, yet there seems no reason to suppose that he had any peculiar causes for self-accusation. His natural disposition was timid and diffident; his spirits were constitutionally weak, even to the borders of absolute uselessness for worldly concerns; so that when the time came for assuming that post to which he had been destined, he shrunk with such terror from the idea of making his appearance before the most august assembly in the nation, that, after a violent struggle with himself, he actually resigned the employment, and with it all his prospects in life. It appears to have been under the agitation of mind which this circumstance occasioned, and which threw him into a serious illness, that he was led to a deep consideration of his state in a religious view; and from the system he had adopted, this course of reflection excited in him the most alarming and distressful apprehensions. In vain did his theological friends set before him those encouraging views which the theory of Christian justification is calculated to present, and which to many is the source of a confidence perhaps as excessive as their former fears; the natural disposition of his mind fitted it to receive all the horrors, without the consolations, of his faith. We are told, that "the terror of eternal judgment overpowered and wholly disordered his faculties; and he remained seven months in a continual expectation of being instantly plunged into final misery." In this shocking condition he became the subject of medical care,

and he was placed in the receptacle for lunatics kept by Dr. Cotton of St. Alban's, an amiable and worthy physician, and the author of some well-known poems. At length he recovered a degree of serenity; but his mind had acquired that indelible tinge of melancholy by which it was ever after characterised, and which rendered his whole life little more than a succession of intervals of comfort between long paroxysms of settled despondency. It is unnecessary to follow him through all his scenes of retirement. Part of his time was spent at the house of his relation, Earl Cowper, at Cole-green; and part at Huntingdon, with his intimate friend the Reverend Mr. Unwin. After the death of the latter, he removed with his widow to Olney in Buckinghamshire, which was thenceforth the principal place of his residence. The affectionate intimacy he enjoyed with this lady is strongly expressed in the following lines, which have probably been understood by most readers as expressive of a conjugal union:

—Witness, dear companion of my walks,
Whose arm this twentieth winter I perceive
Fast lock'd in mine, with pleasure such as love
Confirm'd by long experience of thy worth
And well-tried virtues could alone inspire—
Witness a joy that thou hast doubled long.

TASK, B. I.

At Olney he contracted a close friendship with the Reverend Mr. Newton, then minister there, and since rector of St. Mary Woolnoth, London, whose religious opinions were in unison with his own. To a collection of hymns published by him, Mr. Cowper contributed a large number of his own composition. He first became known to the public in general as a poet by a volume printed in 1782. The pieces of which it consisted were of a singular cast; and if they did not at once place the writer high in the scale of poetic excellence, they sufficiently established his claim to originality, and gave tokens of a genius rather kept down by his subject than deficient in native power. The principal topics are, Error, Truth, Expulsion, Hope, Charity, Retirement, Conversation, all treated upon religious principles, and not without a considerable tinge of that rigour and austerity which belonged to his system. To this it must be attributed, that though naturally a man of kind affections, and more inclined to compassion than severity, yet, like the melancholy Jacques,

—most invectively he pierceth through
The body of the country, city, court.

These pieces are written in rhymed heroics, which he commonly manages with little grace or attention to melody. The style is rather strong and forcible than poetic; but though often prosaic, he is never flat or insipid; and sometimes the poet breaks through in a vein of lively description or bold figure. Of his talent for painting, a better specimen cannot be given than his draught of the melancholy man, probably sketched from what too faithful remembrance suggested of himself:

Look where he comes—In this embower'd alcove
Stand close concealed, and see a statue move;
Lips busy, and eyes fixt, foot falling slow,
Arms hanging idly down, hands claps'd below,
Interpret to the marking eye, distress,
Such as its symptoms only can express.
That tongue is silent now;—that silent tongue
Could argue once, could jest or join the song,
Could give advice, could censure or commend,
Or charm the sorrows of a drooping friend.
Renounce'd alike its office and its sport,
Its brisker and its graver strains fall short;

VOL. X.

Both fall beneath a fever's secret sway,
And like a summer brook are pass'd away.

RETIREMENT.

It does not appear that this volume excited much of the public notice; but his second volume, published in 1785, introduced his name to all the lovers of poetry, and raised him at least to an equality of reputation with any of his contemporaries. This chiefly consists of a poem in six books, entitled *The Task*, which name it derived from the injunction of a lady upon him to write a piece in blank verse, for the subject of which she gave him *the Sofa*. It sets out, indeed, with some sportive discussion of this topic, but it soon falls into a serious strain of rural description, intermixed with moral sentiments and portraits, which, under different titles, is preserved through the six books, with no perceptible method, but freely ranging from thought to thought, from the image to its improvement, as unthralled fancy suggests. It is difficult to determine which is the most conspicuous excellence of this charming production. In the description of natural objects, it unites the most minute accuracy with striking elegance and picturesque beauty. Since Thompson, Cowper is the poet who has added most to the stock of natural imagery; and his paintings are more exact than those of that writer, though generally less grand and comprehensive. His *manner*, indeed, has led some of his imitators into a kind of Dutch style of painting, which has wasted the powers of description upon objects not worth the pains; but Cowper himself is generally preserved by good taste from this degradation of his art. The pious and moral reflections of the *Task*, touch the heart with irresistible force; and its delineations of character are life itself. The personifications, and allegorical figures interspersed, display high powers of fancy; and the picture of Winter riding on his sledgy car, may vie in sublimity with any effort of poetical invention. The permanent colour of the diction is ease and force, sometimes deviating into negligence, but more free than perhaps any other blank verse from the stiffness and tumidity which so commonly disfigure this mode of writing. Although the peculiar religious system of the author is sufficiently discernible in the *Task*, it however appears with less gloom and austerity than in his former pieces. There is added to this volume *Tirocinium*, or a Review of Schools, a piece of great strength, and replete with striking observation, whatever he thought of the decisive sentence it pronounces against the public education of this country. The merry story of John Gilpin seems to shew (as indeed do many passages in his other works), that a strong perception of the ludicrous naturally balanced in his disposition the gloomy propensity which circumstances rendered finally predominant.

For the purpose of losing in employment those distressing ideas, which were ever apt to recur, he undertook the real *task* of translating into blank verse the whole of Homer's *Iliad* and *Odyssey*. This work possesses much merit of execution, and is certainly a much more exact representation of the ancient bard than Pope's ornamental version; but though the epic dignity is well supported in those passages which are intrinsically poetical, yet where the simplicity of the matter in the original is elevated into poetry solely by the force of sonorous versification, the poverty of English blank verse has scarcely been able to prevent it from sinking into mere prose. On the whole, this translation has probably been more praised than read; to the author, however, it was a most valuable source of innocent amusement, and its completion is mentioned by him with the regret felt on parting with a beloved companion.

Nothing, however, was capable of durably relieving his mind from the horrible impressions it had undergone; and

absolute despair was the state in which it finally settled. He passed some of his latter years under the affectionate care of a relation at East Dereham in Norfolk, nor did he entirely drop his literary employments, and the occasional composition of poems, till a short time before his death. This event took place, after a gradual decline of strength, on April 25th, 1800.—We are indebted to the popular biographical work of Dr. Aikin for the foregoing particulars.

COW-POX, a disease to which cows are subject, and from which mankind are likely to derive most important benefits.

In the summer of the year 1798, Dr. Jenner, of Berkeley in Gloucestershire, published several curious and interesting facts respecting this disease, which had been for a very long time known to the dairy farmers in the western counties of England. The most important of these is, that *persons who have once been affected with the cow-pox are thereby rendered incapable of variousious infection.*

"It appears (says Dr. Jenner) on the nipples of cows in the form of irregular pustules. At their first appearance they are commonly of a palish blue, or rather of a colour somewhat approaching to livid, and are surrounded by an erysipelatous inflammation. These pustules, unless a timely remedy be applied, frequently degenerate into phagedenic ulcers; the animals become indolent, and the secretion of milk is much lessened. Inflamed spots now begin to appear on different parts of the hands of the domestics employed in milking, and sometimes on the wrists, which quickly run on to suppuration, first assuming the appearance of small vesications produced by a burn. Most commonly they appear about the joints of the fingers, and at their extremities; but whatever parts are affected, if the situation will admit, these superficial suppurations put on a circular form with their edges more elevated than their centre, and of a colour distantly approaching to blue. Absorption takes place, and tumors appear in each axilla. The system becomes affected, the pulse is quickened, and shiverings with general lassitude and pains about the loins and limbs, with vomiting, come on. The head is painful, and the patient is now and then even affected with delirium. These symptoms, varying in their degree of violence, generally continue from one day to three or four, leaving ulcerated sores about the hands, which, from the sensibility of the parts, are very troublesome, and commonly heal slowly, frequently becoming phagedenic, like those from whence they spring."

There is not perhaps in the annals of medicine, to be found an example of experiment or enquiry, where the life and health of such numbers already born, and of all to be born, were implicated, that has been taken up more generally, received more candidly, or conducted more prudently, than this concerning the cow-pox. Some experiments, however, producing results which induced Dr. Jenner to apprehend that a *spurious* cow-pox had been communicated, he, in a subsequent work, laid down the following rules for the guidance of those who take the matter with which they inoculate *from the cow*.—He says, "The most perfect criterion by which the judgment may be guided is, perhaps, that adopted by those who attend infected cattle. These white blisters on the nipples, *say they, never eat into the fleshy parts*, like those which are commonly of a bluish cast, and which constitute the *true cow-pox*, but that they affect the skin only, quickly end in scabs, and are not nearly so infectious."

Dr. Woodville gives a tabular statement of the progressive descent of the cow-pox infection from patient to patient, as well as the magnitude of the disease which was excited by the inoculation. From the table, which extends much beyond our prescribed limits, we collect the following facts:

1. That out of about 500 cases of the inoculated cow-pox,

one proved fatal; and that in some others the disease, from the number of pustules, was of formidable severity; while, on the other hand, a very large proportion of the patients were scarcely disordered from the inoculation, and had no pustules.

2. That the matter of the vaccine disease has generally produced much fewer pustules and less indisposition than that of the small-pox.

3. That about two-fifths of all the persons inoculated for the variolæ vaccineæ had no pustules; and that in not more than a fourth part of them was there experienced any perceptible disorder of the constitution.

Dr. Pearson also engaged very extensively in this enquiry; and after various inferences drawn from experiments made by himself and communicated to others, he says:

"It now seems to me that the following facts are established on the foundation of experience:

- "1. A constitution which has undergone the small-pox is unsuceptible of again undergoing the disease.

- "2. A constitution which has not undergone the small-pox, but which has undergone the cow-pox, is unsuceptible of undergoing the small-pox.

- "3. A constitution which has not undergone the cow-pox, but which has undergone the small-pox, is unsuceptible of undergoing the cow-pox.

"Now, if the variolous poison destroys the susceptibility of the constitution to the future agency of this poison, in the respect of its producing the small-pox—and if the cow-pox poison destroys the susceptibility of the constitution to the future agency of the variolous poison, in the respect of its producing the small-pox—and if the variolous poison destroys the susceptibility of the constitution to the future agency of the vaccine poison, in the respect of its producing the cow-pox—it is demonstrated, that the same state of susceptibility of the constitution with respect to the future agency of the variolous poison, is produced equally by the agency of the variolous poison, and by the vaccine poison; but if the variolous poison produces unsuceptibility of the constitution to the future agency of the vaccine poison, it is demonstrable that the following fourth proposition is true, viz.

- "4. A constitution which has undergone the vaccine disease is unsuceptible of again undergoing that disease from the vaccine poison, because a state of unsuceptibility with respect to the agency of the variolous poison is produced by the vaccine poison (2d proposition), and a state of unsuceptibility with respect to the agency of the vaccine poison is produced by the variolous poison (3d proposition)—but the state of the constitution being the same in the two cases whether it be produced by the variolous or vaccine poison with respect to unsuceptibility, it seems inevitably in course, that unsuceptibility of the constitution to the future agency of the vaccine poison is produced by the vaccine disease; and the demonstration in course, could be given of the 1st proposition, on the ground of the 2d and 3d proposition, that unsuceptibility of the constitution to the agency of the variolous poison is produced by the variolous disease, if this were not already proved by abundant experience. "At a future time, however, I shall relate the observations and experiments to confirm this *a priori* conclusion; first, because these proofs will increase the validity of the 3d proposition; and secondly, because I do not mean to offer this demonstration as infallible, like mathematical."

It is by no means extraordinary that some accidents should occur to throw suspicion on the supposed efficacy attributed to the practice of inoculating the cow-pox; the preference due to it, however, over *variolous* inoculation, is rendered manifest by the following plain account of the matter given by Dr. Woodville in a periodical work. He says,

"In my report of the new inoculation, published in May

last, including upwards of 500 cases, I observed that the matter of the vaccine disease generally produced much fewer pustules, and less indisposition, than that of the small-pox. But at the same time it was remarked, that in some instances the cow-pox proved a very severe disease, and that one child died of spasmodic fits, occasioned by the eruptive fever which it excited. I hinted, however, that if the matter of the cow-pox used for the inoculations had been taken only from those patients in whom the disease appeared very mild and well characterised, the result would have been more favourable; and I have since had the satisfaction to find this opinion fully confirmed. For of 1000 persons inoculated for the vaccine disease, by me, or under my immediate direction, during the last six months, not more than 150 had pustules which proceeded to suppuration; nor was there one case attended with a dangerous symptom.

"Now, out of 1000 persons inoculated for the small-pox, I find generally that more than 800 have pustules; and as the severity of the disease is commonly in proportion to the number of the pustules, it follows that the cow-pox is milder than the inoculated small-pox in the proportion above mentioned.

"To infants at the breast the new inoculation has proved peculiarly successful, for I have now had a very considerable number of private patients of this description, in none of whom was the inoculation attended with any pustules, and even very rarely with any perceptible disorder of the constitution.

"That those who have undergone the vaccine disease, are thereby rendered secure against the effects of the small-pox, is a truth confirmed by daily experience. Upwards of 1000 of my patients, who had undergone the cow-pox, have been inoculated with variolous matter, yet none of them took the small-pox."

The SOCIETY for BETTERING the CONDITION of the POOR, desirous of extending this practice as much as possible, printed and distributed an Address to the Poor, which is introduced by these preliminary remarks:

"Notwithstanding the advantage of inoculation for the small-pox," say they, "it is a melancholy fact that the poor do still suffer very greatly by that disorder. The following address from the physicians, surgeons, and apothecaries, of the medical hospitals at Manchester, on the subject of inoculation for the cow-pox, may, it is hoped, have its effect in producing from our medical hospitals offers similar to that in the address, and also in preparing the minds of the poor to take the full benefit thereof. Two families near Manchester have lately inoculated for the cow-pox many hundreds of the neighbouring poor; who have all recovered without any sickness to confine them a single day. Twenty of them were afterwards inoculated for the small-pox; for a few days the usual signs of infection were perceived on the arms; but soon disappeared, without communicating the small-pox to any one of the twenty patients on whom this very satisfactory experiment was made."

Their ADDRESS to the POOR runs thus:

The experience of several years has fully proved, that inoculation for the cow-pox is a certain preservative against the small-pox; and is, besides, so mild and safe a disorder, when compared with the inoculated small-pox, that it has been generally introduced among the better informed, and more wealthy inhabitants, both of this kingdom and of various parts of Europe. In order, therefore, to impress strongly on the minds of the poor, the usefulness and superior advantages of this new plan of inoculation, the medical gentlemen (whose signatures are annexed) belonging to these charities, have thought it their duty to state, in this public manner, the following observations

for the serious perusal of all those poor persons, who feel a proper affection for their offspring, and who are desirous of promoting their own interest and comfort.

1. Inoculation for the cow-pox has been practised, for several years, with constant success, in various parts of this kingdom.

2. It has never failed to prevent the infection of the natural small-pox.

3. It may be communicated with safety to persons of every age and sex, and at all times and seasons of the year, with equal advantage.

4. The cow-pox is much preferable to the inoculated small-pox, as being a milder and safer disease, and not capable of infecting the persons living in the same family, or even sleeping in the same bed.

5. It does not produce eruptions, which scar and disfigure the face; and is seldom, if ever, attended with any other marks of the disease, than what appear on the arms from inoculation.

6. Neither swellings, blindness, lameness, nor any other complaints, which are known frequently to be the consequences of the natural small-pox (and sometimes, though but seldom, of the inoculated small-pox), have been observed to follow the cow-pox.

7. Alarming fits frequently seize children when sickening of the small-pox; and while cutting their teeth, this disorder often proves dangerous; but no such objections lie against the cow-pox.

8. So far from proving hurtful, delicate and sickly children are often improved in health by having passed through this complaint.

9. Scarcely any remedies or attendance are required for the cow-pox.

10. There is no necessity for a course of physic either before or after inoculation.

11. The time of the parents will not be taken up in attendance upon the sick, to the injury of the support of the rest of the family: and to poor families, this is an object of no small importance.

The prejudices of the poor against inoculation for the small-pox, by which thousands of lives have been annually saved, have been often lamented; but if they suffer unjust prejudices to prevent their laying hold of the advantages now offered to them, by the inoculation of the cow-pox, they will neglect the performance of a duty they owe to themselves, to their families, and to society at large.—For surely it is little less than criminal to expose their helpless children to the attack of so terrible and fatal a malady as the small-pox, when it may be readily avoided by the inoculation of so mild, simple, and safe a disease, as that of the cow-pox.

The great superiority of the inoculation of vaccine, in preference to variolous matter, consists in this:

That by the latter, infection is brought from all points of the compass; the seeds of a fatal disease are scattered over the whole face of the kingdom; and where a single life is preserved by variolous inoculation, several perhaps are lost by the accidental communication of the natural disease through the neighbourhood. On the other hand, the cow-pox, besides being more free from danger to the patient, confers its benefits to individuals without endangering the community, and without the possibility of extending it to any person in the same family.

COX (Richard) (*Encycl.*). This zealous reformer we find had not totally lost sight of the popish text, *compel them to come in*. A strong proof of his implacability and self-importance appears in his letter to the lord-treasurer Burleigh, in which he warmly expostulates with the council for inter-

posing in behalf of the Puritans, or meddling in affairs of the church, admonishing them to keep their own sphere. Such language from a bishop would make a modern privy-council stare. His works are, 1. Two Latin Orations on the Dispute between Dr. Tresham and Peter Martyr, Lond. 1549, 4to. 2. Liturgy of the Church of England; in compiling, and afterwards correcting which, he was principally concerned. 3. The Lord's Prayer in verse, commonly printed at the end of David's Psalms, by Sternhold and Hopkins. 4. Translation of the Four Gospels, the Acts of the Apostles, and the Epistle to the Romans, in the new translation of the Bible in the reign of Queen Elizabeth. 5. Resolutions of some Questions concerning the Sacrament, in the Collection of Records at the end of Burnet's History of the Reformation. 6. Several Letters to the Queen and others, published in Strype's Annals of the Reformation. He is also said to have been concerned in the declaration concerning the divine institution of bishops, and to have assisted Lile in his grammar.

CRACKER, or **SEA-PHEASANT**, in ornithology, the English name of the *anacausa*. See **ANAS**.

CRAIGMILLAR, a ruinous castle, 2 miles S.E. of Edinburgh, in which Mary queen of Scots resided, after her return from Paris in 1562. Her French retinue were lodged in an adjacent village, thence called Little France; and here too, repenting her rash match with the profligate Lord Darneley, she often retired, to indulge her melancholy in solitude.

CRAINBURG, a town of Germany, in Carniola, on the river Saave, 20 miles N.W. of Laubach. Long. 14. 5. E. Lat. 46. 36. N.

CRAMBE (*Encycl.*), erroneously spelt **CRAMBLE**.

CRAMMOND WATER, a river of Edinburghshire, in Scotland, called also the Almond. For several miles it divides this county from Linlithgowshire, and falls into the Frith of Forth, at the small village of Crammond, a place remarkable for the traces of a great Roman station. Its fertile banks are adorned with villages and country seats.

CRANBOURN, a town of Dorsetshire, with a market on Wednesday. It is well watered with streams, and has a fine chafe, which extends almost to Salisbury. It is 38 miles N.E. of Dorchester, and 94 W. of London.

CRANBROOK, a large town in Kent, with a market on Saturday, the best in these parts. It is 13 miles S. of Maidstone, and 52 S.E. of London. Long. o. 39. E. Lat. 51. 4. N.

CRANE (*Encycl.*). In that article, the descriptions of the figures in Plate 88, Vol. II. have been accidentally omitted. The following is a description of Mr. White's crane.

A, a circular-inclined plane, moving on a pivot underneath it, and carrying round with it the axis E. A person walking on this plane and pressing against the lever B, throws off the gripe D by means of an iron rod C, and thus admits the plane and its axis to move freely, and raise the weight G by the coiling of the rope F round the axis E. To show more clearly the construction and action of the lever and gripe, a plan of a circular-inclined plane with the lever and gripe is added, where B represents the lever, D the spring or gripe. In this plan, when the lever B is in the situation it now appears, the spring or gripe D presses against the periphery of the plane, as shewn by the double line; and the machine cannot move but when the lever B is pressed out to the dotted line H; the gripe is also thrown off to the dotted line I, and the whole machine left at liberty to move. One end of a rope or cord, of a proper length, is fixed near the end of the lever B, and the other end made fast to one of the uprights,

serving to prevent the lever moving too far when pressed by the man.

The *improved crane*, represented in the same plate, consists simply in introducing the action of a worm, that communicates the first motion to the crane, upon the axis of the wheel in which the man walks. The axis of this wheel, and that of the worm, are proposed to be in separate parts, and occasionally united by a coupling-box. When goods are to be raised, the two axes should be connected; when lowered, they may be disunited, and the worm turned by a winch. Thus, the ascent, or descent, of the weight may be accelerated, or stopped at pleasure, by the person walking on the axis of the wheel, or turning the winch; without the remotest possibility of being overpowered by the descending weight.

Explanation of the figure in the plate. A, the wheel in which the man walks. B, the coupling-box. C, the worm. D, the wheel in which it works. E, a wheel upon the same axis, giving motion to F. F, a wheel upon the axis of the windlass. G, the winch.

This machinery may be applied to a crane already erected upon the common principle. The inventor proposes to put a wheel on any convenient axis in the machine, in its present state; and, on this, a worm that may be thrown in or out of gear at pleasure; and to let the lever, by which it is effected, lie within the reach of the man's hand in the wheel. The goods being fastened to the crane, and raised from the floor of the warehouse, in order to be let down, the man puts the worm into the gear, leaves the wheel, and causes them to descend by the winch.

In the same plate (88. Vol. II.) is given a representation of an excellent contrivance for preventing the shocking accidents which occasionally happen to the men who work wheel cranes. This is caused by the weight of the goods they are attempting to raise, being too considerable for the power that is opposed to it; consequently the wheel runs back with great velocity, and unless the useful appendage here spoken of, form a part of the construction, the persons within it are dashed to pieces.

In the view of this contrivance, AA is the axle of the crane; BB two circular pieces, on which are affixed, at convenient distances, several pulleys, carrying, by means of a rope, two bows of iron CC, on which rests a wooden holder D; by this last the men can suspend themselves if the wheel should accidentally revolve, so as to avoid injury.

These contrivances are alike eminent for their ingenuity; but we can by no means omit noticing a kind of crane invented by Mr. Abraham Andrews, of Higham Ferrers, Northamptonshire. This machine weighs the body suspended, while it is raising; an improvement for which the Society for the Encouragement of Arts, &c. in 1791, granted him a premium of 15 guineas.

The proportion of the beam in the plate is as 1 to 20, the large weight being 5 pounds, and the smaller $\frac{1}{4}$ of a pound. The latter, when fixed on the beam-end, will equipoise the former, if hung on the pulley at the end of the gib-beam, which should be placed in a right line with the crane, at the time the weight is adjusted; otherwise it will occasion a friction that may prevent the moveable beam from playing freely.

The following is a description of Mr. A. Andrews's weighing-crane, represented in Plate 24 of this supplement.

The gib of the crane stands on a horizontal beam, moveable on a centre, at A: and the distance of the centre A, from the bearing of the upright, being to the distance B, in the proportion of 1 to 20, the weight placed at B, de-

termines that of the body suspended in the same proportion. C is a stub, or piece of wood, which projects from the weight hanging at the end of the gib, and serves to prevent the beam from rising to too great a height.

CRANGANORE, a town and fort of the peninsula of Hindoostan, on the coast of Malabar, lately subject to the Dutch, by whom it was taken from the Portuguese in 1662. In 1789, the Dutch sold this place to the rajah of Travancore. But Tippoo Sultan, regent of Mysore, disputing their right to sell it, a war ensued between that prince and the rajah, who being powerfully supported by the English and their allies, the nizam of the Deccan and the Maharattas, the war was happily terminated in 1792; Tippoo consenting to pay above three crores of rupees towards the expenses of the war, and to cede one-half of his dominions to the three confederate powers. Cranganore is seated at the mouth of a river, 24 miles N. by W. of Cochin. Long. 76. 30. E. Lat. 10. 23. N.

CREA (*Encycl.*), placed erroneously after the article CREUSA.

CREETOWN, a small port of Scotland, on the E. side of Wigton Bay, in Kirkcudbrightshire. Here several loops are constantly employed in carrying sea-shells coalwise, or importing coal and lime from Cumberland. The shells are dug from banks without the sea-mark, and are esteemed a valuable manure.

CREIFF, a town of Scotland, in Perthshire. Its annual fair for cattle is one of the greatest in Scotland. It is seated on the river Earn, 20 miles W. of Perth.

CREIL, a town of France, in the department of Oise, and late province of the Isle of France. It is seated on the Oise, five miles from Senlis. Long. 2. 43. E. Lat. 49. 13. N.

CREMIU, a small town of France, in the department of Here, and late province of Dauphiny, at the foot of a mountain, a mile from the Rhone. Long. 5. 20. E. Lat. 45. 44. N.

CREMNITZ, the principal mine-town of Upper Hungary, 70 miles N.E. of Presburg. Long. 19. 6. E. Lat. 48. 32. N.

CREMONA, a city of Italy, and capital of a district of the Milanese, called from it the *Cremonese*; is situated 45 miles south-east of Milan, in E. Long. 10. 30. and N. Lat. 45. 0.

CREMONESE, a territory of Italy, in the duchy of Milan, bounded on the E. by Mantua, on the N. by Bresciano, on the W. by Cremafco and Lodez-Lodezan, and on the S. by Parma. It is fertile in wine and fruits, and belongs to the house of Austria. Cremona is the capital.

CREMPEN, a town of Germany, in the duchy of Holstein, five miles from Hamburg.

CRESCENTINO, a town of Piedmont, on the river Po. It was taken by the French in 1704, and by the allies in 1706. It is 20 miles N.E. of Turin. Long. 8. 0. E. Lat. 45. 20. N.

CRESPY, a town of France, in the department of Oise, and late province of the Isle of France, 17 miles S. of Compiègne. Long. 2. 55. E. Lat. 49. 10. N.

CREVECEUR, a town of France, in the department of the North, and late province of Cambrésis, seated on the Scheld, five miles S. of Cambray. Long. 3. 20. E. Lat. 50. 6. N.

CREUSE, a department of France, so named from a river that falls into the Vienne, and containing the late province of Marche. Gueret is the capital.

CREUTZNACH, a town of Germany, in the palatinate of the Rhine, with a castle on an eminence. It is 20 miles S.W. of Mentz. Long. 7. 55. E. Lat. 49. 44. N.

CREWKERNE, a town of Somersetshire, with a market on Saturday. It is seated on a branch of the Parret. Three miles beyond this town is a hill that commands one of the most beautiful prospects in the kingdom. Crewkerne is 132 miles W. by S. of London. Long. 3. 0. W. Lat. 50. 50. N.

CREX, in ornithology (*Encycl.*), a species of RALLUS, erroneously spelt CREA.

CRICKHOWEL, a town of Brecknockshire, with a market on Thursday. It is seated on the river Ufk, 10 miles E. by S. of Brecknock. Long. 3. 7. W. Lat. 51. 49. N.

CRIMES AND PUNISHMENTS (*Encycl.*). Although we have already been somewhat particular in what is communicated under this head, we nevertheless, are so far aware of the importance of the subject to every individual, as to have determined to add, in this place, some account of the general nature of crimes, in which we shall chiefly follow Judge Blackstone.

1. A crime, or misdemeanour, is an act committed, or omitted, in violation of a public law, either forbidding or commanding it. This general definition comprehends both crimes and misdemeanours; which, properly speaking, are mere synonymous terms: though, in common usage, the word "crimes" is made to denote such offences as are of a deeper and more atrocious dye; while smaller faults, and omissions of less consequence, are comprised under the gentler name of "misdemeanours" only.

The distinction of public wrongs from private, of crimes and misdemeanours from civil injuries, seems principally to consist in this: that private wrongs, or civil injuries, are an infringement or privation of the civil rights which belong to individuals, considered merely as individuals; public wrongs, or crimes and misdemeanours, are a breach and violation of the public rights and duties, due to the whole community, considered as a community, in its social aggregate capacity. As if I detain a field from another man, to which the law has given him a right, this is a civil injury, and not a crime; for here only the right of an individual is concerned, and it is immaterial to the public which of us is in possession of the land: but treason, murder, and robbery, are properly ranked among crimes; since, besides the injury done to individuals, they strike at the very being of society; which cannot subsist where actions of this sort are suffered to escape with impunity.

In all cases the crime includes an injury: every public offence is also a private wrong, and somewhat more; it affects the individual, and it likewise affects the community. Thus treason in imagining the king's death, involves in it conspiracy against an individual, which is also a civil injury: but as this species of treason in its consequences principally tends to the dissolution of government, and the destruction thereby of the order and peace of society, this denominates it a crime of the highest magnitude. Murder is an injury to the life of an individual; but the law of society considers principally the loss which the state sustains by being deprived of a member, and the pernicious example thereby set, for others to do the like. Robbery may be considered in the same view: it is an injury to private property; but, were that all, a civil satisfaction in damages might atone for it: the public mischief is the thing, for the prevention of which our laws have made it a capital offence. In these gross and atrocious injuries the private wrong is swallowed up in the public: we seldom hear any mention made of satisfaction to the individual; the satisfaction to the community being so very great. And indeed, as the public crime is not otherwise avenged than by forfeiture of

life and property, it is impossible afterwards to make any reparation for the private wrong; which can only be had from the body or goods of the aggressor. But there are crimes of an inferior nature, in which the public punishment is not so severe, but it affords room for a private compensation also: and herein the distinction of crimes from civil injuries is very apparent. For instance; in the case of battery, or beating another, the aggressor may be indicted for this at the suit of the king, for disturbing the public peace, and be punished criminally by fine and imprisonment: and the party beaten may also have his private remedy by action of trespass for the injury, which he in particular sustains, and recover a civil satisfaction in damages. So also, in case of a public nuisance, as digging a ditch across a highway, this is punishable by indictment, as a common offence to the whole kingdom, and all his majesty's subjects: but if any individual sustains any special damage thereby, as laming his horse, breaking his carriage, or the like, the offender may be compelled to make ample satisfaction, as well for the private injury, as for the public wrong.

II. The nature of crimes and misdemeanours in general being thus ascertained and distinguished, we proceed, in the next place, to consider the general nature of punishments: which are evils or inconveniences consequent upon crimes and misdemeanours; being devised, denounced, and inflicted by human laws, in consequence of disobedience or misbehaviour in those, to regulate whose conduct such laws were respectively made. And herein we will briefly consider the power, the end, and the measure, of human punishment.

1. As to the power of human punishment, or the right of the temporal legislator to inflict discretionary penalties for crimes and misdemeanours. It is clear, that the right of punishing crimes against the law of nature, as murder and the like, is in a state of mere nature vested in every individual. For it must be vested in somebody; otherwise the laws of nature would be vain and fruitless, if none were empowered to put them in execution: and if that power is vested in any one, it must also be vested in all mankind; since all are by nature equal. Whereof the first murderer Cain was so sensible, that we find him expressing his apprehensions, that whoever should find him would slay him. In a state of society this right is transferred from individuals to the sovereign power; whereby men are prevented from being judges in their own causes, which is one of the evils that civil government was intended to remedy. Whatever power therefore individuals had of punishing offences against the law of nature, that is now vested in the magistrate alone; who bears the sword of justice by the consent of the whole community. And to this precedent natural power of individuals must be referred that right, which some have argued to belong to every state (though, in fact, never exercised by any), of punishing not only their own subjects, but also foreign ambassadors, even with death itself; in case they have offended, not indeed against the municipal laws of the country, but against the divine laws of nature, and become liable thereby to forfeit their lives for their guilt.

As to offences merely against the laws of society, which are only *mala prohibita*, and not *mala in se*; the temporal magistrate is also empowered to inflict coercive penalties for such transgression: and this by the consent of individuals; who, in forming societies, did, either tacitly or expressly, invest the sovereign power with a right of making laws, and of enforcing obedience to them when made, by exercising, upon their non-observance, severities adequate to the evil. The lawfulness therefore of punishing such criminals is founded upon this principle, that the

law by which they suffer was made by their own consent; it is a part of the original contract into which they entered, when first they engaged in society; it was calculated for, and has long contributed to, their own security.

This right therefore, being thus conferred by universal consent, gives to the state exactly the same power, and no more, over all its members, as each individual member had naturally over himself or others. Which has occasioned some to doubt, how far a human legislature ought to inflict capital punishments for positive offences; offences against the municipal law only, and not against the law of nature; since no individual has, naturally, a power of inflicting death upon himself or others for actions in themselves indifferent. With regard to offences *mala in se*, capital punishments are in some instances inflicted by the immediate command of God himself to all mankind; as, in the case of murder, by the precept delivered to Noah, their common ancestor and representative, "Whoso sheddeth man's blood, by man shall his blood be shed." In other instances they are inflicted after the example of the Creator, in his positive code of laws for the regulation of the Jewish republic; as in the case of the crime against nature. But they are sometimes inflicted without such express warrant or example, at the will and discretion of the human legislature; as for forgery, for theft, and sometimes for offences of a lighter kind. This practice is thus justified by that great and good man, Sir Matthew Hale: "When offences grow enormous, frequent, and dangerous to a kingdom or state, destructive or highly pernicious to civil societies, and to the great insecurity and danger of the kingdom or its inhabitants, severe punishment and even death itself is necessary to be annexed to laws in many cases by the prudence of lawgivers." It is therefore the enormity, or dangerous tendency, of the crime, that alone can warrant any earthly legislature in putting him to death that commits it. It is not its frequency only, or the difficulty of otherwise preventing it, that will excuse our attempting to prevent it by a wanton effusion of human blood. For, though the end of punishment is to deter men from offending, it never can follow from thence, that it is lawful to deter them at any rate and by any means; since there may be unlawful methods of enforcing obedience even to the justest laws. Every human legislator will be therefore extremely cautious of establishing laws that inflict the penalty of death, especially for slight offences, or such as are merely positive. He will expect a better reason for his so doing, than that loose one which generally is given; that it is found by former experience that no lighter penalty will be effectual. For it is found upon further experience, that capital punishments are more effectual. Was the vast territory of all the Russias worse regulated under the Empress Elizabeth, than under her more sanguinary predecessors? Was it under Catherine II. less civilized, less social, less secure? And yet we are assured, that neither of these illustrious princesses have, throughout their whole administration, inflicted the penalty of death: and the latter, upon full persuasion of its being useless, nay even pernicious, gave orders for abolishing it entirely throughout her extensive dominions. But indeed, were capital punishments proved by experience to be a sure and effectual remedy, that would not prove the necessity (upon which the justice and propriety depend) of inflicting them upon all occasions when other expedients fail. It is feared this reasoning would extend a great deal too far. For instance, the damage done to our public roads by loaded waggons is universally allowed, and many laws have been made to prevent it, none of which have hitherto proved effectual. But it does not therefore follow, that it would be

just for the legislature to inflict death upon every obstinate carrier, who defeats or eludes the provisions of former statutes. Where the evil to be prevented is not adequate to the violence of the preventive, a sovereign that thinks seriously can never justify such a law to the dictates of conscience and humanity. To shed the blood of our fellow-creature is a matter that requires the greatest deliberation, and the fullest conviction of our own authority: for life is the immediate gift of God to man; which neither he can resign, nor can it be taken from him, unless by the command or permission of him who gave it, either expressly revealed, or collected from the laws of nature or society by clear and indisputable demonstration.

We would not be understood to deny the right of the legislature in any country to enforce its own laws by the death of the transgressor, though persons of some abilities have doubted it; but only to suggest a few hints for the consideration of such as are, or may hereafter, become legislators. When a question arises, whether death may be lawfully inflicted for this or that transgression, the wisdom of the laws must decide it: and to this public judgment or decision all private judgments must submit; else there is an end of the first principle of all society and government. The guilt of blood, if any, must lie at their doors, who misinterpret the extent of their warrant; and not at the doors of the subject, who is bound to receive the interpretations that are given by the sovereign power.

2. As to the end, or final cause, of human punishments. This is not by way of atonement or expiation for the crime committed; for that must be left to the just determination of the Supreme Being: but as a precaution against future offences of the same kind. This is effected three ways: either by the amendment of the offender himself; for which purpose all corporal punishments, fines, and temporary exile or imprisonment, are inflicted: or, by deterring others by the dread of his example from offending in the like way, "*ut parricidæ* (as Tully expresses it) *ad paucos, metus ad omnes, perveniat*," which gives rise to all ignominious punishments, and to such executions of justice as are open and public: or, lastly, by depriving the party injuring of the power to do future mischief; which is effected by either putting him to death, or condemning him to perpetual confinement, slavery, or exile. The same end, of preventing future crimes, is endeavoured to be answered by each of these three species of punishment. The public gains equal security, whether the offender himself be amended by wholesome correction, or whether he be disabled from doing any further harm: and, if the penalty fails of both these effects, as it may do, still the terror of his example remains as a warning to other citizens. The method however of inflicting punishment ought always to be proportioned to the particular purpose it is meant to serve, and by no means to exceed it; therefore the pains of death, and perpetual disability by exile, slavery, or imprisonment, ought never to be inflicted but when the offender appears incorrigible: which may be collected either from a repetition of minor offences; or from the perpetration of some one crime of deep malignity, which of itself demonstrates a disposition without hope or probability of amendment: and in such cases it would be cruelty to the public to defer the punishment of such a criminal till he had an opportunity of repeating perhaps the worst of villainies.

3. As to the measure of human punishments. From what has been observed in the former articles we may collect, that the quantity of punishment can never be absolutely determined by any standing invariable rule; but it must be left to the arbitration of the legislature to inflict such penalties as are warranted by the laws of nature and society, and such as ap-

pear to be the best calculated to answer the end of precaution against future offences.

Hence it will be evident, that what some have so highly extolled for its equity, the *lex talionis*, or "law of retaliation," can never be in all cases an adequate or permanent rule of punishment. In some cases indeed it seems to be dictated by natural reason; as in the case of conspiracies to do an injury, or false accusations of the innocent; to which we may add that law of the Jews and Egyptians, mentioned by Josephus and Diodorus Siculus, that whoever, without sufficient cause, was found with any mortal poison in his custody, should himself be obliged to take it. But, in general, the difference of persons, place, time, provocation, or other circumstances, may enhance or mitigate the offence; and in such cases retaliation can never be a proper measure of justice. If a nobleman strikes a peasant, all mankind will see, that if a court of justice awards a return of the blow, it is more than a just compensation. On the other hand, retaliation may sometimes be too easy a sentence; as, if a man maliciously should put out the remaining eye of him who had lost one before it, it is too slight a punishment for the maimer to lose only one of his: and therefore the law of the Locrians, which demanded an eye for an eye, was in this instance judiciously altered; by decreasing, in imitation of Solon's laws, that he who struck out the eye of a one-eyed man, should lose both his own in return. Besides, there are very many crimes, that will in no shape admit of these penalties, without manifest absurdity and wickedness. Theft cannot be punished by theft, defamation by defamation, forgery by forgery, adultery by adultery, and the like. And we may add, that those instances, wherein retaliation appears to be used, even by the divine authority, do not really proceed upon the rule of exact retribution, by doing to the criminal the same hurt he has done to his neighbour, and no more: but this correspondence between the crime and punishment is barely a consequence from some other principle. Death is ordered to be punished with death; not because one is equivalent to the other, for that would be expiation, and not punishment. Nor is death always an equivalent for death: the execution of a needy decrepid assassin is a poor satisfaction for the death of a nobleman in the bloom of his youth, and full enjoyment of his friends, his honours, and his fortune. But the reason upon which this sentence is grounded seems to be, that this is the highest penalty that man can inflict, and tends most to the security of the world; by removing one murderer from the earth, and setting a dreadful example to deter others: so that even this grand instance proceeds upon other principles than those of retaliation. And truly, if any measure of punishment is to be taken from the damage sustained by the sufferer, the punishment ought rather to exceed than equal the injury: since it seems contrary to reason and equity, that the guilty (if convicted) should suffer no more than the innocent has done before him; especially as the suffering of the innocent is past and irrevocable, that of the guilty is future, contingent, and liable to be escaped or evaded. With regard indeed to crimes that are incomplete, which consist merely in the intention, and are not yet carried into act, as conspiracies and the like; the innocent has a chance to frustrate or avoid the villainy, as the conspirator has also a chance to escape his punishment: and this may be one reason why the *lex talionis* is more proper to be inflicted, if at all, for crimes that consist in intention, than for such as are carried into act. It seems indeed consonant to natural reason, and has therefore been adopted as a maxim by several theoretical writers, that the punishment due to the crime of which one falsely accuses another, should be inflicted on the perjured informer. Accordingly, when it was once attempted to introduce into

England the law of retaliation, it was intended as a punishment for such only as preferred malicious accusations against others; it being enacted by statute 37 Edw. III. c. 18. that such as preferred any suggestions to the king's great council should put in forfeitures of tallies; that is, to incur the same pain that the other should have had, in case the suggestion were found untrue. But, after one year's experience, this punishment of tallies was rejected, and imprisonment adopted in its stead.

But though from what has been said it appears, that there cannot be any regular determinate method of rating the quantity of punishments for crimes, by any one uniform rule; but they must be referred to the will and discretion of the legislative power: yet there are some general principles, drawn from the nature and circumstances of the crime, that may be of some assistance in allotting it an adequate punishment.

As, first, with regard to the object of it: for the greater and more exalted the object of an injury is, the more care should be taken to prevent that injury, and of course under this aggravation the punishment should be more severe. Therefore treason in conspiring the king's death is (in Britain) punished with greater rigour than even actually killing any private subject. And yet, generally, a design to transgress is not so flagrant an enormity, as the actual completion of that design. For evil, the nearer we approach it, is the more disagreeable and shocking: so that it requires more obliquity in wickedness to perpetrate an unlawful action, than barely to entertain the thought of it: and it is an encouragement to repentance and remorse, even till the last stage of any crime, that it never is too late to retract; and that if a man stops even here, it is better for him than if he proceeds: for which reasons an attempt to rob, to ravish, or to kill, is far less penal than the actual robbery, rape, or murder. But in the case of a treasonable conspiracy, the object whereof is the king's majesty, the bare intention will deserve the highest degree of severity: not because the intention is equivalent to the act itself, but because the greatest rigour is no more than adequate to a treasonable purpose of the heart, and there is no greater left to inflict upon the actual execution itself.

Again: The violence of passion, or temptation, may sometimes alleviate a crime; as theft, in case of hunger, is far more worthy of compassion, than when committed through avarice, or to supply one in luxurious excesses. To kill a man upon sudden and violent resentment is less penal than upon cool deliberate malice. The age, education, and character, of the offender; the repetition (or otherwise) of the offence; the time, the place, the company wherein it was committed; all these, and a thousand other incidents, may aggravate or extenuate the crime*.

Further: As punishments are chiefly intended for the prevention of future crimes, it is but reasonable that among crimes of different natures those should be most severely punished, which are the most destructive of the public safety and happiness; and, among crimes of an equal malignity, those which a man has the most frequent and easy opportunities of committing, which cannot be so easily guarded against as others, and which therefore the offender has the strongest inducement to commit: according to what Cicero observes, "*ea sunt animadvertenda peccata maxime, quæ difficillime præcavetur*." Hence it is, that for a servant to rob his master is in more cases capital; than for a stranger: if a servant kills his master, it is a species of treason; in another it is only murder: to steal a handkerchief, or other trifle of above the

value of twelve pence, privately from one's person, is made capital; but to carry off a load of corn from an open field, though of fifty times greater value, is punished with transportation only. And, in the island of Man, this rule was formerly carried so far, that to take away a horse or an ox was there no felony, but a trespass, because of the difficulty in that little territory to conceal them or carry them off: but to steal a pig or a fowl, which is easily done, was a capital misdemeanour, and the offender was punished with death.

Lastly, as a conclusion to the whole, we may observe, that punishments of unreasonable severity, especially when indiscriminately inflicted, have less effect in preventing crimes, and amending the manners of a people, than such as are more merciful in general, yet properly intermixed with due distinctions of severity. It is the sentiment of an ingenious writer, who seems to have well studied the springs of human action, that crimes are more effectually prevented by the certainty, than by the severity, of punishment. For the excessive severity of laws (says Montesquieu) hinders their execution: when the punishment surpasses all measure, the public will frequently out of humanity prefer impunity to it. Thus also the statute 1 Mar. II. c. 1. recites in its preamble, "that the state of every king confits more assuredly in the love of the subject towards their prince, than in the dread of laws made with rigorous pains; and that laws made for the preservation of the commonwealth without great penalties are more often obeyed and kept, than laws made with extreme punishments." Happy had it been for the nation, if the subsequent practice of that deluded prince in matters of religion, had been correspondent to these sentiments of herself and parliament, in matters of state and government! We may further observe, that sanguinary laws are a bad symptom of the dis temper of any state, or at least of its weak constitution. The laws of the Roman kings, and the twelve tables of the *decemviri*, were full of cruel punishments: the Porcian law, which exempted all citizens from sentence of death, silently abrogated them all. In this period the republic flourished: under the emperors severe punishments were revived; and then the empire fell.

It is moreover absurd and impolitic to apply the same punishment to crimes of different malignity. A multitude of sanguinary laws (besides the doubt that may be entertained concerning the right of making them) do likewise prove a manifest defect either in the wisdom of the legislative, or the strength of the executive, power. It is a kind of quackery in government, and argues a want of solid skill, to apply the same universal remedy, the *ultimum supplicium*, to every case of difficulty. It is, it must be owned, much easier to extirpate than to amend mankind; yet that magistrate must be esteemed both a weak and a cruel surgeon, who cuts off every limb, which through ignorance or indolence he will not attempt to cure. It has been therefore ingeniously proposed, that in every state a scale of crimes should be formed, with a corresponding scale of punishments, descending from the greatest to the least: but, if that be too romantic an idea, yet at least a wise legislator will mark the principal divisions, and not assign penalties of the first degree to offences of an inferior rank. Where men see no distinction made in the nature and gradations of punishment, the generality will be led to conclude there is no distinction in the guilt. Thus in France the punishment of robbery, either with or without murder, was the same: hence it was, that though perhaps they were therefore subject to fewer robberies, yet they never robbed but they also

* Thus Demosthenes (in his oration against Midias) finely works up the aggravations of the insults he had received. "I was abused (says he) by my enemy, in cold blood, out of malice, not by heat of wine, in the morning, publicly, before strangers as well as citizens; and that in the temple, whither the duty of my office called me."

murdered. In China murderers are cut to pieces, and robbers not : hence in that country they never murder on the highway, though they often rob. And in Britain, besides the additional terrors of a speedy execution, and a subsequent exposure or dissection, robbers have a hope of transportation, which seldom is extended to murderers. This has the same effect here as in China, in preventing frequent assassination and slaughter.

Persons capable, or incapable, of committing CRIMES ; or (which is all one) of suffering the censures of the law upon the commission of forbidden acts.

All the several pleas and excuses, which protect the committer of a forbidden act from the punishment which is otherwise annexed thereto, may be reduced to this single consideration, the want or defect of *will*. An involuntary act, as it has no claim to merit, so neither can it induce any guilt : the concurrence of the will, when it has its choice either to do or to avoid the fact in question, being the only thing that renders human actions either praise-worthy or culpable. Indeed, to make a complete crime, cognizable by human laws, there must be both a will and an act. For though, *in foro conscientiae*, a fixed design or will to do an unlawful act is almost as heinous as the commission of it ; yet, as no temporal tribunal can search the heart, or fathom the intentions of the mind, otherwise than as they are demonstrated by outward actions, it therefore cannot punish for what it cannot know. For which reason, in all temporal jurisdictions, an *overt act*, or some open evidence of an intended crime, is necessary, in order to demonstrate the depravity of the will, before the man is liable to punishment. And as a vicious will without a vicious act is no civil crime, so, on the other hand, an unwarrantable act without a vicious will is no crime at all. So that to constitute a crime against human laws, there must be, first, a vicious will ; and, secondly, an unlawful act consequent upon such vicious will.

Now there are three cases, in which the will does not join with the act : 1. When there is a defect of understanding. For where there is no discernment, there is no choice ; and where there is no choice, there can be no act of the will, which is nothing else but a determination of one's choice to do or to abstain from a particular action : he, therefore, that has no understanding, can have no will to guide his conduct. 2. Where there is understanding and will sufficient, residing in the party ; but not called forth and exerted at the time of the action done ; which is the case of all offences committed by chance or ignorance. Here the will sits neuter ; and neither concurs with the act, nor disagrees to it. 3. Where the action is constrained by some outward force and violence. Here the will counteracts the deed ; and is so far from concurring with, that it loaths and disagrees to, what the man is obliged to perform. Infancy, idiocy, lunacy, and intoxication, fall under the first class ; misfortune and ignorance may be referred to the second ; and compulsion or necessity may properly rank in the third. See INFANCY, IDIOCY, DRUNKENNESS, MISFORTUNE, IGNORANCE, NECESSITY.

CROIA, a town of Albania, in Turkey in Europe, with a bishop's see. It is seated near the gulf of Venice, 13 miles N. E. of Durazzo. Long. 19. 27. E. Lat. 42. 6. N.

CROMACK-WATER, a lake of Cumberland, between Buttermere and Lowelwater, with each of which it is connected by the river Cocker. It is four miles long, and, in some places, near half a mile over. It is beautified with three small isles, one of them a rock. At the N. E. corner is a handsome stone bridge of four arches over its outlet, the Cocker. The water of this lake, though clear, is not so transparent as the lake of Derwent ; but, as well as Buttermere and Lowelwater, it is of a much greater depth than the Derwent. It abounds with very fine char and red trout.

VOL. X.

CROMARTY, a county of Scotland, which comprehends part of a peninsula on the fourth side of the Frith, to which it gives name. On the S. and W. it is bounded by Ross-shire. It is 12 miles long from E. to W. and about three in its greatest breadth. It is fertile and well cultivated ; but it is now almost destitute of old trees ; though, in the days of James V. it was a forest, and afforded shelter to many wolves. It sends one member to parliament, alternately with Nairne.

CROMER, a small town of Norfolk, with a market on Saturday. It is seated near the sea, and was formerly more considerable than at present ; for it had two churches, one of which, with several houses, was swallowed up by the sea. The inhabitants are now chiefly fishermen. The part of a church, which still remains, was built in the time of the Saxons, of curious flint, and the tower was raised to a great height : this, indeed, is all that stands, and the other part of this structure being decayed, divine service is performed once a fortnight in the steeple. It is 22 miles N. of Norwich, and 127 N. E. of London. Long. 1. 15. W. Lat. 53. 0. N.

CROMFORD, a village in Derbyshire, on the river Derwent, in the road from Derby to Manchester. Here Mr. (afterwards Sir Richard) Arkwright erected some of the new cotton mills, a capital improvement of mechanism due to him ; and by means of which the various branches of the cotton manufacture have wonderfully spread in this and the adjacent countries. Here also Sir Richard Arkwright built, before his death, a noble seat, and a church. Cromford is 14 miles N. N. W. of Derby.

CROMWELL (Richard), eldest son of Oliver Cromwell, was by his father appointed successor to the protectorship, but very soon deposed by the army. They discharged his debts, took all the household stuff, plate, &c. gave him a protection for six months, and so he retired. He was by no means qualified to support the station gained by the aspiring talents of his father ; he was of a moderate temper, and untainted with that fanatical spirit which his father had so successfully cultivated : on the restoration he went abroad ; but returned in 1680 under the assumed name of Clark, and settled at Cheshunt, in Hertfordshire, where he lived privately, and died in 1712, aged 86.

CRONACH, a town of Germany, in the circle of Franconia, and bishopric of Bamberg, with a citadel. It is 25 miles N. E. of Bamberg. Long. 11. 35. E. Lat. 50. 27. N.

CRONBORG, a fortress of Denmark, on the isle of Zealand, near Elsinore, which guards the passage of the Sound. In this fortress is a royal palace, in which the late unfortunate and much-injured queen Matilda was imprisoned till she was permitted to retire to Zell. About half a mile from this, is a garden, called Hamlet's Garden, said, by tradition, to be the spot where the murder of his father was perpetrated. Long. 12. 54. E. Lat. 56. 0. N.

CROTALUS (*Enyel*). In that article, plate 59 should have been referred to instead of 89.

CROUCH, a river of Essex, which rises near Horndon, and flowing eastward, divides the hundred of Rochford from that of Dengy, and falls into the German Ocean, between Burnham and Foulness Island. The Wallfleet and Burnham oysters are the product of its creeks and pits.

CROUP, in medicine, an inflammation of the larynx, affecting children under ten years of age, attended with an exudation of coagulable lymph, which acting as an extraneous body, excites a spasmodic stricture of the *rima glottidis*, first inducing a difficulty of breathing, with a peculiar stridulous noise, and in a short time suffocation.

This disease being commonly fatal, requires an early attention to the symptoms, and a rigorous mode of treatment, for want of which it is probable many children have been lost :

6 X

though it is evident from dissection, that it is of an inflammatory nature; yet from reasoning, as well as from some cases which have lately occurred, there can be little doubt that it is the spasmodic contraction of the lungs, which is the immediate cause of death.

As soon as possible a brisk emetic should be administered for the purpose of freeing the patient from the coagulable lymph which is already secreted. Topical bleeding, by means of leeches, should immediately succeed, and the discharge encouraged. As soon as it diminishes, a blister, so large as to cover the whole throat, should be applied, and suffered to lie on for thirty hours or longer.

As soon as the emetic has operated sufficiently, opium in large doses should be administered, by which means the breathing will in general be soon relieved; but should it become more difficult in the course of a few hours, the emetic is to be again repeated, and after its operation the opium again employed. This practice is to be alternately used till such time as the patient is out of danger, which will in general be in the course of three or four days.

Mr. Kendrick, surgeon in Warrington, who first suggested the necessity of employing opiates in the croup, asserts, that this treatment has succeeded in four cases out of five under his care.

CUBAGUA, an island of South America, between that of Margareta and Terra Firma, subject to Spain. Long. 54. 30. W. Lat. 10. 15. N.

CUBAN, a large river, formed by the junction of a great number of streams that rise in the countries comprehended between the Black Sea and the Caspian. Taking a westerly direction, it divides the Abkhaz and Circassians from part of Taurica, and then falls into the Black Sea.

CUBAN, or CUBAN TARTARY, a country of Asia, bounded on the W. by the sea of Adoph; on the N. by the river Don, which separates it from Europe; on the E. by the desert of Afracan; and on the S. by the river Cuban, which divides it from Circassia and the country of the Abkhaz.

CUCKFIELD, a town of Suffex, with a market on Friday. It is 13 miles N. W. of Lewes, and 40 S. by W. of London. Long. 0. 12. W. Lat. 51. 4. N.

CUDDAPA, a town of the peninsula of Hindoostan, ceded by Tippoo Sultan to the nizam of the Deccan. It is seated on the river Pennar, 95 miles W. by N. of its entrance, at Gangapatnam, into the bay of Bengal, and 140 N. W. of Madras. Long. 78. 47. E. Lat. 14. 3. N.

CUDWORTH (Ralph), a very learned divine of the church of England in the 17th century. In January 1657 he was one of the persons nominated by a committee of the parliament to be consulted about the English translation of the Bible. In 1678 he published his *True Intellectual System of the Universe*; a work which met with great opposition. He likewise published a treatise, entitled *Deus justificatus*; or, "The divine goodness of God vindicated, against the assertions of absolute and unconditional reprobation." He embraced the mechanical or corpuscular philosophy; but with regard to the Deity, spirits, geni, and ideas, he followed the Platonists. He died at Cambridge in 1688. The late earl of Shaftesbury styles him an excellent and learned divine, of highest authority at home, and fame abroad. His daughter Damaris, who married Sir Francis Matham, of Oates in Essex, was a lady of genius and learning; she had a great friendship for Mr. Locke, who resided several years at her house at Oates, where he died in 1704.

CUFF (Henry), the unfortunate secretary of the unfortunate Earl of Essex, was born at Hinton St. George in Somersetshire, about the year 1560, of a genteel family, who were possessed of considerable estates in that county. In 1576 he was entered of Trinity College, Oxford, where he soon acquired

considerable reputation as a Grecian, and disputant: He obtained a fellowship in the above-mentioned college; but was afterwards expelled for speaking disrespectfully of the founder. He was, however, soon after admitted of Merton College; of which, in 1586, he was elected probationer, and, in 1588, fellow. In this year he took the degree of master of arts. Some time after, he was elected Greek professor, and, in 1594, proctor of the university.

When he left Oxford is uncertain; nor are we better informed as to the means of his introduction to the Earl of Essex. When that nobleman was made lord lieutenant of Ireland, Mr. Cuff was appointed his secretary, and continued intimately connected with his lordship until his confinement in the Tower; and he is generally supposed to have advised those violent measures which ended in their mutual destruction. The earl indeed confessed as much before his execution, and charged him, to his face, with being the author of all his misfortunes. Mr. Cuff was tried for high-treason, convicted, and executed at Tyburn on the 30th of March, 1601. Lord Bacon, Sir Henry Wotton, and Camden, speak of him in very harsh terms. He was certainly a man of learning and abilities.

He wrote two books; the one entitled, *The Differences of the Ages of Man's Life*; the other, *De Rebus Gestis in Sancto Concilio Niceno*. The first was published after his death; the second is still in manuscript.

CUJAS (James), in Latin *Cujacius*, the best civilian of his time, was born at Toulouse, of obscure parents, in 1520. He learned polite literature and history; and acquired great knowledge in the ancient laws, which he taught with extraordinary reputation at Toulouse, Cahors, Bourges, and Valence, in Dauphiny. Emanuel Philibert, duke of Savoy, invited him to Turin, and gave him singular marks of his esteem. Cujas afterwards refused very advantageous offers from Pope Gregory XIII. who was desirous of having him teach at Bologna; but he chose rather to fix at Bourges, where he had a prodigious number of scholars; whom he not only took great pleasure in instructing, but assisted with his substance, which occasioned his being called the *Father of his Scholars*. He died at Bourges in 1590, aged 70. His works are in high esteem among civilians.

CULLEN (William), an eminent physician and medical teacher, was born in 1712, in the county of Lanerk in Scotland. He served an apprenticeship to a surgeon and apothecary in Glasgow, and afterwards went several voyages to the West Indies, as surgeon to a trading ship. He at length settled at the town of Hamilton, practising chiefly in the medical and pharmaceutical branches. It is a very singular circumstance in the history of medicine, that William Hunter, afterwards so eminent as an anatomist and accoucheur in London, should at one time have been partner with Cullen in an inconsiderable country town. It appears, however, that, at this early period of their lives, neither of them limited his ambition to such a confined circle; for it was the spirit of their partnership to provide means for enabling them alternately to enjoy those further advantages of education which scanty circumstances had hitherto denied them. In consequence of this agreement, Cullen studied one winter at the university of Edinburgh, while Hunter was practising on the common account. Hunter, the next year, visited London, and followed his fortune in that metropolis, under the auspices of Dr. Douglas the anatomist. Cullen, during his abode at Hamilton, attracted the notice of the Duke of Argyll, who happened to be on a visit in the neighbourhood, and was intent upon some chemical researches. It was not difficult for a man of his discernment to discover in the young apothecary a person superior to the station he then occupied. Soon after, a sudden illness of the Duke of Hamilton, whose seat is adjacent

to the town of his name, occasioned Cullen to be sent for; and his treatment of the case appeared so judicious to Dr. Clark of Edinburgh, who was afterwards consulted, that he became his liberal encomiast. Cullen's improving prospects induced him to form a matrimonial connection with an amiable woman, the daughter of a neighbouring minister. He afterwards took the degree of doctor of physic, and settling at Glasgow, was appointed, in 1746, chemical lecturer in the university of that city. Here he began to display those talents for teaching, which ever afterwards so advantageously distinguished him. His enunciation was distinct, his manner lively and familiar; and he peculiarly excelled in the art of clear and methodical arrangement. He soon became a great favourite with the students, and rendered chemistry an object of ardent pursuit among them, the effects of which were afterwards happily exemplified in the discoveries of his pupil, the celebrated Dr. Black. His private practice kept pace with his growing reputation; and, in 1751, he was more directly engaged in the service of the healing art, by his appointment of professor of medicine in the university. The fame of Edinburgh as a medical school has by nothing been so much promoted as by the vigilance of its curators to seize upon every man of distinguished merit within their reach, and incorporate him among their professors. Thus, on the death of Dr. Plummer, the chemical professor, in 1756, Dr. Cullen received an unanimous invitation to the vacant chair; and he did not hesitate to quit all his advantages at Glasgow for a station in the university of the Scottish metropolis. Here he soon arrived at that extraordinary degree of academical popularity which for so many years distinguished him beyond all his brethren, and for which he was indebted, not only to his merit as a teacher, but to the laudable pains he took to ingratiate himself with his pupils. He was cordially attentive to all their interests, admitted them freely to his house, conversed with them on the most familiar terms, solved their doubts and difficulties, gave them the use of his library, and in every respect treated them with the affection of a friend, and the regard of a parent. It is impossible for those who personally knew him in this relation ever to forget the ardour of attachment which he inspired. His influence upon young minds was augmented by the novelty of his opinions, and the freedom of his animadversions upon the medical systems then chiefly in vogue, but which undoubtedly presented several points of attack. The older professors had all been educated in the Boerhaavian school, and though men of merit, were naturally prejudiced in favour of the doctrines they had imbibed. Dr. Cullen called in question some of the fundamental principles of the theory of the Leyden professor, especially those which depended upon the humoral pathology. He introduced new speculations, which, if not always satisfactory, never failed to be ingenious, and afforded animated topics for the debates and discussions of the students. Whilst he was chemical professor, he had no public opportunity of delivering his medical opinions, except in the clinical lectures which fell to his share in course. Indeed, at the death of Dr. Alison, in 1760, he was desired to finish the course of *materia medica* which that professor had begun; and this gave occasion to some further display of his systems. It was not till the decease of Dr. Whytt, in 1766, that a proper medical chair became vacant. The body of students then made a great effort to procure Dr. Cullen's appointment to the practical professorship; but this was occupied by Dr. Gregory, who succeeded to Dr. Rutherford. A compromise, however, took place between them, by which they agreed to give lectures on the theory and practice of physic in alternate years: and some have accounted this period to have been the most flourishing for medical science which Edinburgh ever witnessed. This arrangement was broken by Dr. Gregory's lamented death; after which Dr.

Cullen continued to hold the practical chair till within a few months of his own decease. His private employ kept pace with his academical reputation, and he rose to be the first physician in point of practice in Scotland. He was likewise frequently consulted from England, and other countries, which were filled with practitioners who had been his pupils, and retained a high veneration for his talents. Dr. J. Brown, from being the votary, became the rival and opponent of Dr. Cullen, who at length began to feel some of that jealousy towards an innovator which he himself had once inspired. The history of academical squabbles would improperly be introduced into this sketch; we therefore close the life of this eminent person with mentioning, that he died on February 5, 1790, in his seventy-seventh year. Notwithstanding the sources of emolument he enjoyed, a large and expensive family, and inattention to economy, so far exhausted his income, that he left a slender provision for the survivors, which was augmented by a pension from the crown, granted upon the ground of his having been king's physician for Scotland.

Dr. Cullen's scientific merits are now more particularly to be discussed. As a chemist, no considerable discovery can be ascribed to him; but he was an extremely useful teacher of the science, from the liberal and comprehensive views he took of it, and the great clearness of method with which he treated it. He likewise, from an accurate collection of facts, formed very complete histories of several of its departments, particularly those connected with medicine and the *materia medica*; and it is certain that no man in these kingdoms has done so much to render chemistry a popular study, especially among the medical faculty.

His character, as a preceptor and improver in the theory and practice of physic, is to be estimated from the works he published, as a sort of text-book of his lectures, and of which various successive editions appeared, enlarged and altered according to the progress of his professional labours. Of these the principal is that which, in a bald translation of the Latin term, *Præmiæ Linææ*, used by Haller and others, he entitled "First Lines of the Practice of Physic." The complete edition of this work appeared in 1784, in four volumes octavo. Regarding the affections of the motions and moving powers of the animal economy as the leading enquiry in considering the diseases of the human body, he assumes the general principles of Hoffman, but corrected and extended in their application. He disclaims, however, all those hypothetical opinions which are usually called theories; and asserts, that the doctrines he lays down are only inductions from that generalisation of *facts* relative to the sound and diseased body, which it has been his great business to collect. Nor has any systematist more fairly deserved the praise of being a faithful collector of facts, and allowing them all due weight in his reasonings. He has not, however, been contented with a merely empirical basis for medical practice, but has always endeavoured to investigate the proximate cause of diseases, and to build upon it a consistent method of cure. The most remarkable of his attempts of this kind is his doctrine of the proximate cause of fevers, in which he endeavours to prove the co-existence of spasm and atony in the body. Whatever be thought of the subtle reasonings upon which his opinions in this and other instances are founded, no candid judge will deny the great merit derived to his work from the excellent descriptions and sagacious discriminations it contains, and the full and commonly just views of practice which it displays. Dr. Cullen affords the rare and instructive example of a man naturally addicted to all the refinements of speculation, who yet pays such a respect to experience, as to submit to its decision in all points of practice, even at the hazard of appearing inconsistent with his own doctrine. This disposition, which has given his opponents some advantage

over him in argument, greatly adds to his value as a guide in an art to uncertain in its principles as that of medicine. Another of his class-books is his "Synopsis Nofologiae Methodica," of which the third edition, in two volumes octavo, appeared in 1782. This contains the several nosologies of Sauvages, Linnaeus, Vogel, and Sagar, with one of his own, meant as an improvement upon all these. As methodical arrangement was one of his peculiar talents, it might be expected that he should succeed in this task as far as the nature of the subject would admit; and, without disparagement to his predecessors, it may be pronounced, that he has improved upon them all in the elegance of his characteristic definitions, and the judiciousness of his distribution. The "Lectures on Materia Medica," which we have mentioned as drawn up by Dr. Cullen on an emergency, were thought to ingenious, that copies of them were multiplied among the students; and at length, in 1772, one of them surreptitiously reached the press. The doctor obtained an injunction to stop the sale of this imperfect publication; but, with some corrections, it was afterwards suffered to proceed. He promised, however, at some period to give an improved edition of his own; and this appeared in 1789, in two volumes quarto. This is a work very different from the common systems on the subject, and indeed, as a critic has observed, rather deserves the title of the philosophy of the materia medica than the simple history of it. The arrangement is taken from the medical indications, and to each class are prefixed introductory observations, which form a system of therapeutics. Many of the general doctrines of medicine are likewise detailed. As it contains a number of the mature opinions of the author on the most important topics, it is well entitled to attention, although it is in many points defective as a treatise on the subject assigned. Its general spirit is that of medical scepticism; of a man who has read much, thought much, and determined little: and it has been remarked of Dr. Cullen's writings in general, that he has been more successful in demolishing the systems of others, than in establishing his own. A pamphlet Concerning the Recovery of Persons drowned and seemingly dead, 1775, is to be added to the list of his publications.—We are indebted to the popular biographical work of Dr. Aikin for the foregoing particulars.

CULM, a town of Western Prussia, with a bishop's see, seated near the Vistula, 60 miles S. of Dantzic. Long. 18. 30. E. Lat. 53. 24. N.

CULMORE, a town of Ireland, in the county of Londonderry, seated on the coast of Loughfoyle, five miles N. of Londonderry. Long. 7. 3. W. Lat. 55. 8. N.

CULMSEE, a town of Poland, five miles from Culm, whose bishop generally resides here.

CUMANA, a town of S. America, in Terra Firma, capital of a province of the same name. Long. 63. 35. W. Lat. 9. 46. N.

CUMBERLAND (Richard), a very learned English divine in the latter end of the 17th century, was son of a citizen of London, and educated at Cambridge. In 1672 he published his excellent Treatise of the Laws of Nature; and in 1686, an Essay toward the Jewish Weights and Measures. After the revolution he was nominated by King William to the bishopric of Peterborough, without the least solicitation on his part. He pursued his studies to the last; and the world is obliged to him for clearing up several difficulties in history, chronology, and philosophy. After the age of 83, he applied himself to the study of the Coptic language, of which he made himself master. He was as remarkable for humility of mind, benevolence of temper, and innocence of life, as for his extensive learning. He died in 1718.

CUMBRIAY; GREATER AND LESSER, two little islands in the Frith of Clyde, to the E. of the isle of Bute. The former

is remarkable for its excellent free-stone quarries, and the ruins of an ancient cathedral dedicated to St. Columba. Upon the latter is a lighthouse.

CUPAR, a royal borough of Scotland, in Fifeshire, and the county-town, 8 miles N. by E. of Falkland, in a rich valley, on the N. side of the river Eden.

CURIA-MARIA, an island of Asia, on the coast of Arabia Felix, opposite the mouth of the river Prim. Long. 55. 25. E. Lat. 17. 0. N.

CURING, a term used to denote that process which is applied to any animal or vegetable article of food, with a view to preserve it for future use. Salting, drying, pickling, or smoking, are the common means used for this purpose. The following is the specification of the patent granted to Mr. Batley, of Streatham, Surrey, for a new method of curing herrings, sprats, &c.—"After severing the head, and taking out the entrails of the herrings or sprats, salt the body of the fish with bay or rock, or the common salt, in the casks (if not sufficiently salted as sea fish), but the bay or rock salt is preferable, as the common is more apt to absorb the pickle, and occasion the fish to rust. In the next place pack the fish in a cask, in the usual way, and between every layer sprinkle a small portion of salt, and also pickle, sufficient to cover the fish. Such pickle is to be made with one pound of bay salt, four ounces of saltpetre, and from two to four pounds of melasses (to suit different palates), to a gallon of spring water, if to be procured, and boil the same till the whole of the ingredients are dissolved. (River water may answer the purpose, but spring water is preferable.) When the fish are so packed, leaving a vacuum between two and three inches of the head of the cask, for a full portion of pickle, then let the cask be headed up, and properly coopered, with a cork-hole, either in the head or centre, through which may be poured a further supply of the pickle, for the preservation of the fish; and when the herrings or sprats, but particularly the latter, are intended for travelling, it may be advisable to put a false top, bored with holes, between the fish and cask-head, in order to prevent their being too much shaken: the same proportion of any sugar might be used as a substitute for melasses, but the extra price would probably be considered as an impediment; and from one to three months should be allowed for curing, in order to give the fish a full flavour before they are used, smoked or dried. The above pickle would answer for flavouring the fish in their original state, if needful; but, on account of the oil and fish contained in the heads and roes, the preferable mode of curing and preserving the body of the fish is by severing the head from, and taking out the entrails, as the only effectual means of eradicating the noxious qualities which would otherwise adhere to them. And, in curing sprats, it is expedient to sprinkle a larger quantity of salt in proportion between each layer than is requisite for the herrings when packed in the cask. And as the sprat casks will seldom exceed ten gallons, a vacuum of about one inch from the head for casks of that dimension will be sufficient."

CURL, a disease affecting the plant of the potatoe, very well known to agriculturists. The remedy for this is a matter of such national importance as to induce the Society for the Encouragement of Arts, Manufactures, and Commerce, to offer their gold medal, or thirty pounds, to the person who should discover the nature and cause of it, and point out an effectual cure. They received the three following papers; and being desirous of encouraging every attempt to ensure success in the culture of that valuable vegetable, divided the pecuniary premium equally among the three candidates.

From Mr. Hollin's paper we select the following abstract:—"The curl in potatoes," says he, "is a disease which admits of three different stages or degrees.

"1st. The *half-curl*ed plants, have leaves somewhat long, and curled only in a moderate degree: they produce a tolerable crop, if the summer be not very dry; but if otherwise, the potatoes will be small and watery.

"2d. The *completely-curl*ed plants, seldom more than six or seven inches high: they soon ripen and die. The potatoes are generally smaller than a nutmeg, of a rusty red colour, and unwholesome as food.

"3d. The *corrupted potatoes*, or those in which the vegetative power is nearly destroyed, never appear above ground. The feed may be found at Michaelmas, as fresh, to appearance, as when it was sown, with a few small potatoes close to it.

"The *first cause* of the curl in potatoes must be traced to the manner in which the feed was raised the preceding year.

"If the potatoes be set late in the season, that is, from the middle of May to the middle of June, in a rich soil, well manured, having a southern aspect, and if the summer should be hot and dry till (we will suppose) the beginning of August, when the blow of the plants has fallen off, then the feed will be exhausted in feeding the plant only; and very few potatoes will appear. Should the weather now become moist and genial, the plants, especially if they should be earthed, will blow fresh, and a plentiful crop of very large potatoes may yet be produced.

"These potatoes are perfectly fit for use as food; but as they were produced from the stalk of the plant, after the feed itself was exhausted, they will be defective in moisture and vegetative power: and the plants which proceed from them the following year will be found to be curled."

Second cause. "The curl," says Mr. Hollins, "may be produced without manure or earthing, provided the potatoes be sown (at the end of May) thick together, in a rich soil, and covered with green fern, or other litter, before the plants appear. The rain rots the fern or litter, and enables it to penetrate as a manure to the roots; and the plants are forced, as in the preceding experiment, to a second growth, and blow. The feed thus raised produced plants that were curled."

"The forcing potatoes by cultivation, as above described, I find to be the cause of the curl, both from my own experiments, repeated for several years successively, and also from the observations I have made upon the practice and ill success of my neighbours.

"It is well known that the flowers of many plants, such as the poppy, the rose, and many others, are much altered by cultivation; they become *double*, the stamina are converted into petals, the generic character is lost, they become what botanists call monsters; the parts of generation being changed, no seed is produced. If I may be allowed to consider any part of a plant in which the vegetative power resides as a feed, it will be found that rich cultivation produces, if not absolutely the same, at least a similar imperfection in the potatoe; for the flower and the bulbous root are both enlarged by cultivation. In the flower little or no seed is produced: in the potatoe, the vegetative power is impaired or destroyed, according to the degree of the disease.

"It is observable that, wherever the vegetative power is impaired, there is always a deficiency of moisture; which confirms my opinion, mentioned before, and is itself proved by the following experiment.

"Both healthy and curled plants may be raised from the same potatoe, in the following manner:

"Dig up, in the beginning of October, some potatoes raised as is described in the preceding pages. Amongst the largest will be found some that have, in different parts, different degrees of moisture, the least at the butt, and the most at the crown end, the quantity of moisture gradually increasing from the butt to the crown. Take one set from the crown and ano-

ther from the butt: the former will produce an healthy, the latter a curled plant. The curl-producing potatoes are also observed to be drier both before and after boiling, and are boiled in a shorter time."

The mode of preventing the curl in potatoes recommended by Mr. Hollins is this: he says, 1st. "The best time of setting is from the beginning of April to the middle of May. Make ridges a yard asunder: put your manure first into the trench, and with moderation: let the potatoes in a triangular form, five or six inches asunder, cover them with the soil to the thickness of five or six inches. There is but little danger of laying on too much of the soil: the deeper are the sets, the better will they be protected from the scorching heat of the sun, if the season should be dry. This distance of five or six inches is so small as to prevent the plants growing too rank, and yet sufficient for each of them to be exposed to the sun and the air.

"2dly, When they have grown to the height of six or seven inches above the ground, you must not earth them, as is the usual practice. You must take away the weeds, and may draw a little mould to them; but you must be careful to do it before the blossom-buds appear, which time is generally about the end of June.

"They will now require no further care, excepting that of weeding.

"I am of opinion that early setting is advantageous, on account of the greater chance of early rain, which will be very beneficial to the plants if the summer should be dry. By this process, the plants will be healthy; the young potatoes will be formed in due season; they will grow gradually; the plant will ripen and die in due time, and will not be forced into a second growth by the rain which may fall in September. The tap being thus left in the potatoe, it becomes a feed endowed with an unimpaired perfect vegetative power, and the plants which are raised from them will be found to be entirely free from the curl.

"N. B. The potatoes may be dug as soon as they can be handled without crushing the peel, that is, about the end of September.

"Sound potatoes are procured with the greatest certainty from earth that has been peeled and burnt: the soil thus prepared is well suited to the growth of potatoes. In this they grow gradually, and are not forced beyond their natural size: in doubtful feed, it is safest to plant the smallest potatoes *whole*.

"The foil the most likely to produce the curl, is that which is rich in itself, much manured, and has a southern aspect. In other situations, where the soil is not rich, and the garden is cold, either from its being upon the side of a hill, or exposed to the north, the curl has not yet appeared; which is known to be the case in the mountainous parts of Radnorshire and Montgomeryshire. This is perfectly consonant with my theory; for where the soil is poor, and the situation cold, the plants cannot be forced into a second growth by earthing and manure.

"I do not mean to dissuade those who are anxious to raise large crops for immediate use, from earthing and manuring to the utmost extent; I only caution them against using potatoes so raised for *feed*. By earthing and manuring, you will doubtless raise large crops of large potatoes perfectly good, as food, but imperfect as feed; for the vegetative power will be impaired by this forcing cultivation. Hence it will be the interest of every prudent cultivator, to allot a portion of his potatoe-garden to the raising of feed-potatoes. If the directions which I have given be followed, I have not the least doubt of success; at least I am certain that the curl will not make its appearance."

Mr. Pitt's paper.—"Having been a grower of potatoes," says he, "upon a considerable scale, for these ten years, I write wholly from experience: my annual growth has generally been from five hundred to one thousand bushels. I have frequently had a few curled, but not for several years, unless I planted curled sorts in small quantities, on purpose for observation. The curl in potatoes is doubtless owing to a degeneracy in the feed; to the particular species or variety being worn out; by too great a sameness, and too long planting on the same sort of land: and this degeneracy is by no means peculiar to the potatoe; every known plant, and perhaps even animal, is subject to a similar degeneracy. Wheat, sown too long on the same spot, without changing the feed, will generally become smut and hen-corn. — I have known barley, by being sown nine or ten years on the same kind of soil, degenerate to the lightness of oats; and oats, from the same cause, become little more than husk and chaff. Peas, too long sown without change, ripen later, and become so unkindly, that the pods, on the upper part of the haulm, never fill. To consider the same idea, and apply it in an instance or two to the animal creation, I have known a good breed of hogs, by repetition of breeding male and female from the same farrow, become so rickety, that they could not be reared; and have very credible accounts of the same effects taking place in the human species, by confining intermarriages to two or three families for generations.

"I hope this digression will be excused, as tending to illustrate the main subject, by making the cause of the disorder, in question, apparent.

"The cure, I have no doubt, consists in planting sorts that have hitherto retained their health and their perfection; (and many such sorts there are; fresh varieties are annually raised, and may be multiplied almost to infinity, by sowing the bell or natural seed of the potatoe); and indeed it is the duty, as well as interest, of every cultivator, whether of potatoes, or any other vegetable, to procure his seed from as perfect a plant as possible, and by no means to use the seed of a worn-out, degenerate plant.

"I have never understood, that the curl in potatoes has been, in this country, by any means formidable to the attentive cultivator. No one in their senses would plant a degenerate sort but upon a narrow scale, nor indeed is there the least occasion: for the bounty of nature has always at hand plenty of substitutes, equal or superior in quality to former sorts, even when they were in perfection. The varieties that I have known fail by curling, in this country, are only three: their provincial names are, first, an early sort, called here *Pretty Bettys*; in lieu of which are introduced *Champions* and *Golden Balls*, both excellent early sorts: secondly and thirdly, the old *Winter Reds*, and *Pink Eyes*, have both failed, and we have instead of them, *Aylesbury Whites*, the *Clufter Potatoe*, the *Ox Noble*, red and white *Surinam* for cattle; a dark purple kind, called by some the *Pomegranate Potatoe*; and many other valuable sorts, which never have yet curled. The rational remedy, therefore, undoubtedly, is the raising and introducing of fresh varieties; a practice which has never yet been interrupted by any difficulty."

Mr. Holt's paper.—"On the cause and prevention of the curl in potatoes," says Mr. Holt, "I beg leave to offer the following thoughts, being a subject of no small importance to the farmer, and to which I have paid not a little attention.

"The cause of this disease, as far as I can judge, does not arise from peculiarity of soil, variety of manure, difference of season (dry or moist): the cause, therefore, whatever it may be, it should seem, originates from the set, which, when once infected, I imagine is incurable; and the disease or curl appears to be nothing more than a total degeneracy of the

plant, by being worn out, through want of change of feed, upon the same soil, with probably some other causes co-operating.

"It is a well-known fact, to every experienced farmer, that almost every species of grain and vegetables require repeated renewal, or change from different soils: or they wear out, (as the phrase is), yield but imperfect crops, if continued too long; and defeat the cultivator in his expectations of reaping benefit. Why may not this too cause the same effect in potatoes, by their being too repeatedly planted, and occasion the blasted, early-matured appearance of the stems, which is always followed by a failure of crop.

"In confirmation of the above theory, this district for some years suffered great injury from curled potatoes. As the disease had but then lately made its appearance, the cultivators were at a loss for a remedy.—This was obtained by totally discarding their former feed-plants; and of late years large quantities have been annually imported from Scotland.

"This practice has been attended with success: few crops, I believe I may venture to say none, have been infected with the disease, if renewed; but if the same seed was imprudently, for a few years, continued upon the same soil, some plants would appear infected; and if still continued longer, the disease, instead of being *partial*, would soon become *total*, with few exceptions. The custom now is, to import every year from Scotland.

"There may be other reasons which cause a degeneracy of wearing out of the plant.—Every seed has its peculiar season, when it is most proper to be committed to the earth. In some, the budding of certain plants, or the blowing of flowers, indicate this precise moment to the attentive cultivator: the month, or even the day of the month, is his only guide in others. To a few of these the most favourable time is very limited, so very limited, that the winter turnip will not (in this district) yield a crop, if its seed be not sown within a very few days before or after the 20th of July; but better, if five days before this period, than the same number of days afterwards. From the 20th of March to the end of April is a proper season for planting most of the kinds of the winter potatoe: but this root, the friend and great support of the labouring man, is not so very shy of her favours; productive crops have been obtained when planted even in July.—Time, however, for acquiring sufficient maturity, is not allowed from such late planting; for the crop, though productive, is not perfect, being neither so solid nor palatable; and this may be one cause of accelerating a decay, or bringing on the curl.

"The potatoe is also liable to other disorders: in very dry seasons, excrescences will arise, vulgarly called the *scab*; in moist seasons, little holes or cavities appear, called the *canker*; and both these disorders increase according to the length of time they remain in the earth after having acquired maturity.—It is more than probable, that these disorders may hasten the decay, and cause the curl.

"One method of preventing the disease, namely, by changing the seed, has been already mentioned: another source of prevention offers, from raising new kinds from the seed or apple of the plant, or the same kinds renewed again from the seed. Raising new kinds from seed, however, requires no small portion of discernment; for the seed from the same plant will produce so many varieties, that it requires nice judgment of the cultivator properly to select. Great numbers, from inspection only, will be weeded out and rejected; and of those retained, more will be again rejected the succeeding and following years: of the remaining few, there may different characters still exist; such as ill or well-flavoured, close or coarse-grained, productive, non-productive.

tive, &c. &c. Each may have their respective value: but I think it may be generally asserted, that the finer kinds sooner degenerate; the coarse kinds, which are almost, if not always, more productive, retain their vigour the longest. The following example confirms this opinion.

"Spring, 1785.—I procured a new kind of potatoe, called a Dabb, lately raised from seed; where, I know not: the character of which was large, coarse-grained, strong-flavoured, and of course rejected from the table; but being very productive, was useful for cattle. The last year it was so much improved, as to be no longer rejected: it still retains the quality of being productive, even so much as yielding, this present year, six bushels from every square perch. It should be observed, that the present very luxuriant crop may be in great measure owing to having been planted on a virgin soil, which was never before improved, or broken up; very little dung was used. Here is an evident change for the better; the plants are vigorous, and there is at present no appearance of decay: this new soil may be the means of preserving the plant a few years longer; but a total change of seed will, in time, become absolutely necessary.

"Hence, it should appear, that although the disease, after the present stock has been, to a certain degree, infected, can never be cured, yet means may be taken for prevention: and that this is the case in this district is evident; few crops, of late years, having failed, by being much infected with this disorder; for, wherever the curl has appeared, in ever so small a degree, that stock has been rejected by the attentive cultivator, and new seed obtained.

"It was so late as the year 1765, when the potatoe was first imported from its native soil, America, into Ireland; and afterwards (owing as is reported, to a shipwreck) they were planted upon the sea-coast, in Lancashire, from whence their cultivation has been progressive, from the west, through every part of the kingdom; in some of which but very lately. It is also imagined, that this disease first appeared in this very district of the kingdom wherein they were first cultivated; and this happened about the year 1764: a remarkable circumstance at which time I yet well remember:—a person, full of enterprise, observing the curl in a few stems of a certain crop, and that they at the same time decayed, or arrived at maturity sooner than the rest, had them carefully selected out, imagining he had luckily obtained, somehow, a new and early kind; and had all of them planted the next season: that he was disappointed of his succeeding crop was evident; but from what cause he was puzzled.

"I am the more encouraged to offer these hints, for that, after having drawn them up, in the manner here sent, I read them over to a very intelligent farmer in this neighbourhood, who said that these thoughts totally corresponded with his own. I have shewn them also to a respectable clergyman, who, to his other many excellent qualities, is always ready to communicate information, and has favoured me with the following extract from a private letter.

"A labouring man in my neighbourhood has got a very good potatoe: the only fault is, that out of four plants, three of them are abominably curled; on which account I desired he would give me four potatoes. From each potatoe I took a shoot, not a set, in order to see if the shoots would be curled: they were not: so, possibly their not being curled may be accidental, or possibly the curl may arise from the set planted. Another year, I will plant a dozen or more, of these potatoe-shoots: then, if there should be no curl, I shall be clearly of opinion, that the curl arises from some disease in the set. What I mean by shoot, is—I put

three or four sets into a flower-pot; when they have shot to be about two inches high, and have fibres, I take the sets up, and with a knife cut the shoots off, leaving not the least piece of a set on the shoot. I then plant the shoots."

"It should appear, from the above ingenious experiment, of which future trials will confuse or confirm the fact, that it corroborates the above theory, by proving the disease in the set; and which, when the cause or seat of the disorder is lopped away, the cure is effected by the force of nature to heal itself, and the power of vegetation on the small fibres, which retain newly-acquired life, though from an infected parent stock.

"The nature of vegetation is so mysterious, that we must acknowledge our ignorance in her wonderful process. We know that many varieties of fruits may, by a single bud of each, be inoculated upon one and the same single stock; and that, from this one root or fountain-head, may be obtained the different fruits therein deposited; but by what law of attraction or repulsion this common stock or parent can divide, assimilate, correct, and adjust, the different particles of matter of which each fruit is distinguished, by shape and flavour, is beyond our reach to know. It is true, that but a very small part of the food of plants or fruits is filtered through the roots of the plants: the leaves, the bark, the wood, imbibe from the atmosphere, and perform their task: but being of different shape, texture, and grain, each has its separate and particular mode of operation, and thereby causes different effects. Nor yet are we able to say, what it may be that gives the different flavours to fruit; whether from the component particles of matter differently arranged, or whether from the separate and component parts being of different shapes, &c. &c. These are secrets hitherto withheld, and probably ever will be hid from the search of man."

CURSOLIERS, a small island of Livadia, in the gulf of Patras, formerly called Echanades.

CUSSET, a town of France, in the department of Allier, and late province of Bourbonnois, 17 miles N. of Roanne. Long. 4. 5. E. Lat. 46. 17. N.

CUSTOM and **FABR** (*Encycl.*). In our original article we omitted the necessary consideration of the *effects of custom and habit in the animal economy*. These may be reduced to five heads. 1. On the simple solids. 2. On the organs of sense. 3. On the moving power. 4. On the whole nervous power. 5. On the system of blood-vessels.

1. *Effects on the simple solids.* Custom determines the degree of flexibility of which they are capable. By frequently repeated flexion, the several articles of which these solids consist are rendered more supple and moveable on each other. A piece of catgut, e.g. when on the stretch, and having a weight appended to its middle, will be bended thereby perhaps half an inch; afterwards, by frequent repetitions of the same weight, or by increasing the weight, the flexibility will be rendered double. The degree of flexibility has a great effect in determining the degree of oscillation, provided that elasticity is not affected; if it go beyond this, it produces flaccidity. Again, custom determines the degree of tension; for the same elastic chord that now oscillates in a certain degree of tension, will, by frequent repetition of these oscillations, be so far relaxed, that the extension must be renewed in order to produce the same tension, and consequently the same vibrations, as at first. This appears in many instances in the animal economy, as when different muscles concur to give a fixed point, or tension, to each other: and thus a weakly child totters as it walks; but by giving it a weight to carry, and by thus increasing the tension of the system, it walks more steadily. In like manner the fulness of the sys-

tem gives strength, by distending the vessels every-where, and so giving tension: hence a man, by good nourishment, from being weak, acquires a great increase of strength in a few days; and, on the other hand, evacuations weaken by taking off the tension.

2. *Effects on the organs of sense.* Repetition gives a greater degree of sensibility, in so far only as it renders perception more accurate. Repetition alone gives lasting impressions, and thus lays the foundation of memory; for single impressions are but retained for a short time, and are soon forgot. Thus a person, who at present has little knowledge of cloths, will, by frequently handling them, acquire a skill of discerning them, which to others seems almost impossible. Many are apt to mistake this for a nicer sensibility, but they are much mistaken; for it is an universal law, that the repetition of impression renders us less acute. This is well illustrated by the operation of medicines; for all medicines which act on the organs of sense must, after some time, be increased in their dose, to produce the same effect as at first. This affords a rule in practice with regard to these medicines; it becoming necessary, after a certain time, to change one medicine even for a weaker of the same nature. Thus medicines, which even have no great apparent force, are found, by long use, to destroy the sensibility of the system to other impressions. But to this general rule, that, by repetition, the force of impressions is more and more diminished, there are some exceptions. Thus persons, by a strong emetic, have had their stomachs rendered so irritable, that 1-20th of the first dose was sufficient to produce the same effect. This, however, oftener takes place when the vomit is repeated every day; for if the same vomit be given at pretty considerable intervals, the general rule is observed to hold good. Thus two contrary effects of habit are to be noted; and it is proper to observe, that the greater irritability is more readily produced when the first impression is great, as in the case first given of the strong emetic. This may be further illustrated by the effect of fear, which is commonly observed to be diminished on repetition; which can only be attributed to custom: while, on the other hand, there are instances of persons, who, having once got a great fright, have for ever after continued slaves to fears excited by impressions of the like kind, however slight; which must be imputed entirely to excess of the first impression, as has been already observed. To this head also belongs the association of ideas, which is the foundation of memory and all our intellectual faculties, and is entirely the effect of custom; with regard to the body also, these associations often take place. And sometimes, in producing effects on the body, associations seemingly opposite are formed, which, through custom, become absolutely necessary; e. g. a person long accustomed to sleep in the neighbourhood of a great noise, is so far from being incommoded on that account, that afterwards such noise becomes necessary to produce sleep. It will be of use to attend to this in medical practice; for we ought to allow for, however opposite it may seem at the time, whatever usually attended the purpose we designed to effect. Thus, in the instance of sleep, we must not exclude noise when we want to procure rest, or any causes which may seem opposite to such an effect, provided custom has rendered them necessary.

3. *Effects on the moving fibres.* A certain degree of tension is necessary to motion, which is to be determined by custom; e. g. a fencer, accustomed to one foil, cannot have the same steadiness or activity with one heavier or lighter. It is necessary also that every motion should be performed in the same situation, or posture of the body, as the person has been accustomed to employ in that motion. Thus, in any surgical operation, a certain posture is recommended; but if

the operator has been accustomed to another, such a one, however awkward, becomes necessary afterwards to his right performance of that operation.

Custom also determines the degree of oscillation, of which the moving fibres are capable. A person accustomed to strong muscular exertions is quite incapable of the more delicate. Thus writing is performed by small muscular contractions; but if a person has been accustomed to stronger motions with these muscles, he will write with much less steadiness.

This subject of tension, formerly attributed to the *simple fibres*, is probably more strictly applicable to the moving: for, besides a tension from flexion, there is also a tension from irritation and sympathy; e. g. the tension of the stomach from food, gives tension to the whole body. Wine and spirituous liquors give tension; e. g. a person that is so affected with tremor as scarcely to hold a glass of any of these liquors to his head, has no sooner swallowed it, than his whole body becomes steady; and after the system has been accustomed to such stimuli, if they are not applied at the usual time, the whole body becomes flaccid, and, of consequence, unsteady in its motions.

Again, custom gives facility of motion. This seems to proceed from the distension which the nervous power gives to the moving fibres themselves. But in whatever manner it is occasioned, the effect is obvious, for any new or unusual motion is performed with great difficulty.

It is supposed that sensation depends on a communication with the sensorium commune, by means of organs sufficiently distended with nervous influence. We have found, that sensibility is diminished by repetition. And we have now to observe, that in some cases it may be increased by repetition, owing to the nervous power itself flowing more easily into the part on account of custom. Attention to a particular object may also determine a greater influx into any particular part, and thus the sensibility and irritability of that particular part may be increased.

But with regard to facility of motion, the nervous power, no doubt, flows most easily into those parts to which it has been accustomed: yet facility of motion does not entirely depend on this, but in part also on the concurrence of the action of a great many muscles; e. g. Winflow has observed, that, in performing any motion, a number of muscles concur to give a fixed point to those intended chiefly to act, as well as to others that are to vary and modify their action. This, however, is assisted by repetition, and the freer influx; as by experience we know the proper attitude for giving a fixed point in order to perform any action with facility and steadiness.

Custom gives a spontaneous motion also, which seems to recur at stated periods, even when the exciting causes are removed. Thus, if the stomach has been accustomed to vomit from a particular medicine, it will require a much smaller dose than at first, nay, even the very sight or remembrance of it will be sufficient to produce the effect; and there are not wanting instances of habitual vomiting, from the injudicious administration of emetics. It is on this account that all spasmodic affections so easily become habitual, and are so difficult of cure; as we must not only avoid all the exciting causes, even in the smallest degree, but also their associations.

Custom also gives strength of motion: strength depends on strong oscillations, a free and copious influx of the nervous power, and on dense solids. But in what manner all these circumstances have been brought about by repetition, has been already explained. The effect of custom, in producing strength, may be thus illustrated; a man that begins with lifting a calf, by continuing the same practice every day, will be able to lift it when grown to the full size of a bull.

All this is of considerable importance in the practice of phy-

fic, though but too little regarded; for the recovery of weak people, in great measure, depends on the use of exercise, suited to their strength, or rather within it, frequently repeated and gradually increased. Further, it is necessary to observe, that custom regulates the particular celerity with which each motion is to be performed: for a person accustomed, for a considerable time, to one degree of celerity, becomes incapable of a greater; e.g. a man accustomed to flow walking will be out of breath before he can run twenty paces. The train, or order, in which our motions are to be performed, is also established by custom; for if a man hath repeated motions, for a certain time, in any particular order, he cannot afterwards perform them in any other. Custom also very frequently associates motions and sensations: thus, if a person has been in the habit of associating certain ideas with the ordinary stimulus which in health excites urine, without these ideas the usual inclination will scarce excite that excretion; and, when these occur, will require it even in the absence of the primary exciting cause: e.g. it is very ordinary for a person to make urine when going to bed; and if he has been, for any length of time, accustomed to do so, he will ever afterwards make urine at that time, though otherwise he would often have no such inclination: by this means some secretions become, in a manner, subject to the will. The same may be said of going to stool: and this affords us a good rule in the case of constipation; for by endeavouring to fix a stated time for this evacuation, it will afterwards, at such time, more readily return. It is further remarkable, that motions are inseparably associated with other motions: this, perhaps, very often proceeds from the necessary degree of tension; but it also often depends merely on custom, an instance of which we have in the uniform motions of our eyes.

4. *Effects on the whole Nervous Power.* We have found, that, by custom, the nervous influence may be determined more easily into one part than another, and therefore, as all the parts of the system are strongly connected, the sensibility, irritability, and strength of any particular part, may be thus increased. Custom also has the power of altering the natural temperament, and of inducing a new one. It is also in the power of custom to render motions periodical, and periodically spontaneous. An instance of this we have in sleep, which is commonly said to be owing to the nervous power being exhausted, the necessary consequence of which is sleep, e.g. a rest of the voluntary motions to favour the recruit of that power: but if this were the case, the return of sleep should be at different times, according as the causes which diminish the nervous influence operate more or less powerfully; whereas the case is quite otherwise, these returns of sleep being quite regular. This is no less remarkable in the appetites, that return at particular periods, independent of every cause but custom. Hunger, e.g. is an extremely uneasy sensation; but goes off of itself, if the person did not take food at the usual time. The excretions are further proofs of this, e.g. going to stool, which, if it depended on any particular irritation, should be at longer or shorter intervals according to the nature of the aliment. There are many other instances of this disposition of the nervous influence to periodical motions, as the story of the idiot of Stafford, recorded by Dr. Plot (*Spectator*, No. 447.), who, being accustomed to tell the hours of the church-clock, as it struck, told them as exactly when it did not strike by its being out of order. Montaigne tells us of some oxen that were employed in a machine for drawing water, who, after making 300 turns, which was the usual number, could be stimulated by no whip or goad to proceed further. Infants, also, cry for and expect the breast at those times in which the nurse has been accustomed to give it.

Hence it would appear, that the human economy is subject

VOL. X.

to periodical revolutions, and that these happen not oftener may be imputed to variety; and this seems to be the reason why they happen oftener in the body than mind, because that is subject to greater variety. We see frequent instances of this in diseases, and in their crises; intermitting fevers, epilepsies, asthma, &c. are examples of periodical affections; and that critical days are not so strongly marked in this country as in Greece, and some others, may be imputed to the variety and instability of our climate; but perhaps still more to the less sensibility and irritability of our system; for the exhibition of medicine has little effect in disturbing the crises, though it be commonly assigned as a cause.

We are likewise subject to many habits independent of ourselves, as from the revolutions of the celestial bodies, particularly the sun, which determines the body, perhaps, to other daily revolutions besides sleeping and waking. There are also certain habits depending on the seasons. Our connections, likewise, with respect to mankind, are means of inducing habits. Thus regularity from associating in business, induces regular habits both of mind and body.

There are many diseases, which, though they arose at first from particular causes, at last continue merely through custom or habit. These are chiefly of the nervous system. We should, therefore, study to counteract such habits; and accordingly Hippocrates, among other things for the cure of epilepsy, orders an entire change of the manner of life. We likewise imitate this in the chin cough; which often resists all remedies till the air, diet, and ordinary train of life, are changed.

5. *Effects on the Blood-vessels.* From what has been said on the nervous power, the distribution of the fluids must necessarily be variously affected by custom, and with that the distribution of the different excretions; for though we make an estimate of the proportion of the excretions to one another, according to the climate and seasons, they must certainly be very much varied by custom.

On this head we may observe, that blood-letting has a manifest tendency to increase the quantity of the blood; and if this evacuation be repeated at stated times, such symptoms of repletion, and such motions are excited at these times, as render the operation necessary. The same has been observed in some spontaneous hæmorrhages. These, indeed, at first, may have some exciting causes, but afterwards they seem to depend chiefly on custom. The best proof of this is with regard to the menstrual evacuation. There is certainly something originally in females, that determines that evacuation to the monthly periods. Constant repetition of this, comes to fix it, independent of strong causes, either favouring or preventing repletion; e.g. blood-letting will not impede it, nor filling the body induce it: and, indeed, so much is this evacuation connected with periodical motions, that it is little in our power to produce any effect by medicines but at those particular times. Thus, if we would relax the uterine system, and bring back this evacuation when suppressed, our attempts would be vain and fruitless, unless given at that time when the menses should have naturally returned.

CUSTRIN, a handsome town of Germany, in the New Marche of Brandenburg, with a castle. It is situated in a morass, surrounded by two branches of the Oder, 46 miles E. by N. of Berlin. Long. 14. 40. E. Lat. 52. 40. N.

CUTAIS, the capital of Imeritia, a country between the Black Sea and the Caspian, and the residence of its sovereign prince David. The remains of its cathedral seem to prove that it was once a considerable place, but it now scarcely deserves the name of a village.

CUTCH, a territory of considerable extent in Hindoostan Proper. It is governed by a rajah of its own, and is situated

on the S. E. of Sindy; the E. branch of the Indus separating the two countries. It extends along the N. coast of the gulf of Cutch, and is separated from Guzerat by the river Puddar, or one of its branches. It abounds with hills, woods, and sandy wilds. The interior part of it is unknown. Its capital is Boodee-boodee.

CUXHAVEN, a sea-port of Bremen, situated on the German Ocean, between the mouths of the Elbe and the Weiser.

CYCLOID (*Encycl.*). On the subject of cycloidal curves, a French writer has the following remark: "Il semble qu'une destinée particulière attachée à la cycloïde, lui donne préférablement aux autres courbes un plus grand nombre de propriétés remarquables."

Definition I.

When a circle is made to rotate on a rectilinear basis, the figure described on the plane of the basis by any point in the plane of the circle is called a trochoid. A circle concentric with the generating circle, and passing through the describing point, may be called the describing circle.

Definition II.

If the describing point is in the circumference of the rotating circle, the two circles coincide, and the curve is called a cycloid.

Definition III.

If a circular basis be substituted for a rectilinear one, the trochoid will become an epitrochoid, and the cycloid an epicycloid.

Scholium 1. The terms have hitherto been too promiscuously employed; the terms cycloid and trochoid have been used indifferently; and the term epicycloid has comprehended the epitrochoid, the terms prolate and contracted being sometimes added to imply that the describing point is within or without the generating circle. The interior epicycloid and epitrochoid may very properly be distinguished by the names hypocycloid and hypotrochoid, whenever they are the separate objects of consideration. The different species of epicycloids may be denominated according to the number of their cusps, combined with that of the entire revolutions which they comprehend; for instance, the epicycloid described by a circle on an equal basis is a simple unicuspate epicycloid; and if the diameter of the generating circle be to that of the basis as 5 to 2, the figure will be a quintuple bicuspate epicycloid. If the describing circle of a trochoid or cycloid be so placed as to touch the middle of the basis, and each of the ordinates parallel to the basis be diminished by the corresponding ordinate of the circle, the curve thus generated has been denominated the companion of the trochoid, the figure of the lines, and the harmonic curve.

Scholium 2. The invention of the cycloid has been attributed by Wallis, Ph. Tr. for 1697, n. 229, to Cardinal Cusanus, who wrote about the year 1450: but it seems to be at least as probable that the curve which appears in Cusanus's figure was meant for the femicircle employed in finding a mean proportional. Bovillus, in 1501, has a juster claim to the merit of the invention of the cycloid and trochoid, if it can be any merit to have merely imagined such curves to exist. In 1599, Galileo gave a name to the common cycloid, and attempted its quadrature, but having been accidentally misled by repeated experiments on the weight of a flat substance cut into a cycloidal form, he fancied that the area bore an incommensurable ratio to that of the circle, and desisted from the investigation. Mericenus described the cycloid, in 1615, under the name of la trochoïde, or la roulette, but he went no further. Roberval seems to have first discovered the comparative quadrature and rectification of the cycloid, and the content of a cycloidal solid, about the year 1635, but his treatise

was not printed until 1695. Torricelli, in 1644, first published the quadrature and the method of drawing a tangent. Wallis gave, in 1670, a perfect quadrature of a portion of the cycloid. The epicycloid is said to have been invented by Ræmer; its rectification and evolute were investigated by Newton in the Principia, published in 1687. In 1695 Mr. Caswell shewed the perfect quadrability of a portion of the epicycloid, and Dr. Halley immediately published an extension of Caswell's discovery, together with a comparison of all epitrochoidal with circular areas. M. Varignon is also said to have reduced the rectification of the epitrochoid to that of the ellipsis, in the same year. Nicole, Delahire, Pascal, Reaumur, Maclaurin, the Bernoullis, the commentators on Newton, and many others, have contributed to the examination of cycloidal curves, both in planes and in curved surfaces; and Waring, the most profound of modern algebraists, has considerably extended his researches upon the nature of those lines which are generated by a rotatory progression of other curves. In the present day the most remarkable properties of cycloidal curves are deduced in a simpler and more general manner than appears to have been hitherto done, the equations of several species are investigated, a singular property of the quadricuspidate hypocycloid is demonstrated, and the peculiarities of the spiral of Archimedes are derived from its generation as an epitrochoid.

PROPOSITION I. THEOREM. PL. 23. FIG. 1.

In any curve generated by the rotation of another on any basis, the right line joining the describing point, and the point of contact of the generating curve and the basis, is always perpendicular to the curve described.

It may by some be deemed sufficient to consider the generating curve as a rectilinear polygon of an infinite number of sides; since, in this point of view, the proposition requires no further demonstration; and, indeed, Newton and others have not scrupled to take it for granted: but it is presumed that a more rigid proof will not be considered as superfluous. Let M be the describing point, and P the point of contact; and let LO, MP, and NQ, be successive positions of the same chord of the generating curve at infinitely small distances; then it is obvious, and easily demonstrable, that the arcs OP and PQ, described by the point P of the generating curve in its passage from O to P, and from P to Q, will be perpendicular to the basis at P, and will therefore touch each other. Let the arcs L, IMK, and N, be described with the radius PM, on the centres O, P, and Q. Then the curve described by M will touch IMK; for since O and Q lie ultimately in the same direction from P, if L be above IMK, N will also be above it, since these points must be in the circles L and N, and infinitely near to M; and if L is below IMK, N, for the same reason, must be below it; and M is common to the circle and the curve, therefore the curve touches the circle IMK at M, and is perpendicular to the radius PM.

PROPOSITION II. PROBLEM.

To draw a tangent to a cycloidal curve at any given point.

On the given point as a centre describe a circle equal to the describing circle of the curve, and from the intersection of this circle, with the line described by the centre of the generating circle, let fall a perpendicular on the basis; the point thus found will be the point of contact, and the tangent will be perpendicular to the right line joining this point of contact and the given point, by the first proposition. It will be obvious, from inspection, which of the two intersections of the circle to be described, with the tract of the centre, is to be taken as the place of that centre corresponding to the given point.

PROPOSITION III. PROBLEM. FIG. 2.

To find the length of an epitrochoid.

Let C be the centre of the basis VP, K that of the rotating circle PR, and of the describing circle GL, P the point of con-

tact, and M the describing point. Then joining MNC, and supposing VX to be an element representing the motion of the point P in either the basis or the generating circle, draw the arc MN on the centre C, and join CVN, then NM will represent the motion of the point M as far as it is produced by the revolution round the centre C: take MO to VX as GK to PK, then MO will be the motion of M arising from the revolution round K, and NO will be the element of the curve produced by the joint motion. Let CH be parallel to PM, then CX or CP : CM :: VX : MN, and PK : MK :: CP : HM :: VX : MO, therefore CM : HM :: MN : MO, and these lines being perpendicular to CM, HM, the triangle NMO is similar to CMH, and MN : NO :: CM : CH, hence CP : CH :: VX : NO. Take PY to CP as PK to CK, then CH : CP :: PM : PY :: NO : VX. On L describe the circle PFB, and draw IMLF : let FD be perpendicular to PRB, take DE to DF as PL, and E will be always in the ellipsis BEP : let AE and AF be tangents to the ellipsis and circle at E and F; then the increment of the arc EF will be to MO as PL to GL, and to VX as PL to PR. Join GM, and parallel to it draw PI; then PIL is a right angle, and ILP = AED, and IM : IL :: PG : PL :: DE : DF, by construction; therefore the figure IMLP is similar to DAEF, as PL to PM so is AF to AE, and so is the increment of the arc BF to that of BE; but the increment of BF is to VX as PL to PR, therefore the increment of BE is to VX as PM to PR. Now, it was proved that NO : VX :: PM : PY; therefore the increment of BE is to NO as PY to PR, or as CP to 2 CK: and the whole elliptic arc BE is to the whole SM as the radius of the basis to twice the distance of the centres.

Corollary 1. The fluxion of every cycloidal arc is proportional to the distance of the describing point from the point of contact.

Corollary 2. In the epicycloid the ellipsis coincides with its axis BB, and the arc BE with BD, which is double the versed sine of half the arc GM, in the describing or generating circle: therefore the length of the curve is to this versed sine as four times the distance of the centres to the radius of the basis.

PROPOSITION IV. PROBLEM. FIG. 2, 3.

To find the centre of curvature of an epitrochoid.

Let PY be, as in the last proposition, to CP as PK to CK, and on the diameter PY describe the circle PZY, cutting PO in Z: take OW a third proportional to OZ and OP, and W will be the centre of curvature. For, let QP = VX be the space described by P, while NO is described by O; it is obvious from prop. 1, that the intersection of NQ and OP must be the centre of curvature. Let QT be perpendicular to PA parallel to QN; then, by prop. 3, NO : VX or QP :: PO : PY, but by similar triangles QP : CF :: PY : PZ; therefore NO : QR :: PO : PZ, and by division, NO : ΔO :: OP : OZ; and by similar triangles :: OW : OF or OF.

Corollary. When Z coincides with O or M, OW is infinite; therefore whenever PZY intersects the describing circle, the epitrochoid will have a point of contrary flexure at the same distance from C as this intersection: and the circle PZY is given when the basis and generating circle are given, whatever the magnitude of the describing circle may be.

PROPOSITION V. PROBLEM. FIG. 4.

To find the evolute of an epicycloid.

In the epicycloid SM, the point M being in the circumference of PMR, PZ will be to PM in the constant ratio of PY to PR, and MZ to PM as RY to PR; and PM to MW in the same ratio; hence PM : PW :: RY : PY :: CR : CP, therefore the point W is always in a circle PWΞ of which the radius is to PK in that proportion and which touches SP in P. On the centre C describe a circle ΔΞΘ touching PWΞ in Ξ; then, since CR : CP :: PR : PΞ, we

have by division CR : CP :: CP : PΞ, and the circle PWΞ being to ΔΞΘ as PMR to SP, the arc PM being equal to SP, the similar arc PW will be equal to ΔΞ, and, taking ΔΞΘ = PWΞ, ΞΘ will be always equal to ΞW, and W in a curve ΘWS similar to SM, of which it is the evolute.

PROPOSITION VI. PROBLEM. FIG. 5.

To find the area of an epitrochoid.

On the centre C describe a circle touching the epitrochoid in S, take GN to GC as PR to PC, and let the circle GΘΠ describe on the basis SG the epicycloid SΘ. Then taking GM always to GΘ as GL to GN, M will be in the epitrochoid SM; for the angular motion of the chord GΘ, is the same as that of GM in the primary epitrochoid. Let SΩ be the evolute of SΘ, and GWΞ its generating circle. On diameters equal to ΞG, ΞL, and ΞΠ, describe three circles, AD, AE, and AF, touching the right line AB in A; let the angle BAD be always equal to GΘΦ, and it is evident that AD, AE, and AF, will be equal respectively to WG, WM, and WΘ. But the angular motion of WG on W being equal to the sum of the angular motions of GM on G and CG on C, is to that of AF, or of GM, or half that of KM, in the ratio of CN to CG, or CR to CP; therefore the fluxions of the areas SWG, SWM, and SWΘ are to those of the segments AD, AE, and AF, in the same ratio; and that ratio being constant, the whole areas, and their differences, are also respectively to each other as CR to CP.

Scholium. The quadrable spaces of Halley are those which are comprehended between the arc of the epitrochoid, that of the describing circle, and that of a circle concentric with the basis and cutting the describing circle at the extremities of its diameter.

PROPOSITION VII. PROBLEM. FIG. 6.

To find a central equation for the epicycloid.

Let CT be perpendicular to RT, the tangent at the point M, then PMR will be a right angle, and PM parallel to CT. On the centre C describe through M the circle MNO, and let MQ be perpendicular to RO. Then the rectangle OQN = PQR, OQ : PQ :: QR : QN, by addition OQ : PQ :: OR : PN; hence by division OP : PQ :: IR : PN, and PQ = $\frac{OPN \text{ or } INP}{IR}$. But PMQ = PR × PQ =

$\frac{PR}{IR} \times INP$; and by similar triangles CT : CR :: PM : PR, whence CTQ = $\frac{CRq}{PRq} \times PMq = CRq \times \frac{INP}{IRP}$. Let MZ and RY be tangents to SP, then INP = MZ, and IRP = RY, CT = CR × $\frac{MZ}{RY}$, and CT will be to MZ in the constant ratio of CR to RY. Putting CP = a, CR = b, CM = s, CT = u, then $uu = \frac{bs - aa}{bb - aa}$.

PROPOSITION VIII. PROBLEM. FIG. 7.

To find a geometrical equation for the conchoidal epitrochoid.

Let CP = PK. On the centre C describe a circle equal to GM, cutting SC in Z. Join MZF, then the arc DZ = GM, and GM is parallel to CK, therefore BF is also equal to DZ or GM, CF is parallel to KM, and MF = CK: therefore this epitrochoid is the curve named by Delahire the conchoid of a circular basis, as was first observed by Reaumur in 1708, and afterwards by Maclaurin, in 1720. Call CK, a, DE, b, ZH, x, HM, y, ZM, s, and let ZI be perpendicular to CK; then FZ = a - s, CI = $\frac{a-s}{2}$, and, CIZ and ZHM being similar, CZ : CI :: ZM : ZH,

or $\frac{b}{2} : \frac{a-s}{2} :: s : x$; hence $bx = as - ss$, $bx + ss = as$,

$L^2x^2 + 2bsx^2 + s^4 = a^2x^2$, and by substituting for s^2 , $x^2 + 2bx^2 - a^2x^2 + b^2x^2 + 2x^2y^2 + 2bxy^2 + y^4 - a^2y^2 = 0$.

Corollary 1. Join FN, and complete the parallelogram MPNL, then since EF = DZ = EN, FN is perpendicular to EK, and ML to NL, and, NL being always equal to FM or CK, L is always in a circle described on the centre N, LM a tangent to that circle, and ZM a perpendicular to that tangent drawn from the point Z.

Corollary 2. Fig. 8. The unicuspitate epicycloid admits of a peculiar central equation, with respect to the point S. Call SM, s , and let ST = u be perpendicular to the tangent

MT, then $u = \frac{s^2}{2a}$. For the triangles SIP and MTS being

similar, and IP being half of SM, or s , SP = $\sqrt{\frac{as}{2}}$, SPq :

SMq :: IPq : STq, or $\frac{as}{2} : s^2 :: \frac{ss}{4} : u^2$, and $2au^2 = s^3$.

Corollary 3. Fig. 8. The unicuspitate epicycloid is one of the caustics of a circle. For making the angle CRY = MRC = $\frac{1}{2}$ SCP, the triangle CRY is isosceles, and CY is constant; so that all rays in the direction of the tangent MR will be reflected by the circle QR towards Y, and consequently SM will be the caustic of a radiant point at Y.

PROPOSITION IX. PROBLEM. FIG. 9.

To find a geometrical equation for the tricuspitate hypocycloid.

Let PA and MF be perpendicular to CS. Join PMB, KM, RMG, and PD. Then the angle APB is equal to the difference of APC and MPB, or to that of their complements PRM, PCA : but PRM = $\frac{1}{2}$ PKM = $\frac{1}{2}$ PCA, therefore APB = $\frac{1}{2}$ PCA = ADP = APS, and the triangles APS and APB are similar and equal. Let SC = a , SF = x , FM = y , and SB = r . Then SA : SP :: SP : SD, and SP = $\sqrt{ar}$. Draw PE perpendicular to BP; then BE = SD = $2a$, BC = $a - r$, EC = $3a - r$, and by similar triangles, CP : CR :: EC : CG = $\frac{1}{2}$ EC = $a - \frac{1}{2}r$; therefore GB = $\frac{3}{2}r$; but BE : BG :: BP : BM, or $2a : \frac{3}{2}r ::$

$\sqrt{ar} : \frac{r}{3a} \sqrt{ar} = BM$; again, BP : BM :: BA : BF, or

$\sqrt{ar} : \frac{r}{3a} \sqrt{ar} :: \frac{r}{2} : \frac{rr}{6a}$, and SF = x , $r = r - \frac{rr}{6a}$, $6ax =$

$6ar - rr$, and $r = 3a \pm \sqrt{9aa - 6ar}$. But MFq = BMq

= BFq, or $y^2 = \frac{r^2}{9a} - \frac{r^4}{36a^2}$, and $36a^2y^2 = 4ar^3 - r^4$. By adding to this the square of the former equation, and proceeding in the same manner to exterminate r , we obtain an equation of the value of x and y , which, when the surds are brought to the same side, and the square of the whole is taken, is at last reduced to $x^4 - \frac{4}{3}ax^3 + 2x^2y^2 - 12axy^2 + y^4 + 12a^2y^2 = 0$, a regular equation of the fourth order.

Scholium. The equation of the corresponding hypotrochoids may be investigated nearly in the same manner, by dividing PR and PM in a given ratio, but the process will be somewhat more tedious.

PROPOSITION X. PROBLEM. FIG. 10.

To find a geometrical equation for the bicuspitate epicycloid.

Let CP = PR. Join RMS, PM, PD; draw CT perpendicular to RT, TE to CR, and EG, MB, RA, to SC. Then the angle DRP = $\frac{1}{2}$ MKP = SCP, and by equal triangles; RA = CT, and RD = CD, and by similar trian-

gles RM : RP :: RE : RT, and RP : RD :: RT : RC : therefore RM : RD :: RE : RC, and ME is parallel to SC, and EG = BM. Put CP = a , BC = x , BM = y , CM = s , CT = u ; then by prop. 7. $u^2 = \frac{4}{3}s^2 - a^2$; or $\frac{4}{3}u^2 = s^2 - a^2$; but RC : CT :: CT : CE :: CE : EG, or y ,

hence $y = \frac{u^3}{4aa} = \frac{16a^2y^3}{64}$, $\frac{27}{64}u^6 = \frac{27}{4}ay^2 = \frac{ss - aa^2}{4}$

= $\frac{xx + yy - aa^2}{4}$; whence by involution the equation of the sixth order may be had at length.

Corollary. Since CRM = SCR, a ray in the direction of the tangent MR will be reflected by a circle FR always parallel to SC : therefore SM is the caustic of the circle FR when the incident rays are parallel to CS.

PROPOSITION XI. PROBLEM. FIG. 11.

To find a geometrical equation for the quadricuspitate hypocycloid.

Let CR = PR, then the angle PRM = $\frac{1}{2}$ PKM = 2 PCS, RAC = ACR, RA = RC = RB = RP, AB = SC, and drawing the perpendiculars CT, TD, TE, and MF, RM = RT, AM = BT, AF = EC, FC = AF, and FM = BD. Let SC = a , FC = x , FM = y , CM = s , CT = u ; then AB : AC :: AC : AT :: AT : AE, whence AT = $\frac{ax^2}{ax^2}$, and in the same manner BT = $\frac{ay^2}{ay^2}$; and CT being a mean proportional between AT and TB, $u^2 = \frac{a^2x^2y^2}{a^2x^2y^2}$, and $u^6 = a^2x^2y^2$. But by prop. 7. $3u^2 = a^2 - s^2$, therefore $27a^2x^2y^2 = a^2 - s^2 = a^2 - x^2 = y^2$; whence the equation may be had at length by involution. The same result may be obtained by Dr. Waring's method of reduction, from

$\frac{axx}{axx} + \frac{ayy}{ayy} = a$.

Corollary. Since the portion of the tangent AB intercepted between the perpendiculars AC, BC, is a constant quantity, this hypocycloid may in that sense be called an equitangential curve; and the rectangular corner of a page-fate must be rounded off into the form of this curve in order to admit a beam of a given length to be carried round it.

PROPOSITION XII. PROBLEM.

To investigate those cases in which the general propositions either fail or require peculiar modifications.

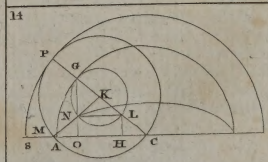
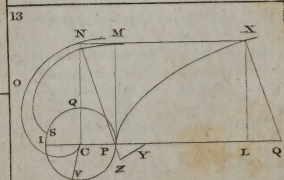
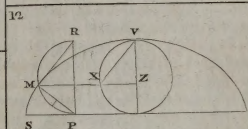
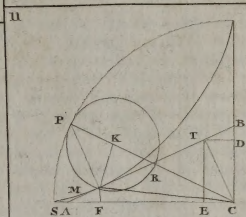
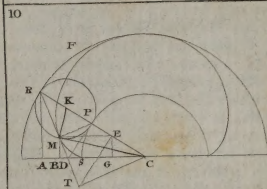
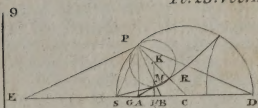
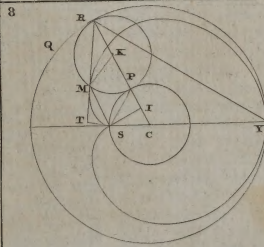
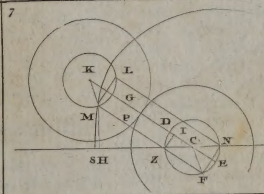
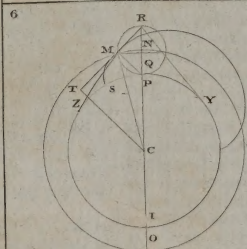
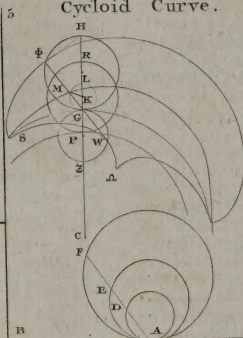
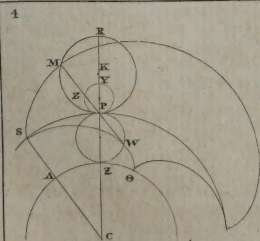
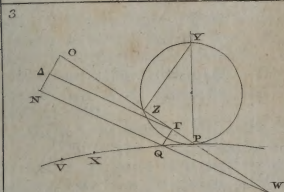
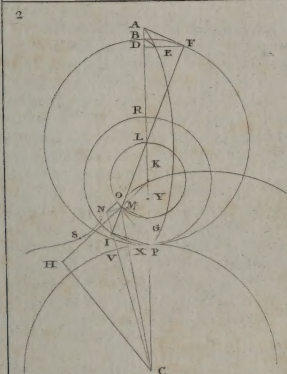
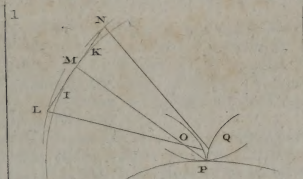
Case 1. Fig. 12. If the generating circle be considered as infinitely small, or the basis as infinitely large, so as to become a straight line, the epicycloid will become a common cycloid, and the ratio of CP to CK in prop. 3. cor. 2. becoming that of equality, the length of the arc SM will be four times the versed sine of half PM, and VM twice the chord RM or VX, therefore the square of the arc VM is always as the absciss VZ. The evolute is an equal cycloid, and the circles in prop. 6. being as 1 to 4, the area of the cycloid is to that of its generating circle as 3 to 1. The properties of the cycloid as an isochronous and as a brachistochronous curve belong to mechanics, and it is demonstrated by writers on optics that its caustic is composed of two cycloids.

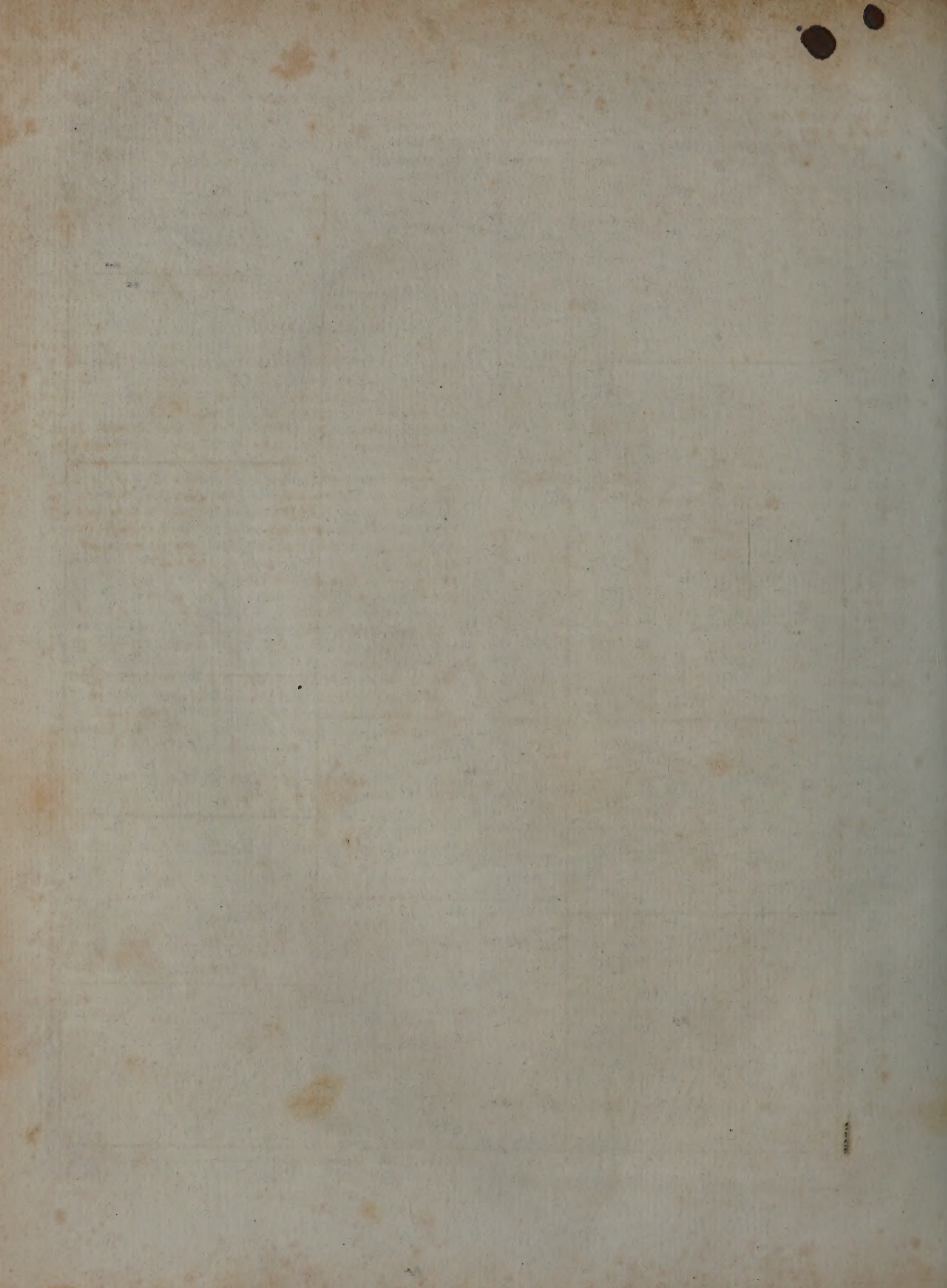
Case 2. Fig. 13. If the generating circle be supposed to become infinite while the base remains finite, the epicycloid will become the involute of a circle; and the fluxion of the curve being always, by prop. 3. cor. 1. to that of PM as PM to CP, its length SM will be a third proportional to IP and PM. Call CP, a , and PM, x , then the fluxion of SM is

$\frac{xx}{a}$; but the rectangle contained by half PM and the fluxion

of SM is the fluxion of the area PSM, or FPM = $\int \frac{xx}{2a} dx = \frac{x^3}{6a}$. The epitrochoid described by the point C of the gene-

Cycloid Curve.





rating plane will be the spiral of Archimedes, since CN is always equal to PM = PS = QV; and since the angular motion of CN and PM are also equal, the area CON = PSM = $\frac{\pi^2}{6a}$. Instead of the ellipsis of prop. 3, let PX be a parabola

of which IP is the parameter, and continuing NM to X, the arc PX will be equal to CON. For making LQ = CP, it is well known that the fluxion of PX varies as XQ or as PN, which represents the fluxion of CON. For the curvature, PY in prop. 4, becomes = CP, and the radius is a third proportional to NZ and NP.

Case 3. Supposing now the generating circle to become again finite, but to have its concavity turned towards the basis, the same curve will be described as would be described by the rotation of a third circle on the same basis in a contrary direction, equal in diameter to the difference of those of the two first circles.

Case 4. If the circles be of the same size, with their concavities turned the same way, no curve can be described; but if the generating circle be still further lessened, a hypocycloid will be produced, if the same figure as that which would be described by a third circle equal in diameter to the difference of the two first. All the general propositions are equally applicable to hypocycloids with other epicycloids, as might easily have been understood from an inspection of the figures, if there had been room for a double series.

Case 5. Fig. 14. If the diameter of the generating circle be half that of the basis, the hypocycloid will become a right line, and the hypotrochoid an ellipsis. For since the angle PKM = 2 PCS, PCM, being half PKM, coincides with PCS, and M is always in CS. Let GNL be the describing circle of the hypotrochoid, and join GNO, then NL is parallel, and ON perpendicular to SC and ON = HL, which is always to GO as CL to CG; therefore AN is an ellipsis: and the centre C will evidently describe a circle.

CYRIL (St.) bishop of Jerusalem, succeeded Maximus in 350. He was afterward deposed for the crime of exposing to sale the treasures of the church, and applying the money to the support of the poor during a great famine. Under Julian he was restored to his see, and was firmly established in all his old honours and dignities under Theodosius; in which he continued unmolested to his death in 386. The remains of this father consist only of 23 catecheses, and one letter to the Emperor Constantius.

CYRILL (St.), patriarch of Alexandria, succeeded Theophilus, his uncle, in 412. Scarce was he installed, when he began to exert his authority with great vigour; he drove the Novatians and Jews from Alexandria, permitting their wealth and synagogues to be taken from them. This proceeding highly displeased Orestes, the governor of the city, who saw that if the bishop's authority was not soon suppressed it might grow too strong for that of the magistrate. Upon which a kind of civil war broke out between Orestes and the bishop; many tumults were raised, and some battles fought in the very streets of Alexandria. St. Cyrill also distinguished himself by his zeal against Nestorius bishop of Constantinople, who, in some of his homilies, had asserted that the Virgin Mary ought not to be called the mother of God. The dispute at first proved unfavourable to Cyrill, whose opinion was not only condemned, but himself deprived of his bishopric and thrown into prison. But he was soon after released, and gained a complete victory over Nestorius, who in 431 was deposed from his see of Constantinople. Cyrill returned to his see at Constantinople, where he died in 444. St. Cyrill also wrote against Theodorus of Mopsuestia, Diodorus of Tarsus, and Julian the apostate. He composed commentaries on St. John's gospel, and wrote several other books. His works

were published in Greek and Latin in 1638, in six volumes folio.

CYRILL LUCAR, patriarch of Constantinople. This eminent man, who has been strangely neglected by the writers of biographical collections, was born in the isle of Candia at the time when it was under the protection of the Venetians. He received his education at Venice under Maximus Margunius, afterwards bishop of Cerigo (an island in the entrance of the Archipelago), who wrote in Greek a learned discourse concerning the procession of the Holy Ghost. After he had finished his studies there, and had acquired a perfect knowledge of the Latin and Italian languages, he travelled into various parts of Europe, the better to fit himself for the service of his country. On his return into the East he was made a priest, and afterwards archimandrite, or prior of a convent. In 1600 he was made the bearer of a letter from Meletius patriarch of Alexandria, to Sigismund III. king of Poland and Sweden; the occasion of which was this: several bishops of Lithuania and Black Russia who had hitherto continued in the communion of the Greek church, wrought upon by several temporal advantages, which they proposed to gain in the diet of Poland, sent two of their number to Rome to make their submission to the pope in 1595. This gave great offence to the other members of the Greek church, but the design of an union being favoured by the king, a synod was called at Brest, to establish this affair. At this synod the Duke of Ostrovia and those of the Greek party appeared, and firmly refused to submit to the proposed union. The name of *non-unia*, or *dissenters*, was given to those persons who resolved to adhere to the Greek church, and in obedience to the Patriarch of Constantinople. Cyril was one of these, being sent thither for the express purpose of breaking off the union of the Russians with the church of Rome. Afterwards this party had several conferences with the Protestant noblemen and divines, particularly those of the Lutheran communion; and some steps were taken to effect an union between the Protestant and Greek churches. But this excellent design proved abortive. About this time Sigismund, out of his zeal for the Roman church, published an edict against the spreading of the Greek religion in his dominions; and soon after wrote a treatise to Meletius, advising him to make his submission to the pope. This letter he answered with all due respect, desiring him to bestow his favour upon Cyril, the bearer, as being worthy of it, both for his learning and integrity. His active way of life, and knowledge of the world, gained by his travels and employments, rendered him every-where conspicuous and deserving in the esteem of all of the highest dignity of his church. The patriarchal see of Alexandria becoming vacant, he was chosen to succeed Meletius, and in that seat he continued nineteen years. The great deference which the other patriarchs of the Greek communion pay to the see of Constantinople induces them to make frequent journeys thither. Here Cyril came about the beginning of 1612; and in the lent following a priest of that church, who had received part of his education among the Jesuits, said many things in favour of the Romish religion, which occasioned Cyril to oppose him with the greatest earnestness. While he was at Constantinople the patriarch of that see died; a circumstance which usually produces considerable confusion, as the rest of the bishops make use of all kinds of means to get the election. The Turks take advantage of these dissensions; and as the patriarch must be confirmed by the grand-seignior, the visier and bashas expect considerable bribes from all the candidates. Cyril had a great party among the bishops, who wished him to be advanced to the patriarchate for the good of the Greek church. To prevent his being elected, the opposite party made use of the accustomed mode;

and by advancing a large sum, got Timothy bishop of Marmara appointed; but he died soon after, and Cyril was chosen without opposition to the vacant chair in 1621. This appointment was very mortifying to the Jesuits, and other zealous members of the Roman communion, because they knew how great an enemy he was to their corruptions; how well inclined to a reformation, and particularly favourable to the Protestant churches. Every artifice, therefore, was adopted to effect his ruin; and, by the help of the French ambassador, they were in hopes to get him deposed, in order that Gregory bishop of Anagla, a creature of their own, might occupy his place. Cyril instantly called a synod, in which the ambitious pretender was excommunicated. The enemies of the patriarch, however, succeeded in prejudicing the mind of the visier against him, and he was banished to Rhodes; after which Gregory was advanced to the patriarchal dignity, on a promise of paying twenty thousand dollars, but not being able to raise this sum, Anthimus archbishop of Adrianople purchased the place. This gave great satisfaction to the court of Rome, and Pope Urban VIII. complimented the French ambassador on his skill and dexterity in this infamous business. But this triumph did not last long, for the English ambassador, Sir Thomas Rowe, interposed so effectually, that Cyril was recalled to Constantinople, and Anthimus made his submissions to him and received absolution. New designs were then formed, and the pope sent over an anti-patriarch, under the title of Apostolical Suffragan, enjoining full power to do what was necessary to promote the interests of the Roman church. Accordingly several titular bishops were created of Smyrna, Naxia, and other places. The Greeks, alarmed at this attempt upon their church, made heavy complaints to the visier, and with such success, that the suffragan was glad to escape for his life, and the titular bishops were thrown into prison. Matters seemed now to wear a favourable aspect; but the calm was of short duration, for Cyril's enemies were only watching an opportunity to complete their grand object. In 1627 a Greek priest, called Mataxa, who had resided in England several years, and had learnt there the art of printing, arrived at Constantinople, and brought with him a printing press and types for the use and information of the poor Greeks. The design was excellent; but it was difficult to get the luggage ashore without giving jealousy to the Turks. The priest was brought to Sir Thomas Rowe by the Archbishop of Corinth, from the patriarch, to beg of him to own the goods, which accordingly he did. The ambassador, however, would not permit the press to be worked in his house, but advised them to take one in the neighbourhood for the purpose. When the Jesuits heard that this press was set up, they were greatly alarmed, and were determined to put an end to the work, which they knew to be unfavourable to their cause. They insinuated that the patriarch intended to subvert the faith of his own church, on which he caused a small book to be printed concerning the doctrine of that church, dedicated to Charles I. king of England. This gave them additional offence; but as they could gather nothing from this book on which to ground an accusation, they had recourse to another which he had written and got printed in England, in defence of the divinity of Christ against the Jews. Having gathered some passages from this treatise which opposed the Koran, they laid them before the visier, at the same time charging Cyril with the design of stirring up the Cossacks to invade the empire. The visier, without any further enquiry, sent his soldiers to the printing-house, and took possession of its contents; but Mataxa escaped. The English ambassador, on this, waited upon the visier, and expostulated with him so effectually, that he was convinced of having been imposed upon, and promised to restore all the goods within three days,

And as the Jesuits had taken great liberties with the name of Sir Thomas, by representing him as the head of the heretics, and a friend of seditious persons, satisfaction was made to him, by sending the accusers to prison, where they would have suffered by the bow-string, if he had not interceded for their lives. The patriarch now enjoyed repose for a considerable time; though his enemies still fostered their virulent animosity against him, and promoted dissensions among his bishops, in order to effect, at last, his deprivation. In 1630, a Confession of Faith, drawn up by Cyril, was printed in Latin at Geneva, and occasioned considerable observation, and some controversy. The Romanists, nettled at a work which flatly opposed the dogmata of their church, and the pretensions of their pontiff, caused an answer to be made to it in Greek, and dispersed over the East. Soon after this the French ambassador at Constantinople gave a dinner to the patriarch and his friends; after which he shewed him the Confession which had been sent to him by order of the pope, with express orders to demand of him if he was the real author of it, and maintained the doctrines therein contained. Cyril honestly replied, that it undoubtedly was his Confession; but that as he owed no obedience to the pope, he was not obliged to render him any account of his faith; adding besides, that he stood at the head of a church to which he would be always ready to give satisfaction in a general synod, referring all to the Word of God, and the fathers of the primitive church. To this the ambassador replied, that at Rome, and in France, they looked upon him as a Calvinist, which sect was much hated by the king, his master, who, therefore, wished that the patriarch would become a Roman-catholic. The answer of this good man was in these words: "In the articles of my belief, and my eternal salvation, I shall neither follow the king of France nor the pope of Rome; neither will I act contrary to the dictates of my own conscience." In 1634 his enemies got him banished to the isle of Tenedos, and Anastasius was elected in his room; but, in a few months, he was restored to his seat, though not without a heavy contribution being paid to the grand-seignior. The year following another competitor was set up; the patriarch was sent to the isle of Rhodes; and so eager were his adversaries to destroy him utterly, that a design was formed to take him off the island, and carry him to Italy, where, doubtless, he would have been made a sacrifice of by the inquisition. This design being discovered, the governor of the island removed him from thence, and thus prevented the scheme from being carried into effect. In July, 1636, he was restored again, and the visier being his friend, he rested safely for some time; but, in 1638, Bairam Basha becoming the favourite of the sultan, represented Cyril as a dangerous man, by whose instigation the Cossacks had lately committed some depredations on the frontiers; and that, by his influence over the people of his persuasion, he might probably stir them up to mutiny. The emperor on this sent an order for his being strangled immediately. The governor of Constantinople, on receiving this mandate, sent his officers to seize on the patriarch, and sent him prisoner to a castle on the Bosphorus. From thence he was conveyed into a boat, where the fatal bow-string being applied to his neck, he was soon dispatched; they then stripped the body and threw it into the sea, from whence it was afterwards taken by some fishermen, and by some of his friends buried on the shore. When this was made known to the government, an order came for taking the body up, and throwing it again into the sea, which was done; but the body was afterwards recovered, and buried obscurely in one of the small islands that lie over against the bay of Nicomedia.

He was, in all respects, a great man, and may justly be termed a martyr for truth and religion, having been persecuted

by his enemies all through his public life, for firmly resisting the encroachments of a foreign power, and strenuously supporting the independence and faith of his own church.

He had a great regard for the English church and nation, which, about the same time, was suffering violently from the attacks of restless and ambitious men. He sent over to King Charles I. that famous Alexandrian MS. of the New Testa-

ment which is now in the king's library, and has been edited in a capital manner by the late learned Dr. Woide.

CZERCASSI, a town of Russia, in the Ukraine, with a castle, seated near the Dnieper, 85 miles SE. of Kiow. Long. 32. 1. E. Lat. 49. 0. N.

CZERSKO, a town of Poland, on the Vistula, twenty miles N.W. of Warsaw. Long. 21. 31. E. Lat. 52. 26. N.

D

DAM

DACHSBACH, a town of Franconia, 22 miles S. of Bamberg.

DACHSTEIN, a town of France in the department of Lower Rhine, with a palace that belonged to the see of Strasbourg. Long. 7. 45. E. Lat. 48. 35. N.

DACHSTUHL, a town of Germany, in the circle of Upper Rhine, and principal place of a lordship, which gives the possessor a seat and voice at the diets of the circles, though not at that of the empire. It is 22 miles S.E. of Treves.

DADO, in architecture and joinery, a word which has three different meanings, 1st. It denotes the cubic part of the pedestal of a column or statue, included between the base and the entablement. 2d. That part of the pedestal of a pilaster, which corresponds with the *dado* in solid work. 3dly. It means that part of the wainscoting, or stucco work, which is a lateral prolongation of the *dado* of a pilaster; *i. e.* the place included between the foot-board and the cornice of the wainscoting.

DAFAR, or DOPAR, a town of Arabia Felix, seated on a bay of the same name, on the S.E. coast. Long. 53. 25. E. Lat. 16. 30. N.

DAGISTAN, or DAGHESTAN, a town of Persia, capital of the province of Daghestan; situate on a river, which runs into the Caspian Sea, 240 miles N.W. of Meshid.

DAHL, the finest river of Sweden, which flows through Dalecarlia and on the S. confines of Geftricia, and falls into the gulf of Bothnia, to the E. of Geste. Near Escarleyb, it forms a celebrated cataract, scarce inferior to the fall of the Rhine at Laufen.

DAILLIE (John), a Protestant minister near Paris, was one of the most learned divines of the 17th century, and was the most esteemed by the Catholics, of all the controversial writers among the Protestants. He was tutor to two of the grandsons of the illustrious Mr. Du Pleffis Mornai. Mr. Dailie having lived fourteen years with so excellent a master, travelled into Italy with his two pupils: one of them died abroad; with the other he saw Italy, Switzerland, Germany, Flanders, Holland, and England, and returned in 1621. He was received minister in 1623, and first exercised his office in the family of Mr. Du Pleffis Mornai; but this did not last long, for that great lord died soon after. The memoirs of this great man employed Mr. Dailie the following year. In 1625 he was appointed minister of the church of Saumur, and in 1626 removed to Paris. He passed all the rest of his life in the service of this last church, and composed several works: his first piece was his master-piece, and an excellent work, *Of the Use of the Fathers*, printed in 1631. It is a strong chain of reasoning, which forms a moral demonstration against those who would have religious disputes decided by the authority of the fathers. He died in 1670, aged 77.

DAM, a town of the United Provinces, in Groningen,

DAN

seated on the Damster, three miles from the sea, and fifteen S.W. of Embden. Long. 6. 48. E. Lat. 53. 22. N.

DAM, a town of Prussian Pomerania, seated on the Oder, ten miles S.E. of Stetin. Long. 14. 50. E. Lat. 53. 31. N.

DAMANHOUR, a town of Egypt, near the canal of Alexandria; 32 miles S.E. of Alexandria.

DAMAR, a town of Arabia Felix, in Yemen, 100 miles S. of Sanaa. Long. 46. 33. E. Lat. 16. 0. N.

DAMASCENUS (John), an illustrious father of the church in the 8th century, born at Damascus, where his father, though a Christian, enjoyed the office of counsellor of state to the Saracen caliph; to which the son succeeded. He retired afterwards to the monastery of St. Sabas, and spent the remainder of his life in writing books of divinity. His works have been often printed; but the Paris edition in 1712, two volumes folio, is esteemed the best.

DAMASCIUS, a celebrated heathen philosopher, born at Damascus in the year 540, when the Goths reigned in Italy. He wrote the *Life* of his master Iddorus; and dedicated it to Theodora, a very learned and philosophical lady, who had also been a pupil to Iddorus. In this *Life*, which was copiously written, he frequently made oblique attacks on the Christian religion. We have nothing remaining of it but some extracts preserved by Photius. Damascius succeeded Theon in the rhetorical school, and Iddorus in that of philosophy, at Athens.

DAMGARTIN, a town of Swedish Pomerania, with a castle, seated on the Recknils, eighteen miles W. of Stralfund. Long. 12. 57. E. Lat. 54. 16. N.

DAMM, a town of Upper Saxony, in the duchy of Pomerania. The inhabitants carry on a considerable trade in steel manufactures. It is seated on the Plohe, five miles E. of Stetin. Long. 14. 39. E. Lat. 53. 21. N.

DAMME, a strong town of Flanders, seated on the canal between Shys and Bruges. It was taken by the duke of Marlborough in 1706, and ceded to the Dutch at the peace of Utrecht.

DAMME, a town of the United Provinces, in Groningen. Though unfortified, it enjoys the privileges of a city, and before the late revolution had a voice among the states of Groningen. It suffered much by inundations some years since. It is seated on the Damster, fourteen miles N.E. of Groningen.

DANBURY, a village in Essex, situate on a hill, five miles E. of Clemsford, and sixteen W. of the sea. The spire of the church was burnt by lightning in 1750, but was soon after rebuilt, and forms a sea-mark.

DANCALI, or DANKALI, a kingdom of Abyssinia, on the coast of the Red Sea. The soil is unproductive; and its chief riches consist in salt and honey. It is governed by a prince nominally tributary to the negus, or emperor of Abyssinia.

DANDOLO (Henry), doge of Venice, a brave admiral

and politician. With a Venetian fleet he took Constantinople in 1203, and had the moderation to refuse to be emperor. He died in 1250.

DANET (Peter), abbot of St. Nicholas de Verdun, was one of the persons chosen by the duke of Montausier to write on the classics for the use of the dauphin. He had a share in Phædrus, which he published with notes and explications in Latin. He also wrote a dictionary in Latin and French, and another in French and Latin. He died at Paris in 1709.

DANGER, ISLES OF, three islands in the S. Pacific Ocean, seen by Commodore Byron in 1765, but were so surrounded by rocks and breakers, that it was unsafe to attempt to land. The commodore supposed them to be the islands seen by Quiros, in the beginning of the 17th century, and named Solomon's Islands. Long. 169. 28. W. Lat. 10. 15. S.

DANNEBERG, a town of Lower Saxony, capital of a district of the same name. It belongs to the elector of Hanover, and is seated on the Tetze, near the Elbe, forty miles S.E. of Lünenburgh. Long. 11. 29. E. Lat. 53. 14. N.

DANTE (Ignatius) a descendant of the poet, was born at Perugia, and took the habit of a Dominican monk. He became skilful in philosophy and divinity, but more so in the mathematics. He was invited to Florence by the great duke Cosmo I. and explained to him the sphere, and the books of Ptolemy. He read public lectures on the same subject, and had many auditors in the university of Bologna, where he explained geography and cosmography. Being returned to Perugia, he made a fine map of that city, and of its whole territory. The reputation of his learning caused him to be invited to Rome by Gregory XIII. who employed him in making geographical maps and plans. He acquitted himself so well in this, that the pope thought himself obliged to prefer him; and accordingly gave him the bishopric of Alatri, near Rome. He went and resided in his diocese; but Sixtus V. who succeeded Gregory XIII. would have him near his person, and ordered him to return to Rome. Dante was preparing for the journey, but was prevented by death, which seized him in 1586. He published at Florence, in 1569, a treatise Of the Construction and Use of the Astrolabe. He also wrote notes on the Sphere of Sacrobosco, on the Astrolabe, and on the Universal Planisphere. He made a sphere of the world in five tables; and was the author of some other small things.

DANVERS (Henry), a brave warrior in the end of the sixteenth, and beginning of the seventeenth century; and created earl of Danby by King Charles I. was the second son of Sir John Danvers, knight, by Elizabeth his wife, daughter and coheir to John Nevil, the last Lord Latimer. He was born at Danteley in Wiltshire, on the 28th day of June, 1573. After an education suitable to his birth, he went and served in the Low-country wars, under Maurice count of Nassau, afterwards Prince of Orange; and was engaged in many military actions of those times, both by sea and land. He was made a captain in the wars of France, occasioned in that kingdom by the league; and there knighted for his good service under Henry IV. king of France. Next, he was employed in Ireland, as lieutenant-general of the horse, and serjeant-major of the whole army, under Robert earl of Essex, and Charles baron of Mountjoy, in the reign of Queen Elizabeth. Upon the accession of King James I. he was, on account of his family's deserts and sufferings, advanced, on the 21st of July, 1603, to the dignity of a peer of this realm, by the title of Baron of Danteley; and in 1605, by a special act of parliament, restored in blood, as heir to his father, notwithstanding the attainder of his elder brother, Sir Charles Danvers, knight. Moreover, he was appointed lord president of Munster in Ireland, and in 1620, made governor of the isle of Guernsey, for life. By King Charles I. he was created earl of Danby, on

February 5, 1625-6; and made one of his privy-council, and knight of the order of the Garter. Being himself a man of learning, as well as a great encourager of it, and observing that opportunities were wanting in the university of Oxford for the useful study of botany, he purchased a piece of ground by the river Charwell, opposite to Magdalen College; which he encompassed with a curious wall of square polished stone, and replenished with a great variety of plants and herbs proper for the study of physic and botany. He founded also an almshouse and a free-school, at Malmesbury in Wiltshire. In his latter days he chose a retired life; and, upon what account is not well known, fell under the displeasure of the court. At length he died, at his house in Cornbury-Park in Oxfordshire, January the 20th, 1643-4, in the seventy-first year of his age; and was buried in the chancel of the parish-church of Danteley, under a noble monument of white marble, with an epitaph, which contains the best character that can be given of him. He was never married.

DANVERS (John), was younger brother and heir of Henry. He was also a knight and one of the gentlemen of the privy-chamber to King Charles I. and was so ungrateful and inhuman as to fit in judgment upon his gracious master, that unfortunate prince, and to be one of those who signed the warrant for his execution. He died before the restoration of King Charles II, but, however, all his estates both real and personal were confiscated in 1661. From Lord Clarendon we understand, he was neglected by his brother, and, by a vain expence in his way of living, contracted a vast debt, which he knew not how to pay, and being a proud formal weak man, between being seduced and a seducer, became so far involved in their counsels, that he suffered himself to be applied to their worst offices, taking it to be a high honour to sit upon the same bench with Cromwell, who employed and contemned him at once; nor did that party of miscreants look upon any two men in the kingdom with that scorn and detestation as they did upon Danvers and Midlam.

DARABGERD, or DARAB-GUISER, a town of Persia, in Faristan, said to have been founded by Darius. It is large, but not populous, and near it salt is found of various colours, white, black, red, and green. A considerable manufacture of glass is carried on here. It stands 116 miles E.S.E. of Schiras.

DARAH, or DRAS, a country of Africa; bounded on the N. by Morocco, Gezula, and Tafillet, and on the E. and S. by Zahara, and on the W. by Sus. A river of the same name flows through it. The principal produce is indigo and dates. The inhabitants are Arabs and Mahometans; and some of the districts of the country are dependent on Morocco.

DARAPOORY, a town of the peninsula of Hindoostan, in Myfore, 88 miles E. of Seringapatam. Long. 78. 26. E. Lat. 12. 11. N.

DARAPORUM, a town of the peninsula of Hindoostan, in Myfore, 36 miles E.S.E. of Coimbatore, and 75. W. of Trichinopoly. Long. 77. 30. E. Lat. 10. 42. N.

DAR-EL-HAMARA, a town of the kingdom of Fez, built by the Romans. Its trade consists in oil and corn; and it is seated on a mountain. Long. 6. 35. W. Lat. 34. 20. N.

DARGONNE (Dom Bonaventure), a religiousist of the Carthusian order, was born at Paris in 1640, and died in 1704. We have of his a very judicious work, entitled, *Un Traité de la Lecture des Pères de l'Eglise*; the best edition of which is that of 1697. He published also, *Des Melanges d'Histoire et de Littérature*, under the name of Vigneul de Marville, in 3 vols. 12mo; the last of which is said to be done by the abbé Banier. This is a very curious and interesting collection of critical reflections and literary anecdotes. He has been called to account by the critics for what he has said of Bruyere. He was the author of some other things.

DARIEN, a river and gulf of Terra Firma, which divide the provinces of Darien and Carthage. In 1695 the Scotch obtained a charter from William III., empowering them to form a settlement on the N.W. point of the gulf, where the country had never been occupied by the Spaniards, but continued to be possessed by the native Indians. This settlement excited such an alarm among the maritime powers of Europe, and particularly the jealousy of the Spanish court and of the English East-India Company, that the adventurers, meeting with every obstruction from the very administration that had granted their charter, were obliged to abandon the settlement.

DARLSTON, a village near Stone, in Staffordshire, where are the remains of a castle on a hill.

DAROCA, a town of Spain, in Arragon, on the Xiloca, 38 miles S.S.W. of Saragossa. Long. 1. 5. W. Lat. 41. 15. N.

DARORE, a town of the Deccan of Hindoostan, 80 miles E. by S. of Amednagar. Long. 76. 10. E. Lat. 18. 50. N.

DART, a river in Devonshire, which rises at the foot of Dartmoor Hills, crosses Dartmoor to Ashburton, and after passing Totneis, where it is navigable for small vessels, is joined by the Hareborn, and falls into the English Channel, at Dartmouth.

DARTMOOR, an extensive moorish tract, in Devonshire, bounded on the N. by bleak hills, and extending forward quite through the centre of the county to the sea. It contains about 80,000 acres, and is watered by the river Dart. Many sheep are bred here, but of a small kind, and subject to the rot. The chief riches of the inhabitants are their black cattle, which thrive well on the coarse four herbage.

DARWAR, a strong town of Hindoostan, in the kingdom of Mylore, and one of the sultan's frontier towns, 88 miles S. by W. of Vissapour, and ninety E.N.E. of Goa. Long. 75. 29. E. Lat. 16. 5. N.

DASSEN-EYLAND, or Isle of Deer, one of the three small islands to the N. of the Cape of Good Hope; so called on account of the great number of deer which were first carried thither in 1601. Here are also sheep whose tails weigh 19 pounds. Long. 18. 7. E. Lat. 33. 25. S.

DASSOUCCI, a celebrated French musician and poet of the 17th century, who published his own adventures, which are very odd, in the style of a buffoon. He relates, that he was born at Paris; that his father, an advocate in the parliament, was of Sens in Burgundy; that his mother was of Lorraine, a very little woman, and very prone to anger; that her husband and she, not being able to agree, parted by consent, after having divided their children and their substance; that he lived with his father at Paris, where he was ill-treated by a servant, who was his father's mistress; that at nine years of age he went to Calais, where he made people believe that he understood astrology, and was son to a famous calculator of natiivities; that, having by a little artifice cured a person who conceived himself sick, he passed for a magician; that he was obliged to leave Calais privately, the mob threatening to throw him into the sea. Bayle knows nothing more of him, till the time that the Duke de St. Simon got Lewis XIII. to hear him at Germain; when he hit that prince's humour by a drinking song of his own making, which it afterwards became the fashion to sing at court. The king listened to his songs ever after, and admitted him freely into his closet; and they called Dassouci, Phœbus Garderobin, because he had his lutes always in the king's wardrobe. He continued this game under Lewis XIV. but having an inclination to go to Turin, he left Paris about 1655. Arriving at Lyons, he found many temptations to detain him. He entertained with his music all the convents of singing nuns; and there was not one of those devout virgins, who had not

already a copy of his Ovid in a Merry Humour. This was the title of a work, wherein he translated part of Ovid's Metamorphoses into burlesque verse. He stayed three months at Lyons, in the midst of diversions, plays, and entertainments, being highly caressed by Moliere, and the Bejars; after which he went to Avignon with Moliere, and then to Pezenas, where the assembly of the states of Languedoc was held. He was maintained by those players a whole winter; and followed Moliere as far as Narbonne. Afterwards he went to Montpellier, where he was imprisoned, and very near being burnt, for a suspected commerce with a male. He continued three months at Montpellier after his release, and drew up an account of that Tragi-comical Adventure, for he calls it; which however he did not print, though the chief magistrate, who had seen it, gave him leave. He afterwards saw several towns of Provence; and went to wait on the Prince of Morgues at Monaco, who made him a handsome present.

Being arrived at Turin, he had some trouble to confuse by his presence the report of his execution, which had been read in the Burlesque Gazette. He laboured to procure a settlement in that court, and supposes he should have succeeded, if the musicians of the country had not grown jealous of him. He pretends, that the beauty of his poetry laid him open to the indignation of a poet of Auvergne, who criticised and prosecuted him: and adds, that he suffered much for having neglected the favourites, because he implicitly fancied it sufficient to make his court to their royal highnesses. Perceiving they grew cold towards him, he requested either to be dismissed, or to have a fixed pension; and, to his great mortification, obtained the former. About 1674 he published two small volumes, which he had compiled in the prison of the Chatelet at Paris. He was confined there at that time: but we know nothing of the particulars relating either to his confinement or his enlargement. Dassouci had several enemies: among the rest, Cyrano de Bergerac and Boileau. He was a very indifferent sort of man, as we learn from his own accounts and confessions: there is no occasion to depend upon the testimony and authority of his satirists for this.

DAVENANT (John), bishop of Salisbury, and a very learned man, was the son of an eminent merchant, and born in Watling-street, London, about 1570. He was admitted of Queen's College, Cambridge, in 1587, where he took his degrees in arts regularly. A fellowship was offered him about 1594, but his father would not suffer him to accept it, on account of his plentiful fortune; however, after his father's decease, he accepted of one, and was admitted into it in 1597. He took his doctor's degree in 1609, having long distinguished himself by his parts and learning; and the same year was elected Lady Margaret's professor of divinity. In 1614 he was chosen master of his college; and became so considerable, that he was one of those eminent divines, sent by James I. to the synod of Dort in 1618. He returned to England in May 1619, after having visited the most eminent cities in the Low-countries. In 1621 he was advanced to the see of Salisbury, and continued in favour during the remainder of James's reign; but in 1630-1 he incurred the displeasure of the court, by meddling, in a sermon preached before the king at Whitehall, with the predestinarian controversy; "all curious search into which" his majesty had strictly enjoined, in his declaration prefixed to the 39 articles in 1628, "to be laid aside." For this pretended contempt of the king's declaration he was not only reprov'd the same day, but also summoned to answer two days after before the privy-council; and, though he was dismissed without further trouble, and even admitted to kiss the king's hand, yet he was never afterwards in favour at court. He died of a consumption, April 20, 1641, to which, it is said, a sense of the sorrowful times he saw coming on did not a little

contribute; and was buried in Salisbury cathedral. He was a man of exemplary manners, and a great divine; but strictly attached to Calvinism with all its absurdities.

He wrote, 1. A Latin Exposition of St. Paul's Epistle to the Colossians, the third edition of which was printed at Cambridge in 1639. It is the substance of lectures, read by him as Margaret professor. 2. *Prælectiones de Duobus in Theologia Controversis Capitibus: de Judice Controversiarum, primo: de Justitia Habituali & Actuali, altero, Cant. 1631.* 3. In 1634, he published the questions he had disputed upon in the schools, 49 in number, under this title; *Determinationes Questionum quarundam Theologicarum.* 4. *Animadversiones* upon a Treatise lately published, and entitled, *God's Love to Mankind*, manifested by disproving his absolute Decree for their Damnation, Camb. 1641.

DAVENANT (William), younger brother to the former, and fourth son of Sir William Davenant, was educated at Magdalen-hall in Oxford, where he took the degree of B.A. in 1677. He translated into English from the French, a book, entitled, *Animadversiones* upon the famous Greek and Latin Historians, written by La Mothe le Voyer, who was tutor to Lewis XIII. He took the degree of M. A. in 1680; and about the same time, entering into orders, was presented to a living in the county of Surrey, by his patron Robert Wymond-fole, of Putney, esq. He travelled with this gentleman into France; and in the summer of 1681, was unfortunately drowned in a river near Paris, as he was swimming for his own diversion.

DAVENANT (Doctor Charles), an eminent civilian and writer, eldest son of the preceding, and educated in Cambridge: he wrote several political tracts; and likewise plays. He was (1685) impowered, with the master of the revels, to inspect the plays designed for the stage, that no immoralities might be presented. His *Essays on Trade* are in high esteem; and were lately reprinted in five vols. 8vo. Doctor Davenant was inspector-general of exports and imports; and died in 1712.

DAVENPORT (Christopher), a learned Englishman, was born at Coventry, in Warwickshire, about 1598, and educated in grammar-learning at a school in that city. He was sent to Merton College in Oxford at fifteen years of age; where spending two years, he, upon an invitation from some Romish priest, afterwards went to Douay. He remained there for some time; and then going to Ypres, he entered into the order of Franciscans among the Dutch there, in 1617. After several removals from place to place, he became a missionary into England, where he went by the name of Franciscus à Sancta Clara; and at length was made one of the chaplains to Henrietta Maria, the royal consort of Charles I. Here he did all he could to promote the cause of Popery, by gaining disciples, raising money among the English Catholics to carry on public matters abroad, and by writing books for the advancement of his religion and order. He was very eminent for his uncommon learning, being excellently versed in school divinity, in fathers and councils, in philosophers, and in ecclesiastical and profane history. He was, Wood tells us, a person of very free discourse, while his fellow-labourer in the same vineyard, Hugh Cressly, was reserved; of a lively and quick aspect, while Cressly was clouded and melancholy: all which accomplishments made him agreeable to Protestants as well as Papists. Archbishop Laud, it seems, had some knowledge of this person; for, in the seventh article of his impeachment, it is said, that "the said archbishop, for the advancement of Popery and superstition within this realm, hath wittingly and willingly received, harboured, and relieved, divers Popish priests and Jesuits, namely, one called Sancta Clara, alias Davenport, a dangerous person and Franciscan friar, who hath

written a Popish and seditious book, entitled, *Deus Natura, Gratia, &c.* wherein the thirty-nine Articles of the Church of England, established by act of parliament, are much traduced and scandalized: that the said archbishop had divers conferences with him, while he was writing the said book, &c." To which article, the archbishop made this answer: "I never saw that Franciscan friar, Sancta Clara, in my life, to the utmost of my memory, above four times, or five at most. He was first brought to me by Dr. Lindfild, but I did fear, that he would never expound the articles so, that the church of England might have cause to thank him for it. He never came to me after, till he was almost ready to print another book, to prove, that episcopacy was authorised in the church by divine right; and this was after these unhappy firs began. His desire was, to have his book printed here; but at his several addresses to me for this, I still gave him this answer: That I did not like the way which the church of Rome went concerning episcopacy; that I would never consent, that any such book from the pen of a Romanist should be printed here; that the bishops of England are very well able to defend their own cause and calling, without any help from Rome, and would do so when they saw cause; and this is all the conference I ever had with him." Davenport at this time absconded, and spent most of those years of trouble in obscurity, sometimes beyond the seas, sometimes at London, sometimes in the country, and sometimes at Oxford. After the restoration of Charles II. when the marriage was celebrated between him and Catherine of Portugal, Sancta Clara became one of her chaplains; and was for the third time chosen provincial of his order for England, where he died May 31, 1680.

He was the author of several works: 1. *Paraphrastica Expolitio Articulorum Confessionis Anglicanæ.* This book was, we know not why, much railed at by the Jesuits, who would fain have had it burnt; but being soon after licensed at Rome, all further rumour about it stopped. 2. *Deus, Natura, Gratia: sive, Tractatus de Prædestinatione de Meritis, &c.* This book was dedicated to Charles I. and Prynne contends, that the whole scope of it, as well as "the paraphratical Exposition of the Articles," reprinted at the end of it in 1635, was to reconcile the king, the church, and the articles of our religion to the church of Rome. He published also a great number of other works, which are not now of consequence enough to be mentioned.

DAVENPORT (John), elder brother of Christopher just mentioned, was born at Coventry, in 1597; and sent from thence with his brother to Merton College in 1613. He afterwards took a different rout from him; for whereas Christopher went to Douay, and became a Catholic, John went to London, and became a Puritan. He was minister of St. Stephen's in Coleman-street, and seemed by his fanatical brethren a person of excellent gifts in preaching, and in other qualities belonging to a divine. About 1630, he was appointed by certain factious and discontented persons, one of the feesees for the buying in impropriations; but, that project miscarrying, he left his pastoral charge about 1633, under pretence of opposition from the bishops, and went to Amsterdam. Here, endeavouring to be a minister in the English congregation, and to join with them in all duties, he was opposed by John Paget, an elder, on account of some difference between them about baptism; upon which he wrote, in his own defence, A Letter to the Dutch Classis, containing a just Complaint against an unjust Doer; wherein is declared the miserable Slavery and Bondage that the English Church at Amsterdam is now in, by Reason of the tyrannical Government and corrupt Doctrine of Mr. John Paget, their Minister, Amst. 1631. Two or three more pieces relating to this controversy were published by him afterwards; and such were his

parts and learning, that he drew away from them many of their congregation, to whom he preached and prayed in private houses.

In the beginning of the rebellion, he returned into England, as other Nonconformists did, and had a cure bestowed on him; but finding matters not go on agreeably to his humour, he went into New England, and became a pastor of New Haven there. He afterwards removed from thence to Boston in 1668, where he died the year following. He was the author of *A Catechism* containing the chief Heads of the Christian Religion, which was printed in London in 1659: several Sermons: *The Power of congregational Churches asserted and vindicated*: and of *An Exposition of the Canticles*, which has never been published.

DAVID (George), a most extraordinary heretic, was the son of a waterman of Ghent, and educated a glazier, or, as some say, a glass-painter. He began about 1525 to preach such whimsies as these, namely, that he was the true Messiah, the third David, nephew of God, not after the flesh, but after the spirit. "The heavens," he said, "being empty, he was sent to adopt children worthy of that kingdom; and to restore Israel, not by death, as Christ, but by grace." With the Sadducees, he denied eternal life, the resurrection, and the last judgment: with the Adamites he was against marriage, and for a community of women: and with the followers of Manes, he thought that the body only, and not the soul, could be defiled by sin. According to him, the souls of unbelievers ought to be saved, and those of the apostles damned. Lastly, he affirmed it folly to believe that there was any sin in denying Jesus Christ; and ridiculed the martyrs for preferring death to apostacy. A persecution being commenced against him and his followers, he fled first to Frieland, and from thence to Basil, where he lurked under the name of John Bruck. He died in that city in 1556, promising to his disciples, that he should rise again in three days; which, as it happened, was not altogether false; for the magistrates of Basil, understanding at length who he was, did, about that time, dig up his corpse, which, together with his writings, they caused to be burned by the common executioner. As great a madman as this George David was, he had his followers, which continued some time after his death.

DAVIES (Dr. John), was born in Denbighshire, and educated by William Morgan, afterwards bishop of St. Asaph. He was admitted a student of Jesus College, Oxford, in 1589, and afterwards became a member of Lincoln College in the same university. He was rector of Malloyd, or Manlyd in Merionethshire, and afterwards a canon of St. Asaph. He commenced doctor in 1616, and was highly esteemed by the university, says Wood, as well as versed in the history and antiquities of his own nation, and in the Greek and Hebrew languages; a most exact critic, an indefatigable searcher into ancient writings, and well acquainted with curious and rare authors. His works are, 1. *Antique Lingue Britannicæ nunc communiter dictæ Cambro-Britannicæ, à suis Cymrææ vel Cambriæ, ab aliis Wallicæ Rudimenta*, &c. 1621, 8vo. 2. *Dictionarium Latino-Britannicum*, 1632, folio. With this is printed *Dictionarium Latino-Britannicum*, which was begun and greatly advanced by Thomas Williams, physician, before 1600. It was afterwards completed and published by Dr. Davies. 3. *Adagia Britannica, Authorum Britannicorum nomina, & quando floruerunt*, 1632, printed at the end of the Dictionary before mentioned. 4. *Adagiorum Britannicorum Specimen*, MS. Bibl. Bodl. He also assisted W. Morgan, bishop of Landaff, and Richard Parry, bishop of St. Asaph, in translating the Bible into Welsh, in that correct edition which came out in 1620. He also translated into the same language (which he had studied at vacant hours for thirty

years) the book of *Revelation*, written by Robert Parsons, a Jesuit.

DAVIES (John), an eminent and learned critic, was the son of a merchant in London, and born there April 22, 1679. After being educated in classical learning at the Charterhouse school, he was, in 1695, sent to Queen's College, Cambridge; where he took the degree of B.A. in 1698. In 1701 he was chosen fellow of his college; and the year following took the degree of M.A. In 1711, having distinguished himself by several learned publications, hereafter to be mentioned, he was collated by Moore bishop of Ely to the rectory of Fen-Ditton near Cambridge, and to a prebend in the church of Ely; taking the same year the degree of LL.D. Upon the death of Dr. James, he was chosen master of Queen's College, March 23, 1716-17; and created D.D. in 1717, when George I. was at Cambridge. He died March 7, 1731-32, aged 53, and was buried in the chapel of his college; where a flat marble stone was laid over his grave, with a plain inscription. His mother, who was a daughter of Sir John Turlton, Knt. is said to have been living in 1743.

This learned man was not, as far as we can find, the author of any original works, but only employed himself in giving fair and correct editions of some Greek and Latin authors of antiquity. Thus, in 1703 he published in 8vo. 1. *Maximi Tyrii Dissertationes*, Gr. and Lat. ex Interpretatione Heinitii, &c. 2. *C. Julii Cæsaris, & A. Hirtii quæ extant omnia*, Cant. 1706, 4to. It was republished in 1727. 3. *M. Minucii Felicii Octaviani, Cant. 1707, 8vo.* It was printed again in 1712, 8vo. with the notes greatly enlarged and corrected, and the addition of Commodianus, a writer of the Cyprianic age. 4. Then he formed a scheme of publishing new and beautiful editions of Cicero's philosophical pieces, by way of supplement to what Grævius had published of that author; and accordingly put out, in 1709, his *Tufculanarum Disputationum, Libri quinque*, 8vo. This edition, and that of 1738, which is the fourth, have at the end the emendations of his intimate friend Dr. Bentley. The other pieces were published by our author in the following order: *De Naturâ Deorum*, 1718. *De Divinatione & de Fato*, 1721. *Academica*, 1725. *De Legibus*, 1727. *De Finibus Bonorum & Malorum*, 1728. These several pieces of Tully were printed in 8vo. in a fair and handsome manner; have been received with a general applause; and have passed, most of them, through several editions. He had also gone as far as the middle of the third book of Cicero's Offices; but being prevented by death from finishing it, he recommended it in his will to the care of Dr. Mead, who put it into the hands of Dr. Thomas Bentley, that he might fit and prepare it for the press. But the house where Dr. Bentley lodged, which was in the Strand, London, being set on fire through carelessness, as it is said, by reading after he was in bed, Davies's notes and emendations perished in the flames. 5. Another thing published by our learned author, which we have not mentioned, was, *Lactantii Firmiani Epitome Divinarum Institutionum*, Cant. 1718, 8vo.

DAVILA (Henrico Catherino), a celebrated historian, was born of an illustrious family in the Isle of Cyprus; but was obliged to leave his country, on its being taken by the Turks, in 1571. He first retired to Avila in Spain, whence his family supposed they had derived their name and origin; from thence he went to France, and made himself known at court under the reigns of Henry III. and Henry the Great. He there distinguished himself on several occasions by his valour; and at length went to Venice, where he had a very handsome pension settled upon him by that republic, in whole service his brother Lewis Davila had been a commander. Davila, while he was at Venice, wrote his admirable History of the Civil Wars of France, which contains every thing worth

notice that passed from the death of Henry II. in 1559, to the peace of Vervins in 1598. He was killed about the year 1635, by a gentleman of Verona; who, in a dispute about furnishing him with carriages in pursuance of his having a commission from the republic, discharged a pistol at Davila, and wounded him in such a manner, that he died soon after. Davila's son, a youth of about 18, being present, had the spirit to revenge the death of his father; for, instantly rushing upon the murderer, he cut him in pieces.

DAVIS (Henry Edwards), son of Mr. John Davis, of Windsor, was born July 11, 1756, and educated at Ealing, Middlesex, whence he removed to Balliol-College, Oxon, May 17, 1774, and took his degree about Jan. 1778, as B.A. In the spring of that year he distinguished himself amongst the earliest examiners of some remarkable assertions, and insinuations yet more extraordinary, introduced in the History of the Decline and Fall of the Roman Empire. So much accurate knowledge, and a judgment so well matured as that Examination discovered, has been rarely found at the age of twenty-one. The historian, in his Vindication, exerted very considerable efforts, though strongly assailed by veterans in literature, to defend himself against his juvenile opponent. Mr. Davis, in his Reply, manifested no ordinary degree of candour and firmness. Such proofs of learning, sagacity, and zeal for the Christian cause, drew the particular attention of men, eminent by their public station, their talents, and acquired advantages, and still more distinguished by their virtue and piety. In 1780, having entered into full orders, he was established, in a manner peculiarly to his honour, in a fellowship of his college; and, for some time before his death, was tutor; an office which he discharged with solicitude and constancy, too great for the sensibility of his mind and the delicacy of his constitution. A lingering illness removed him from the society of his many estimable friends, and deprived the public of his expected services. Feb. 10, 1784, without any apparent change between a placid slumber and death, he expired. He was buried at Windsor, which was the place of his birth. He had cultivated a taste for elegant literature, particularly in poetry, and occasionally wrote for the Gentleman's Magazine; the particulars cannot now be ascertained, except that in the Magazine for April 1782, p. 281, a letter signed C. and D. pointed out a very erroneous representation, for such it is presumed it will appear to impartial readers, in a passage of Mr. Gibbon concerning Gennadius. Of this the discovery belongs to Mr. Davis; though in the drawing of it, as the signature imports, a learned friend was concerned.

It may be added, that, before his publication of the Examination, he had given several proofs of an early genius; and as in this he resembled some eminent men, so he did also in another respect, being from his infancy of a very tender and delicate constitution. His apprehension was quick, his judgment correct; and in his application he was indefatigable.

DAVOS, a town of Switzerland, and capital of a jurisdiction of the same name, in the country of the Grisons. In the district are two lakes well furnished with fish, mines of copper, lead, and silver; and the inhabitants breed a great number of cattle: sixty miles S. E. of Zurich. Long. 27. 21. E. Ferro. Lat. 46. 40. N.

DAUN, a town of Germany, in the electorate of Treves, seated on the Moselle, at the foot of a mountain, on which is a castle, twelve miles N. of Mont Royal.

DAUPHIN, FORT, a fort built by the French, on the E. coast of Madagascar. Long. 45. 10. E. Lat. 24. 55. S.

DAWES (Sir William), an eminent English prelate, was the youngest son of Sir John Dawes, bart. and born at Lyons, near Braintree, in Essex, Sept. 12, 1671. He was educated at

Merchant-Taylor's school in London, where he made a great proficiency in classical learning; and was also tolerably versed in the Hebrew tongue, even before he was fifteen years of age; which was chiefly owing to the additional care that Kidder, afterwards bishop of Bath and Wells, but then rector of Rayne near Braintree, was pleased to take of his education. In 1687 he was sent to St. John's College in Oxford; but his father's title and estate descending to him, upon the death of his two elder brothers, about two years after, he left Oxford, and entered himself a nobleman in Catharine-hall, Cambridge. He took possession of his eldest brother's chambers, who died there just before of a fever, at the same time that his other brother, who was lieutenant of a ship, was unhappily drowned. After he had taken the degree of M. A. he visited his estate in Essex, and intended to make a short tour into some other parts of the kingdom, which he had not seen; but his progress was stopped by his happening to meet with Frances, the eldest daughter of Sir Thomas Darcy, of Braxfield-lodge in Essex, a fine and accomplished woman, whom he soon after married.

As soon as he arrived at the proper age, he was ordained deacon and priest by Compton bishop of London. He intended, from the very first, to enter into holy orders; and is said to have prepared himself for this, by making some of the most eminent English divines his study, while he was very young. Shortly after, he was created D.D. by a royal mandate, in order to be qualified for the mastership of Catharine-hall, to which he was unanimously elected in 1696, upon the death of Dr. John Echard. He did several beneficial acts to his college: particularly, he contributed liberally towards the finishing a chapel which his predecessor had begun; and, by his interest at court, procured the first vacant prebend of Norwich to be annexed, by act of parliament, to the mastership of Catharine-hall for ever. In 1696 he was made a chaplain in ordinary to King William; and shortly after, was presented by his majesty to a prebend in the church of Worcester. Sir William, it seems, had pleased the king so well in a sermon, preached at Whitehall, Nov. 5, 1696, that his Majesty sent for him, and without any solicitation gave him this prebend; telling him at the same time, that "the thing indeed was but small, and not worth his acceptance, but as an earnest of his future favour, and a pledge of what he intended for him." Nov. 10, 1698, he was collated by Archbishop Tenison to the rectory, and the month following, to the deanery of Bocking in Essex; where he behaved in a very charitable and exemplary manner.

After Queen Anne's accession, Sir William was made one of her chaplains, and was in a fair way for some of the highest dignities in the church. Accordingly, though he missed the bishopric of Lincoln, which was vacant in 1705, yet her Majesty, of her own accord, named him to the see of Chester in 1707. The reason of his missing Lincoln was his having, in a sermon upon Jan. 30, uttered some bold truths, which were not agreeable to certain persons in power; who took occasion from thence to persuade the queen, contrary to her inclination, to give it to Dr. Wake, afterwards archbishop of Canterbury. This, however, made no impression upon Sir William; and, therefore, when he was told by a certain nobleman, that he had lost a bishopric by his preaching, his reply was, that "as to that he had no manner of concern upon him, because his intention was never to gain one by it." In 1713-14, he was translated to the archiepiscopal see of York; at which time he was also made a privy-councillor of state. He continued above ten years in this high station, much honoured and respected; and then a diarrhoea, to which he had been subject some time, coming to be attended with a fever, and ending in an inflammation of his bowels, put a period to his life, April 30, 1724. He was buried in the chapel of Catharine-hall, Cambridge.

near his lady, who died Dec. 22, 1705, in her 29th year. He had seven children, three of which only, namely, Elizabeth, Jane, and Darcy, survived him.

He was the author of several things, some of which were published by himself, and others after his decease, under the title of his *Whole Works*, with a Preface, giving some Account of the Life, Writings, and Character of the Author, 1733, in 3 vols. 8vo. Those published by himself were, 1. *An Anatomy of Atheism*, 1693. This is a poem, consisting of five sheets, and was written by the author before he was eighteen years of age. It is more remarkable for its argument and easiness of diction, than for any briskness and force of imagination. 2. *The Duties of the Closet*, &c. written before he was 21 years of age. 3. *The Duty of Communicating explained and enforced*, &c. composed for the use of his parishioners at Bocking. 4. *Sermons preached upon several Occasions before King William and Queen Anne*, 1707, 8vo. dedicated to that queen. 5. *A Preface to the Works of Bishop Blackall*, published in 1723.

DAWES (Richard), an English scholar, celebrated for the publication of a work, entitled, *Miscellanea Critica*, was born in 1708; and, after a school-education under Mr. Anthony Blackwall, admitted of Emanuel College, Cambridge, in 1725. In 1736 he published a specimen of a Greek translation of *Paradise Lost*; of which, in his preface to the *Miscellanea Critica*, he had candour enough to point out the imperfections himself. Mr. Dawes died in 1766, and left some MSS. to which Mr. Burgess, who afterwards published an improved edition of the *Miscellanea Critica*, had access. There are some others in Dr. Aikew's collection, who bought Mr. Dawes's library.

DAX, or **Acas**, an ancient town of France, in the department of Landes, with a bishop's see. Here are some famous hot baths, the spring of which discharges 543 cubic feet of water in 15 minutes. It is seated on the Adour, 24 miles N.E. of Bayonne. Long. 1. o. W. Lat. 43. 42. N.

DAY (Thomas), an eminent miscellaneous writer, the only son of Thomas Day, esq. one of the collectors outwards of the customs in the ports of London, was born in the year 1748. He received his education at Charter-house, and removed thence to Oxford. He afterwards made a tour on the Continent, and, on his return to England, entered himself of the society of the Middle Temple, and was called to the bar. But, although possessed of great eloquence, with a mind not only able to comprehend, but to improve the modes of judicial proceedings, he was disgusted with the technical nicety of legal process; and being possessed of an ample fortune, much augmented by the accumulation of a long minority, he declined the emoluments of the law, and devoted his time to literary pursuits. In 1777 he married Miss Esther Milnes, of Wakefield, in Yorkshire; and with this lady he lived retired many years at Ainsley, in the county of Surrey; where he amused himself with the occupation of a large farm, more for the sake of maintaining a number of poor families whom he employed around it, than with any view to his own advantage. He occasionally interfered in the politics of the times, with the honest zeal of a disinterested patriot, and the manly firmness of an independent country gentleman. But, on the 28th of September, 1789, a period was put to his valuable life by a fall from his horse, as he was riding out with some gentlemen in Berkshire.

Mr. Day's first publication, in 1773, was *The Dying Negro*, a poetical epistle. In 1776 he published another poem, entitled *The Devoted Legions*, addressed to Lord George Germaine, and the commanders of the forces against America.

In 1783 he produced the *History of Sandford and Merton*; a work of great importance to youth, and which he assisted.

It afterwards extended to three volumes 12mo. It consists of a variety of tales interwoven with a story, in which two children and their tutor are the principal characters. This work was followed by another, with the same benevolent views, entitled *The History of Little Jack*, and printed in 1783, in the *Children's Miscellany*. Mr. Day likewise published occasionally many political productions; 1. *Reflections on the present State of England, and the Independence of America*. 2. *Fragment of an original Letter on the Slavery of the Negroes*. 3. *A Dialogue between a Justice of the Peace and a Farmer*. 4. *The Letters of Marius; or, Reflections upon the Peace, the East-India Bill, and the present Crisis*. 5. *A Letter to Arthur Young, esq. on the Bill now pending in Parliament to prevent the Exportation of Wool*.

DEADMAN'S-HEAD, a cape in Cornwall, between St. Maw's and Fowey.

DEAFNESS (*Encycl.*). Under that article we have noticed an invariable consequence attending those who have the misfortune to be born *totally deaf*; namely, that they are also, by a natural consequence, *dumb* also. We have also mentioned the names of ingenious men who have found means to supply these lamentable defects in a great degree, and give to society many useful members. To their assistance, however, the poor could by no means attain, and this became an inducement with a few benevolent gentlemen, possessing an abundance of the temporal blessings of Providence, to appropriate a part of their superfluity to the purpose of raising these poor *automata* to a state of intellectual existence and usefulness, by opening a school for their instruction at Bermondsey.

On making enquiry into the nature and extent of this institution, it appears that, although it is in a prosperous condition, when the date (1792) of its establishment is considered; yet it is far from being sufficiently opulent to extend assistance to all who stand in need of it. It was the wish of its founders to have confined their bounty to instruction only; but receiving applications for relief from the most distant parts of the kingdom, it was found impracticable to fix on a situation where the children might have been daily collected: they were therefore obliged to add to it board and lodging, which necessarily contracted the sphere of their benevolence.

The number of *deaf* and *dumb* persons in this country is supposed to amount to several hundreds; more than 80 of whom, of a proper age, that is, between nine and fourteen, have applied for admittance; but the funds of the institution have not enabled the governors to receive above half that number: some have received instruction and been discharged, capable of expressing their ideas, and acknowledging their gratitude; and 35 are now in the asylum.

Their education consists in learning to speak and read articulately; to write, cypher, and understand language; and a manufactory is about to be erected adjoining the school, where some of the boys are to be instructed in the art of a taylor; others in that of a shoemaker; and the girls are to be taught to make stays; by which they will be rendered capable of earning their own maintenance, and becoming useful members of society.

From this account it appears, that there are at this moment upwards of 40 children, proper objects of this institution, to whom, for want of more liberal support, the governors cannot extend relief; and who, being unable to earn their own subsistence, are heavy burthens to their indigent parents; many of whom have large families, and are scarcely able to procure the common necessities of life.

DEAN, a town in Gloucestershire, with a market on Monday. It had its name from the forest of Dean, in which it is

seated, 11 miles W. of Gloucester, and 112 W.S.W. of London. Long. 2. 31. W. Lat. 51. 50. N.

DEAN, a forest in Gloucestershire, including that part of the county which lies between the Severn and the shires of Monmouth and Hereford. It contains four market towns and 23 parishes. It is fertile in pasture and tillage, bears very fine oaks, and has rich mines of iron and coal. It was once reckoned the chief support of the English navy; and the Spanish armada, it is said, was expressly commissioned to destroy it. It is now thinned by frequency of felling, and narrowed by increase of cultivation, though a few deer still continue to run wild in its recesses. The forest of Dean, and the vale of the same name, abound in orchards, which produce great plenty of excellent cyder.

DEBALPOUR, a town of Hindoostan Proper, capital of a district in the country of Moultan. It is situated on the great road from Delhi to Moultan, 146 miles S. of Lahore, and 190 E. by S. of Moultan. Long. 73. 50. W. Lat. 29. 20. N.

DEBEN, a river in Suffolk, which rises near Dobenham, and flows to Woodbridge, where it expands into a long narrow arm of the German Ocean, a little to the N. of Harwich.

DEBENHAM, a town in Suffolk, with a market on Friday, seated near the head of the Deben, on the side of a hill, 24 miles E. of Bury St. Edmunds, and 84 N.E. of London. Long. 1. 17. E. Lat. 52. 22. N.

DEBTOR (*Encycl.*). By the act for relieving insolvent debtors, 41 Geo. III. c. 70. gaolers are to make out alphabetical lists of prisoners, who, on March 1, 1801, or since, and at the time of making them out, were in custody for debt, stating at whose suit each prisoner is detained, which lists are to be delivered upon oath to the quarter sessions; to be kept by the clerk of the peace, and may be examined *gratis*.

Three copies of lists to be fixed up in each prison ten days before the session.

Prisoners, on March 1, 1801, for debts not exceeding 1,500l. conforming to this act, to be discharged.

Persons discharged from prison after March 1, 1801, and before the passing of this act, without their consent, entitled to the benefit of this act, on surrendering themselves at sessions.

Likewise persons imprisoned before the passing of this act for any debt which they shall have been imprisoned, at the suit of the same plaintiff, before March 1, 1801, entitled to the benefit of this act.

Justices, on petitions of the prisoners, delivering schedules of their estates, may issue warrants for bringing them to the quarter session.

Two justices may, upon petition from debtors, assemble their courts as soon as may be after passing this act, for the purposes thereof, and appoint days for the discharge of prisoners.

Schedules to remain with the clerk of the peace for inspection.

Debtors intending to apply for their discharge, to give previous notice thrice in the London or Dublin gazette; and if they be in custody in any gaol out of London, or in any gaol out of Dublin, then also in some newspaper which shall be published near them; and for each notice the prisoner shall pay the sum of 4d. and no more.

Debtors to deliver schedules to the gaoler previous to the first notice, and for neglect to be remanded to prison.

Gaoler to attest signatures to schedules, and to give copies to debtors, and also to creditors demanding them, on penalty of 20l.

Notice shall be signed by the debtor and gaoler.

Debtors applying at the session, proving notices were duly inserted, shall, in open court, upon oath, deliver in signed schedules, containing certain particulars.

Schedule and oath to be subscribed by the debtor, and to remain with the clerk of the peace for perusal of creditors.

Court, at the request of a creditor, may examine gaolers on oath; and the debtor's oath not being disproved, the court to order his discharge.

Estate and effects of discharged debtors vested in the clerk of the peace, who is to assign the same to such creditors as the court shall direct, in trust for the whole. And assignees are to get in effects, and sell them. Assignees are also to make dividend within three months, first verifying their accounts on oath. Thirty days' notice of making dividends to be given. No creditor to share till he has proved his debt. Reality of debts may be enquired into at the session. Surplus of effects to be paid the debtor.

Creditors for annuities, or money payable at any future time, to receive dividends as under a commission of bankrupt.

Powers of clerk of the peace for the county of Lancaster to extend to his deputies.

Estates of debtors, not inserted in schedules, to be vested in the clerk of the peace.

Holders of securities, without consideration given, not entitled to any benefit.

Estates to be vested in the clerk of the peace for the time being.

No suit in equity to be commenced without consent of the majority in value of creditors.

Schedules to be produced by clerks of the peace to creditors, and signed copies to be evidence.

Clerk of the peace refusing to produce schedules, &c. to forfeit 10l. with treble costs.

Assignees to compound with lords of manors for copyhold or customary estates.

The debtors right only to be affected by this act.

Act not to prevent mortgages, &c. taking place of claims of an inferior nature.

Power of leasing lands or over real or personal estate, vested in assignees.

The acting gaoler at the time of delivering the lists to take the oath.

At the session, on request of creditors, gaolers to be sworn.

At request of creditors, gaolers may be examined on oath at the sessions touching commitments.

Debtors forswearing, to be deemed guilty of perjury.

Persons discharged not liable for debts prior to March 1, 1801.

Prisoners are not to be discharged of debts subsequent to March 1, 1801.

Prisoners who, on application as insolvent debtors, have been remanded back, and since discharged without their consent, entitled to the benefit of this act.

Act may be pleaded to any action of escape.

Act may be pleaded generally by prisoners.

This act not to extend to attorneys, or servants, embezzling money; nor to persons obtaining money on false pretences. Prisoners remanded to prison under any insolvent act for fraudulently obtaining money, shall not receive any benefit under this act; nor persons charged in execution for damages recovered in any action for criminal conversation; nor persons removing effects of the value of 50l. liable to be distrained for rent; nor persons selling or assigning effects to defraud creditors.

Gaolers to permit prisoners to be spoken with, on penalty of 40l.

Gaolers making false entries, to forfeit goal.

Debtors refusing to discover the trade and abode of the person at whose suit detained, or to come to the lodge, shall be excluded the benefit of this act.

Justices may hold a session at or near the county gaol.

Prisoners in custody for fees, &c. claimed by gaolers, or other officers of the prison, shall be discharged.

Act not to extend to debtors to the crown, or offenders against revenue laws, unless the treasury certify their consent.

Determination of justices to be final, unless the prisoner get rid of the objections to his discharge.

Estates of which prisoners are seized in jail to be delivered up to creditors.

Affinees may apply for the further examination of debtors to two justices.

Justices to call before them debtors, and if they refuse to appear, may commit them.

Reward of 20l. per cent. for discovering any part of debtor's estate not comprised in schedule.

Discharge of prisoner fraudulently obtained, void.

Affinees, with consent of majority in value of creditors, may compound for debts, and submit disputes to arbitration.

Any person concealing estates of debtors, shall forfeit 100l. for every offence, and also double the value of the estate so concealed.

If assignees die, others may be chosen.

Courts, on complaint, may remove assignees.

Where mutual credit has been given, the balance to be stated.

Prisoners, for not paying monies awarded, costs, &c. entitled to the benefit of this act; and also prisoners on processes out of courts of conscience.

No persons who have taken the benefit of any insolvent act within five years, to be entitled to relief under this.

Affirmation of quakers to be taken.

This act not to extend to Scotland.

DECAPITATION, the act of beheading, or severing the head from the body; a mode of public punishment exercised in this and some other countries.

Among other singular questions lately agitated in France and Germany, the following is not the least curious: "*Whether the separated head of a person suffering on the scaffold be still, for a certain time, conscious of its sufferings?*" This question was proposed at the time the guillotine was first adopted as the instrument of public execution in France; and the writings which appeared on this apparently whimsical subject, were numerous. Professor Soemmering maintained in a particular treatise, first printed in the *Moniteur*, that the consciousness of the sufferer still continued for some time; and the professor is so far persuaded of the truth of this assertion, that in his opinion, the severed head would still emit sounds, if it were not separated from the organs of speech, as well as those of respiration.

Professor Wedekind controverted this opinion, and defended the French method of beheading as the quickest and least painful species of death, by which all consciousness is at once intercepted and annihilated: he says, that the blood-vessels of the separated head are, *ipso facto*, instantly and completely emptied of the blood, and that the organ of the mind is thus rendered totally inactive; consequently, the head cannot be conscious, either of its former or present state.

Mr. Cloßius, of Tübingen, though not fully convinced that the head, in a severed state, retains consciousness, yet considers this fact as highly probable, and on the whole, agrees in opinion with Soemmering. He dwells at considerable

length, in his treatise *On Decapitation*, upon the objections started by Wedekind, and endeavours to prove that the blood-vessels of the head are by no means so quickly and completely emptied, as the professor is disposed to think; and that even without an actual circulation of the blood, there may still remain some activity and energy in the brain. He produces in support of his hypothesis, a variety of arguments, derived partly from analogy and a comparison of the symptoms of a person beheaded with those observed in similar situations; and partly from appearances which have been noticed in individuals executed by the sword or guillotine. On account of this probability, ought not the dictates of humanity to be listened to, and instead of beheading, should not another mode of execution be devised, by which the deadly blow, and the complete annihilation of the natural structure of the brain, might take place at the same instant? Such, for instance, would be a sudden and violent convulsion of the brain, a mortal thrust on the stomach, and the like.

Another German writer on this subject, C. A. Eschenmayer, combats the opinion of Soemmering, but deals so much in confused philosophic speculations and vague hypotheses, that we shall forbear taking notice of what he advances; and proceed to give some account of a French treatise, entitled *Opinion du Citoyen Sue, sur le Supplice de la Guillotine*; a Paris, 16 pp. 8vo.—Citizen Sue, not contented with asserting that the head still continues to live, and to feel the most excruciating pain, as long as the blood remains warm in the smallest vessels, maintains that the lower part of the body also must suffer, after the head has been struck off. His arguments are not a little curious. He compares the act of beheading with that of amputation of a limb; as it has been observed that persons have felt, or at least imagined that they felt, pain in a limb, after being separated from the body by a surgical operation, as also after a dislocation of the vertebrae; that the upper parts of the body remain sensible and alive, while the lower extremities are lifeless and insensible to pain. The incongruity of this mode of reasoning from analogy is so palpable that it requires no refutation.

The author quotes various instances of preternatural births, or monsters born without a brain, and spinal marrow, on which he grounds his conjecture, that the lower extremities of the body are still sensible to pain, after a separation of the head has taken place. But, besides the obvious inconsistency in this comparison, it requires to be previously proved, that such monsters have ever had consciousness, and suffered pain, on account of the unnatural structure of their bodies. The remarkable facts witnessed by the author, during a number of executions at Paris, and related in this treatise; for instance, the singular phenomenon of smiling, or rather of blushing, in the trunkless head of Madame Cordet; the assassin of Marat, are no doubt curious, but not conclusive.

The subject of dispute is indeed such as admits of no positive decision; for the feelings of a person, after the mortal blow has been given by the sword or guillotine, cannot be ascertained, and we may pronounce it impossible for human reason to form an adequate conception of their greater or less duration. If there exist a something within the body, which after its dissolution hastens towards another destination, in which we shall not be insensible to agreeable or disagreeable sensations, this something will no doubt also possess the consciousness of its situation, whether the body has been destroyed by a putrid fever, by poison, by a concussion of the brain, or by any other mode of depriving or taking away life. It does not, indeed, here, depend upon the state of the circulation of the blood, or other relations, as connected with the body; for it must be admitted, that this something, if it continue

after and without the body, has no connection with corporeal causes, organs of the mind, or the like.

DECCAN, an extensive tract of country in Asia, which, according to the signification of its name, the South, has been supposed to include the whole regions of Hindoostan Proper. But, in its more accurate sense, it contains only the countries situate between Hindoostan Proper, the Carnatic, the Western Sea, and Orissa; namely, the provinces of Candesh, Dowlatabad, Vissapour, Golconda, and the W. part of Berar. It is bounded on the N. by the river Nerbudda, by Bengal, and by Bahar; and the river Kistna forms its separation on the S. from the peninsula of Hindoostan. All this vast country was once a province of the Mogul empire. Candesh, Vissapour, and a part of Dowlatabad, are subject to the Mahrattas; the remainder to the nizam of the Deccan.

DECCAN, the dominions of the nizam of the Deccan, comprising Golconda, the principal part of Dowlatabad, and the western part of Berar; the latter subject to a tribute of a fourth part of its net revenue to the Berar Mahrattas. His territories are bounded on the N.W. by the Poonah Mahrattas, on the N. by the Berar Mahrattas, on the E. by the Northern Circars, and on the S. by the Carnatic and Mysore. By family succession, in 1780, the nizam became possessed of the districts of Adoni and Tachore, and of the Guntoor Circar; and by the peace of 1792 he had a share of the country cessions made by Tippoo Sultan, including Kopaul, Cuddap, and Gangecolla. His dominions (without including the cessions) are supposed to be 430 miles from N.W. to S.E. by 300 wide. His capital is Hydrabad.

DECISE, an ancient town of France, in the department of Nievre, seated in an island formed by the Loire, 16 miles S.E. of Nevers. Long. 4. 31. E. Lat. 46. 50. N.

DECKENDORF, a town of Lower Bavaria, seated near the Danube, 37 miles S.E. of Ratibon. It was taken by the Swedes in 1641. Long. 12. 55. E. Lat. 48. 42. N.

DECKER (Thomas), a writer in the reign of James I. and being a contemporary with Ben Jonson, became more eminent by having a quarrel with that great poet, than he would perhaps otherwise have done from the merit of his own works. What the original occasion of their contest was, is unknown; but Jonson, who certainly could never "bear a rival near the throne," has, in his Poetaster, the Dunciad of that author, among many other poets whom he has satirized, been peculiarly severe on Decker, whom he has characterized under the name of Crispinus. This compliment Decker has amply repaid in his Satyromastix, or the Untrusting a humorous Poet, in which, under the title of young Horace, he has made Ben the hero of his piece. Although, as we before observed, Decker was but a middling poet, yet he did not want his admirers, even among the poets of his time; some of whom thought themselves not disgraced by writing in conjunction with him;—Webster having a hand in three of his plays, and Rowley and Ford joining with him in another. His Honest Whore, and the comedy of Old Fortunatus, are allowed to be solely his, which are said to contain beauties, in respect to character, plot, and language, equal to the abilities of any of those authors that he was ever assisted by; and indeed in the former, equal to any dramatic writer (Shakspeare excepted) that this island has produced.

The precise time of this author's birth and death are not recorded; yet he could not have died young, as the first play we find of his writing was published in 1600, and the latest date we meet with to any other is in 1638, except the Sun's Darling, which, Langbaine observes, was not published till after the death of its author.

DECREET, in the law of Scotland, a final decree or judgment of the lords of session, from which an appeal only lies to parliament.

DECREET-Arbitral, in Scots law, the sentence or judgment of one to whom parties voluntarily submit the determination of any question betwixt them.

DEDDINGTON, a town in Oxfordshire, with a market on Tuesday. It was anciently a corporation, and sent members to parliament in the reign of Edward III. It is 16 miles N. of Oxford, and 70 W.N.W. of London. Long. 12. 1. W. Lat. 52. 2. N.

DEE, a river of Scotland, which rises in Aberdeenshire, amid the mountains of Mar Forest, and flows through a wild country till it reaches the fertile vale of Braemar, whence it proceeds in an easterly direction to Aberdeen, below which it falls into the British Ocean.

DEE, a river of Scotland, which rises in the N.W. part of Kirkcudbrightshire, and joining the Ken, below New Galloway, falls into the Irish sea at Kirkcudbright.

DEED (*Encycl.*). Any indenture (except parish indentures), lease, or deed-poll; and any charter-party release, contract, or other obligatory instrument; or any procuration or letter of attorney; for every 15 common law sheets of 72 words each, 5 W. & M. c. 21. 6d. 9. and 10 W. III. c. 25. 6d. 12 Anne. f. 2. c. 9. 6d. 30 Geo. II. c. 19. rs. 16 Geo. III. c. 34. rs. 17 Geo. III. c. 50. rs. 6d. 23 Geo. III. c. 58. rs. 35 Geo. III. c. 30. rs. 37 Geo. III. c. 90. 3s. 41 Geo. III. c. 10. 3s. 41 Geo. III. c. 86. 2s. Total fifteen shillings.

And moreover, by 37 Geo. III. c. 111. there shall be paid upon every deed which shall be made after Aug. 1. 1797, an additional stamp duty of 10s. over and above all duties now payable on the vellum or paper whereon such deed shall be engrossed (but this is upon the first skin only), the provisions of this act being as follow:

This is not to extend to any bond or letter of attorney; nor any deed whatever, bearing date Aug. 1797.

Also it shall not extend to any indenture of apprenticeship, where a sum not exceeding 10l. shall be given; nor to any lease for not exceeding twenty-one years, the full improved annual value whereof, and rent reserved therefor, shall not be more than 10l.* nor to any lease for lives, or years determinable on lives, where the fine shall not exceed 20l. nor the rent reserved 40s.

Nor shall any deed be subject to the payment of any greater duty than the sum before mentioned, or to be stamped on more than one skin, with the additional stamp; or to be stamped with more than one such stamp.

Nor shall the duty by this act imposed be liable to the regulations respecting the stamping of parchment and paper, according to the number of common law sheets engrossed thereon.

Upon payment, within 60 days, after the date of the deed, of the duty hereby imposed, the stamp-officers may stamp any

* But by 39 and 40 Geo. III. c. 42. the above duties shall extend to every deed which by law may form, or is intended to form, a part of any conveyance of lands or tenements, whereby twenty-one years, whatever may be the value thereof; and stamped, may be taken to the office, at any time within twelve months after July 9, 1800, to be stamped upon payment of duty.

vellum, parchment, or paper, on which any deed shall have been engrossed, or on which any deed shall be intended to be engrossed, with the additional stamp.

And if the duty shall not be paid within sixty days, then it shall be lawful to lend the deed to the head office, and on payment of the duty; and the further sum of 10*l.* by way of penalty, the same may be stamped.

But grants, conveyances, and assurances under the seal of the duchy of Lancaster, according to 19 Geo. 3. c. 45, where the consideration does not exceed 10*l.* are exempted by that act, and 39 and 40 Geo. 3. c. 72, from all duty.

Note, the number of stamps required to be used on deeds are one for every fifteen common law sheets (of 72 words each) contained in the deed, or in any schedule or instrument annexed thereto, or any indorsement thereon.

DEERHURST, a village in Gloucestershire, three miles S. of Tewkesbury, subject, by its low situation, to frequent inundations from the Severn. Here was a palace built, and afterwards converted to a monastery in 715, which the Danes destroyed; but it was rebuilt and made an alien priory, under the patronage of the abbot of Tewkesbury. Its being rebuilt in the reign of Edward the Confessor, and its consecration by the then bishop of Worcester, is denoted by a Latin inscription on a stone, which, in 1675, was dug up in an orchard.

DEFECATE (*Encegel*). The various ways in which defecation, or CLARIFICATION as it is otherwise called, may be performed, are very fully set forth in the following observations of Citizen Parmentier.

"The term *defecation* or *clarification* is generally applied in pharmacy to an operation, by means of which liquids are freed from the foreign substances that impair their transparency.

"This operation, simple as it may appear to be, nevertheless merits particular attention; especially when we consider the advantages which are obtained from it in the chemical and pharmaceutical arts. I therefore thought it might be useful to communicate some general observations on clarification.

"It is not my intention, in this place, to discuss the different methods employed for the process of clarification, nor to enumerate in detail the respective effects which they produce upon the different substances to which they are applied; but I shall content myself with pointing out the principal phenomena that are observed in operations of this kind.

"The end propoed, when we wish to clarify a fluid, is to free it from substances which, without being dissolved, remain suspended in it, and impair its transparency and limpidity; but these substances are separated sometimes by subsiding or filtration; sometimes by the action of the air, of heat, of light, of motion, and of fermentation; sometimes finally, by the aid of agents, which, in uniting the particles dispersed in the liquid which we wish to clarify, often change their nature, and no longer permit them to remain in the state in which they were before. We shall commence an enquiry with considering spontaneous clarification. This never takes place, unless when the particles, that are to be separated, have a specific gravity decidedly inferior or superior to that of the fluid in which they are suspended; they can then unite either at the lower part of the fluid or at its surface, and there form a mass which may very easily be removed, if the separation has been complete; the fluid then possesses all the transparency that can be desired, and which the most accurate filtration cannot augment.

"This mode of clarification is sometimes subject to several inconveniences, the chief of which are, that it requires a considerable length of time to effectuate it, and that, during this interval, it contributes to favour the formation of new pro-

ducts, which, changing the composition of the fluid that was to be clarified, do not leave it the same as it was previous to its clarification, independent of the substances that impaired its transparency. We find a very striking example of what happens in this case, when we consider the circumstances with which the spontaneous clarification of the juices of plants or fruits is attended. These juices, when fresh expressed, are always turbid; they nevertheless become clear by imperceptible degrees; but then their nature is no longer altogether the same as it was before; for they contain products which would not have been found in them if they had been clarified immediately after having been expressed. Hence it also proceeds, that the juices of the lemon, the gooseberry, the Seville orange, &c. when examined before or after their spontaneous clarification, are so widely different with respect to their taste, smell, colour, and economical properties.

"In general, we may establish it as a constant rule, that all the liquids susceptible of fermentation are those in which spontaneous fermentation produces the effects of which we have just been treating; whilst these effects do not take place in those which are little or not at all susceptible of fermentation, and the transparency of which is impaired merely by particles which are incapable of exerting any operation upon the constituent parts of these liquids.

"Thus, for example, water, alcohol, ether, oil, &c. when deprived of their perfect transparency, may easily acquire it again by spontaneous clarification, without the smallest change taking place in the composition of these fluids; for, if we examine them after they have been clarified, we shall find them similar to others that have not been subjected to the process of clarification.

"The second process for clarifying fluids consists in filtering them; but this operation can never be performed without the aid of intermediate substances, the very minute pores of which suffer only the fluid to pass through them, but intercept the passage of all the particles that were merely suspended in it.

"An infinite variety of substances are used as instruments of filtration: paper, woollen, linen and cotton cloth, carded cotton, sponge, sand, earths, pounded glass, charcoal, porous stones, &c. all these substances may be usefully employed in this operation; but their nature and purity ought to be examined, especially when we have to filter saline substances.

"It is the business of the chemical and pharmaceutical operator to choose, amongst the different kinds of filters, that which, whilst it is the best adapted for effecting the clarification of the fluids, is at the same time incapable of producing any change in its constituent principles. Now this choice is to be determined by the knowledge which we have of the nature of the fluid, and of the species of filter which it may be proper to employ.

"If it be an aqueous, vinous, spirituous, or oily liquid, paper may be employed without any inconvenience, provided it be of a good quality. This last condition is to be strictly attended to, otherwise the product of the filtration will often be defective.

"Paper is known to be a kind of web, formed of vegetable fibres, that have undergone various preparations. The particles of these fibres are intermingled in such a manner, as to leave between them pores, the tenuity of which is always proportionate to the state in which the paste was at the moment when it was converted into paper. If this tenuity be considerable, the pores are soon obstructed by the sediment which is deposited by the liquid we wish to filter; the filtration then ceases to take place. When, on the contrary, the pores are very wide, the filtration is effected rapidly, but always in an imperfect manner; for, whilst the liquid passes through the

filter, it carries with it the more minute particles that were suspended in it, and only the grosser ones remain upon the surface of the filter.

"The great art, therefore, is to choose paper, the pores of which have precisely the size requisite for admitting only the fluid that is to be filtered, but none of the particles that impair its transparency.

"We meet with two sorts of paper in commerce, which nearly produce this effect, and, though they are not always so perfect as might be desired, they are those which have hitherto been preferred. The one, which is semi-white, bears the peculiar appellation of *papier Joseph*; the other is a kind of grey paper, but not so coarse as that which is used for wrapping different cheap articles of merchandize: both of them are manufactured without size.

"The whiteness of the *papier Joseph* shews that it has been manufactured with a purer paste than that which has served for the manufacture of the grey paper; the liquids that have been filtered through it are always transparent; but it has the inconvenience of tearing very readily, and its pores are soon obstructed, so that the filtration goes on but slowly.

"The grey paper can serve for a greater length of time to furnish all clear liquids; but, as the paste with which it has been manufactured has not been so well purified as that of the *papier Joseph*, it always communicates to the liquids a disagreeable taste, which proceeds from the solution of the foreign substances contained in this paper. This is also the reason why certain fluids, such as whey, wine, spirituous compounds, and other potable liquids, that have been filtered through grey paper, have always a smell and taste, which are easily recognised by experienced organs. Hence it proceeds, that, amongst these liquids, some are more susceptible of spoiling than when they have been filtered through the *papier Joseph*.

"The nature of the paper demands our attention most of all when we have to filter saline solutions. If we have employed grey paper, it often happens, that a part of its substance is dissolved by their action, so that the filtered liquid is not so pure as we should wish to have it. This inconvenience, which is not equally perceptible when we use the *papier Joseph* in preference, may be still more diminished by the precaution of not employing filters till after they have previously been washed several times with boiling water. A careful preparer of medicines ought always to keep a store of filters washed in this manner, in order that he may be able to use them as occasion requires. *Josse*, a man of distinguished merit in pharmacy, to whom we are indebted for many important observations, has found their advantages in a variety of circumstances. He has remarked, amongst others, that whey, clarified and filtered through *papier rasin*, could be kept in good preservation for more than a fortnight, when filtered every day; which was not the case with the ordinary grey paper, though previously washed.

"By a diametrically opposite effect, different vegetable juices have been kept transparent and in good preservation, without passing into the acid state, by filtering them every day through grey paper: it has only been observed, that their colour became more intense during the first days, and that they afterwards gradually became colourless.

"But if the nature of filters demands our consideration, their form and position are no less deserving of our attention. In order that a filter of paper may produce its full effect, it is necessary that it should not adhere at all points to the substance which supports it; otherwise the filtration would soon be interrupted. This inconvenience is avoided by folding it different ways; but as these folds soon become deranged, some prefer placing straw, or glass tubes, between the filter and the

support. I confess that this latter expedient has not always succeeded with me, and that I have mostly remarked, that the folds made in the filters produced as much effect as the straw and tubes. In Germany, they use, for this purpose, funnels grooved on their inner surface.

"A period arrives, at which, whatever precautions may have been taken, the filtration grows languid, and at length is entirely suspended; this circumstance takes place, when the pores of the paper are obstructed in such a manner as no longer to afford a passage to the fluid. Sometimes we may prolong the filtration, by giving a slight circular motion to the funnel; but this effect is of short duration, and nothing more is left for us to do than to change the filter. It appears that no means have hitherto been discovered for remedying this inconvenience, to which all kinds of filters are liable.

"It has been already observed, that filters of woollen cloth, linen, and carded cotton, are also in use; those of woollen cloth were formerly very much in use; they are even the first that were employed; they were made in the form of a cone, the base of which was kept open by means of a ring, which was afterwards fastened to a frame with strings. This species of filter was termed the bag of Hippocrates; it is still used for filtering spirituous compounds. As it may be made very capacious, it is able to receive a large quantity of liquid at once, but it passes through very slowly; often even it is necessary to wait for a long time before the liquid passes through clear, on which account one ought never to have recourse to it, unless when others cannot be procured.

"However, when syrups are to be filtered, woollen cloth is used; but then, instead of giving it the form of a bag, the cloth is merely fixed upon a square frame, to which it is attached at its four corners by means of pegs. The boiling syrup is poured upon the middle of it, which almost always bags a little, and often at the end of a few minutes the liquor passes through very clear.

"This filter thus disposed may still be employed for filtering many other liquids, especially such as are of a watery nature, and do not contain pot-ash or soda in solution; for, were they never so slightly alkaline, the filter would soon be destroyed, and the filtered liquid would not possess the requisite qualities.

"Linen and paper are generally employed for filtering the alkaline liquids, and they answer the purpose very well, especially when these liquids are not too much concentrated.

"As to carded cotton, it is reserved for filtering such fluids as are considered precious, whether on account of the difficulty of procuring them, or of the small quantity with which one is provided.

"In order to form this filter, carded cotton is introduced into the tube of a glass funnel, and stuffed in with a rod of glass, so that it forms a kind of cork slightly compressed: the fluid which we wish to filter is then poured into the funnel. The filtration takes place drop by drop, and after the first have been separated, those which follow are always clear. The essential oils may very conveniently be filtered by this means, without danger of waste, which would inevitably take place if any of the other filters, of which I have already spoken, were used.

"The acids, especially those that are in a concentrated state, can only be filtered through pounded glass; but we must use the precaution not to employ this substance till after we have washed it several times, at first with a large quantity of water, and afterwards with an acid, in order to deprive it of the earthy or other foreign particles that might be dissolved by the acids which we wish to filter.

"The filters of glass may very well be formed in a funnel.

The great art that is required in order that they may produce this effect, is first to fix some fragments of glass in the tube, afterwards to add other smaller ones, and thus to continue, always diminishing the size of the fragments, till we have formed a thickness of three or four fingers' breadths, the upper layer of which ought to be glass reduced to fine powder.

"This kind of filter lets the liquid pass through with sufficient facility, that in less than an hour it is possible to filtrate several kilogrammes of acid, in a funnel of glass of a moderate size.

"Sand is also very commonly used for clarifying the water employed for domestic purposes. The cisterns lined with sand are in fact real filters, the effect of which is the more certain, the more the layers of sand are disposed in such a manner, that the water which covers them is obliged successively to pass through them, and that they retain the substances which injure its transparency.

"The art of constructing cisterns lined with sand has not yet arrived at the degree of perfection to which it might be brought, and though its object may seem to be of but small importance, it nevertheless well deserves the attention of philosophers.

"For the rest, experience proves that cisterns lined with sand can be used with advantage only during a certain time; frequently it is necessary to renew the sand which they contain, or at least to wash it, in order to deprive it of the earthy and heterogeneous substances which the water deposits in it, and which, when they have accumulated to a certain degree, not only prevent the filtration, or render it incomplete, but also communicate to the liquid a taste, which is the more disagreeable the longer they have remained in it.

"Nothing is more easy, as is well known, than to deprive the water of rivers of the earth which it often carries along with it, and which impairs its transparency. All that is required, is to let it stand for some hours in an earthen vessel, but uncovered, for the action of the air is necessary in order to effect this precipitation in a speedy and complete manner.

"However, though the practice of filtering water destined to be used as drink is to be traced to the most remote antiquity, it must be confessed, that the cisterns established for this purpose do not only free them of the mud which rendered them turbid, but likewise deprive them of a superabundance of air with which they are sometimes impregnated, a superabundance which constitutes their lightness, their sharpness, &c. in a word, that superiority which the water of the Seine, for example, has over that of all known rivers. The proof that this is the case, is that by dint of repeated filtrations one may render water insipid, heavy, and unwholesome.

"Thus when one wishes to determine the specific gravity of the water of the Seine, one ought to take it from the river on a day when it is limpid, or at least let it clear itself by standing, and not choose the filtered water in preference; for if this operation renders water more clear, it at the same time produces considerable changes in it, by depriving it, as has been remarked, of the air which it contains in superabundance.

"I have known a person whose organs of taste were rendered so acute by exercise, that he could distinguish water that had been filtered through sand from such as had not, by the different impressions which that made upon them. The latter appeared to him to be more rapid and light. This undoubtedly proceeds from the absence of the air we have mentioned, and which may be still more distinctly perceived under the recipient of the pharmaceutical apparatus. Some persons, interested in supporting the opinion contrary to that which has been advanced above, have asserted that if the water were continually obliged to pass through ten feet of sand and gravel from below upwards, it would be in a condition to produce,

with the weight of the heterogeneous substances, an effect capable of contributing to purify it completely, that is to say, to deprive it of its salts: the prepossession was so great that the following reasoning was adduced in favour of this notion.

"If these filters are sufficient for depriving the water of its air, why should not this operation of filtration be equally proper for depriving it of the salts which it contains? but attention has not been paid to the circumstances that these salts, held in solution in the water, being of greater specific weight, filter themselves together with it through the smallest tubes, whilst the air, being specifically lighter than the water, and existing in it in a state different from that of the salts, separates itself easily; finally, it has also been attempted to apply filtration to the water of the sea, with a view to render it palatable; the process for this purpose has been announced to government as a new and ingenious invention; it consisted in a filtration which was effected from below upwards by the application of force.

"But the union of the saline substances with the water is not a mere mechanical state of division; they are not merely interposed between its particles, as some philosophers have maintained, but they are perfectly dissolved in the water, and possess a degree of fluidity equal to its own. These salts consequently become capable of passing through filters with the most minute pores. It is therefore only by reducing the water to the state of vapours that we can separate the saline substances which it holds in solution, and no other expedient than distillation will ever produce a satisfactory effect. But let us resume the subject of the general effects of filtration.

"Besides the filters of which we have already treated, the stones known by the appellation of filtering-stones are also employed for clarifying water. Of these there are several kinds; they are very porous, as they consist for the greater part of free-stone. They are hollowed out and filled with water. This fluid gradually insinuates itself amongst their pores, and appears on the outside in the form of clear drops, which fall into a receptacle upon which the stones are placed.

"These stones ought previously to be washed several times with water; it is even remarked, that the water which is filtered through them during the first days has a disagreeable taste, which depends upon the foreign substances this fluid has dissolved in passing through the stone; so that it is not till the water which passes through has no longer any peculiar taste that it is fit to be used for drink.

"Upon the whole, the filtering-stone, as it has been extolled, is a bad means for procuring good water. Besides, the filtration proceeds very slowly, and frequently even ceases to take place, unless we use the precaution of rubbing both the inside and outside of the stone, from time to time, with a hard brush, in order to detach the mud which the water deposits upon it. It is undoubtedly to these inconveniences that we ought to attribute the disrepute into which this kind of filtration stands at present.

"It now only remains for us to speak of the processes employed, in order to give different fluids that perfect limpidity, which they can never acquire by spontaneous clarification and by means of filters, of whatever kind they may be.

"If it be true, that the opacity observable in certain fluids is entirely owing to the interposition of molecules which are not dissolved, but merely suspended in them by the aid of a state of extreme division, it is certain also, that under other circumstances the deficiency of transparency depends entirely upon the imperfect solubility of one or more substances which these fluids contain; so that in order to give them the desired limpidity, it is absolutely necessary to have recourse to means which augment the solubility of the substances in question, or at least effect their total separation.

"Albuminous and gelatinous matter, the acids, certain salts, lime, cream, blood, alcohol, may in many cases contribute to effect the clarification of certain fluids, for which the ordinary filters would be inadequate. However, these agents are not to be used indiscriminately, and the preference which is given to the one above the other always requires to be determined according to the knowledge which we have of the composition of the liquid we wish to clarify. Accident has discovered, for example, that two handfuls of marl, reduced to a coarse powder, and thrown into the pressing tub, clarify cider.

"The effect of the albuminous and gelatinous matters is principally remarkable in the vinous liquids. It is on this account that they are employed when it is required to fine wines, that is to say, when we wish to give them that high degree of limpidity which they can rarely acquire and preserve by mere repose. In this case, nothing more is required, than to dissolve either of these two substances in a small quantity of water, and to mix this solution cold with the wine; a short time after, a kind of net-work is observed throughout the whole mixture, which soon contracting together collects all the foreign substances from the wine, and carries them with it to the bottom of the vat.

"In other instances, one is obliged to heat the liquids with which we mix the albuminous matter; and it is only at the moment of ebullition that the clarification takes place. The most of the syrups are clarified by this process, and no other has yet been discovered that produces a better effect.

"It is also observed, that albuminous matter alone is not always sufficient to clarify liquids, even though we raise them to a degree of temperature sufficient to make them boil, but that it is necessary to assist its operation by means of an acid, or a salt with a redundancy of acid. In proof of this, we may adduce what takes place in the clarification of whey.

"In fact, it is demonstrated that it is only when we add to this fluid, at the moment when it begins to boil, some acidulous tartarite of potash (*cream of tartar*), or vinegar, that the albuminous matter with which it had previously been mixed, coagulates and carries with it the caseous matter, which impaired the transparency of the serum.

"For the rest, it is easily conceived that the quantity of acid which it will be proper to add in this case, must always bear a relation to the state of the fluid, and that it would be ridiculous to pretend that the proportion can be fixed in an invariable manner.

"New cream is employed with advantage for clarifying spirituous liquors: one or two spoonfuls to the pint are sufficient to produce this effect in the space of a few hours in the cold. But as in this clarification, some caseous particles always remain suspended in the fluid, by reason of their great tenacity, it is necessary to separate them at last by filtration through a bag or through paper.

"Finally, there are some fluids, which, in order to become clear, require to be subjected to a degree of heat nearly approaching that of boiling water. These are principally such as are rendered opaque merely by substances, the solubility of which cannot become complete, unless it be facilitated by raising the temperature of their solvent above its natural rate. Many saline solutions stand in this predicament, and whoever occupies himself ever so little with chemistry, will frequently meet with such.

"Most of the fresh-expressed juices of vegetables may also be partially clarified by the operation of heat. Thus it is customary amongst apothecaries to have recourse to this means with those juices which, on account of their thickness and viscosity, are not susceptible of being filtered.

"Frequently a slight degree of heat, applied to the expressed

and filtered juices of certain vegetables, is sufficient suddenly to destroy their transparency; in this case a flaky whitish substance floats in the liquid, and collects at the bottom of the vessel. This is the substance which Rouelle, the younger, considered as the vegeto-animal matter of corn, and which I demonstrated, as far back as the year 1772, to be nothing more than a substance analogous to the white of egg; which proves that at that period we were upon the way to inscribe albumen amongst the products of the vegetable kingdom.

"An important observation, upon which I ought to insist, is, that in general it appears absolutely necessary to separate the *magma*, which forms in liquors that are clarified with albuminous matter, especially when, in order to concentrate those liquids, it is necessary to evaporate them by the aid of ebullition. Without this precaution, this *magma* would dissolve, and the liquors would become more turbid than they were previous to the clarification. It proceeds from a similar cause, that broth, from which the scum has not been taken off, always retains a disagreeable appearance, and will not keep.

"Though the employment of albuminous matter for clarifying the juices of certain vegetables be of utility, it is, however, not without its inconveniences. Amongst others, one that has been remarked is, that it changes the nature of these fluids in such a manner, as partly to destroy their medicinal properties. It is known what happens to certain pharmaceutical preparations, such as decoctions of medicines, when, in order to clarify them, recourse has been had to white of egg and heat; for then they are almost without effect, unless we take care to double the proportions of the ingredients that ought to enter into their composition. Lewis has remarked that this operation deprived the syrup of diacodium of all its powers.

"These are the observations which I thought would be useful to collect on the subject of clarification. My intention in communicating them was to shew, that such an operation, though simple in appearance, must not be performed in an indifferent manner, and that, amongst the various processes that are in common use, some do not present results equally satisfactory with those of others. The choice ought therefore always to be determined according to the nature of the substances upon which we have to operate. I confine myself to the relation of the facts; to others I leave it to give the explanations of them that may be desired."

DEFESCH (William), a German, and some time chapel-master at Antwerp, was in his time a respectable professor on the violin, and leader of the band for several seasons at Marybone-Gardens. His head was engraved as a frontispiece to some musical compositions published by him, and his name is to be found on many songs and ballads to which he set the tunes for Vauxhall and Marybone-Gardens. He died about 1751, aged 70.

DEFORCEMENT, in Scots law, the opposing or resisting of the officers of the law in the execution of their office.

DEINSE, or DEYNSE, a town of Austrian Flanders, seated on the Lis, eight miles S.W. of Ghent. Long. 3. 39. E. Lat. 50. 59. N.

DEIZABAD, a town of Persia, in Irac-Agemi, ninety miles N. of Isfahan.

DELACOUR (James), an elegant, though neglected poet, was an inhabitant of Cork, in Ireland, and much cared for his sprightly wit and moral conduct, beauties which are very rarely united. His first published poem was entitled *The Prospect of Poetry*, inscribed to Boyle earl of Orrery, and introduced by complimentary verses from several respectable writers of the day. Though rather too impetuous and fiery (a sad prediction of his future destiny), it contains some pas-

pages, surprisingly beautiful and sublime; the measure is harmonious, the design uniform, though not new, and, altogether, it is a performance of infinite merit. His description of the birth of Love is replete with tender and elegant conception. Mr. Bell, in his compilation of *Fugitive Poetry*, has very judiciously retained, indeed, we may say, revived this piece.

His *Progress of Beauty*, which is, we suppose, very scarce in this kingdom, is far superior to Lord Lansdowne's on the same subject, and with the same title. His *Epithalamium*, also, has all the delicacy and sweetness of Catullus. But, alas! all human endowments are variable, and the page of this day has often been the ideot of the next.

Poor *Delacour*, at an earlier age than his unrivalled countryman *Swift*, was a member of society no more. All his once vivid faculties were fled, and all his myrtles blasted. We assign him the myrtle, because like *Lee*, who lost his reason also, his chief talent lay in chaste amorous description. He was frequently seen in the open street, with a mob of boys around him, pouring forth extempore rhymes, chiefly satirical; not unfrequently exhibiting some bright, but evanescent, flashes of fancy amidst his wildest delirium!

Even during the long period of *Delacour's* infamy, the light of the poet was not totally extinguished: there exists a manuscript copy of his *Verbes* on the Earthquake at Lisbon, composed in some serene moment, full of lofty, but extravagant conception. And he produced about the same time some little pieces, which appeared in the *Gentleman's Magazine*, then the repository of wit and genius; and, in particular, some lines to the author of the *Seasons* (which inspired even the leaden pen of old Dennis the critic); and an humorous epitaph on a tallow-chandler, who bequeathed ten pounds to reward the best tribute to his memory.

DELEBIO, a town of Switzerland, in the Valteline, on a small river which runs into the *Adda*, five miles N.W. of *Morbegno*.

DELFINO, a town of Turkey in Europe and capital of Lower Albania, where the pacha resides. It is fifty miles E.N.E. of *Larida*.

DELFTSHAVEN, a fortified town of Holland, on the N. side of the Meuse, with a canal to *Delft*, &c. It is between *Rotterdam* and *Schiedam*, not three miles from either.

DELFTZUYL, a fortress of the United Provinces, in Groningen. It was taken by the Spaniards in 1581, and retaken by the Dutch in 1590. It is seated on the *Damster*, thirteen miles N.E. of Groningen.

DELICHI, a river of Albania, the *Acheron* of the ancient poets, who feigned it to be in hell.

DELICT, in Scots law, signifies such small offences or breaches of the peace as are punishable only by fine or short imprisonment.

DELLAMCOITA, a fortress of the country of Bootan, which commands the principal pass over the mountains. It was taken by storm in 1773, by a detachment under the command of Captain John Jones, and is 175 miles N. of *Moorshedabad*.

DELOS (*Encycl.*). Anciently this island was governed by its own kings. *Virgil* mentions one *Anius* reigning here in the time of the Trojan war. He was, according to that poet, both king and high-priest of *Apollo*, and entertained *Aeneas* with great kindness. The Persians allowed the Delians to enjoy their ancient liberties, after they had reduced the rest of the Grecian islands. In after ages, the Athenians made themselves masters of it; and held it till they were driven out by *Mithridates the Great*, who plundered the rich temple of *Apollo*, and obliged the Delians to side with him. *Mithridates* was in his turn driven out by the Romans, who granted the inhabitants many privileges, and exempted them from all

sorts of taxes. At present it is quite abandoned; the lands being covered with ruins and rubbish, in such a manner as to be quite incapable of cultivation. The inhabitants of *Mycone* hold it now, and pay but ten crowns land-tax to the grand-signior for an island which was once one of the richest in the world.—*Strabo* and *Callimachus* tell us that the island of *Delos* was watered by the river *Inäpus*: but *Pliny* calls it only a spring; and adds, that its waters swelled and abated at the same time with those of the Nile. At present there is no river in the island, but one of the noblest springs in the world; being twelve paces in diameter, and inclosed partly by rocks, and partly by a wall. Mount *Cynthus*, whence *Apollo* had the surname of *Cynthius*, is by *Strabo* placed near the city, and said to be so high, that the whole island was covered by its shadow; but our modern travellers speak of it as an hill of a very moderate height. It is but one block of granite of the ordinary sort, cut, on that side which faced the city, into regular steps, and inclosed on both sides by a wall. On the top of the mountain are still to be seen the remains of a stately building, with a mosaic pavement, many broken pillars, and other valuable monuments of antiquity. From an inscription discovered there some time ago, and which mentions a vow made to *Serapis*, *Isis*, and *Amubis*, some have conjectured, that on this hill stood a temple dedicated to these Egyptian deities, though no-where mentioned in history.—The city of *Delos*, as is manifest from the magnificent ruins still extant, took up that spacious plain reaching from one coast to the other. It was well peopled, and the richest city in the Archipelago, especially after the destruction of *Corinth*; merchants flocking thither from all parts, both in regard of the immunity they enjoyed there, and of the convenient situation of the place between Europe and Asia. *Strabo* calls it one of the most frequented empories in the world; and *Pliny* tells us, that all the commodities of Europe and Asia were sold, purchased, or exchanged there. It contained many noble and stately buildings; as, the temples of *Apollo*, *Dianna*, and *Latona*; the porticoes of *Philip* of Macedonia, and *Dionysius Eutyches*; a gymnasium; an oval basin made at an immense expence, for the representation of sea-fights; and a most magnificent theatre. The temple of *Apollo* was, according to *Plutarch*, begun by *Eryfichton* the son of *Cecrops*; but afterwards enlarged and embellished at the common charges of all the states of Greece. *Plutarch* tells us, that it was one of the most stately buildings in the universe; and speaks of an altar in it, which, in his opinion, deserved a place among the wonders of the world. It was built with the horns of various animals, so artificially adapted to one another, that they hanged together without any cement. This altar is said to have been a perfect cube; and the doubling it was a famous mathematical problem among the ancients. This went under the name of *Problema Deliacum*; and is said to have been proposed by the oracle, for the purpose of freeing the country from a plague. The dispenser was to cease when the problem was solved.—The trunk of the famous statue of *Apollo*, mentioned by *Strabo* and *Pliny*, is still an object of great admiration to travellers. It is without head, feet, arms, or legs; but from the parts that are yet remaining, it plainly appears, that the ancients did not exaggerate when they commended it as a wonder of art. It was of a gigantic size, though cut out of a single block of marble; the shoulders being six feet broad, and the thighs nine feet round. At a small distance from this statue lies, amongst confused heaps of broken columns, architraves, bases, chapters, &c. a square piece of marble 15½ feet long, ten feet nine inches broad, and two feet three inches thick; which undoubtedly served as a pedestal for this colossus. It bears, in very fair characters, this inscription in Greek, "The Naxians to *Apollo*." *Plutarch* tells us, in the life of *Nicias*, that he

caused to be set up, near the temple of Delos, an huge palm-tree of brass, which he consecrated to Apollo; and adds, that a violent form of wind threw down this tree on a colossian statue raised by the inhabitants of Naxos. Round the temple were magnificent porticoes built at the charge of various princes, as appears from inscriptions which are still very plain. The names of Philip king of Macedon, Dionysius Eutyches, Mithridates Evergetes, Mithridates Eupator, kings of Pontus, and Nicomedes king of Bithynia, are found on several pedestals.—To this temple the inhabitants of the neighbouring islands sent yearly a company of virgins to celebrate, with dancing, the festival of Apollo and his sister Diana, and to make offerings in the name of their respective cities.

DELRIO (Martin Anthony), a most learned man, was born at Antwerp of Spanish parents, in 1551. The progress he made in letters, while a very boy, is recorded with wonder. He was taught grammar in the Low-countries; and then sent to Paris to learn rhetoric and philosophy under the Jesuits. Afterwards he went to study civil law in the new university of Douay; but removing from thence to Louvain, he laid aside that pursuit, and applied himself to polite literature. This he cultivated with so much ardour and success, that he surprised the public, when he was only nineteen years of age, with some good notes upon the tragedies of Seneca. He cited in this work almost 1100 authors, with all the assistance of a man who had read them thoroughly, and weighed their sentiments with great judgment and exactness. The reputation he acquired by this first essay of his erudition was afterwards increased. He is said to have understood at least ten languages, and to have read every thing, ancient or modern, that he thought worth reading. He was admitted LL. D. at Salamanca in 1574; and was afterwards a counsellor of the parliament of Brabant, and an intendant of the army. In 1780 he became a Jesuit at Valladolid; from whence, going into the Low-countries, he taught divinity and the belles-lettres, and contracted a firm friendship with Lipsius. He taught also at Liege, at Mayence, at Gratz, and at Salamanca. He died at Louvain, in 1608, about two years after his friend Lipsius.

Besides notes upon Seneca, Claudian, and Solinus, he wrote a great number of works, the principal of which are, 1. *Dquisitiones Magice*. 2. *Commentaries upon some Books of the Old Testament*. 3. *Explications of some of the hardest and most important Texts of Scripture*. We must not confound him with John Delrio, of Bruges, dean and grand vicar of Antwerp, who died in 1624; and who was the author of *Commentaries upon the 119th Psalm*.

DELSPERG, a town of Switzerland, in the bishopric of Basle, ten miles N.W. of Soleure. Long. 7. 23. E. Lat. 47. 17. N.

DEMBEA, a considerable lake of Abyssinia, in a province of the same name, in the W. part of the empire. It is supposed to be 450 miles in circumference, and contains many islands, one of which is a place of confinement for state prisoners.

DEMER, a river which rises in the bishopric of Liege, waters Hasselt, Dieft, Sichern, Archot, and Mechlin, below which it joins the Senne, and takes the name of Rupe.

DEMERARY, a Dutch settlement in Guiana, on a river of the same name, three leagues W. of Paramaribo. It was taken by the English in 1781; but the French dispossessed them of it soon after, and by the treaty of peace in 1783, it was restored to the Dutch. It was again taken by the English in April 1796.

DEMMIN, an ancient town of Swedish Pomerania, in the duchy of Stettin, on the river Peen. Long. 13. 22. E. Lat. 53. 52. N.

DE MISSY (Cæsar), a man greatly distinguished in the learned world, though no great author in form, was born at Berlin, Jan. 2, 1703, being the son of a merchant there. He studied first at the French college at Berlin, and thence removed to the university of Francfort on the Oder. He was examined for the ministry in 1725, and after some difficulties obtained it; but the ecclesiastics there being hampered with subscriptions, to which he could not assent, he quitted the country soon after. He preached about five years in different towns of the United Provinces, from whence he was invited to London in 1731, and ordained to serve the French chapel in the Savoy. In 1762 he was named by the Bishop of London to be one of the French chaplains to the king in his chapel at St. James's. He died August 10, 1775. He seldom published any thing except occasionally, in consequence of unforeseen engagements, or at the importunity of friends. Several little poetical pieces, essays both in sacred and profane literature, epitomes of books, memoirs, dissertations, &c. by De Missy, with his initials C. D. M. or some assumed name, and frequently anonymous, appeared in different collections and periodical journals in Holland, France, and England, from 1721. He was greatly assisting to many of the learned in their several undertakings: among others who are indebted to him, were the late Professor Wetstein, in his splendid edition of the Greek Testament, and the late Dr. Jortin, in his *Life of Erasmus*. He was twice married, but left no child.

DEMONA, a fort of Piedmont, on the river Stura, ten miles S.W. of Coni. Lon. 7. 28. E. Lat. 44. 18. N.

DEMOTICA, or DYMOTEC, a town of Turkey in Europe, in Romania, where a Greek archbishop resides. It was the residence of Charles XII. for some years; and is situate near the Maritich, twelve miles S. of Adrianople.

DEMPSTER (Thomas), a very learned man, but of a singular character. He was born in Scotland, but we do not find in what year. He went over to France, for the sake of embracing the catholic religion; and taught classical learning at Paris about the beginning of the seventeenth century. Though his business was to teach school, yet he was as ready to draw his sword, and as quarrelsome, as if he had been a duellist by profession: and it is said, that there scarce passed a day but he had something or other of this kind upon his hands. This spirit and turn of temper drew him into many scrapes; and one in particular, which obliged him to quit the country. Grangier, principal of the College of Beauvais at Paris, being obliged to take a journey, appointed Dempster his substitute. Dempster caused a scholar to be whipped in full school, for challenging one of his fellows to fight a duel. The scholar, to revenge this affront, brought three gentlemen of his relations, who were of the king's life-guards, into the college. Dempster made the whole college take arms; hamstringing the three life-guard men's horses before the college gate; and put himself into such a posture of defence, that the three sparks were forced to ask for quarter. He gave them their lives; but imprisoned them, and did not release them for some days. They sought another way to revenge themselves: they caused an information to be made of the life and moral behaviour of Dempster, and got some witnesses to be heard against him. Upon this he went over to England, where he found refuge; but did not make any long stay. He went abroad again, and read lectures upon polite learning in several universities; in that of Nismes particularly, where he disputed for a professor's chair, and obtained it. He went to Bologna, and was professor there for the remainder of his life; and was then also admitted a member of the Academy della Rotte. He died there in September 1625, leaving behind him several learned works; as *Commentaries on Rofinus de Antiquitatibus Romanorum*, and upon Claudian, &c.; four

books of Epistles; several dramatic pieces, and other poems; some books of law; an Apparatus to the History of Scotland; a Martyrology of Scotland; and a List of the Scottish Writers.

DENAIN, a village of France, in the department of the North, remarkable for a victory gained over Prince Eugene, by Marshal Villars, in 1712. It is seated on the Scheldt, eight miles W. of Valenciennes.

DENDER, a river of Austrian Hainault, which waters Leuze, Ath, Lefines, Grammont, Ninove, and Aloft, and joins the Scheldt at Dendermonde.

DENDERA, a town of Egypt, on the W. side of the Nile. Near it are very magnificent ruins, supposed to be those of an ancient temple of Serapis. It is 48 miles S.S.E. of Girge, and 242 S. of Cairo. Long. 31. 40. E. Lat. 26. 10. N.

DENDRANATOMY, a term used by some for a description of the various parts of trees; as root, trunk, branch, bark, wood, pith, flower, fruit, &c. See **PLANTS, VEGETATION, &c.**

DENIA, an ancient sea-port of Spain, in Valencia, on the Mediterranean Sea, and at the foot of a mountain, 52 miles E. of Alicante. Long. 0. 36. E. Lat. 38. 44. N.

DENMARK (*Encycl.*). The laws of Denmark are so concise, that the whole body is contained in one quarto volume, written in the language of the country. Every man may plead his own cause, without employing either council or attorney: but there are a few advocates for the benefit of those who cannot or will not speak in their own defence. The proceedings are so summary, that a suit may be carried through all the courts, and finally decided, in thirteen months. There are three courts in Denmark, and an appeal lies from the inferior to the superior tribunal. The lowest of these is, in cities and towns, denominated the *Byfogeds Court*; and in the country, the *Herredsfoogds*. Causes may be appealed from this to the *Landfog*, or general head-court for the province: but the final appeal lies to the court of *High-right* in Copenhagen, where the king presides in person, assisted by the prime nobility. The judges of the two other courts are appointed by his majesty's letters patent, to sit and determine causes *durante bene placito*. These are punishable for any misdemeanours of which they may be guilty; and when convicted of having passed an unjust sentence, they are condemned to make reparation to the injured party. Their salaries are very inconsiderable, and paid out of the king's treasury, from the fines of delinquents, besides a small gratuity from the plaintiff and defendant when sentence is passed: Such is the peculiar privilege enjoyed by the city of Copenhagen, that causes appealed from the *Byfogeds* court, instead of passing through the provincial court, are tried by the burgomaster and common-council; from whence they proceed immediately to the highest court, as the last resource. Affairs relating to the revenue are determined in the rent-chamber of Denmark, which is analogous to our court of exchequer. To another tribunal, composed of some members from this rent-chamber, from the admiralty, and college of commerce, merchants appeal for redress, when their commodities are seized for non-payment of duties. All disputes relating to the sea are determined by the court of admiralty, constituted of commissioners appointed for these purposes. The chancellor may be more properly termed a secretary's office. It consists of clerks, who write and issue all the king's decrees and citations, transcribe papers, and, according to the directions they receive, make draughts of treaties and alliances with other nations. The government of Denmark is very commendable for the excellent policy it maintains. Justice is executed upon criminals with great severity; and such regulations are established as effectually prevent those outrages that are daily committed in other coun-

tries. No man presumes to wag his tongue against the government, far less to hatch schemes of treason. All the subjects are, or seem to be, attached to their sovereign by the ties of affection. Robbery on the highway, burglary, coin-ing or clipping, are crimes seldom or never heard of in Denmark. The capital crimes usually committed are theft and manslaughter. Such offenders are beheaded very dexterously with one stroke of a sword. The executioner, though infamous, is commonly rich; because, over and above the functions of his office, he is employed in other scandalous occupations, which no other person will undertake. He, by means of his understrapper, called the *pracher*, empties all the jakes, and removes from houses, stables, or streets, dead dogs, horses, &c. which no other Dane will vouchsafe to touch on any consideration whatsoever.

In Copenhagen there is a master of the police, who superintends the economy of that city. No torches are allowed to be carried through the streets of this city, because great part of the houses are of timber, and the wind is generally high. In lieu of *fixembaux*, the court and quality use large round lanterns, flamed to the end of long poles. In a word, the master of the police regulates every thing that relates to the decency, good order, quiet, and security, of the capital. The apothecaries in this kingdom are under excellent regulations: their number at Copenhagen is restricted to two; and one is allowed to every other town of importance. They are examined and appointed by the college of physicians, and confirmed by the king himself; otherwise they cannot exercise the profession. Their shops are visited three times a-year by the magistrates, accompanied with physicians, who inspect their medicines and regulate the prices. They are obliged to keep an exact account of every thing they sell, to specify the name of the person who bought it, and that of the doctor by whom it was prescribed; so that accidents are prevented, and murders by poison easily discovered.

DENNIS, or **St. DENNIS**, a famous town of the Isle of France, with a Benedictine abbey, wherein are the tombs of the kings of France, with a considerable treasure. E. Long. 2. 26. N. Lat. 48. 56.

DENYS (the Little), a Scythian, became abbot of a monastery at Rome: he was the first who computed time from the birth of Dionysius to Christ, and fixed that great event, according to the vulgar æra. He was also a learned canon-law writer, and died about the year 540.

DEPURATION. See **DEFECATION** in this SUPPLEMENT.

DERENBURG, a town of Lower Saxony, in the principality of Halberstadt, six miles W.S.W. of Halberstadt, and 17 E. of Gollar.

DEREOTE, or **DEIROUTE**, a town of Egypt, in the isle formed by the canal from Cairo to Rosetta. Here is a magnificent temple. Long. 31. 45. E. Lat. 30. 40. N.

DERHAM (William). (*Encycl.*). To our account of this excellent philosopher and divine, it may not be amiss to add a list of his works, most of them published in the *Philosophical Transactions*. 1. Part of a Letter dated Dec. 6, 1697, giving an Account of some Experiments about the Height of the Mercury in the Barometer at the Top and Bottom of the Monument in London; and also a Description of a portable Barometer. 2. A Letter dated Jan. 13, 1697-8, about a Contrivance to measure the Height of the Mercury in the Barometer, by a Circle, on one of the Weather Plates; with a Register or Diary of the Weather, observed every Day at Upminster, during the Year 1697. 3. A Letter to Dr. Sloane; with a Register of the Weather, Winds, Barometer's Height, and Quantity of Rain fallen at Upminster in Essex, during the Year 1698. 4. A Register, &c. as above, for the Year

2699. In these registers, he exhibits to view, in separate columns, every day, at the hours of eight, twelve, and nine, the weather; winds, clouds, height of the barometer, rain, &c. 5. Observations on the Death-Watch, or that Insect which makes a noise like the Beats of a Watch. 6. Observations on the Weather, Rain, Winds, &c. for 1699, 1700, 1701, 1702, compared with other Observations made at Townley in Lancashire, by Mr. Townley, and communicated to our Author. 7. An Account of some Spots observed in the Sun in June 1703. 8. Observations on the great Storm, Nov. 26, 1703. 9. The History of the Death-Watch: from which the Superstitious may learn, to the great Ease and Comfort of their Souls, that the tickling Noise of this minute Creature, which fills them with such Terrors and Forebodings, is nothing more than a wooling A&I, and commonly heard in July, or about the Beginning of August. 10. An Account of an Instrument for finding the Meridian, with a Description of the same. 11. Experiments on the Motion of Pendulums in vacuo. 12. A Prospect of the Weather, Winds, and Height of the Mercury in the Barometer, on the first Day of the Month; and of the whole Rain in every Month in 1703, and the Beginning of 1704: observed at Townley in Lancashire, by R. Townley, Esq. and at Upminster in Essex, by our Author. 13. An Account of a Glade of Light seen in the Heavens, March 20, 1704-6. 14. Tables of the Weather, &c. for 1705. 15. An Account of a pyramidal Appearance in the Heavens, seen in Essex, April 3, 1707. 16. Experiments and Observations on the Motion of Sound; in Latin. 17. On the Migration of Birds. 18. An Account of an Eclipse of the Sun, Sept. 5, 1708, as observed at Upminster: and of an Eclipse of the Moon, Sept. 18, 1708. 19. An Account of a strange Meteor, or Aurora Borealis, in Sept. or Oct. 1706. 20. An Account of a Child crying in the Womb. It was the child of one Clark, of Horn Church in Essex, who was heard to cry in his mother's womb, at times, for five weeks. 21. The History of the great Frost in 1708. 22. Account of Spots observed in the Sun by our Author, from 1705 to 1708; and from 1707 to 1711. 23. Of subterraneous Trees found at Dagenham-Breach in Essex. 24. Account of an Eclipse of the Moon, seen at Upminster, Jan. 12, 1711-12. 25. Of a Woman big with Child, and having the Small-pox, delivered of a Child having the same Distemper, Sept. 8, 1713. 26. An Account of the Rain at Upminster, for eighteen Years. 27. Tables of the barometrical Altitudes for 1708, at Zurich in Switzerland; and of the Rain of Pisa in Italy, and Zurich, and Upminster, for 1707, 1708: with Remarks on the Winds, Heat and Cold, &c. 28. Miscellanea occasioned by swallowing the Stones of Bullace and Sloes. 29. Extract from Mr. Gassaigne's and Mr. Crabtree's Letters, proving Mr. Gassaigne to have been the Inventor of the telescopic Sights of Mathematical Instruments, and not the French. 30. Observations about Wasps, and the Difference of their Sexes. 31. Observations on the Lamen Boreale, or Streaming, Oct. 8, 1725. 32. Tables of the Eclipses of Jupiter's Satellites, from 1700 to 1727; with Remarks on those Tables. 33. The Difference in Time of the Meridians of divers Places, computed from Observations on the Eclipses of Jupiter's Satellites. 34. A Letter to Sir Hans Sloane, Bart. containing a Description of some uncommon Appearances, observed in an Aurora Borealis, Oct. 13, 1728. 35. Of the Meteor called the Ignis Fatuus, from Observations made in England by our Author, and others in Italy, communicated by Sir Thomas Derham, Bart.

He published in his younger years, The Artificial Clock-Maker; or, a Treatise of Watch and Clock Work, shewing to the meanest Capacities the Art of calculating Numbers to all Sorts of Movements; the Way to alter Clock-Work; to

make Chimes, and set them to musical Notes; and to calculate and correct the Motion of Pendulums. Also, Numbers for divers Movements; with the ancient and modern History of Clock-Work; and many Instruments, Tables, and other Matters, never before published in any other Book. The fourth edition of this book, with large emendations, was published in 1734, 12mo. In 1711 and 1712 he preached sixteen sermons at Boyle's Lectures; which, having put into a new form, he published in 1713, under this title, Physico-Theology; or, a Demonstration of the Being and Attributes of God from his Works of Creation: with large Notes, and many curious Observations, 8vo. And, in pursuance of the same design, he published, in 1714, Astro-Theology; or, a Demonstration of the Being and Attributes of God from a Survey of the Heavens. Illustrated with copper-plates, 8vo. In 1716 he was made a canon of Windsor, being at that time chaplain to the Prince of Wales; and, in 1730, received the degree of D.D. from the university of Oxford, on account of his learning, and the services he had done to religion by his culture of natural knowledge. When Eleazar Albin published his Natural History of Birds, and English Insects, in 4 vols. 4to, with many beautiful cuts, it was accompanied with very curious notes and observations by our learned author. He also revised the Miscellanea Curiosa, published in 3 vols. 8vo. 1726. The last thing he published of his own composition was, Christo-Theology; or, a Demonstration of the Divine Authority of the Christian Religion, being the Substance of a Sermon preached at Bath, Nov. 2, 1729, and published at the earnest Request of the Auditory, 1730, 8vo. But, besides his own, he published some pieces of Mr. Ray, and gave new editions of others, with great additions from the author's own MSS. To him the world is likewise indebted for the publication of the Philosophical Experiments and Observations of the late eminent Dr. Robert Hooke, and other eminent Virtuoses in his Time, 1726, 8vo, with copper cuts. He communicated also to the Royal Society several pieces, which he received from his learned correspondents.

DERNE, a town of Barbary, capital of a district in Tripoli, near the coast, and the residence of a sangiac. Long. 22. 45. E. Lat. 32. 55. N.

DERRICK (Samuel), a native of Ireland, was born in 1724. Being intended for trade, he was some time placed with a linen-draper in Dublin, but disliking his business, he quitted it and his country about 1751, and commenced author in London. Soon after he arrived at the metropolis, he indulged an inclination which he had imbibed for the stage, and appeared in the character of Gloucester, in *James Shore*; but with little success, that he never repeated the experiment. After this attempt he subsisted chiefly by his writings, but being of an expensive disposition, running into the follies and excesses of gallantry and gaming, he lived almost all his time the slave of dependence, or the sport of chance. His acquaintance with people of fashion, on Beau Nash's death, procured him at length a more permanent subsistence. He was chosen to succeed that gentleman in his offices of master of the ceremonies at Bath and Tunbridge. By the profits of these he might have been enabled to place himself with economy in a less precarious state; but his want of conduct continued after he was in the possession of a considerable income, by which means he was at the time of his death, March 7, 1760, as necessitous as he had been at any period of his life. He translated one piece from the French of the King of Prussia, called *Sylla*, a dramatic entertainment, 1753, 8vo.

DERWENT, a river of Derbyshire, which rises in the high Peak, flows S. through the middle of the county, and,

passing Derby, empties itself into the Trent, on the borders of Leicestershire.

DERWENT, a river of Yorkshire, which rises in the N. riding, and running S. falls into the Ouse, below York.

DERWENT, a river of Durham, which forms, for some space, the boundary between that county and Northumberland, and falls into the Tyne, above Newcastle.

DERWENT, a river of Cumberland, which, flowing through the lakes of Derwent-water and Bassenthwaite-water, to Cockermouth, enters the Irish Sea, near Workington.

DERWENT-WATER, a lake of Cumberland, in the vale of Kestwick. It is three miles in length, and a mile and a half wide. Five islands rise out of this lake, which add greatly to the beauty of the appearance. On one of them is an elegant modern-built house.

DES BARREAUX (James de Vallec, Lord), a French nobleman, and born at Paris in 1602, was, like the English Lord Rochester, a great wit, a great libertine, and a great penitent. He made a vast progress in his studies under the Jesuits, who, perceiving he had a genius capable of any thing, endeavoured to get him into their society; but neither he nor his family would ever listen to the proposal. He did not love them, and used to rail at them in an agreeable manner. He was intimate with Theophile, who was advocate-general, and afterwards president in the parliament of Paris; and, being very handsome in his youth, it is said that Theophile was in love with him, and sometimes even jealous of him. Some pretend, that he abused him; but Des Barreaux's friends have assured us, that he always abhorred that unnatural vice. He was very young when his father procured him the place of a councillor in the parliament of Paris. His wit was admired there, but he would never report a cause; for he used to say, that it was a sordid occupation, and unworthy of a man of parts, to read wrangling papers with attention, and to endeavour to understand them. He lost that place from the following cause:—Cardinal Richelieu falling in love with the celebrated beauty Marion de Lorme, whose affections were entirely placed on our Des Barreaux, proposed to him by a third hand, that if he would resign his mistress, he should have whatever he should desire. Des Barreaux answered the proposal no otherwise than in a jesting way; feigning all along to believe the cardinal incapable of so much weakness. This enraged the minister so highly, that he persecuted our councillor as long as he lived, and forced him not only to quit his place, but to leave the kingdom.

As Des Barreaux loved his liberty and his pleasures extremely, he did not find himself unhappy in having quitted the long robe. He made a great number of Latin and French verses, and some very pretty songs: and never pursued any thing but good cheer and diversions. He was vastly entertaining in company, and greatly sought after by all men of wit and taste. He had his particular friends in the several provinces of France, whom he frequently visited; for he took a pleasure in shifting his quarters, according to the seasons of the year. In winter, he went to seek the sun on the coasts of Provence. He passed three of the worst months in the year at Marseilles. The house which he called his favourite was that of the Count de Clermont de Lodeve, in Languedoc; where, he used to say, good cheer and liberty were on their throne. Sometimes he went to Balzac on the banks of the Charante; but his chief residence was at Chenailles, on the Loire. His general view in these ramblings was to search out the best fruits and the best wines in the climates; however, it must be observed, in justice to him, that the pleasures of the mind, as well as those of the body, were sometimes the occasion of his journeys; as, when he went into Holland, on

purpose to see Des Cartes, and to improve by the instructions of that great genius.

His friends do not deny that he was a great libertine; but pretend, that Fame, according to custom, has laid more of him than is true, and that, in the latter part of his life, he was convinced of the reality of religion. They say, that he did not disapprove the truths of Christianity, and wished to be fully convinced of them; but he thought nothing was so difficult to a man of wit as to believe. He was born a Catholic, but had not the least faith either in the worship or doctrines of the Romish religion; and he used to say, that if the Scriptures are the rule of our actions and of our belief, there was no better religion than the Protestant. However all this might be, it is certain that, four or five years before his death, he entirely forsook his vicious courses: he paid his debts, and, having never been married, gave up the remainder of his estate to his sisters; reserving to himself for life an annuity of 4000 livres. He then retired to Chalon, on the Soane, which he said was the best and purest air in France; hired a small house; and was visited by the better sort of people, particularly by the bishop, who afterwards spoke well of him. He died in that city, like a good Christian, in 1647, having made a devout sonnet two or three years before his death, which was greatly esteemed.

DESEADA, or CAEE DESIRE, the southern point of the straits of Magellan, in S. America, at the entrance of the S. Sea. Long. 74. 18. W. Lat. 53. 4. N.

DES MAIZEAUX (Peter), secretary of the Royal Society of London, was the son of a French Protestant minister, and born at Auvergne in 1666. He retired early, probably as a refugee, into England; and died there in 1745. He had intimate connections with St. Evremont and Bayle. He gave a very handsome edition of the works of the former, in 3 vols. 4to. with the life of the author prefixed: and he drew up the life of the latter, which was printed before the edition of his Dictionary, in 1730, and separately at the Hague, 1732, 2 vols. 12mo. He published also, in the same year, the Miscellaneous Works of Bayle, in 4 vols. folio. He was the editor of other things; and whatever he published he accompanied with remarks, full of literary anecdotes. He was very exact and curious in his accounts; but somewhat prolix and tedious.

DESTOUCHES (André, Cardinal), a French musician, was born at Paris in 1672. He accompanied Father Tachard to Siam, with a resolution of entering into the society of Jesuits upon his return; but he changed his purpose, and became a soldier. It was in this line of life that he discovered his talents for music; and he quitted soldiery, that he might devote himself entirely to it. He soon gained a vast reputation by his opera of *Lise*, which the king relished so highly, as to present the composer with 200 louis-d'ors; graciously adding, that no music since Lulli had pleased him so much as his. What was very singular is, that Destouches, when he made this charming piece, knew nothing of composition; but, instead of art, he had genius, and (what is usually the concomitant of genius) a very strong passion for his object. After producing the *Lise*, he made himself master of rules; but it is said, that they damped his genius, and that none of his compositions afterwards equalled the *Lise*. He died in 1749, superintendent of the royal band, and inspector-general of the royal academy of music, with a pension of 4000 livres.

DESTOUCHES (Philip Nericaut), a French dramatic writer, was born at Tours in 1680, and educated at Paris. His first destination was to the army; but he quitted this service, to attach himself to the Marquis de Puyfieux, ambassador of France with the Helvetic body. It was in Switzerland that his talent for theatrical productions first displayed itself; and

his *Curieux Impertinent* was exhibited there with applause. His dramatic productions made him known to the regent, who sent him to London in 1717, to assist, in his political capacity, at the negotiations then on foot. He spent seven years thus in London, married a wife, and returned to his country; where the dramatist and negotiator were well received. The regent had a just sense of his services, and promised him great things; but dying soon after, left Desfouches the meagre comfort of reflecting, how well he should have been provided for if the regent had lived. Having lost his patron, he retired to Fortlécq, near Melun, as the most proper situation to make him forget the caprices of fortune. He purchased the place; and, cultivating agriculture, philosophy, and the muses, abode there as long as he lived. Cardinal Fleury would fain have drawn him out of it, and sent him ambassador to Petersburg; but Desfouches would not stir: he chose rather to attend his lands and his woods, and to correct with his pen the manners of his own countrymen, than to go and converse with the Boyards of Russia. He died in 1754, leaving a daughter and a son: the latter, by order of Lewis XV. published at the Louvre an edition of his father's works, in 4 vols. quarto. Desfouches had not the gaiety of Regnard, nor the strong warm colouring of Moliere; but he is always polite, tender, and natural.

DETHMOLD, a town of Westphalia, on the river Wehara, 15 miles N. of Paderborn. Long. 8. 55. E. Lat. 52. 0. N.

DETROIT, a town of the United States, on the W. side of the strait, or river, that forms the communication between the lakes St. Clair and Erie. Long. 83. 2. W. Lat. 42. 22. N.

DEVA, a sea-port of Spain, in Guipuscoa, on the bay of Biscay, 15 miles S.E. of Bilbao. Long. 2. 40. W. Lat. 43. 24. N.

DEVENTO, a town of Bulgaria, with a Greek archbishop's see, seated on the Paniza, 65 miles N.E. of Adrianople. Long. 37. 33. E. Lat. 42. 33. N.

DEVETTO, or **ZAGORIA**, a town of Turkey in Europe, in Bulgaria, the see of a Greek archbishop; situate near the Black Sea, 58 miles N.E. of Adrianople, and 106 N.N.W. of Constantinople. Long. 27. 22. E. Lat. 42. 25. N.

DEVIZES, a borough in Wilts, with a market on Thursday, and a manufacture of ferges and other woollen stuffs. It sends two members to Parliament, and is seated on an eminence, 24 miles N.W. of Salisbury, and 89 W. of London. Long. 2. 2. W. Lat. 51. 20. N.

DEVON, a river of Perthshire, over which, in the beautiful vale of Glendevon, is a great curiosity, called the Rumbling Bridge. It is similar to that over the Braan, and consists of one arch, thrown over a horrible chasm, worn by the river, about eighty feet deep, and very narrow. In other places, the river has forced its way, in a surprising manner, through the rocks. At the Caldron-lin, it has worn away the softer parts of the stone, and formed immense pits, into which the water falls with a tremendous noise. Below this, the whole river is precipitated in one sheet, from a height of forty feet.

DEUX PONTS, a town of Germany, in the palatinate of the Rhine, capital of a duchy of the same name, seated on the Erbach, 49 miles N. by W. of Strasburg, and 50 S.W. of Mentz. Long. 7. 26. E. Lat. 49. 10. N.

DIACOUSTICS. See **ACOUSTICS** in this SUPPLEMENT.

DIANTHUS (*Encyel.*). Though carnations grow freely in almost any garden earth, and in it produce beautiful flowers, yet they are generally superior in that of a light loamy nature: and of this kind of soil the florists generally prepare a kind of compost in the following manner, especially for those fine varieties which they keep in pots. A quantity of loamy earth must be provided, of a light sandy temperature,

from an upland or dry pasture-field or common, taking the top spit turf and all, which must be laid in a heap for a year, and turned over frequently. It must then be mixed with about one third of rotten dung of old hot-beds, or rotten neat-dung, and a little sea-sand, forming the whole into a heap again, to lie three, four, or six months, at which time it will be excellent for use; and if one parcel or heap was mixed with one of these kinds of dungs, and another parcel with the other, it will make a change, and may be found very beneficial in promoting the size of the flowers. This compost, or any other made use of for the purpose, should not be sifted, but only well broken with the spade and hands. When great quantities of carnations are required, either to furnish large grounds, or for market, or when it is intended to raise new varieties, it is easily effected by sowing some seed annually in spring, in common earth, from which the plants will rise abundantly. Several good varieties may also be expected from the plants of each sowing; and possibly not one exactly like those from which the seed was sowed. The single flowers are always more numerous than the double ones; but it is from the latter only that we are to select our varieties. The season for sowing the seed, is any time from the 20th of March to the 15th of April. The plants generally come up in a month after sowing: they must be occasionally weeded and watered till July, when they will be fit for transplanting into the nursery beds. These beds must be made about three feet wide, in an open situation; and taking advantage of moist weather, prick the plants therein four inches asunder, and finish with a gentle watering, which repeat occasionally till the plants have taken good root. Here they must remain till September, when they will be so well advanced in growth as to require more room; and should then have their final transplantation into other three feet wide beds of good earth, in rows nine inches asunder, where they are to be placed in the order of quincunx. Here they are to remain all winter, until they flower, and have obtained an increase of the approved varieties of doubles by layers; and until this period, all the culture they require is, that if the winter should prove very severe, an occasional shelter of mats will be of advantage. In spring, the ground must be loosened with a hoe; they must be kept clear from weeds; and when the flower-stalks advance, they are to be tied up to sticks, especially all those that promise by their large flower-pods to be doubles.

The only certain method of propagating the double varieties is by layers. The proper parts for layers are those leafy shoots arising near the crown of the root, which, when about five, six, or eight inches long, are of a proper degree of growth for layers. The general season for this work is June, July, and the beginning of August, as then the shoots will be arrived at a proper growth for that operation; and the sooner it is done after the shoots are ready, the better, that they may have sufficient time to acquire strength before winter: those laid in June and July will be fit to take off in August and September, so will form fine plants in the month of October. The method of performing the work is as follows:—First provide a quantity of small hooked sticks for pegs. They must be three or four inches long, and their use is to peg the layers down to the ground. Get ready also in a barrow a quantity of light, rich mold, to raise the earth, if necessary, round each plant, and provide also a sharp penknife. The work is begun by stripping off all the leaves from the body of the shoots, and shortening those at top an inch or two evenly. Then choosing a strong joint on the middle of the shoot or thereabouts, and on the back or under side thereof, cut with the penknife the joint half-way through,

directing the knife upward so as to slit the joint up the middle, almost to the next joint above, by which you form a kind of tongue on the back of the shoot; observing that the swelling skinny part of the joint remaining at the bottom of the tongue must be trimmed off, that nothing may obstruct the issuing of the fibres; for the layers always form their roots at that part. This done, loosen the earth about the plant; and, if necessary, add some fresh mold, to raise it for the more ready reception of the layers; then with your finger make a hollow or drill in the earth to receive the layer; which, bend horizontally into the opening, raising the top upright, so as to keep the gash or slit part of the layer open; and, with one of the hooked sticks, peg down the body of the layer, to secure it in its proper place and position, still preserving the top erect, and the slit open, and draw the earth over it an inch or two, bringing it close about the erect part of the shoot; and when all the shoots of each plant are thus laid, give directly some water to settle the earth close, and the work is finished. In dry weather the waterings must be often repeated, and in five or six weeks the layers will have formed good roots. They must then be separated with a knife from the old plant, gently raised out of the earth with a point of a knife or trowel in order to preserve the fibrous roots of the layers as entire as possible; and when thus taken up, cut off the naked sticky part at bottom close to the root, and trim the tops of the leaves a little. They are then ready for planting either into beds or pots. In November the fine varieties in pots should be moved to a sunny, sheltered, situation for the winter; and if placed in a frame, to have occasional protection from hard frost, it will be of much advantage. In the latter end of February, or some time in March, the layers in the small pots, or such as are in beds, should be transplanted with balls into the large pots, where they are to remain for flower. To have as large flowers as possible, curious florists clear off all side-shoots from the flower-stem, suffering only the main or top buds to remain for flowering. When the flowers begin to open, attendance should be given to assist the fine varieties, to promote their regular expansion, particularly the largest kinds called *butchers*, whose flowers are sometimes three or four inches diameter. Unless these are assisted by art, they are apt to burst open on one side, in which case the flower will become very irregular: therefore, attending every day at that period, observe, as soon as the calix begins to break, to cut it a little open, at two other places in the indenting at top with narrow-pointed scissars, and hereby the more regular expansion of the petals will be promoted; observing, if one side of any flower comes out faster than another, to turn the pot about, that the other side of the flower may be next the sun, which will also greatly promote its regular expansion. When any fine flower is to be blown as large as possible, florists place spreading paper collars round the bottom of the flowers, on which they may spread their petals to the utmost expansion. These collars are made of stiff, white paper, cut circular, about three or four inches over, having a hole in the middle to receive the bottom of the flower, and one side cut open to admit it. This is to be placed round the bottom of the petals in the inside of the calix, the leaves of which are made to spread flat for its support: the petals must then be drawn out and spread upon the collar to their full width and extent; the longest ones undermost, and the next longest upon these; and so on; observing that the collar must nowhere appear wider than the flower; and thus a carnation may be rendered very large and handsome. These directions will answer equally well for the propagation of the pinks and sweet-williams, though neither of these require such nicety in their culture as the carnations.

DIBBLING (*Encycl.*). In the reports of the Society for bettering the Condition of the Poor, is the following extract from an account of the superior advantages of dibbling wheat, or setting it by hand, communicated by the Rev. Dr. Glafie.

"In the year 1759," "says the doctor," "I prevailed with Mr. Joseph Morland, one of the best farmers in my neighbourhood, to try, on a small scale, the experiment of setting wheat by hand, instead of sowing it. In this mode of agriculture, not more than one bushel an acre is required; whereas, in sowing, more than two bushels must be used. He tried his experiment upon an acre or two; and, the season being favourable, the produce was such as he had never before experienced. It was more than 40 bushels on an acre; being above a fourth beyond the average crop of that year. The straw was remarkably strong; and the wheat, the finest sample, and of the best quality, in the market. The persons employed in setting the wheat, were some women, of whose diligence and handiness in setting beans, he had the most experience. He found that five of these women would set an acre of wheat in a day. The soil he used was a strong loam, not without a mixture of gravel in some parts of it; and it was in good condition.—The next year he planted four or five acres with similar success; and he has since continued the practice, though on a small scale; his farm consisting of grass land, with a disproportionate quantity of arable. This year he has planted eight acres; and his example has now produced its effect on most of his neighbours; one of whom has, this year, set by hand 30 acres of wheat, and another as much as 40 acres.—Mr. Morland calculates his average produce from set wheat, for 10 years back (the last harvest excepted) to have been 32 bushels, or four quarters the acre; and that without any extra manure or dressing, beyond what a good practical farmer would generally apply; whereas in that country, where the rent of land is about 20s. per acre, no extraordinary manure being used in either case, the average produce of sown wheat does not exceed 24 bushels an acre. There is no other difference between the two modes of planting, except that, in the set wheat, the farmer may, if he chooses, keep his land perfectly clean, by using a small hoe; and may also earth up his wheat, if he wishes to do it; and that his straw is heavier and better, and of much more value, and the ears much longer, than of sown wheat. The account current between the two modes of planting 40 acres of wheat, stands thus; not to mention the increased value of straw, and the saving of expense in sowing.

Saving of seed on 40 acres, one bushel an acre,			
at 18s. per bushel	-	-	£.36 0 0
Deduct expence of setting ditto at 5s. per acre	-	-	10 0 0
			26 0 0
Add increased produce, being eight bushels			
per acre, at 18s. per bushel, on 40 acres	-	-	288 0 0
			£.314 0 0

"OBSERVATIONS.—Of setting wheat by hand the apparent, and ordinary, advantages are these:

"1st. The original saving of expence, and of seed; being upon 40 acres, at the present price of wheat, a clear advantage of 26l.—This is a considerable object, in time of scarcity; for, supposing the quantity of land cultivated with wheat in England, were not more than 800,000 acres, and half of it proper for this mode of cultivation; it would amount to 400,000 bushels of wheat; a circumstance of no small importance at any time, but particularly at the present.

"2d. The increase of the average produce of corn, being 320 bushels upon 40 acres. This increase of produce, reckoned

upon 400,000 acres, as before stated, would be 400,000 quarters of wheat, or 3,200,000 bushels.

"3d. The increased value of the straw; which stands more firm, and is less liable to be lodged. The straw is fairer and larger, and fetches a better price at the market, which is a great benefit in the neighbourhood of the metropolis, and of any large towns.

"4th. The very useful and acceptable employment it affords to the poor, particularly to women and children; and the advantage thereby given to cottagers with large families, and to the public in general, by the consequential saving in the poor rates.

"If it should be observed, that all kinds of land are not adapted to this mode of husbandry. The soil which Mr. Morland chose for his first experiment, was a strong loam, not without a mixture of gravel in some parts of it.—As to the expence of labour, five women will easily plant an acre in a day. For the setting, no line is necessary to be drawn; the women are directed to follow what is called the seam of the furrow; and they are desired to make the holes, at the distance of two inches, or rather more, in the row; and not to drop more than two seeds in each hole. The rows may be six or seven inches from each other, which will give the feed ample room to tiller.

"If this mode of cultivation were adopted in every kind of land, to which it is suited, it would save many hundred thousand bushels of seed a-year; it would make an increase of one-fourth upon such average crops, and give healthful and satisfactory occupation, and means of subsistence, to thousands of women and children, at the dead season of the year, when there is a general want of employment. It is at this period that most women and children consider themselves as laid up for the winter, and become a burthen upon the father of the family, and in many cases upon the parish. The wife is no longer able to contribute her share towards the weekly expences, unless (which is seldom the case) she has any peculiar skill in knitting, spinning, or sewing, or other merely domestic work.—In a kind of despondency she sits down, unable to contribute any thing to the general fund of the family, and conscious of rendering no other service to her husband, except that of the mere care of his family." As a gratifying example of a different kind, Dr. Glasse states the case of his principal labourer; who, in consequence of adopting this new mode of husbandry, earned, in October, 26 shillings a-week, by the labour of himself, his wife, and child; a benefit on his part, which has been attended by a saving to the doctor, on the eight acres so cultivated, of above eight bushels of wheat towards his winter supply; with a fair and reasonable prospect of an increased produce, to add to the general stock of the country, and to the restoration of plenty at the ensuing harvest.

Dibbling wheat was not attempted on a large scale, till an industrious farmer, in the vicinity of Norwich, had begun to dibble on less than an acre of land. The success of this experiment induced others to follow his example, and notwithstanding the ridicule they incurred for adopting so singular a practice, their crops were not only larger, but likewise so much superior to those of others, that dibbling has become the practice of every intelligent agriculturalist in Norfolk, whence it has spread into several other counties.

From a conclusive experiment made by the Rev. H. J. Clofe, of Trimley, near Ipswich, in the years 1783-4, it appears that drilling or dibbling greatly exceeds the broad-cast husbandry, on the best cultivated soils; and, besides the increased produce of grain, many other advantages arise from the former method.

Mr. Clofe employed the frame for setting wheat, represented in pl. 17.

This implement is two feet two inches wide, and provided with seven tines; but Mr. C. has since experienced that a frame of similar width, with five tines only, is preferable to one of seven.

The lands on which this method may be practised with the greater advantage, are either those after a clover-stubble, or where trefoil and grass-seed were sown in the spring before the last. These, after the usual manuring, are once turned over by the plough in an extended flag or turf, at ten inches wide, and the wheat is set in the manner already described. By this mode, three pecks of grain are sufficient for an acre; which, being immediately buried, is equally secured against the depredations of vermin, or the power of frost. The regular manner in which it rises, affords the best opportunity of keeping it clear from noxious plants, by weeding or hand-hoeing.

Dibbling is peculiarly beneficial when corn is dear; and, if the season be favourable, may be practised with great benefit, both to the public and the farmer: as it saves six pecks of seed-wheat per acre; and, if generally adopted, would of itself afford bread for more than half a million of people. It should, however, be observed, that in seasons when corn is sold at a low price, or the autumn unfavorable to the practice, it cannot be practised with advantage. Thus, in light lands, a very dry season prevents dibbling, because the holes will be filled up as soon as the instrument is withdrawn. In like manner, on strong and stiff clays, if it be very wet, the seeds in the holes cannot be properly covered by the bush-harrow.

DICTYS CRÉTENSIS (*Encyc.*). There are two anonymous writers still extant, who pretend to have written of the Trojan war previously to Homer; one of whom goes under the name of Dictys Crétensis, the other under that of Dares Phrygius. Before the history of Dictys are two prefaces; the first of which relates, that Dictys wrote six volumes of the Trojan war in Phœnician characters, and in his old age, after he was returned to his own country, ordered them, a little before his death, to be buried with him in a leaden chest, or repository, which was accordingly done; that, however, after many ages, and under the reign of Nero, an earthquake happened at Gnodius, a city of Crete, which uncovered Dictys's sepulchre, and exposed the chest; that the shepherds took it up, and expecting a treasure, opened it; and that, finding this history, they delivered it into the hands of somebody, who sent it to Nero, and he ordered it to be translated, or rather trans-charactered, from Phœnician into Greek. From which fine story nothing more has been concluded, than that this history was forged by some of Nero's flatterers, purely to curry favour with him: for he always affected a fondness for any thing relating to Trojan antiquities; and it is remarkable that, when Rome was in flames, he rejoiced as having seen the destruction of Troy. The other preface to Dictys is an epistle of L. Septimius, the Latin translator, in which he inscribes it to Arcadius Rufinus, who was consul in the reign of Constantine; and tells him much the same story of the history we have already related. As for Dares Phrygius, who is called by Homer, in the 5th book of the Iliad, a priest of Vulcan, he is said to have written a history of the destruction of Troy in Greek, which Ælian asserts to have been extant in his time, and which Photius also mentions in his Bibliotheca. The original is lost; but there is a Latin translation of it extant, which Cornelius Nepos is said to have made.

DIE, a town of France, in the department of Drome. It was lately an episcopal see, and is seated on the Drome, 24 mile S.W. of Valence. Long. 5. 23. E. Lat. 44. 42. N.

DIEBURG, a town of Germany, in the electorate of Mentz, 24 miles E.S.E. of Mentz.

DIEPHOLTZ, a town of Westphalia, capital of a county of the same name, subject to the electorate of Hanover. It is seated on the lake Dummer, 30 miles N.W. of Minden. Long. 8. 45. E. Lat. 52. 36. N.

DIERDORF, a town of Westphalia, with a castle, the residence of the counts; situate on the Wiedbach, eight miles N.N.E. of Coblenz.

DIERICH, a town of the duchy of Luxemburg, and the capital of a jurisdiction; situate on the Semois, 15 miles N.W. of Treves, and 15 N. of Luxemburg. Long. 5. 52. E. Lat. 50. 5. N.

DIERNSTEIN, a town of the archduchy of Austria. Near it is a castle, in which Richard I. king of England, was imprisoned. It is 38 miles W.N.W. of Vienna. Long. 15. 55. E. Lat. 48. 30. N.

DIESENHOFFEN, a considerable town of Switzerland, in Thurgau, seated on the Rhine, 5 miles S. of Schaffhausen. Long. 8. 42. E. Lat. 47. 35. N.

DIEST, a town of Austrian Brabant, on the river Demer, 15 miles N.E. of Louvain. Long. 59. E. Lat. 50. 59. N.

DIET (*Encycl.*). In Dr. Nisbet's Practical Treatise on Diet, we find some valuable remarks on the flesh of fowls and other animals commonly used as food. Some of these we shall select for the benefit of our valetudinary readers.

Fowls.—These afford a more wholesome and delicate diet than quadrupeds. It is easier also of digestion; but they afford at the same time a less proportion of real nourishment. Nor is their nourishment so general as that of quadrupeds, some parts of them being always tough and insipid, from their manner of life. Of birds, a greater number of the carnivorous kinds are eaten than of quadrupeds; but they are, however, chiefly those that live on fish, from which indeed they acquire a peculiar taste, but this is by no means so unpleasant as that of carnivorous quadrupeds. The time of using fowls requires more to be studied than that of quadrupeds, as they are frequently out of season, particularly in spring, when they pair; and where they are birds of passage, or migrate from one place to another, they require some residence, or to be in case, before they are fit for use.

Fowls as well as quadrupeds are much improved in size and fatness by domestication; but this is of two kinds: the first is making them familiar, and allowing them to feed as they please, which in the hen kind is known by what are called barn-door fowls—the other is properly cramming them, that is, shutting them up for the sole purpose of feeding. These arts of feeding no doubt give more succulence and tenderness to the food, and increase its alkalescency. From giving succulency they are an improvement; but from increasing alkalescency, they render the food more unfit for weak stomachs and convalescents, by whom this species of food is much used, though at the same time they render it more easy of solution. Exercise is necessary to give perfection to all food, for by this means the fat of the animal is equally dispersed through the muscular parts; while, when fatted hastily, it is accumulated in the cellular membrane. By the domestication, also, of fowls in general, their peculiar flavour, on which their excellence depends, is lessened; and by cramming them it becomes entirely lost. Hence also, unless their fibres are very tough, roasting is to be preferred to boiling them, on the same account.

Salmon.—The salmon is a very extensive article of food, and is used in three ways, either fresh, cured, or smoked. It is of a tender substance, sufficiently succulent and nourishing, but at the same time somewhat oily, and therefore heavy on the stomach. It differs in its richness and alkalescency according to the particular places in which it is taken. When middle-aged it is in most perfection, and it should neither be eaten too young nor too old.

Salmon trout differs chiefly in being soft and gelatinous.

Pike.—This is a fish of prey, and feeds on the smaller species. Hence it is termed the water wolf. Its flesh is short, compact, and close in its parts. The river pike is the best of this species, and considered as the least heating, though somewhat hard of digestion, and lying heavy on the stomach. It differs, however, much in different countries. It is also best in the winter season. This fish has been recorded as very long lived; a fact confirmed by the story of the one thrown into a pond by the emperor Frederick the Second, with a brass ring about its neck, which was caught two hundred and sixty-two years afterwards. The truth of this, however, may be called in question.

Carp.—The carp is a fish very long lived, and was first introduced into Britain in 1514. Like the pike, the river carp is the best. It often grows to an amazing size, and has been known to weigh two hundred pounds weight. It is best food in March, May, and June. It is not so dense as the pike, and therefore easier of digestion. The older it is, it becomes the firmer, better tasted, and more wholesome. From the spawn of this fish is made the caviare, a dish much used by the Jews. This fish can be made to live a considerable time out of water, and will even, by a particular mode of treatment, grow fat.

Perch.—The perch is a food superior to the two former, and is of two sorts, the river and sea perch. It is of a firm texture, but a tender substance, easily soluble, not glutinous, not heating, nor remarkably stimulant. When young its flavour is best, which it loses by age, and becomes rather ill-tasted. The best for use are the middle-aged. They should never be used in the months of March or April, which is the spawning time. They are best caught in clear water, for marshes and muddy places vitiate their flavour.

Whiting.—The whiting is a sea fish, tender, white, and delicate, with little gluten or viscosity, and therefore proper for the most weakly stomachs, conveying little stimulus to the system. The best sort are short, and they are much valued as an article of food.

Haddock.—Is a sea fish, and much resembles the whiting, but is firmer in its texture, and in general much larger in size. It is caught in high perfection in different parts on the coast of Britain, particularly in the month of January.

Cod.—The cod is also a sea fish, of a more dense and glutinous texture than the two former, and its delicate parts are the glutinous ones about the head and the fountains. It is used of three kinds—the fresh cod, the green or white cod, and the dried or cured cod—the difference lying in the preparation of the two last, the one being salted and barreled for use, the other being salted, and dried in the sun, or smoked. The green cod generally comes from Newfoundland; the dry cod, again, is taken on the coast of Placentia and Scotland. Both these kinds require to have their salt much extracted, by immersion in water, before being used. The pickle of cod is frequently used as an external application of a dissolving nature.

Eels.—These have no exercise, are fat and slimy; they contain much nourishment, but are difficultly perspirable; they are well tasted, but, from their viscosity, are apt to lie heavy on the stomach. They are dressed in a variety of ways, but are lightest when roasted, and should be well seasoned with condiment, particularly vinegar and horseradish, for when long retained on the stomach they become heating and oppressive. The best kind are taken in clear water. They are very retentive of life, and have been known to live five or six days out of water. From the skin a mucilage is made, reckoned of sovereign virtue, by the vulgar, in swellings.

Tench.—The tench is a fish of a delicate taste. It feeds generally in muddy places, and is said to be the only fish that

the pike spares. When it can be procured from clear water the flavour is always superior. It was much under-rated by the ancients, but in modern times it is esteemed equal to carp. Its name it derives from the peculiarity of its colour.

Trout.—Of this fish there are a great variety, but the salmon-trout is the best, being soft and gelatinous, and at the same time somewhat stimulant and alkaline. All trout, indeed, are a very putrescent food, and therefore easy of digestion. They should be eaten in their freshest state, and taken, if possible, from running water. They are best in summer, for then they are in best condition, and their flavour most delicate.

Corstorphine Cream.—Besides cheese, another form in which the curd is used in one part of Scotland, is in what is termed corstorphine cream. This is made by filling a vessel with skimmed milk, which has a hole in its bottom stopped with a peg; this vessel is placed within another filled with boiling water; and when this is done, it is allowed to remain in this situation for a day or two, according to the state of the weather; at the end of this period a coagulation of the milk has taken place, and the watery part of it subsided to the bottom. This watery part is then drawn off by opening the peg at the bottom of the vessel, and being again stopped up, the same operation is continued for twenty-four hours longer, when an additional water is again drawn off, and the consistence of the curd is thus rendered pretty thick; it is then agitated briskly with a wooden stick, and made fit for use. This form of curd is much used in the neighbourhood of Edinburgh; it forms an aliment tolerably nourishing, and in summer, from its proportion of acidity, is gratefully acid and cooling.

Rice.—This grain is the chief support of the greatest part of Asia, is the general vegetable aliment of the East, and has been even long employed in Europe for the same purpose. The peculiar qualities of this grain are not easily ascertained. It discovers little sweetness, and it is not much disposed either to aciescence or fermentation. But from its effects it is evident its nourishing parts must be in great proportion. Of all the grains it is certainly the most innocent, and the most useful in the case of invalids: it contains a thin, light and very soluble mucilage, which not being so disposed to acidity as the other mucilages of grain, is therefore less flatulent, and fits easy on the stomach. It has been supposed to possess something of an astringent quality, and has therefore been ordered as a common remedy in bowel complaints; but it shews no marks of an astringent quality when put to the test; and its good effects can, therefore, only arise from its demulcent nature, as blunting acrimony, and soothing irritation. The nutritious quality of rice has been supposed by some, attended with one noxious quality, viz. being hurtful to the eyes, on no rational or satisfactory foundation. The weakness of sight, and blindness of the Chinese, has been indeed ascribed to the frequent use of hot rice; but how this can operate, it is impossible to conceive, or in what manner it should differ, boiled, or in this different state, excepting in temperature and softness, which can only increase its solubility in the stomach. The source of impaired vision, therefore, is more to be sought for in the abuse of venery among that people, with their immoderate indulgence in tea, and in other narcotic and aromatic stimulants.

Rice is used in a variety of ways—in jelly, or decoction, which is made with it in the same way as with barley and oats, or other grain. Its chief consumption, however, is in puddings, and it is used as an ingredient in stews. Lately an attempt has been made, by mixing it with wheat, to form it into bread, in the proportion of three parts of wheat, to one of rice; and one peculiar quality it is said to possess, that its mixture corrects bad wheat flour. In this climate, rice is

generally very quickly digested, and the return of appetite takes place soon after its use. In the warmer climates, however, from the relaxed, debilitated state of the stomach of the inhabitants, it is found necessary, in order to prevent its lying long upon them, to conjoin it with a considerable quantity of strong spices. This grain is very much used in Carolina, and no bad consequence is found to follow it; a proof of the insufficient grounds on which its tendency to produce blindness is built.

On the whole, this grain, both for extent of produce, its proportion of nourishment, and its goodness, is preferable to all others; its flour being finer, and its texture more tender than any of them, which is particularly apparent by macerating the different grains in water, for of all of them the rice swells to the largest size; a proof of its parts are more intimately divided.

Potatoe.—As an intermediate substance between the farinaceous seeds and roots, we have placed here, though properly belonging to the roots, the potatoe.

The potatoe was first introduced into Europe in 1486, by Sir Francis Drake, and is originally a native of Peru; where, unless reared under a particular management, by little exposure to the sun, it possesses much of the quality of the nightshade, to which species it belongs. The potatoe is now a root of the first importance in Europe, as affording a mild wholesome nourishment; and next to the grains, it is most used of any vegetable production. The attention paid to its cultivation has produced a great many varieties of it; and they may be yet increased from the seed contained in the apples; but this variety differs only in the proportion each possesses of its constituent parts. The light, mealy potatoes are the best. The constituent parts of this root, when examined, consist: 1. of a dry powder, or starch, as in grains: 2. a fibrous matter, of a grey colour, similar to the roots of pot-herbs; and 3. a mucilage, resembling that of the esculent plants. By the process of boiling, these parts become intimately blended, have their solubility increased, and become easier digested. This root, in many countries, affords the chief proportion of their nourishment; a proof of its wholesomeness and alimentary quality, for both men and animals are known to get fat under its use; though, in proportion to bulk, it does not afford the same quantity of nourishment as the grains. From its possessing such a large proportion of watery parts, nearly one half, it cannot fail to be easily digested, and to pass in a very short time into chyle. Hence it is by no means of itself a permanent nourishment, and the appetite sooner returns after it than after most other kinds of diet. Flatulence and heartburn are also very seldom known to arise from it, though continued in very great quantities; and in many cases where vegetable diet comes to be prescribed, it has been the only substance found to agree. From its constituting an article in such general use, it has come to be prepared in a variety of forms. It is used in bread, its flour is employed in pastry, and it is also converted by the French into a sago and salad.

Though we have mentioned the potatoe as a root, it is not properly the root of the plant, but rather a sort of underground fruit, produced upon a confined branch. The real roots do not produce potatoes; they only serve the purpose of drawing nourishment from the soil, as the leaves above extract it from the atmosphere. The potatoe below, and the apple above, are in fact the same; but being in different elements, they assume different appearances. The one seems to be intended for the preservation of the species, the other for the food of animals. Such is the prolific nature of this vegetable, that from one large potatoe, 8 lb. of good sizeable ones have been produced. As an article of sustenance, the potatoe is greatly recommended by its palatable nature,

and by its being reared at little expence. Hence it is well suited as a provision for the poor. Potatoes are never unwholesome but from being reared in a bad soil, improperly preserved, or eaten to excess; circumstances which can all be easily guarded against. Given raw, they have been found highly useful in scorbutic complaints.

By some authors, potatoes have been considered as possessed of noxious qualities. But experience gives no sanction to this opinion; and had it been just, the truth of it must have been completely established long before this time in an article which forms so much the diet of the poor in every country, and especially in Ireland, where, on the contrary, the most healthy people are reared.

Mushrooms.—Where mushrooms prove deleterious, the first sensations they produce are qualmsiness, which soon increases to violent sickness: this is succeeded by giddiness, a palpitation of the heart, and flushing heat of the skin; with more or less redness of it. Swelling of the face also ensues, and sometimes a sensation all over the body, as if a general fulness or swelling prevailed. The patient fares in an unusual manner. All objects appear different from what they did before, a difficulty of breathing ensues, and the mind is strangely confused. Delirium and convulsions have been also known as frequent consequences of this attack. In other cases where the symptoms are mild, and do not appear for a good many hours after eating them, the sickness ends in cholera morbus, on the termination of which, the patient generally falls into a sound sleep, or a somewhat comatose state.

To relieve these symptoms as speedily as possible, the clearing the stomach of its noxious contents should be the first step; and the best emetic for this purpose is ten grains of the vitriolated zinc, which may even be repeated if the sickness does not abate. The emetic is then to be succeeded by the vegetable acids, which should be given in pretty considerable quantity, either in the form of vinegar or lemon-juice. These will be found an antidote against what remains of the poison.

Tea.—Tea is the dried leaves of a shrub, the produce of China and Japan. It is divided into two varieties, green and bohea, which vary somewhat in their particular flavour and taste, though they agree in the general qualities of being slightly astringent, bitterish, and aromatic. In their recent state they are possessed of a strong, narcotic property, which is carefully diminished by maceration and drying, so that the acrid juice in which it resides comes to be considerably dissipated. They are dried on iron plates, from a part of some tincture of which their astringent quality is derived; and so dangerous are they held by the Chinese, as not to be used for a twelvemonth after they are plucked. Thus only by a preparatory process are they rendered at all fit for the purpose of diet.

Tea was first imported into Britain about the year 1666, and was confined for some time to the tables of the people of fashion; but in consequence of the pleasantness of its flavour and its fascinating effects, it soon gained a preference over every other diluent beverage, and came into general use. Hence it has shared the fate of all articles in universal demand. Its qualities have been sophisticated, and it has received additions, altering its nature in some degree from what it was on its first importation. These additions consist, first in concealing a deficiency of natural flavour, or aromatic part, by the oils fragrant; secondly, from less attention being paid to the periods of gathering it; and thirdly, from care being employed in the time of curing it, or preparing it for use.

The general effects of no dietetic article are perhaps so little determined as those of tea. By one party it is described as a poison, by another it is extolled as a medicine of the first virtues. Truth, however, seldom lies in extremes; and in or-

der to form a just opinion of this important subject, we should examine, first, its effects in a state of concentration; secondly, in the form it is most used; and thirdly, trace the different situations of those who use it. With respect to the first, we find that, formed into an extract, or with its juice inspissated, it has been known to kill in the quantity of a few grains. The distilled water has been attended with the same fatal consequences, or, if not extinguishing life, it has produced incurable palsy. Even the effluvia of this herb, long snelt at, has been known to produce apoplexy; and several tea-brokers, who are accustomed to smell every box that is opened, have fallen victims to their profession in this way. These facts then sufficiently prove the powerful narcotic qualities of this plant, when employed in sufficient strength, or in a concentrated state. Experiments also made with it on small animals have produced the same fatal issue, and that in a very short space of time after the application of the infusion. The green tea seems also the most powerful, or possesses the greatest proportion of that active principle on which these effects depend. Indeed all the high-flavoured teas possess it in an eminent degree. In the common form of infusion in which tea is employed for dietetic use, none of these consequences arise. In the East it has been used in this form from time immemorial; but in England it did not become common till after the restoration, when it was introduced at court by Katherine of Portugal. From this time it has gradually come into general use, so much so, that the importation from China in 1777, was upwards of sixteen millions of pounds, and from that time to the present it has increased to no less than thirty millions. On its first use, it was generally prepared in decoction, or boiled in a kettle, either in milk or water, the Eastern method; but by this preparation its aromatic quality was considerably impaired. The infusion, therefore, in Europe, though different from the Eastern method, has been preferred; and by this infusion its narcotic quality is, perhaps, retained more strongly than when part is dissipated by boiling.

The excellence of this infusion will depend on three circumstances, the degree of heat of the water employed, the softness or quality of the water, and the time allotted for the infusion.

With respect to the first, the water should always be brought to the boiling point, and continued as nearly as possible in that degree of temperature; in regard to the second, the water should be mixed as little as possible with any adventitious particles of a saline or mineral nature; and with respect to the third, the vessel employed should be so large as to keep the infusion of an equal strength.

The effects of tea drunk in this way are to increase the digestive action of the stomach, and to augment the appetite. Hence it is particularly useful where the stomach is overloaded, and nourishment is taken to excess; but in the same way, where nourishment is deficient, or where the stomach is unable to receive it, like all other powerful stimulants, it must tend to injure the organ, and shew all the bad consequences of its narcotic quality, in exciting various morbid affections of the nervous system. It is in this way that its introduction into Europe has proved so pernicious to the lower ranks of society. Instead of an auxiliary to diet, as it ought to be, it has come to constitute the principal part of it, and is drunk at all times of the day, and in such a state of concentration as to act as a real poison upon the body. Indeed to this herb, more than to any other cause, we may attribute that change in the constitution of the inhabitants of this country, which has displayed itself so remarkably within this century. Formerly nervous complaints were little known or understood, now they are most frequently met with; nor can they be attributed to any other cause, as the introduction of no other dietetic article has

been in equal extent within such a short period of time. The highest degree of these complaints, pally, we find increased as four to one within the last thirty years. Hence the use of this article requires more caution, and attention to counteract its pernicious consequences, than any other with which we are acquainted. These consequences steal on by degrees: it affords a beverage fascinating to the taste; it excites a momentary hilarity of spirits after its use, and it is not till after some hours of enjoying of this exhilarating state that the faintness and sinking, correspondent to the previous excitement, ensue, which calls anew for the same repetition of it, or some other stimulant, to produce a similar effect. The drinking of tea, therefore, should only be conjoined with a due proportion of nourishment. Its narcotic effects should be corrected by boiling rather than infusion; and in some countries it is common to correct this effect by its junction with certain aromatic or sweet herbs. It is rendered grateful to the taste by the addition of milk and sugar, which should always bear a greater proportion in the making of it than they at present do.

Dr. Nisbet extends his remarks to various other articles of diet, with which it may be the interest of many to make themselves acquainted; for these, however, we refer to the doctor's treatise.

DIEU (LEWIS DE), minister of Leyden, and professor in the Walloon College of that city, was a man of great abilities, and uncommonly versed in the Oriental languages. He was born April 7, 1500, at Flushing, where his father, Daniel de Dieu, was minister. Daniel was a man of great merit, and a native of Brussels, where he had been a minister 22 years. He removed from thence in 1585, to serve the church at Flushing, after the Duke of Parma had taken Brussels. He understood Greek and the Oriental languages; and he could preach with the applause of his auditors in German, Italian, French, and English. The churches of the Netherlands sent him, in 1588, over to Queen Elizabeth, to inform her of the designs of the Duke of Parma, who secretly made her proposals of peace, though the King of Spain was equipping a formidable fleet against England.—Lewis studied under Daniel Colonius, his uncle by his mother's side, who was professor at Leyden in the Walloon College. He was two years minister of the French church at Flushing; and might have been court-minister at the Hague, if his natural aversion to the manners of a court had not refrained him from accepting that place. He thought the post which was offered him more proper for a man in years than a student. The prince commended his modesty and prudence. He was called to Leyden in 1619, to teach, with his uncle Colonius, in the Walloon College; and he discharged the duty of that employment with great diligence till his death, which happened in 1642. He refused the post of divinity-professor in the new university of Utrecht; and, if he had lived long enough, he would have had the same post in that of Leyden. He married the daughter of a counsellor of Flushing, by whom he had eleven children.

He published, in 1631, "A Commentary on the Four Gospels, and Notes on the Acts of the Apostles." His first care had been to examine the Latin versions of the "Syriac New Testament," made by Tremellius and Guido Fabricius Bodezianus; and that of St. Matthew's Gospel in Hebrew, made by Munster and Mercerus. He published also the "Revelation of St. John," which he printed both in Hebrew and Syriac characters, with a Latin version of his own. He published the "History of the Life of Jesus Christ," written in the Persian tongue by the Jesuit Jerom Xavier, with learned notes; and he joined to the original a Latin translation. "The History of St. Peter," written in the Persian language, was also published by him, with a Latin translation and notes. He drew up likewise "Rudiments of the Hebrew and Persian

Tongues, and a Parallel of the Grammar of the Oriental Tongues." Some things also of smaller note were published by his friends after his death.

DIEUZE, a town of France, in the department of Meurthe, remarkable for wells of salt water, which produce much salt. It is seated on the Scille, 22 miles N.E. of Nancy. Long. 6. 45. E. Lat. 48. 53. N.

DIEXALEDRIA, in natural history, a genus of pellucid and crystalliform spars, composed of two pyramids, joined base to base, without any intermediate column: the diexahedria are dodecahedral, or composed of two hexangular pyramids.

DIEZ, St. a town of France, in the department of the Vosges. It had lately a celebrated chapter, whose canons were obliged to produce proofs of nobility. It is seated on the Meurthe, 30 miles S.E. of Luneville. Long. 7. 4. E. Lat. 48. 20. N.

DIGBY (Sir EVERARD), an English gentleman, memorable for the share he had in the powder-plot, and his suffering on that account, was descended from an ancient family, and born some time in 1581. His father, Everard Digby, of Drytroke in Rutlandshire, esq. was a person of great worth and learning, had his education in St. John's College, Cambridge, where he took the degree of M.A. and published several treatises, some on learned, others on curious subjects: as, 1. *Theoria Analytica*, viam ad Monachium Scientiarum Demonstrans, 1579. 2. *De Duplici Methodo Libri duo*, Rami Methodum Refutantes, 1580. 3. *De Arte Natandi*, Libri duo, 1587. 4. A Dissuative from taking away the Goods and Livings of the Church. His son, of whom we are speaking, was educated with great care, but under the tuition of some Popish priests, who gave him those impressions which his father, if he had lived, might probably have prevented; but he died when his son was no more than eleven years of age. He was brought very early to the court of Queen Elizabeth, where he was much taken notice of, and received several marks of her majesty's favour. On the coming in of King James, he went likewise to pay his duty; as others of his religion did: was very graciously received; and had the honour of knighthood conferred upon him, being looked on as a man of fair fortune, pregnant abilities, and a court-like behaviour. He married Mary, daughter and sole heiress of William Mulhso, esq. of Gotherst in Buckinghamshire, with whom he had a great fortune, which, with his own estate, was settled upon the children of that marriage. He was drawn in to be privy to the gunpowder-plot; and though he was not a principal actor in this dreadful affair, or indeed an actor at all, yet he offered 1500l. towards defraying the expences of it; entertained Guy Fawkes, who was to have executed it, in his house; and was taken in open rebellion with other Papists after the plot was detected and had miscarried. Upon his commitment to the Tower, he persisted steadily in maintaining his own innocence as to the powder-plot, and refused to discover any who were concerned in it; but when he was brought to his trial at Westminster, Jan. 27, 1605-6, indicted for being acquainted with and concealing the powder-treason, taking the double oath of secrecy and constancy, and acting openly with other traitors in rebellion, he pleaded guilty. After this, he endeavoured to extenuate his offence; and then requested, that, as he had been alone in the crime, he might alone bear the punishment, without extending it to his family; and that his debts might be paid, and himself beheaded. When sentence of death was passed, he seemed to be very much affected; for, making a low bow to those on the bench, he said, "If I could hear any of your lordships say you forgave me, I should go more cheerfully to the gallows."

To this all the lords answered, " God forgive you, and we do." He was, with other conspirators, upon the 30th of the fame month, hanged, drawn, and quartered; at the west end of St. Paul's church in London; where he asked forgiveness of God, the king, the queen, the prince, and all the parliament; and protested, that, if he had known this act at first to have been so foul a treason, he would not have concealed it to have gained a world, requiring the people to witness, that he died penitent and sorrowful for it." Wood mentions a most extraordinary circumstance at his death, as a thing generally known; namely, that when the executioner plucked out his heart, and according to form held it up, saying, " Here is the heart of a traitor," Sir Everard made answer, " Thou lyest." But perhaps, as generally as it was known then, persons may be found in this incredulous age, that would hardly believe it, even if Wood himself had actually asserted it.

Sir Everard left at his death two young sons, afterwards Sir Kenelm and Sir John Digby; and expressed his affection towards them by a well-written and pathetic paper, which he desired might be communicated to them at a fit time, as the last advice of their father. While he was in the Tower, he wrote, in juice of lemon or otherwise, upon slips of paper, as opportunity offered; and got these conveyed to his lady by such as had permission to see him. These notes, or advertisements, were preserved by the family as precious relics; till, in 1675, they were found at the house of Charles Cornwallis, Esq. executor to Sir Kenelm Digby, by Sir Rice Rudd, bart. and William Wogan, of Gray's-Inn, esq. They were afterwards annexed to the proceedings against the traitors, and other pieces relating to the Popish plot, printed by the orders of Secretary Coventry, dated Dec. 12, 1678.

DIGBY (Lord George), an English nobleman of great parts, was son of John Digby earl of Bristol, and born at Madrid in Oct. 1612. In 1626 he was entered at Magdalen College in Oxford; where he lived in great familiarity with the well-known Peter Heylin, and gave manifest proofs of those great endowments, for which he was afterwards so distinguished. In 1636 he was created M.A. there, just after Charles I. had left Oxford; where he had been splendidly entertained by the university, and particularly at St. John's College, by Dr. Laud, afterwards Archbishop of Canterbury. In the beginning of the long parliament, he was disaffected to the court, and appointed one of the committee to prepare a charge against the Earl of Strafford, in 1640; but afterwards would not consent to the bill, " not only," as he said, " because he was unsatisfied in the matter of law, but for that he was more unsatisfied in the matter of fact." From that time he became a declared enemy to the parliament, and shewed his dislike of their proceedings in a warm speech against them, which he made at the passing of the bill of attainder against the said earl, in April 1641. This speech was condemned to be burnt, and himself, in June following, expelled the House of Commons. Jan. 1641-2, he went on a message from his majesty to Kingston upon Thames, to certain gentlemen there, with a coach and six horses. This they improved into a warlike appearance; and accordingly he was accused of high-treason in parliament, upon pretence of his levying war at Kingston upon Thames. Finding what umbrage he had given to the parliament, and how odious they had made him to the people, he obtained leave, and a licence from his majesty, to transport himself into Holland; whence he wrote several letters to his friends, and one to the queen, which was carried by a perfidious confidant to the parliament, and opened. In a secret expedition afterwards to the king, he was taken by one of the parliament's ships, and carried to Hull; but being in such a disguise that not his nearest relations could

have known him, he brought himself off very dexterously by his artful management of the governor Sir John Hotham. In 1643 he was made one of the secretaries of state to the king, and high-steward of the university of Oxford, in the room of William lord Say. In the latter end of 1645 he went into Ireland, and exposed himself to great hazards of his life, for the service of the king: from thence he passed over to Jersey, where the Prince of Wales was, and after that into France, in order to transact some important matters with the queen and Cardinal Mazarine. Upon the death of the king, he was exempted from pardon by the parliament, and obliged to live in exile, till the restoration of Charles II. when he was restored to all he had lost, and made knight of the Garter. He became very active in public affairs, spoke frequently in parliament, and distinguished himself by his enmity to Clarendon while Chancellor. He died at Chelsea, March 20, 1676, after succeeding his father as Earl of Bristol.

Many of his speeches and letters are still extant, to be found in our historical collections. There are also letters of his to his cousin Sir Kenelm Digby against Popery, mentioned in the preceding article; yet afterwards he became a Papist himself, which, with several other inconsistencies in his character, has been severely censured.

DIGBY (John), earl of Bristol, and father of the Lord George Digby, was by no means an inconsiderable man, though checked by the circumstances of his times from making so great a figure as his son. He was descended from an ancient family at Colehill in Warwickshire, and born in 1580. He was entered a commoner of Magdalen College, Oxford, in 1595; and the year following, distinguished himself as a poet by a copy of verses made upon the death of Sir Hen. Unton, of Wadley in Berks. Afterwards he travelled into France and Italy, and returned from thence perfectly accomplished: so that, soon falling under the notice of King James, he was admitted gentleman of the privy-chamber, and one of his majesty's carvers, in 1605. February following he received the honour of knighthood; and, in April 1611, was sent ambassador into Spain, as he was afterwards again in 1614. April 1616, he was admitted one of the king's privy-council, and vice-chamberlain of his majesty's household; and in 1618, was advanced to the dignity of a baron, by the title of Lord Digby, of Sherborne in Dorsetshire. In 1620 he was sent ambassador to the Archduke Albert, and the year following to Ferdinand the emperor; as also to the Duke of Bavaria. In 1622 he was sent ambassador-extraordinary to Spain, concerning the marriage between Prince Charles and Maria daughter of Philip III. and the same year was created Earl of Bristol. Being attacked, after his return to England, by that overbearing man the Duke of Buckingham, he repelled and worsted him; and thence greatly among the discontented in parliament. But the violence of that assembly soon disgusting him, he left them, and became a zealous adherer to the king and his cause; for which at length he suffered exile, and the loss of his estate. He died at Paris, Jan. 21, 1652-3.

He was the author of several works. Besides the verses above mentioned, he composed other poems; one of which, an air for three voices, was set by H. Lawes, and published in his *Airs and Dialogues*, at London, in 1653. 1. A Tract, wherein are set down those Motives and Ties of Religion, Oaths, Loyalty, and Gratitude, which obliged him to adhere unto the King in the late unhappy Wars in England. 2. A Tract, wherein he vindicateth his Honour and Innocency from having in any Kind deserved that injurious and mercilefs Censure, of being excepted from Pardon and Mercy either in Life or Fortunes. 3. An Appendix to the first tract. These two tracts which have the general title of his *Apology*, toge-

ther with the appendix, and two of his speeches in parliament, were printed at Caen, in 1647, and reprinted in 1656. The first speech was upon May 20, 1642, concerning an Accommodation of Peace and Union between the King and his two Houses of Parliament; and the second was upon June 11 following, in vindication of it. There are also extant other speeches of his; one particularly at the Council-Table at Oxford in 1642, in Favour of the Continuance of the War with the Parliament. It was spoken after Edge-Hill fight, and published at London the same year. He also published at Caen, in 1647, An Answer to the Declaration of the House of Commons, Feb. 11, 1648, against making any more Addresses to the King; and dedicated it to his good countrymen of England, and fellow-subjects of Scotland and Ireland. Several letters of this lord are to be found in the Cabala.

Besides these treatises in the political way, he was, in the earlier part of his life, the author of a work of a very different nature, namely, a translation of Peter du Moulin's book, entitled, A Defence of the Catholic Faith, contained in the Book of King James against the Answer of N. Coeffeteau, &c. 1610. He probably undertook this laborious and, as one should think, disagreeable task, at the request of that pedantic and theological monarch; at least, with a view of currying favour with him. The dedication, however, to the king is not in his own name, but in that of J. Sandford, his chaplain.

DIGGES (Leonard), an English gentleman famous for his mathematical learning, was descended from an ancient family, and born at Digges-Court in the parish of Barham in Kent; but we know not in what year. He was sent to University College in Oxford, where he laid a good foundation of learning; and retiring from thence without a degree, prosecuted his studies, and composed the following works: namely, 1. *Tectonicum*; briefly shewing the exact Measuring, and speedy Reckoning of all Manner of Lands, Squares, Timbers, Stones, Steeples, &c. 1556, 4to. Augmented and published again by his son Thomas Digges, 1592, 4to.; and reprinted there in 1647, 4to. 2. A geometrical practical Treatise, named *Pantometria*, in three books. This he left in MS. but, after his death, his son supplied such parts of it as were obscure and imperfect, and published it in 1591, folio; sub-joining, A Discourse geometrical of the five regular and platonical Bodies, containing sundry theoretical and practical Propositions, arising by mutual Conference of these Solids, Inscription, Circumscription, and Transformation. 3. *Prognostication everlasting of right good Effect*: or, Choice Rules to judge the Weather by the Sun, Moon, and Stars, &c. 1555, 1556, and 1564, 4to. corrected and augmented by his son, with divers general tables, and many compendious rules, 1592, 4to. He died about 1574.

DIGGES (Thomas), only son of Leonard Digges, after a liberal education, went and studied for some time at Oxford; and by the improvements he made there, and the instructions of his learned father, became one of the greatest mathematicians of his age. When Queen Elizabeth sent some forces to assist the oppressed inhabitants of the Netherlands, Digges was appointed muster-master-general of them; by which he had an opportunity of becoming skilled in military affairs. Besides the revising, correcting, and enlarging some pieces of his father's already mentioned, he wrote and published the following learned works himself: namely, 1. *Alae five Scalae Mathematicae*: or Mathematical Wings or Ladders, 1573, 4to. This book contains several demonstrations for finding the parallaxes of any comet, or other celestial body, with a correction of the errors in the use of the radius astronomicus. 2. An arithmetical-military Treatise, containing so much of Arithmetic as is necessary towards Military Discipline, 1579, 4to. 3. A geometrical Treatise,

named *Stratiticeae*, requisite for the Perfection of Soldiers, 1579, 4to. This was begun by his father, but finished by himself. They were both reprinted together in 1590, with several amendments and additions, under this title: An arithmetical warlike Treatise, named *Stratiticeae*, compendiously teaching the Science of Numbers, as well in Fractions as Integers, and so much of the Rules and Equations algebraical, and Art of Numbers collical, as are requisite for the Profession of a Souldier. Together with the Moderne militaire Discipline, Offices, Lawes, and Orders in every well-governed Campe and Armie, inviolably to be observed. At the end of this work there are two pieces; the first entitled A briefe and true Report of the Proceedings of the Earle of Leycester, for the Releife of the Towne of Sluce, from his Arrival at Vlissingh, about the End of June 1587, until the Surrender thereof 26 Julii next ensuing; whereby it shall plainlie appear, his Excellencie was not in anie Fault for the Loffe of that Towne: the second, A briefe Discourse what Orders were bett for repulping of foraine Forces, if at any Time they should invade us by sea in Kent, or elsewhere. 4. A perfect Description of the celestial Orbs, according to the most ancient Doctrine of the Pythagoreans, &c. This was placed at the end of his father's *Prognostication everlasting*, &c. printed in 1592, 4to. 5. A humble Motive for Affociation to maintain the Religion established, 1601, 8vo. To which is added, his Letter to the same Purpose to the Archbishops and Bishops of England. 6. *England's Defence*: or, a Treatise concerning Invasion. This is a tract of the same nature with that printed at the end of his *Stratiticeae*, and called, A briefe Discourse, &c. It was written in 1599, but not published till 1686. 7. A Letter printed before Dr. John Dee's *Parallatice Commentationis praxeosque nucleus quidam*, 1573, 4to. Besides these and his *Nova corpora*, he had by him several mathematical treatises ready for the press; which, by reason of lawsuits and other avocations, he was hindered from publishing. He died in 1595, but we know not at what age. He married, and had sons and daughters; of which more will be said in the next article.

DIGGES (Sir Dudley), eldest son of Thomas Digges, just mentioned, was born in 1583; and entered a gentleman-commoner of University College in Oxford, 1598. Having taken the degree of B.A. in 1601, he went and studied for some time at the inns of court; and then travelled beyond sea, having before received the honour of knighthood. After seeing and observing much, he returned home, and led a retired life, till 1618; when he was sent by James I. ambassador to the Czar, or Emperor of Russia. Two years after he was commissioned with Sir Maurice Abbot to go to Holland, in order to obtain the restitution of goods, taken by the Dutch from some Englishmen, in the East-Indies. He was a member of the third parliament of James I. which met at Westminster Jan. 30, 1620-1; and was so little compliant with the court measures, as to be ranked among those whom the king called ill-tempered spirits. He was likewise a member of the first parliament of Charles I. in 1626; and not only joined with those eminent patriots, who were for bringing Villiers duke of Buckingham to an account, but was indeed one of the chief managers in that affair, and so very active, that he was committed to the Tower, though soon released. He was again member of the third parliament of Charles I. in 1627-8, being one of the knights of the shire for Kent; but seemed to be more moderate in his opposition to the court, than he was in the two last, and voted for the dispatch of the subsidies. Nevertheless, when any attempts were made upon the liberties of his country, or the constitution of parliament, his spirits were roused, and he openly exerted them. In short, he was a

man of such consequence, that the court thought it worth their while to gain him over; and accordingly they tempted him with the advantageous and honourable office of master of the rolls, of which he had a reversionary grant Nov. 29, 1630, and became possessed of it April 20, 1636, upon the death of Sir Julius Caesar. But he did not enjoy it quite three years; for he died March 8, 1638-9, and his death was reckoned among the public calamities of those times.

He was a worthy good man, and, as a certain writer says, "a great alertor of his country's liberty in the world of times." He was the author of several performances in the literary way: 1. A Defence of Trade: in a Letter to Sir Thomas Smith, Knt. Governor of the East-India Company, 1615, 4to. After his death, there was printed under his name, 2. A Discourse concerning the Rights and Privileges of the Subject, in a Conference desired by the Lords, and had by a Committee of both Houses, April 3, 1628; 1642, 4to. 3. He made several speeches upon various occasions, inserted in Rushworth's Collections, and Ephemeris Parliamentaria. 4. He collected the letters that passed between the Lord Burleigh, Sir Francis Walsingham, and others, about the intended marriage of Queen Elizabeth with the Duke of Anjou, in 1570, and with the Duke of Alençon, in 1581. They were published in 1655, folio. The publisher, who signs himself A. H. says in the preface, that "this piece was never intended for the press, but had slept long amongst the papers of Sir Dudley Digges, a personage of known wisdom and integrity, and who understood well the value of this manuscript, which had nothing forged or supposititious in it.

Sir Dudley had a brother Thomas, and a son Dudley, who were both learned men and authors. His brother Thomas was educated in University College, Oxford, took the degree of B.A. in 1606, removed to London; and then, travelling beyond sea, studied in foreign universities: from whence returning a good scholar, and an accomplished person, he was created M.A. in 1626. He translated from Spanish into English, Gerardo, the Unfortunate Spaniard, 1622, 4to. written by Goncalo de Cespedes: and, from Latin into English verse, Claudian's Rape of Proserpine, 1617, 4to. He died in 1635, being accounted a good poet and orator; and a great master of the English, French, and Spanish languages.

His son Dudley, who was his third son, was also of University College, Oxford, where he took the degree of B.A. in 1631-2; and the year after was elected fellow of All-Souls College. He took a master's degree in 1635; and became a good poet and linguist, and a general scholar. He died in 1643; having distinguished himself only by the two following productions: 1. An Answer to a printed book entitled Observations upon some of his Majesty's late Answers and Expresses, Oxon, 1642. 2. The Unlawfulness of Subjects' taking up Arms against their Sovereign in what Case soever, with Answers to all Objections, Lond. 1643, 4to.

DROGES (West), was a celebrated comedian, formerly of the Haymarket, and for some time manager of the Edinburgh theatre. This gentleman is frequently spoken of in Mrs. Bellamy's Memoirs. He performed latterly in Dublin, and became useful to the Irish manager by giving him secret instructions; he was suddenly seized with a paralytic stroke, which rendered him incapable of following his profession, Necessity now obliged him to play the sycophant off the stage, and become entirely the manager's instrument: this procured him an allowance, but, at the same time, the envy and ill-will of all the company. His first appearance upon the stage was at Dublin in 1749. He died at Cork in 1786.

DIGITALIS (Enceyl). The following observations on the medical use and effects of the digitalis purpurea are ex-

tracted from an essay of Dr. Mease, resident physician at the port of Philadelphia.

The purple fox-glove, he says, is a medicine which, for some time, stood high in the list of the materia medica, but for various reasons appears to have, in some measure, lost the character once formed of it.—The causes influencing the success of the digitalis, may be referred to the following heads: 1. The season of the year in which the plant is collected will have a very considerable influence on the effects produced on the system. 2. The part of the plant employed ought likewise to be attended to, when forming a judgment of its virtues. 3. A frequent cause of the failure of the digitalis may be attributed to the careless mode of preparing it for use. 4. The adulteration of the plant with other vegetables. 5. The various modes of exhibiting this medicine; and 6. The particular condition of the patient at the time of its exhibition.

Dr. Mease very judiciously comments upon each of these particulars, and more at large upon the last. He examines with some acuteness the different opinions of physicians relative to this subject, and illustrates them with his own observation and experience on the effects of this powerful plant.—As a specimen of his method of reasoning, we shall quote the following remarkable passage:

"To account for the success of this remedy in dropsies, and diseases of too much action in the arterial system, is readily done. But, to reconcile the opposite testimony of Dr. Withering and others, with respect to their different success in dropsies of too little action, is very difficult: nay, to reconcile the contrary advice of Dr. Withering himself, who recommends the digitalis in mania and hemoptoe, 'with a bounding pulse,' and in dropsies with a weak one, is impossible. And here I may repeat a remark I formerly made, viz. 'That a medicine whose primary operation is the reduction of the force of the arterial system, when this is so intimately connected with the general strength of the body, should only succeed in those cases where the latter is considerably exhausted, appears not only to be paradoxical, but ill agrees with the uniformity observed in the operations of nature, in other parts of the animal economy.' It is incumbent on Dr. Withering to account for this apparent opposition in his own sentiments, and to satisfy the doubts of physicians, arising from the action of the remedy being directly contrary to the principles upon which alone certain dropsies can be cured. I may also remark, that it is much to be wished, physicians were more accurate in noting the state of their patient's system, at the time of prescribing this and other remedies; and also the state of the pulse at the same time, with its frequency; which, though so constantly stated, is of far less consequence in determining the situation of the system, as to the important point of the existence or absence of the inflammatory disposition, than the former. We should thus arrive with more certainty at the true virtues of a medicine, and be able to reconcile the contradictory accounts of physicians, respecting its utility in the same disease."

These golden remarks cannot be too often and too seriously repeated, particularly to the junior class of medical practitioners.—Our author quotes a striking passage from a letter of Dr. Withering to Dr. Woodville, published in the Medical Botany of the latter, in which the inattention of physicians, in the exhibition of digitalis, is severely censured, and he concludes with the following practical hints:

"It may not be improper to add some cautions and observations upon the use of digitalis, not mentioned in the above paper, for the information of those who may not have seen Dr. Withering's work, and may wish to exhibit the medicine.

"The doctor desires the medicine to be given in the doses in an infusion of the plant, which he prefers to every other form, and directs one drachm of the dried leaves to be infused for four hours in half a pint of boiling water, adding to the strained liquor half an ounce of any spirituous water, and an ounce of this infusion to be given twice a-day to an adult. If the patient be stronger than usual, or the symptoms very urgent, this dose may be given once in eight hours; and, on the contrary, in many instances, half an ounce at a time will be quite sufficient. (This method of exhibiting the medicine ought to be continued until it either acts on the kidneys or stomach, pulse or bowels: to be stopped upon the first appearance of any of these effects; the patient to drink freely during its operation.) But, without attending to this rule, I have known the digitalis prescribed in the various forms of decoction, pills made with soap, and in powder mixed with prepared chalk or magnesia; and though the two last substances may not act in any opposite way, yet they may divide the particles, and by clogging them, prevent application to the stomach, and thus diminish its activity. A tedious decoction will dissipate the virtue of many plants less volatile than digitalis; but a slight one will no doubt injure it, and ought therefore never to be employed. Pills are often made up with such substances, as render them soluble with difficulty. If we even suppose soap free from this objection, we nevertheless do not know what secret effects may be produced by it, on particular stomachs, to interrupt the action of the medicine; and certainly it will not be so readily applied to that organ, as in a watery form.

"In case of *ascites* and *anasarca*, when the patient is weak, and the evacuation of the water rapid, the use of a proper bandage is indispensably necessary. If the water should not be wholly evacuated, it is best to allow an interval of several days, before the medicine be repeated, in order that food and tonics may be exhibited.

"The flow of urine will often precede, sometimes accompany, and frequently follow the sickness at stomach, at the distance of some days, and not unfrequently be checked by the medicine, especially if given in too large doses. The sickness will sometimes cease, and recur again as violent as before, and will continue to recur for three or four days, at more distant intervals. These sufferings seldom occur, and are no objection to the use of digitalis, neither is the stone in the bladder."

Dr. Beddoes, who has written much on the properties of digitalis, says, "within three years I have seen many scores of phthical invalids from among the poorer classes. I have always had, close at hand, a number of opulent patients of the same description. Each class has, in fact, lain before me, almost as conveniently for comparison, as the objects of his attention lie before a scholar occupied in collating a set of manuscripts. In general, where I had all possible evidence of the existence of tubercles, the exhibition of digitalis has been perfectly successful. If I specify that it has succeeded in three such cases out of five, I believe I much underrate the proportion of favourable events. With regard to the poor, who apply for relief in sickness, there exists a perpetual cause of uncertainty. Their attendance slackens as their health improves; and they are apt to disappear upon complete recovery; nor is it always easy to find them out by enquiry. In the richer class I have found the proportion of fortunate cases more considerable than I have stated; and where digitalis alone fails, success is sometimes obtained by helps, of which I shall speak before quitting the subject.

"When ulceration has succeeded to interior disorganization, the greater difficulty of cure has appeared to me very

strongly marked. Why this should be, is easily comprehended from general analogy: its full illustration, by tracing the diversity of animal actions step by step, I relinquish to those who may think they understand the nature of phthical ulceration, and the effect of the particular situation which the ulcers occupy. Entire failure has appeared to me, on the one hand, most frequent in the neediest poor; and on the other, in those females of higher life, who, from transmitted feebleness, and the want of air and exercise, of wholesome hunger and digestion, appear more like the shadows of human beings, than substantial compounds of flesh, blood, and bone. And as one means for the conciliation of contradictory testimonies, respecting the effect of digitalis in confirmed or ulcerated consumption, I adhere to the opinion expressed in the West-country Contributions, 1799, pp. 534—5: viz. that robustness of constitution is peculiarly favourable to the action of digitalis in this disease."

Three cases of pulmonary affection are detailed, in which digitalis produced evident benefit. The case of Dr. Briggs is well worthy of notice; it is accurately drawn up by that physician himself, and the disease was evidently incipient tubercular phthisis.

On the mode of exhibition of digitalis Dr. Beddoes observes, "when the mild exhibition of digitalis produces no good effect, and the patient is not greatly reduced, I have occasionally found it useful to administer it in nauseating or in sickening doses. In a few cases the purulent expectoration has been lessened at every sickness, and under the use of intermediate small doses has failed to return to its former quantity.

"I have very frequently employed digitalis externally; but never alone. I am not, therefore, able to speak with confidence of the effects of this manner of using it. In cases where the common mode fails, I purpose to try friction vigorously, and hope sometimes to succeed. I imagine some analogy of operation between sickness from digitalis and sickness from failing. The persons, in whom I have seen consumption considerably mitigated, and the very few whom I have known perfectly cured, by a sea voyage, have not, any of them, belonged to the more puny division of the consumptive. And I apprehend delicate females, affected by this disease, rarely experience great relief from sea sickness. I do not, however, feel myself entitled to advance an opinion on this point. I merely offer a conjecture, principally wishing to excite the attention of observers."

And again, "when fox-glove is deficient in operation, I have found the conjunction of opium in large doses, of bitters and squills, powerful auxiliaries. I have often joined with it *hyocyamus* and *cicuta*."

The following observations are of considerable importance; "When digitalis has failed altogether in incipient consumption, I have occasionally found calomel succeed in a few instances." And, "I have sometimes given the *hydrargyrus cum creta*, and sometimes the simple mercurial pill, instead of calomel, without any variation in the effect. And I have of late often joined one or the other with digitalis.

"There is a state of confirmed consumption, in which, if an auxiliary to digitalis of given operation could be discovered, some lives would be saved. The state I allude to is of this nature. In some instances, when the fox-glove has removed the hectic fever, and greatly reduced the expectoration and cough, the decline shall become almost imperceptible; the patient frequently appearing chlorotic, but being really phthical, as the event most commonly, and sometimes dissection, has evinced. During this almost stationary period, the organs of sanguification appear inert; and the deficient production of blood (into which the chyle is probably converted in the lungs)

sufficiently accounts for that consumption of the body which denominates the disorder. This defect of sanguification explains the emaciating process, when there is no excess of action either in the capillaries or other parts of the vascular system, nor any apparent drain, or else less evacuation than exists in cases where there is no emaciation. Those principles which enter into new combination during muscular contraction, being derived from the blood, and blood not being formed in sufficient quantity, the substance of the body will be wasted by the mere vital movements. Neither will the fat be replaced as fast as it is absorbed; and of other parts. In phthisical children, where the attractions on which growth (or longitudinal extension of parts) depends, do not cease, though probably solids very different in constitution from the healthy solids are formed, it should seem that emaciation ought to go on with peculiar rapidity, if other circumstances were alike."

In his attempts to account for the "mode in which digitalis operates," the author seems to have adopted that theory which is known in this country by the name of *chemical physiology*. He says, "at present I can only enunciate an opinion, reserving full discussion to a future occasion. To whatever organ medicinal application is made, I consider the applied substance as a chemical compound. The organs themselves I consider likewise as chemical compounds, extremely variable, and of a peculiar nature for the time being. We know that certain changes in those organic compounds, which are first affected, will produce successive changes in connected parts, till perhaps the whole frame undergoes a change in its composition, and consequently in its actions. Some effects of these changes will be manifest; others more obscure; and others not ascertainable by any of our present methods of observation."

"There is nothing in all this peculiar to the beings which we usually denominate organized. Alterations in any body will produce alterations in a series of adjacent bodies to an indefinite extent. The changes produced by the burning of a candle may be traced far into the sublimary system; and by help of pretty close analogies, they may be pursued into a more remote region of the universe. In organized bodies, if secondary effects are more sudden or more sensible than in most others, this is owing to the close connection of their members, and to the easily variable constitution of each member. By virtue of their connection, the members of the galvanic piles, at present known, seem to influence one another as readily as the bodily organs; but being similarly constituted, there is presented no diversity but in the degree of operation."

Conceding to this opinion the merit of considerable ingenuity, we cannot, at the same time, allow it to contain an accurate generalization of the phenomena already known relating to organized nature.

The different branches of human knowledge can only be considered as connected expressions of facts following, in their arrangement, either the order of nature, or strict and obvious analogies; and, by the common consent of philosophers, they have been distinguished from each other by appropriate names. The phenomena relating to mechanics have been supposed to be distinct from the phenomena of chemistry; and as yet it would be considered as rash to class the galvanic facts as simple chemical changes: why then should we, in direct contradiction to the adopted modes of nomenclature, attempt to identify the powers producing living action, which are, with regard to us, unknown, with the agencies of organic matter, which are obvious and ascertained? It is surely better to confess our total ignorance of the laws of life, than to form obscure generalizations founded upon loose analogies concerning them; as in the one case we give full liberty to the in-

ventive powers of the human mind; but, in the other, we limit its exertions to a particular object, by holding up to view a theory which is most probably false, and concerning which it is nevertheless compelled to reason.

Indeed, after the first enunciation, Dr. Beddoes himself seems to have been fully aware of the danger and difficulty of systematizing concerning the organized nature. He says, "again, we can scarce be said to have advanced a step in vital chemistry. We are not acquainted with the constitution of any one organ in any one of its conditions. We know nothing of the difference between the several conditions compatible with life. How, therefore, the recipient and the received body modify each other in the first instance, remains a perfect mystery. Nor are we better informed as to many of the consequences of the primary modifications. Of some our senses may occasionally inform us; and would inform us of more, if they were more assiduously and advantageously applied. But we shall most grossly deceive ourselves, if we imagine that such observations as we at present take, can ever amount to a theory or systematical body of facts. They are, perhaps, almost remote effects, and therefore, relatively to us, uncertain—the more remote, the more uncertain; because, of the parts progressively affected, if any one, unknown to the observer, be in a different state at different times, or in different persons, the effect that has previously taken place, and is again expected, may fail to appear. Our judgment, however, respecting the character of medical agents must abide by effects, thus remote and uncertain."

The experiments made by Mr. King, on the comparative action of opium and digitalis on cold-blooded animals, which follow these preliminary observations, were well contrived, and their results are curious and worthy of attention. The account of them will not admit of abridgment; and we must content ourselves with giving Dr. Beddoes's generalization of facts concerning the mode of operation of digitalis, which, in some measure, is founded upon them.

"1. Digitalis, in a certain dose, will increase the action of the arterial system.

"2. It will increase the digestive power of the stomach, when that is impaired.

"3. It will often induce sleep, like opium.

"4. Like opium, in an over-dose it occasions languor and excessive sensibility, headach, dimness of vision, nausea, and bilious vomiting.

"5. It almost immediately produces great excitement in frogs, somewhat as opium does; and produces certain other effects, similar to those of opium."

DIGNAN, a town of Venetian Istria, three miles from the gulf of Venice. Long. 13. 5. E. Lat. 45. 10. N.

DIGNITY (*Encycl.*). To those who study human nature, there is a point which has always appeared intricate: how comes it that generosity and courage are more esteemed, and bestow more dignity, than good-nature, or even justice; though the latter contribute more than the former to private as well as to public happiness? This question, bluntly proposed, might puzzle even a philosopher; but, by means of the foregoing observations, will easily be solved. Human virtues, like other objects, obtain a rank in our estimation, not from their utility, which is a subject of reflection, but from the direct impression they make on us. Justice and good-nature are a sort of negative virtues, that scarce make any impression but when they are transgressed: courage and generosity, on the contrary, producing elevated emotions, enliven greatly the sense of a man's dignity, both in himself and in others; and for that reason, courage and generosity are in higher regard than the other virtues mentioned: we describe them as grand and elevated, as of greater dignity, and more praise-worthy.

This leads us to examine more directly emotions and passions with respect to the present subject : and it will not be difficult to form a scale of them, beginning with the meanest, and ascending gradually to those of the highest rank and dignity. Pleasure felt as at the organ of sense, named *corporeal pleasure*, is perceived to be low; and when indulged to excess, is perceived also to be mean: for that reason persons of any delicacy dissemble the pleasure they take in eating and drinking. The pleasures of the eye and ear, having no organic feeling, and being free from any sense of meanness, are indulged without any shame: they even rise to a certain degree of dignity when their objects are grand or elevated. The same is the case of the sympathetic passions; a virtuous person behaving with fortitude and dignity under cruel misfortunes, makes a capital figure; and the sympathizing spectator feels in himself the same dignity. Sympathetic distress at the same time never is mean: on the contrary, it is agreeable to the nature of a social being, and has general approbation. The rank that love possesses in the scale, depends in a great measure on its object: it possesses a low place when founded on external properties merely; and is mean when bestowed on a person of inferior rank without any extraordinary qualification: but when founded on the more elevated internal properties, it assumes a considerable degree of dignity. The same is the case of friendship. When gratitude is warm, it animates the mind; but it scarce rises to dignity. Joy bestows dignity when it proceeds from an elevated cause. If we can depend upon induction, dignity is not a property of any disagreeable passion: one is slight, another severe; one depresses the mind, another animates it; but there is no elevation, far less dignity, in any of them. Revenge, in particular, though it inflame and swell the mind, is not accompanied with dignity, not even with elevation: it is not however felt as mean or grovelling, unless when it takes indirect measures for gratification. Shame and remorse, though they sink the spirits, are not mean. Pride, a disagreeable passion, bestows no dignity in the eye of a spectator. Vanity always appears mean, and extremely so where founded, as commonly happens, on trivial qualifications.

We proceed to the pleasures of the understanding, which possess a high rank in point of dignity. Of this every one will be sensible, when he considers the important truths that have been laid open by science: such as general theorems, and the general laws that govern the material and moral worlds. The pleasures of the understanding are suited to a man as a rational and contemplative being, and they tend not a little to ennoble his nature; even to the Deity he stretcheth his contemplations, which, in the discovery of infinite power, wisdom, and benevolence, afford delight of the most exalted kind. Hence it appears, that the fine arts, studied as a rational science, afford entertainment of great dignity; superior far to what they afford as a subject of taste merely.

But contemplation, however in itself valuable, is chiefly respected as subservient to action; for man is intended to be more an active than a contemplative being. He accordingly shews more dignity in action than in contemplation: generosity, magnanimity, heroism, raise his character to the highest pitch: these best express the dignity of his nature, and advance him nearer to divinity, than any other of his attributes.

Having endeavoured to assign the efficient cause of dignity and meanness, by unfolding the principle on which they are founded, we proceed to explain the final cause of the dignity or meanness bestowed upon the several particulars above mentioned, beginning with corporeal pleasures. These, as far as useful, are, like justice, fenced with sufficient sanctions to pre-

vent their being neglected: hunger and thirst are painful sensations; and we are incited to animal love by a vigorous propensity: were corporeal pleasures dignified over and above with a place in a high class, they would infallibly overturn the balance of the mind, by outweighing the social affections. This is a satisfactory final cause for refusing to these pleasures any degree of dignity: and the final cause is not less evident of their meanness, when they are indulged to excess. The more refined pleasures of external sense, conveyed by the eye and the ear from natural objects and from the fine arts, deserve a high place in our esteem, because of their singular and extensive utility: in some cases they rise to a considerable dignity; and the very lowest pleasures of the kind are never esteemed mean or grovelling. The pleasure arising from wit, humour, ridicule, or from what is simply ludicrous, is useful by relaxing the mind after the fatigue of more manly occupation: but the mind, when it surrenders itself to pleasure of that kind, loses its vigour, and sinks gradually into sloth. The place this pleasure occupies in point of dignity, is adjusted to these views: to make it useful as a relaxation, it is not branded with meanness; to prevent its usurpation, it is removed from that place but a single degree: no man values himself for that pleasure, even during gratification; and if it have engrossed more of his time than is requisite for relaxation, he looks back with some degree of shame.

In point of dignity, the social emotions rise above the selfish, and much above those of the eye and ear: man is by his nature a social being; and to qualify him for society, it is wisely contrived, that he should value himself more for being social than selfish.

The excellency of man is chiefly discernible in the great improvements he is susceptible of in society: these, by perseverance, may be carried on progressively, above any assignable limits; and even abstracting from revelation, there is great probability, that the progress begun here will be completed in some future state. Now, as all valuable improvements proceed from the exercise of our rational faculties, the author of our nature, in order to excite us to a due sense of these faculties, hath assigned a high rank to the pleasures of the understanding: their utility, with respect to this life as well as a future, entitles them to that rank.

But as action is the aim of all our improvements, virtuous actions justly possess the highest of all the ranks. These, we find, are by nature distributed into different classes, and the first in point of dignity assigned to actions that appear not the first in point of use: generosity, for example, in the sense of mankind is more respected than justice, though the latter is undoubtedly more essential to society; and magnanimity, heroism, undaunted courage, rise still higher in our esteem: the reason of which is explained above.

DILIGENCE, in Scots law, signifies either that care and attention which parties are bound to give, in implementing certain contracts or trusts, and which varies according to the nature of the contract. Or it signifies certain forms of law, whereby the creditor endeavours to operate his payment, either by affecting the person or estate of the debtor.

DILLA, MOUNT, a remarkable promontory of the coast of Malabar, 20 miles N. by W. of Tillicherry. Long. 75. 2. E. Lat. 12. 1. N.

DIMOTUC, a town of Romania, with a Greek archbishop's see; seated on a mountain, surrounded by the Meriza, 12 miles S.W. of Adrianople. Long. 26. 15. E. Lat. 41. 35. N.

DINANT, a town of France, in the department of the North Coast, seated on a craggy mountain, at the foot of which is the river Rance, 20 miles S. of St. Malo. Long. 1. 58. W. Lat. 48. 20. N.

DINANT, a town of Germany, in the bishopric of Liege, with a castle, seated near the Meuse, 12 miles S. of Namur. Long. 4. 51. E. Lat. 50. 17. N.

DINASMONDY, a town in Merionethshire, with a market on Friday, 18 miles S. of Bala, and 196 N.W. of London. Long. 3. 40. W. Lat. 52. 37. N.

DINCHURCH, a village in Kent, in Romney Marsh, three miles N.E. of Romney. Here are kept the records of the Marsh; and the court is held by the lords of the Marsh, and the members of the corporation, who are appointed by statute, 33 Edward III. to regulate all affairs concerning the Marsh.

DINKELSPIL, a free imperial town of Suabia. It has a great and a little council: the former is a mixture of Papists and Lutherans; but the little one are all Papists. It carries on a trade in cloth and reaping-hooks, and is seated on the Wernitz, 37 miles S.W. of Nuremberg. Long. 10. 20. E. Lat. 49. 0. N.

DINGELFING, a town of Lower Bavaria, seated on the Isar, 20 miles N.E. of Landschut. Long. 12. 36. E. Lat. 48. 40. N.

DINGLE, a sea-port of Ireland, in the county of Derry, seated in Dingle Bay, four miles W. of Limerick. Long. 8. 40. W. Lat. 53. 42. N.

DIO CASSIUS, a famous Greek historian, a native of Nicæa, a city of Phrygia, was governor of Pergamus and Smyrna, and commanded in Africa and Pannonia. In the year 229, he was raised by Alexander Severus to the dignity of consul; but not being agreeable to the troops, was obliged to retire to the place of his birth, where he ended his days. He composed a Roman History in Greek, a part of which only has been handed down to us. He is accused of partiality against Pompey, Cicero, Seneca, and several other great men. He is chiefly esteemed for the speeches he puts into the mouths of Agrippa and Mæcenæ, when Augustus advised with them whether he should preserve the empire, or restore the ancient government.

DIOCLESIAN. The bloody persecutions of the Christians, in the time of this emperor, forms a chronological æra, called the *era of Dioclesian*, or of the martyrs. The causes of a supposed extinction of Christianity at that period, having been the subject of some literary controversy, the following remarks on the subject, which appeared in the British Magazine for 1800, may not be unacceptable to many of our readers.

Let it be supposed, says the writer, that the Christian religion, instead of obtaining a decisive and lasting victory over Paganism, in the reign of Constantine the Great, was itself totally annihilated by the persecution, commonly called the Dioclesian. In order to a more complete inversion of the fact, let it be further supposed, that the progress of this religion, immediately upon its first promulgation, was exceedingly rapid, and that it gradually declined under successive persecutions, till it became extinct under that which has been mentioned. This period is fixed upon for the final overthrow of Christianity, because it supplies the most adequate cause of the supposed event, which comes nearest in point of time to the opposite of the real one.

The patrons and adherents of the triumphant religion would, without doubt, ascribe the destruction of an enemy, once so formidable, to the miraculous interposition of the dei-

ties whom they worshipped. Not to interfere with this opinion, it may yet be allowed to the philosopher, whose province it is to trace or supply the latent and intricate connection between causes and effects, to confine his consideration to those *natural and secondary causes*, which may be supposed to have at least contributed to the production of the extraordinary and important event. And it does not appear that any causes of that description can be assigned with greater probability than the *five following*; 1. the inflexible, and, if we may use the expression, intolerant zeal of the Christians; 2. the doctrine of a future life; 3. the miraculous powers ascribed to the primitive church; 4. the pure and austere morals of the Christians; 5. the union and discipline of the Christian republic.

I. No qualities could be imagined more directly calculated to frustrate the attempts of the primitive-Christians than the inflexibility, and, if we may use the expression, the intolerance, of their zeal. Their system of protelytism was fundamentally erroneous. The religion which they proposed was indeed too far of a general nature, that none were excluded from the benefit of it: it was intended for a common blessing. Yet, with all this liberality, Christianity was, in the strictest sense, and to the last degree, an unfocial religion. It would neither accommodate itself to the reigning superstitions, nor would it admit any association with them. It was determined to stand alone; and wherever it prevailed, it must prevail upon the ruins of all other systems. With such pretensions, the heralds of the Gospel could not reasonably hope for a favourable reception. Their apparent arrogance could only serve to provoke the indignation of those whom they endeavoured to convert; and the zeal with which they prosecuted their cause, especially if it were so extravagant as has with great confidence been asserted, would, according to the *natural course of things*, have a direct tendency to defeat their object*.

II. The doctrine of a future state of retribution, of reward to the good, and of punishment to the wicked, was by no means a peculiar doctrine of Christianity. Heathenism had its Elysium and its Tartarus. The natural apprehension, however, with respect to a future state, had produced in the majority of the civilized Gentiles, the common people as well as the higher ranks of the philosophers, a disbelief and contempt of the doctrine;—at least, of that part which relates to future punishment†. Socrates, Cicero, and Seneca, admitted only the alternative of the mortality of the soul, or of its future enjoyment or happiness‡. Christianity came forward to revive the exploded doctrine: it arrayed the happiness of the righteous with new glories, and conferred new terrors upon the place of punishment. But the heathens had given up their Elysium, and the spiritual heaven of the Christians was not more alluring: they had succeeded in dissipating the dread of their Tartarus, and it was not to be expected that they should tamely submit to the fresh imposition of the doctrine, rendered more formidable both by the evidence which supported it, and by the additional horrors with which it was attended.

III. A claim to miraculous powers, when considered as a natural cause, must be understood of those which are unjustly pretended to; or, which are false: for real miracles are a supernatural cause, and are only compatible with a true religion. Miracles, thus explained, were nothing new to the heathens. Their own religion was founded upon them. Neither were

* For the indignation of the heathens against the Jews on account of the infidelity of their religion, see Josephus cont. Apion, lib. 2. §. 7. For the same fact, more especially with respect to the Christians, see Warburton's Divine Legation, book 2. § 6.

† This is proved with triumphant evidence by Leland, in his Advantage and Necessity, &c, book 3. ch. 8.

‡ Apologia Socratis, § 22. Cicero de Senectute, sub finem. Seneca, Ep. 24.

they averse to admit the claims of Christianity. But then they expected, they thought themselves entitled to, a return of the compliment. When, therefore, they found that the religion proposed to their acceptance, instead of being flattered, or even contented with this honour, aspired to sovereign and exclusive dominion; its arrogant pretensions would naturally excite the indignation of the votaries of heathenism. And the less able they were to ascribe to imposture the miracles to which it pretended, the more violent would be their prejudices, and the more extravagant their resentment.

IV. While the religion of the Christians was calculated to make them benefactors to the world, by engaging them in the practice of the whole circle of duty, to God, their neighbour, and themselves, they nevertheless considered that part of it which concerns the supreme Being as paramount to all the rest, and in every case of competition entitled to the preference. From this principle flowed their purity, and what is denominated their austeriety. It was a principle which they held in common with Socrates*. But, however reasonable, it could never fail to give offence; and it has always been observed, that a conspicuous moral superiority, on account of the reproach which it conveys to the generality, is almost sure to create enemies†. Nor is there any hatred so virulent as that which has an unjust foundation‡. Even the fortitude which the Christians displayed in their martyrdom, could not escape a sinister interpretation. It was branded as obstinacy§. And then, instead of conciliating the compassion, or exciting the admiration of the heathens, it only served for a more specious pretence of prosecuting the persecution of these unhappy sufferers with increased severity. Such were the fruits of the virtues of the primitive Christians.

V. The Romans, who valued themselves principally upon their knowledge of the art of government, would behold with extreme jealousy the rise and establishment of an independent and increasing society within the bosom of their own dominions—an *imperium in imperio*||. Nor would the assumption of the character of religion in any way abate this jealousy; of which their treatment of the Bacchic mysteries at Rome is a remarkable instance¶. When, therefore, the converts to Christianity had, in the time of Nero, according to Tacitus**, become a vast multitude, and, in the exulting language of Tertullian, had filled every part of the empire††, it was not to be expected that the rulers of that empire would behold with indifference a society, however peaceable the spirit of its institution, and the conduct of its members, which their principles or their prejudices could only dispose them to look upon as a conspiracy. It was the fact. And the causes which have been mentioned, uniting their influence with this, produced that series of progressive persecutions, which had for their object not only the subjugation, but the extermination and destruction of Christianity.

When Christianity had thus armed against itself, the power and policy of a mighty empire, the jealousy of its magistracy, both supreme and subordinate, the interests of its priesthood,

the virulent and well-disciplined rancour of its philosophers, and the furious passions of a superstitious and inflamed populace, it were justly to be esteemed a miracle, if a religion, of which non-resistance was the most specious reproach, should escape the destruction with which it was threatened.

Such are the natural causes by which the event here supposed may be accounted for. Nor will the objection, that precisely the same causes have been assigned for a fact directly the opposite‡‡, have any weight with the philosopher, who is satisfied that the *flexibility* of an argument, as it enlarges the sphere of its operation, and gives it liberty to act in any direction, is rather a recommendation than a disparagement to it. And it can with as little reason be expected, that he who is so justly offended at the *obstinate inflexibility* of the Christian, will so far lose sight of the consistency of his character, as to regard it with greater indulgence, even though *truth herself* should venture to assume it.

DIONYSIUS (Areopagita), was born at Athens, and educated there. He went afterwards to Heliopolis in Egypt; where, if we may believe some writers of his life, he saw that wonderful eclipse which happened at our Saviour's passion, and was urged by some extraordinary impulse to cry out, *Aut Deus patitur, aut cum patiente dolet*; "Either God himself suffers, or condescends with him who does." At his return to Athens he was elected into the court of Areopagus, from whence he derived his name of *Areopagite*. About the year 50 he embraced Christianity; and, as some say, was appointed first bishop of Athens by St. Paul. Of his conversion we have an account in the 17th chapter of the Acts of the Apostles.—He is supposed to have suffered martyrdom; but whether under Domitian, Trajan, or Adrian, is not certain. We have nothing remaining under his name, but what there is the greatest reason to believe spurious.

DIONYSIUS (Bishop of Corinth), flourished under the reigns of Marcus Antoninus and Commodus, and is supposed to have suffered martyrdom about the year 178. We know little more of him than what appears from some of his epistles, preserved by Eusebius: from which we learn, that he was not only very diligent in his pastoral care over the flock committed to him, but that he extended his care likewise to the inhabitants of all other countries and cities. He wrote a letter to the Lacedæmonians, in which he exhorts them to peace and concord: another to the Athenians, in which he recommends purity of faith and evangelical holiness: a third to the Nicomedians, to bid them beware of the heresy of Marcion: a fourth to the churches of Crete: a fifth to the churches of Pontus: a sixth to the Gossians, in which he admonishes Pinytus, their bishop, not to impose too severely upon the brethren the heavy burthen of continence, but to consider the frailties and infirmities of the flesh. He wrote also a seventh letter to the Romans, in which he mentions the famous epistle of Clements to the Corinthians; which, as we learn from him,

* Plat. Ap. Sac. § 11.

† Virtutem incolumen odimus. Horat. Od. lib. 3. 24. Etiam gloria ac virtus inensus habet, ut nimis ex propinquo diversa arguens. Tacitus Annal. lib. 4. § 33.

‡ Odium, quorum causæ aciores, quia iniquæ. Tac. Ann. lib. 1. § 33.

§ With Pliny it was "inflexibilis obstinatio," lib. 10. ep. 97; with Marcus Antoninus *φίλη παρρησία*, lib. 10. § 3. In another cause it might have suggested the—*Justum et tenacem propositi virum*, &c.

|| Tu regere imperio populos, Romane, memento, hæc tibi erunt artes, &c. Virg. En. lib. 6. 851. &c.

¶ Liv. Hist. lib. 39. § 8, particularly § 16.

** Ingens multitudo. Tac. Hist. lib. 15. § 44.

†† Hæterni sumus et vestra omnia implevimus, urbes, &c.—Sola vobis relinquimus templa. Tert. Ap. cap. 37.

‡‡ Gibbon's Decline and Fall, &c. ch. 15.

was wont, at that time, to be publicly read in their churches. But none of these letters are now extant.

DIONYSIUS (Bishop of Alexandria), was born a Heathen, and of an ancient and illustrious family. He was a diligent enquirer after truth, which he looked for in vain among the sects of philosophers; but at last found it in Christianity, in which he was probably confirmed by his preceptor Origen. He was made a presbyter of the church of Alexandria in 232; and, in 247, was raised to that see upon the death of Heracles. When the Decian persecution arose, he was seized by the soldiers and sent to Taposiris, a little town between Alexandria and Canopus; but he escaped without being hurt, of which there is a marvellous account in the fragments of one of his letters, which Eusebius has preserved. He did not come off so well under the Valerian persecution, which began in 257: for then he was forcibly hurried off in the midst of a dangerous illness, and banished to Cephros, a most desert and uncultivated region of Lybia, in which terrible situation he remained for three years. Afterwards, when Gallienus published an edict of toleration to the Christians, he returned to Alexandria, and applied himself diligently to the offices of his function, as well by converting heathens, as by suppressing heretics. The Novatian heresy he laboured to put a stop to; he endeavoured to quiet the dispute, which was risen to some height, between Stephen and Cyprian, concerning the re-baptization of heretics: but he attempted both these things with Christian moderation and candour. For it must be acknowledged to his credit, that he seems to have possessed more of that spirit of gentleness and meekness, than was usually to be found in those primitive and zealous times. A little before his death he was called to a synod at Antioch, to defend the divinity of Jesus Christ against Paul of Samosata, who was bishop of Antioch: but he could not appear by reason of his great age and infirmities. He wrote a letter however to that church, in which he explained his own opinion of the matter, and refuted Paul: whom he thought to very blameable for advancing such an error, that he did not deign to salute him even by name. He died in the year 267; and, though his writings were very numerous, yet scarce any of them are come down to us, except some fragments preserved by Eusebius.

DIOPHANTUS, a celebrated mathematician of Alexandria, reputed to have been the inventor of algebra. When he lived, is not known: some have placed him before Christ, and some after, with equal uncertainty. He wrote 13 books of arithmetic; which the astronomer Regiomontanus tells us, are still preserved in MSS. in the Vatican library: Meziriac's edition of seven of these books has been several times reprinted, with notes and illustrations.

DIPLOMATICS (*Encycl.*). In order to understand the nature of diplomas, and manuscripts, and to distinguish the authentic from the counterfeit, it is necessary to know that the paper of the ancients came from Egypt, and was formed of thin leaves or membranes, taken from the branches of a tree named *Papyrus*, or *Bibulum Ægyptiacum*, and which were pasted one over the other with the slime of the Nile, and were pressed and polished with a pumice-stone. This paper was very scarce; and it was of various qualities, forms, and prices, which they distinguished by the names of *charta hieratica*, *lurica*, *augusta*, *amphitheatica*, *fastica*, *tanirica*, *emporetica*, &c. They cut this paper into square leaves, which they pasted one to the other, in order to make rolls of them: from whence an entire book was called *volumen*, from *volvendo*; and the leaves of which it consisted, *pagine*. Sometimes, also, they pasted the leaves all together by one of their extremities, as is now practised in binding; by this method they formed the

back of a book, and these the learned call *cordices*. They rolled the volume round a stick, which they named *umbilicus*; and the two ends that came out beyond the paper, *cornua*. The title, wrote on parchment, in purple characters, was joined to the last sheet, and served it as a cover. They made use of all sorts of strings or ribbands, and even sometimes of locks, to close the book; and sometimes also it was put into a case. But there is not now to be found, in any library or cabinet whatever, any one of these volumes. We have been assured, however, by a traveller, that he had seen several of them in the ruins of Herculaneum; but so damaged, the paper so stiff and brittle, by the length of time, that it was impossible to unroll them, and consequently to make any use of them; for on the first touch they fell into shatters. We shall speak hereafter of those books they call *codices*.

We are ignorant of the precise time when our modern paper was invented; and when they began to make use of pens in writing, instead of the stalks of reeds. The ink that the ancients used, was not made of vitriol and galls, like the modern, but of foot. Sometimes also they wrote with red ink made of vermilion; or in letters of gold, on purple or violet parchment. It is not difficult for those who apply themselves to this study, to distinguish the parchment of the ancients from that of the moderns, as well as their ink and various exterior characters: but that which best distinguishes the original from the counterfeit, is the writing or character itself; which is so distinctly different from one century to another, that we may tell with certainty, within about 40 or 50 years, when any diploma was written. There are two works which furnish the clearest lights on this matter, and which may serve as sure guides in the judgments we may have occasion to make on what are called ancient diplomas. The one is the celebrated treatise on the Diplomatic, by F. Mabillon; and the other, the first volume of the *Chronicon Gotvicense*. We there find specimens of all the characters, the flourishes, and different methods of writing, of every age. For these matters, therefore, we must refer our readers to those authors; and shall here only add, that

All the diplomas are wrote in Latin, and consequently the letters and characters have a resemblance to each other: but there are certain strokes of the pen which distinguish not only the ages, but also the different nations; as the writings of the Lombards, French, Saxons, &c. The letters in the diplomas are also usually longer, and not so strong as those of manuscripts. There has been also introduced a kind of court-hand, of a very disproportionate length, and the letters of which are called *Ætules litteræ*, *crispæ ac protrahitiores*. The first line of the diploma, the signature of the sovereign, that of the chancellor, notary, &c. are usually wrote in this character.

The signature of a diploma consists either of the sign of the cross, or of a monogram or cipher, composed of the letters of the names of those who subscribed it. The initial letters of the name, and sometimes also the titles, were placed about this cross. By degrees the custom changed, and they invented other marks; as for example, the sign of Charlemagne was thus:

R
A
K—S
V
L

They sometimes added also the dates and epoch of the signature, the feasts of the church, the days of the calendar, and other like matters. The successive corruption of the Latin language, the style and orthography of each age, as well as their different titles and forms; the abbreviations, accentua-

tion, and punctuation, and the various methods of writing the diphthongs; all these matters united, form so many characters and marks by which the authenticity of a diploma is to be known.

The seal annexed to a diploma was anciently of white wax, and artfully imprinted on the parchment itself. It was afterward pendent from the paper, and inclosed in a box or case, which they called *bullæ*. There are some also that are stamped on metal, and even on pure gold. When a diploma bears all the characters that are requisite to the time and place where it is supposed to be written, its authenticity is not to be doubted; but, at the same time, we cannot examine them too scrupulously, seeing that the monks and priests of former ages have been very adroit in making of counterfeits; and the more, as they enjoyed the confidence of princes and statesmen, and were even sometimes in possession of their rings or seals.

With regard to manuscripts that were wrote before the invention of printing, it is necessary (1) to know their nature, their essential qualities, and matter; (2) to be able to read them freely, and without error; (3) to judge of their antiquity by those characters which we have just mentioned with regard to the diplomas; and (4) to render them of use in the sciences. As there are scarce any of the ancient codes now remaining (see par. 2.) wrote on the Egyptian paper, or on wood, ivory, &c. we have only to consider those that are written on parchment or vellum (*membraneæ*), and such as were wrote on our paper (*chartaceæ*). The former of these are in most esteem. With regard to the character, these codes are written either in square and capital letters, or in half square, or round and small letters. Those of the first kind are the most ancient. There are no intervals between the words, no letters different from the others at the beginning of any word, no points, nor any other distinction. The codes which are wrote in letters that are half square, resemble those we have in Gothic characters, as well for the age as the form of the letters. Such as were wrote in round letters are not so ancient as the former, and do not go higher than the ninth or tenth century. These have spaces between the words, and some punctuation. They are likewise not so well wrote as the preceding, and are frequently disfigured with comments. The codes are divided, according to the country, into Lombard, Italian, Gaulic, Franco-Gaulic, Saxon, Anglo-Saxon, &c.

In the ancient Greek books, they frequently terminated the periods of a discourse, instead of all other division, by lines; and these divisions were called, in Latin, *versus*, from *vertendo*: for which reason these lines are still more properly named *versus* than *lineæ*. At the end of a work, they put down the number of verses of which it consisted, that the copies might be more easily collated: and it is in this sense we are to understand Trebonius, when he says, that the pandects contain 150,000 *pene versus*. These codes were likewise *vel probe vel deterioris notæ*, more or less perfect, not only with regard to the calligraphy or beauty of the character, but to the correction of the text also.

It is likewise necessary to observe, in ancient codes, the abbreviations, as they have been used in different centuries. Thus, for example, A. C. D. signifies, Aulus Caius Decimus; Ap. Cn. Appius Cneius; Aug. Imp. Augustus Imperator. The characters that are called *notæ*, are such as are not to be found in the alphabet; but which, notwithstanding, signify certain words. All these matters are explained in a copious manner by Vossius, and in the Chronicon Gotvicensæ. Lastly, the learned divide all the ancient codes into *codices minus raros, rariores, editos, & anecdotos*. The critical art is here indispensably necessary: its researches, moreover, have no bounds; and the more, as the use of it augments every

day, by the discoveries that are made in languages, and by the increase of erudition.

DISSENTIS, a town of Switzerland, capital of a jurisdiction of the same name, in the country of the Grisons, with an abbey founded in the seventh century. It is situate near the sources of the Rhone, 10 miles S.S.W. of Ilanz.

DISMAL SWAMP, a marshy tract on the coast of N. Carolina, 50 miles long and 30 broad. It occupies the whole country between Albemarle Sound and Pamlico Sound.

DISPOSITION, in Scots law, is that deed or writing which contains the sale or grant of any subject: when applied to heritable subjects, it in some cases gets the name of *charter*, which differs from a disposition in nothing else than a few immaterial forms.

DISS, a town in Norfolk, with a market on Friday. It is seated on the river Waveney, on the side of a hill; and at the W. end of the town is a large muddy lake, abounding with eels. Here are manufactures of sail-cloth, linen cloth, hose, and stays. It is 19 miles S. of Norwich, and 92 N.N.E. of London. Long. 1. 9. E. Lat. 52. 25. N.

DISSEN, or **TISSEN**, a town of Germany, in the bishopric of Osnabrug, where are salt works belonging to the Elector of Hanover. It is 16 miles S.E. of Osnabrug.

DISSENTERS (*Encycl.*). The first dissenters from the establishment were called **PURITANS**, and generally adopted the presbyterian form of church government. Robert Brown, a disaffected minister, in the reign of Elizabeth, instituted a new sect, which afterwards rose into considerable consequence, under the title of **INDEPENDENTS**. The presbyterians at present are but very few; for most, if not all the dissenting congregations in England, are independent of any synodical assembly. There is another numerous and respectable class of dissenters called baptists, but a consideration of their state and principles already appears in another place.

At the time of the act of uniformity in 1662, and for many years afterwards, the non-conformists or dissenters were doctrinally Calvinists. About the close of the last century, Arianism began to shew itself among them, and when Dr. Clarke started the controversy on the Trinity, it spread more rapidly among the dissenters than in the established church. Most of the considerable congregations declined from the Calvinistical sentiments of their ancestors, and fell into Arian or Socinian principles. Some, however, while they adopted the Arminian doctrines, admitted that of the trinity, though it is doubtful whether most of these were not Semi-arians. All those who thus gave up the creed of the old nonconformists have assumed the title of rational dissenters, because they assert the full use of human reason on matters of faith. Socinianism was rather a private matter of opinion among particular ministers and others, till Dr. Lardner openly espoused it. Dr. Priestley's zeal and talents gave it considerable circulation; and the secession of Mr. Lindsey from the established church gave rise to a Socinian congregation in Essex-street, wherein a liturgy altered from that of the church of England is used. This congregation is now under the care of Dr. Diney, another clergyman who has seceded from the church on account of his principles. The number of Socinians, however, is far from being large; and the meeting in Essex-street is but thinly attended. Since the rise of methodism many independent congregations have returned to Calvinistic principles, and many new places of worship have been erected for those of that persuasion. Several of the preachers in Mr. Wesley's and Mr. Whitfield's connections, and also those who were brought up at the expense of the late Counts of Huntingdon, have forsaken the itinerant course of life, and settled as ministers of congregations on the independent plan. It happens that among these, few are found who possess the ad-

vantages of education; but they in general appear earnest in their manner, and ready in their eloquence. The plain and familiar mode of address seems best suited to common hearers, and in this respect the man of moderate talents may possess superior advantages to the man of erudition. The system of the rational Christians is, indifferently calculated to operate upon the minds of the ordinary part of mankind; and those of a more assuaging intellect will only be prepared by it for the reception of positive infidelity.

Dr. Priestley, before his departure for America, lamented greatly the rapid decline of Socinianism; and there is no ground to believe that the case has been altered since. Yet the dissenters at large, it is imagined, have not decreased. If old congregations have dissolved, new ones have arisen of a different complexion; and it deserves remark, that many who acquired religious sentiments and habits of seriousness by attending some favourite and popular preacher in the establishment, have forsaken the church on his death, and joined the dissenters. This circumstance has often happened, and is generally owing to the doctrine preached by the succeeding minister being different from that to which the people have been long accustomed. Much, indeed, may be attributed to the capriciousness of hearers; but, in general, persons of a serious turn, who have been in constant attendance on the service of the church, will not leave it without some reason of this sort.

The dissenters have lately distinguished themselves by instituting, in conjunction with the methodists, a missionary society. The design of propagating the gospel is doubtless highly commendable, and forms, in fact, a Christian duty. But in this, as in all other great undertakings, much prudence, wisdom, and humility, are requisite. Whether these have been evidenced in this famous project is a matter of some question. Passing by all the intermediate regions of barbarism, the managers of this institution directed their first attention to the distant isles of the southern ocean. The persons sent out on this arduous work were mostly mechanics, and such as had little acquaintance with human nature, the various customs and characters of mankind, and the arts of insinuating address, calculated to effect a great change in the manners of the people to whom they were sent. Some disappointment attended this first mission; but in another which was afterwards undertaking among the Hottentots, by the Dutch, from the cape of Good Hope (under the direction of the London society), great success, it is said, has been experienced, and there is a prospect of much good being done in that quarter. There is evidently, however, much of ostentation in the procedure of this society. Their journals are published in a most pompous manner, and an elegant print has been engraved representing the interview of the missionaries at Otahite with the chiefs. This conduct is ridiculous before the event of the mission is exactly known, and that cannot be expected suddenly to take place. These gentlemen seem to think that the divine power and direction are surely on their side, and, therefore, that they have no reason to doubt of success. This is not acting as the apostles did, nor in the manner which their Master commanded them.

The same zealous persons have recently been stirred up to undertake what they call missions at home; and, in consequence, many itinerant preachers have gone into various parts of the country. This may, in some cases, do good, but the scheme ought to put the clergy on their guard; and the only way by which they can counteract the itinerants is to out-preach, out-live, and out-labour them. The care and faithfulness of the established ministers will soon render the officiousness of the others of none effect. The principal seminaries of education for the ministry among the dissenters are at Hackney, Northampton, Manchester, Homerton, Wrexham

(Denbighshire), Swansea (South Wales), Hoxton, Taunton, and Davenport.

DIVING (*Encycl.*). The following description of a submarine vessel, or *diving-machine*, invented by Mr. Bushnell, of Connecticut, is given in the Transactions of the American Philosophical Society.

The external shape of the sub-marine vessel bore some resemblance to two upper tortoise shells of equal size, joined together; the place of entrance into the vessel being represented by the opening made by the swell of the shells, at the head of the animal. The inside was capable of containing the operator, and air sufficient to support him thirty minutes without receiving fresh air. At the bottom, opposite to the entrance, was fixed a quantity of lead for ballast. At one edge, which was directly before the operator, who sat upright, was an oar for rowing forward or backward. At the other edge was a rudder for steering. An aperture, at the bottom, with its valve, was designed to admit water, for the purpose of descending; and two brass forcing-pumps served to eject the water within, when necessary for ascending. At the top, there was likewise an oar, for ascending or descending, or continuing at any particular depth. A water-gauge, or barometer, determined the depth of descent, a compass directed the course, and a ventilator within supplied the vessel with fresh air, when on the surface.

The entrance into the vessel was elliptical, and so small as barely to admit a person. This entrance was surrounded with a broad elliptical iron band, the lower edge of which was let into the wood of which the body of the vessel was made, in such a manner, as to give its utmost support to the body of the vessel against the pressure of the water. Above the upper edge of this iron band there was a brass-crown, or cover, resembling a hat with its crown and brim, which shut water-tight upon the iron band: the crown was hung to the iron band with hinges, so as to turn over sideways, when opened. To make it perfectly secure when shut, it might be screwed down upon the band by the operator, or by a person without.

There were in the brass crown three round doors, one directly in front, and one on each side, large enough to put the hand through. When open they admitted fresh air; their shutters were ground perfectly tight into their places with emery, hung with hinges, and secured in their places when shut. There were likewise several small glass windows in the crown, for looking through, and for admitting light in the day-time, with covers to secure them. There were two air pipes in the crown. A ventilator within drew fresh air through one of the air pipes, and discharged it into the lower part of the vessel; the fresh air introduced by the ventilator expelled the impure light air through the other air pipe. Both air pipes were so constructed, that they shut themselves whenever the water rose near their tops, so that no water could enter through them, and opened themselves immediately after they rose above the water.

The vessel was chiefly ballasted with lead fixed to its bottom; when this was not sufficient, a quantity was placed within, more or less, according to the weight of the operator; its ballast made it so stiff, that there was no danger of upsetting. The vessel with all its appendages, and the operator, was of sufficient weight to settle at very low in the water. About two hundred pounds of the lead, at the bottom for ballast, would be let down forty or fifty feet below the vessel; this enabled the operator to rise instantly to the surface of the water, in case of accident.

When the operator would descend, he placed his foot upon the top of a brass valve, depressing it, by which he opened a large aperture in the bottom of the vessel, through which the water entered at his pleasure; when he had admitted a suffi-

cient quantity, he descended very gradually; if he admitted too much, he ejected as much as was necessary to obtain an equilibrium, by the two brass forcing pumps, which were placed at each hand. Whenever the vessel leaked, or he would ascend to the surface, he also made use of these forcing pumps. When the skilful operator had obtained an equilibrium, he could row upward, or downward, or continue at any particular depth, with an oar, placed near the top of the vessel, formed upon the principle of the screw, the axis of the oar entering the vessel; by turning the oar one way he raised the vessel, by turning it the other way he depressed it.

A glass tube eighteen inches long, and one inch in diameter, standing upright, its upper end closed, and its lower end, which was open, screwed into a brass pipe, through which the external water had a passage into the glass tube, served as a water-gauge or barometer. There was a piece of cork, with phosphorus on it, put into the water-gauge. When the vessel descended the water rose in the water-gauge, condensing the air within, and bearing the cork, with its phosphorus, on its surface. By the light of the phosphorus, the ascent of the water in the gauge was rendered visible, and the depth of the vessel under water ascertained by a graduated line.

An oar, formed upon the principle of the screw, was fixed in the fore part of the vessel; its axis entered the vessel, and being turned one way, rowed the vessel forward, but being turned the other way rowed it backward; it was made to be turned by the hand or foot.

A rudder, hung to the hinder part of the vessel, commanded it with the greatest ease. The rudder was made very elastic, and might be used for rowing forward. Its tiller was within the vessel, at the operator's right hand, fixed, at a right angle, on an iron rod, which passed through the side of the vessel; the rod had a crank on its outside end, which commanded the rudder, by means of a rod extending from the end of the crank to a kind of tiller, fixed upon the left hand of the rudder. Raising and depressing the first-mentioned tiller turned the rudder as the case required.

A compass marked with phosphorus directed the course, both above and under the water; and a line and lead sounded the depth when necessary.

The internal shape of the vessel, in every possible section of it, verged towards an ellipsis, as near as the design would allow, but every horizontal section, although elliptical, yet as near to a circle as could be admitted. The body of the vessel was made exceedingly strong; and to strengthen it as much as possible, a firm piece of wood was framed, parallel to the conjugate diameter, to prevent the sides from yielding to the great pressure of the incumbent water, in a deep immersion. This piece of wood was also a seat for the operator.

Every opening was well secured. The pumps had two sets of valves. The aperture at the bottom, for admitting water, was covered with a plate, perforated full of holes to receive the water, and prevent any thing from choking the passage, or stopping the valve from shutting. The brass valve might likewise be forced into its place with a screw, if necessary. The air pipes had a kind of hollow sphere, fixed round the top of each, to secure the air-pipe valves from injury: these hollow spheres were perforated full of holes, for the passage of the air through the pipes: within the air-pipes were shutters to secure them, should any accident happen to the pipes, or the valves on their tops.

Wherever the external apparatus passed through the body of the vessel, the joints were round, and formed by brass pipes, which were driven into the wood of the vessel, the holes through the pipes were very exactly made, and the iron rods, which passed through them, were turned in a lathe to

fit them; the joints were also kept full of oil, to prevent rust and leaking. Particular attention was given to bring every part, necessary for performing the operations, both within and without the vessel, before the operator, and as conveniently as could be devised; so that every thing might be found in the dark, except the water-gauge and the compass, which were visible by the light of the phosphorus, and nothing required the operator to turn to the right hand, or to the left, to perform any thing necessary.

The inventor next pursues the subject under the following heads:—

1. Description of a magazine, and its appendages, designed to be conveyed by the sub-marine vessel to the bottom of a ship.—In the fore part of the brim of the crown of the sub-marine vessel, was a socket, and an iron tube, passing through the socket; the tube stood upright, and could slide up and down in the socket, six inches: at the top of the tube was a wood-screw, fixed by means of a rod, which passed through the tube, and screwed the wood-screw fast upon the top of the tube: by pulling the wood-screw up against the bottom of a ship, and turning it at the same time, it would enter the planks; driving would also answer the same purpose; when the wood-screw was firmly fixed, it could be cast off by unscrewing the rod, which fastened it upon the top of the tube.

Behind the sub-marine vessel was a place, above the rudder, for carrying a large powder magazine; this was made of two pieces of oak timber, large enough, when hollowed out, to contain 150 pounds of powder, with the apparatus used in firing it, and was secured in its place by a screw, turned by the operator. A strong piece of rope extended from the magazine to the wood-screw above mentioned, and was fastened to both. When the wood-screw was fixed, and to be cast off from its tube, the magazine was to be cast off likewise by unscrewing it, leaving it hanging to the wood-screw; it was lighter than the water, that it might rise up against the object, to which the wood-screw and itself were fastened.

Within the magazine was an apparatus, constructed to run any proposed length of time, under twelve hours; when it had run out its time, it unpointed a strong lock resembling a gun lock, which gave fire to the powder. This apparatus was so jointed, that it could not possibly move, till, by casting off the magazine from the vessel, it was set in motion.

The skilful operator could swim so low on the surface of the water, as to approach very near a ship, in the night, without fear of being discovered, and might, if he chose, approach the stem or stern above water, with very little danger. He could sink very quickly, keep at any depth he pleased, and row a great distance in any direction he desired, without coming to the surface, and when he rose to the surface, he could soon obtain a fresh supply of air, when, if necessary, he might descend again, and pursue his course.

2. Experiments made to prove the nature and use of a sub-marine vessel.—The first experiment made was with about two ounces of gunpowder, which were exploded four feet under water, to prove to some of the first persons in Connecticut that powder would take fire under water.

The second experiment was made with two pounds of powder, inclosed in a wooden bottle, and fixed under a hoghead, with a two-inch oak plank between the hoghead and the powder; the hoghead was loaded with stones as deep as it could swim; a wooden pipe descending through the lower head of the hoghead, and through the plank, into the powder contained in the bottle, was primed with powder. A match put to the priming, exploded the powder, which produced a very great effect, rending the plank into pieces; demolishing the hoghead; and casting the stones and the ruins of the

hoghead, with a body of water, many feet into the air, to the astonishment of the spectators. This experiment was likewise made for the satisfaction of the gentlemen above mentioned.

There were afterwards made many experiments of a similar nature, some of them with large quantities of powder; they all produced very violent explosions, much more than sufficient for any purpose had in view.

In the first essays with the sub-marine vessel the inventor took care to prove its strength, to sustain the great pressure of the incumbent water, when sunk deep, before he trusted any person to descend much below the surface: and he never suffered any person to go under water without having a strong piece of rigging made fast to it, until he found him well acquainted with the operations necessary for his safety. After that he made him descend, and continue at particular depths, without rising or sinking, row by the compass, approach a vessel, go under her, and fix the wood-screw mentioned before, into her bottom, &c. until he thought him sufficiently expert to put any design into execution.

It required many trials to make a person of common ingenuity a skilful operator: the first employed was very ingenious, and made himself master of the business, but was taken sick in the campaign of 1776, at New York, before he had an opportunity to make use of his skill, and never recovered his health sufficiently afterwards.

3. Experiments made with a sub-marine vessel.—After various attempts to find an operator to his wish, Mr. Buthnell sent one, who appeared more expert than the rest, from New York, to a fifty-gun ship, lying not far from Governor's Island. He went under the ship, and attempted to fix the wooden screw into her bottom, but struck, as he supposes, a bar of iron, which passes from the rudder hinge, and is fixed under the ship's quarter. Had he moved a few inches, which he might have done, without rowing, he would probably have found wood where he might have fixed the screw; or, if the ship were sheathed with copper, he might easily have pierced it: but not being well skilled in the management of the vessel, in attempting to move to another place, he lost the ship; after seeking her in vain, for some time, he rowed some distance, and rose to the surface of the water, but found day-light had advanced so far, that he durst not renew the attempt. The adventurer said that he could easily have fastened the magazine under the stem of the ship, above water, as he rowed up to the stern, and touched it before he descended. Had he fastened it there, the explosion of 150 pounds of powder (the quantity contained in the magazine), must have been fatal to the ship. In his return from the ship to New York, he passed near Governor's Island, and thought he was discovered by the enemy on the island; being in haste to avoid the danger he feared, he cast off the magazine, as he imagined it retarded him in the swell, which was very considerable. After the magazine had been cast off one hour, the time the internal apparatus was set to run, it blew up with great violence.

Afterwards, there were two attempts made in Hudson's river, above the city, but they effected nothing. One of them was by the afore-mentioned person. In going towards the ship, he lost sight of her, and went a great distance beyond her: when he at length found her, the tide ran so strong, that, as he descended under water, for the ship's bottom—it swept him away. Soon after this, the enemy went up the river, and pursued the boat which had the sub-marine vessel on board; and sunk it with their shot. "Though," says Mr. Buthnell, "I afterwards recovered the vessel, I found it impossible, at that time, to prosecute the design any

further. I had been in a bad state of health, from the beginning of my undertaking, and was now very unwell; the situation of public affairs was such, that I despaired of obtaining the public attention, and the assistance necessary. I was unable to support myself, and the persons I must have employed, had I proceeded. Besides, I found it absolutely necessary, that the operators should acquire more skill in the management of the vessel, before I could expect success: which would have taken up some time, and made no small additional expence. I therefore gave over the pursuit for that time, and waited for a more favourable opportunity, which never arrived."

4. Other experiments made with a design to fire shipping.—In the year 1777, Mr. Buthnell made an attempt from a whale-boat against the Cerberus frigate, then lying at anchor between Connecticut river and New London, by drawing a machine against her side, by means of a line. The machine was loaded with powder, to be exploded by a gun-lock, which was to be unimpined by an apparatus, to be turned by being brought along-side of the frigate. This machine fell in with a schooner at anchor, astern of the frigate, and concealed from his sight. By some means or other it was fired, and demolished the schooner and three men; and blew the only one left alive over-board, who was taken up very much hurt.

After this he fixed several kegs under water, charged with powder, to explode, upon touching any thing, as they floated along with the tide: he set them afloat in the Delaware, above the English shipping at Philadelphia, in December, 1777. "I was unacquainted," says he, "with the river, and obliged to depend upon a gentleman very imperfectly acquainted with that part of it, as I afterwards found. We went as near the shipping as he durst venture; I believe the darkness of the night greatly deceived him, as it did me. We set them adrift, to fall with the ebb, upon the shipping. Had we been within sixty rods I believe they must have fallen in with them immediately, as I designed; but, as I afterwards found, they were set adrift much too far distant, and did not arrive until after being detained some time by frost, they advanced in the day-time, in a dispersed situation, and under great disadvantages. One of them blew up a boat with several persons in it, who imprudently handled it too freely, and thus gave the British that alarm which brought on the battle of the Kegs."

DIU, an island at the entrance of the gulf of Cambay, in the Deccan of Hindoostan, three miles long and one broad. On it is a large fortified town of the same name, built of free-stone and marble; and it contains some fine churches, erected by the Portuguese, about the time they took possession of the island in 1515. The trade of the town, once so important, is almost entirely removed to Surat. It is 180 miles W. by S. of Surat, and 200 N.W. of Bombay. Long. 69. 52. E. Lat. 20. 43. N.

DIURESIS (from *uror, urine*). An excretion of urine.

DIXAN, the first town in Abyssinia, on the side of Tarenta. It is built on the top of a conical hill; a deep valley surrounds it like a trench, and the road winds spirally up the hill till it ends among the houses. The inhabitants consist of Moors and Christians, whose only trade is the selling of children. The Christians bring such as they have stolen in Abyssinia to Dixan, where the Moors receive them, and carry them to a market at Masuah, whence they are sent to Arabia or India. The priests of the province of Tigre are openly concerned in this infamous traffic. Long. 40. 7. E. Lat. 14. 57. N.

DIXMUDE, a town of Austrian Flanders, which has been often taken, the last time by the French in 1794. It is cele-

brated for its excellent butter, and seated on the river Yperlee, ten miles N.W. of Ypres. Long. 2. 57. E. Lat. 51. 2. N.

DIZIER, St. a town of France, in the department of Upper Marne, seated on the Marne, where it begins to be navigable for boats, fifteen miles S.E. of Vitri-le-François. Long. 4. 54. E. Lat. 48. 35. N.

DNIEPER, anciently the Boristhenes, a large river of Russia, which rises in the government of Smolensko, and flowing in a southerly direction, enters the Black Sea, between Cherfon and Oczakow. From its source to its mouth, it now flows entirely through the Russian dominions; and through this whole course, of above 800 miles, its navigation is only once interrupted by a series of cataracts, which begin below the mouth of the Samara, and continue for above forty miles; but these may be passed in spring, without much hazard, even by loaded barks. In other seasons of the year, the goods are landed at Kernenik, opposite the mouth of the Samara, and transported forty miles by land to Kitchkale, six miles from the fortrefs of Alexandrowk, where they are again embarked, and defend the stream to Cherfon.

DNIESTER, a fine river, which rises in Galicia, in Austrian Poland, and visits Chockzim, dividing Podolia from Moldavia; it then separates Bessarabia from the Russian government of Catharinenslat, and having watered Bender, falls into the Black Sea, between the mouths of the Dnieper and the Danube.

DOBELIN, a town of Courland, twenty miles S.W. of Mittau. Long. 23. 35. E. Lat. 56. 28. N.

DOBRZIN, a town of Poland, in Masovia, capital of a territory of the same name, seated on a rock, near the Vistula, fourteen miles N.W. of Plockiko. Long. 19. 5. E. Lat. 52. 54. N.

DOCKUM, a town of the United Provinces, in W. Friesland; at the mouth of the river Ee, ten miles N.E. of Lewarden. Long. 5. 41. E. Lat. 53. 18. N.

DOBART (Denys), physician of Lewis XIV. and member of the French Academy of Sciences, was born at Paris in 1634. Among other things, he is the author of a *Statica Medicina Gallica*: and he greatly cultivated the theory of insensible perspiration, treading closely in the steps of Sanctoarius. He made the following experiment upon himself. Upon the first day of Lent 1677, he weighed 116 pounds and one ounce; after undergoing the discipline and abstinence of Lent, he weighed, on Easter Eve, no more than 107 pounds and twelve ounces. He lost during this season, therefore, eight pounds and five ounces. These attentions he is said to have continued for 33 years. He died in 1707, universally regretted. He was, says Fontenelle, of a most religious and serious character, yet not austere and frowning. Guy Patin, who was as covetous of eulogies, as he was prodigal of satire, called him *monstrum sine vitio*, a prodigy of wisdom and science without any defect.

Claude Dobart, his son, who was also first physician to the king, died at Paris in 1720, and left Notes sur l'Histoire Générale des Drogues, par Pierre Pomey.

DODSWORTH (Roger), son of Matthew Dodsworth, rector of York cathedral, and chancellor to Archbishop Matthews, was born July 24, 1585, at Newton-Grange, in the parish of St. Oswald, in Rydale, Yorkshire; he was a man of wonderful industry, but less judgment; always collecting and transcribing, but never published any thing. He was esteemed as an indefatigable collector of the antiquities of York, who undertook and executed a work, which, to the antiquaries of the present age, would have been the stone of Tyldes. One hundred and twenty-two volumes of his own writing, besides original MSS. which he had obtained from several hands,

making all together 162 volumes folio, now lodged in that grand repository of our ancient monuments the Bodleian Library at Oxford, are lasting memorials what this country owes to him, as the two volumes of the *Monasticon* (which though published under his and Dugdale's names conjointly, were both collected and written totally by him) will immortalise that extensive industry which has laid the whole kingdom under obligation. The patronage of General Fairfax preserved this treasure, and bequeathed it to the library where it is now lodged. Fairfax preserved also the fine windows of York cathedral; and when St. Mary's tower, in which were lodged innumerable records, both public and private, relating to the northern parts, was blown up during the siege of York, he gave money to the soldiers who could save any scattered papers, many of which are now at Oxford; though Dodsworth had transcribed and abridged the greatest part before. Fairfax allowed Dodsworth a yearly salary to preserve the inscriptions in churches.

Fairfax died in 1671; his nephew Henry Fairfax, Dean of Norwich, gave Roger Dodsworth's 160 volumes of collections to the university of Oxford; but the MSS. were not brought thither till 1673, and then in wet weather, when Wood with much difficulty obtained leave of the vice-chancellor to have them brought into the muniment-room in the school-tower, and was a month drying them on the leads. Dodsworth died in August 1654, and was buried at Rufford, Lancashire.

DOEL, a town of Dutch Flanders, on the river Scheld, opposite Lillo, nine miles N.W. of Antwerp. Long. 4. 15. E. Lat. 51. 17. N.

DOG (*Encycl.*) By stat. 38 Geo. III. c. 41. f. 2. there shall be paid, from and after April 5, 1798, in lieu of the old duties repealed, the following rates and duties for every dog of the several descriptions herein-after mentioned, kept by or for the use of any person:

Number of dogs.	Duties payable for each dog.
For every greyhound, hound, pointer, setting dog, spaniel, lurcher, or terrier, and for every dog of whatever description or denomination the same may be, where any person shall keep two or more dogs	£. 0 6 0
For any dog (not being a greyhound, hound, setting dog, spaniel, lurcher, or terrier) kept by or for the use of any person inhabiting a dwelling-house, affixed to any of the duties on houses, windows, or lights, or on inhabited houses, where one such dog and no more shall be kept by or for the use of such person	£. 0 4 0
The said duties to be paid by the persons respectively keeping such dogs, or for whose use the same shall be kept, and to be subject to all the exemptions contained in any act in force; and also to the regulations contained in the act of the 36th George III. which act contains the following provisions:—	

1st, That the duty shall not extend to dogs not six months old, the proof of which is to lie on the owner, on an appeal to the commissioners.

2dly, If any person shall be desirous of compounding for the number of hounds by him kept, and shall give notice thereof to the collector, and shall pay within thirty days after April 5, yearly, the sum of 24l. such person shall not be liable to be assessed in respect of any hounds by him kept in the preceding year; and if they are kept in two or more parishes, he shall give notice in which parish such composition is intended to be made. 38 Geo. III. c. 41. f. 2.

DOGADO, a province of the late Venetian states, in

which is the capital. It is bounded on the E. by the gulf of Venice, on the S. by Polesino, on the W. by Paduano, and on the north by Trevifano. It comprehends many small islands near it, called the LAGUNES of VENICE.

DOGGET (Thomas), an author and an actor, was born in Castle-street, Dublin, and made his first theatrical attempt on the stage of that metropolis; but not meeting with the encouragement there that his merit undoubtedly deserved, he came over to England, and entered himself in a travelling company, but from thence very soon was removed to London, and established in Drury-Lane and Lincoln's-Inn-Fields theatres, where he was universally liked in every character he performed, but those in none more conspicuously than those of Fonderwife in the Old Bachelor, and Ben in Love for Love, which Mr. Congreve, with whom he was a very great favourite, wrote in some measure with a view to his manner of acting.

In a few years after he removed to Drury-Lane theatre, where he became joint-manager with Wilks and Cibber, in which situation he continued, till on a disgust he took in the year 1712, at Mr. Booth's being forced on them as a sharer in the management, he threw up his part in the property of the theatre, though it was looked on to have been worth 1000*l.* per annum. He had, however, by his frugality, saved a competent fortune to render him easy for the remainder of his life, with which he retired from the hurry of business in the very meridian of his reputation. As an actor he had great merit, and his contemporary Cibber informs us that he was the most original and the strictest observer of nature, of any actor of his time. His manner, though borrowed from none, frequently served for a model to many; and he possessed that peculiar art which so very few performers are masters of, viz. the arriving at the perfectly ridiculous, without stepping into the least impropriety to attain it. And so extremely careful and skilful was he in the dressing of his characters to the greatest exactness of propriety, that the least article of what he wore seemed in some measure to speak and mark the different humour he presented;—a necessary care in a comedian, in which many performers are but too remiss. He died Sept. 22, 1721.

Dogget, in his political principles, was a "Whig up to the head and ears;" and so strictly was he attached to the interests of the house of Hanover, that he never let slip any occasion that presented itself of demonstrating his sentiments in that respect. One instance, among others, is well known, which is, that the year after George I. came to the throne, this performer gave a waterman's coat and silver badge, to be rowed for by six watermen, on the 1st day of August, being the anniversary of that king's accession to the throne. And at his death bequeathed a certain sum of money, the interest of which was to be appropriated annually, for ever, to the purchase of a like coat and badge, to be rowed for in honour of that day. Which ceremony is every year performed on the 1st of August, the claimants setting out on a signal given at that time of the tide when the current is strongest against them, and rowing from the Old Swan near London-Bridge, to the White Swan at Chelsea.

As a writer, Dogget has left behind him only one comedy, which has not been performed in its original state for many years, entitled, *The Country Wake*. C. 1696, 4to. It has been altered however into a ballad farce, which frequently makes its appearance under the title of, *Flora, or Hob in the Well*.

DOL, a town of France, in the department of Ille and Vilaine. It was lately an episcopal see, and is situate in a mo-

rafs, five miles from the sea, and 21 S.E. of St. Malo. Long. 1. 41. W. Lat. 48. 33. N.

DOLCE-AQUA, a town of Piedmont, capital of a marquise of the same name, with a castle. It is seated on the Nervia, five miles N. of Vintimiglia. Long. 7. 42. E. Lat. 43. 58. N.

DOLCIGNO, a strong town of Albania, with a bishop's see, a good harbour, and a citadel. It is seated on the Drino, 10 miles S.E. of Antivari. Long. 19. 25. E. Lat. 42. 12. N.

DOLE, a town of France, in the department of Jura, seated on the river Doubs, 35 miles S.W. of Besançon. Long. 5. 38. E. Lat. 47. 6. N.

DOLET (Stephen), a very learned man, and memorable for being burnt at Paris for his opinions in religion, was born at Orleans in 1508. He applied himself to reform the French language, and polish it from the barbarity with which it was incrufted; nay, what is more, as Baillet tells us, he thought himself destined by Heaven to this task, and let himself to compose some treatises on the matter; but the public, it seems, was not disposed to listen to his pretended vocation. He wrote some Latin and French verses, which in Bayle's judgment are not amiss; for as to the severity and contempt with which Julius Scaliger treated him and his poetry, it has no weight with Bayle, who imputes it to a private motive of resentment, which Scaliger had conceived against Dolet, for interfering with him in defending the Ciceronians against the ridicule of Erasmus. Dolet's attempts to promote good literature gained him a great share in the affection of Castellani, who was a very learned prelate, and much beloved by Francis I. whose natural son, by the way, Dolet is said to have been; though Bayle is of opinion, that Francis was too young, when Dolet was born, to have been his father. We must not forget to observe, that Dolet, though a learned man and an author, was in the mean time a printer and bookseller at Lyons, and printed some of his own writings. He would have printed the French translation of most of Plato's works, which he himself had made, if he had lived; this translation however he must have made from the Latin, which he understood well, and not from the Greek, which he is said not to have understood at all. The first time he was imprisoned for religion, his friend Castellani interceded for him, and got him released, upon his promising to be a good Catholic. But Dolet relapsing into his former licentious way, nobody durst appear for him when he was imprisoned the second time: so that, being abandoned to the fury of the inquisitors, he was condemned to be burnt to death for atheism, and not for Lutheranism as some have declared: this punishment he underwent August 3, 1546, which was the day of his nativity. A letter was published by Almevoen, in his *Amicitiae Theologico-Philologicae*, printed at Amsterdam in 1694, which testifies, that Dolet recommended himself to the holy Virgin, and to St. Stephen, a little before he was strangled, but these kind of testimonies are much to be suspected.

DOLGELLY, a town in Merionethshire, with a market on Tuesday. It is seated on the river Avon, in a vale so called, and at the foot of the great rock Cader-Idris, which is extremely high. It has a good manufacture of Welsh cotton, and is 31 miles N.W. of Montgomery, and 205 of London. Long. 9. 48. W. Lat. 52. 42. N.

DOLLART BAY, a large gulf, separating E. Friedland, in Germany, from Groningen, one of the United Provinces.

DOMAZLIZE, a town of Bohemia, in the circle of Pilsen, remarkable for a battle fought between the crusaders and the Hussites in 1466, to the great disadvantage of the former. It was taken by the Swedes in 1541. It is seated on the river Cadzuz, 17 miles S. of Pilsen.

DOMBACA, a small island near the coast of Ava, in the Bay of Bengal. Long. 94. 35. E. Lat. 17. 32. N.

DOMBES, a late principality and small country of France, in Burgundy, of which Trevoix was the capital. It is now part of the department of Ain.

DOMBROWAZ, a town of Poland, in the palatine of Lemberg, 60 miles S.W. of Lemberg.

DOMFRONT, a town of France, in the department of Orne, seated on a craggy rock, which has a large cleft from the summit to the base, through which flows the little river Varenne. It is 35 miles N.W. of Alençon. Long. 0. 43. W. Lat. 48. 38. N.

DOMICILE, in Scots law, is the dwelling-place where a person lives with an intention to remain.

DOMINIUM EMINENS, in Scots law, that power which the state or sovereign has over private property, by which the proprietor may be compelled to sell it for an adequate price where public utility requires.

DOMINIUM DIRECTUM, in Scots law, the right which a superior retains in his lands, notwithstanding the feudal grant to his vassal.

DOMINIUM UTILE, in Scots law, the right which the vassal acquires in the lands by the feudal grant from his superior.

DOMINO, St. one of the Tremiti Islands, in the gulf of Venice, 15 miles from the coast of Naples.

DOMITZ, a town of Mecklenberg Schwerin, with a fort, seated at the confluence of the Elbe and Elve, 25 miles S. of Schwerin. Long. 11. 41. E. Lat. 53. 15. N.

DOMMEL, a river of Brabant, which receives the Aa below Bois-le-Duc, and then falls into the Meuse.

DOMO-D'OSSOLA, a town of Italy, in the duchy of Milan, with a castle, seated on the Tosa, at the foot of the Alps, 20 miles N. of Varallo.

DOMPAIRE, a town of France, in the department of the Voiges, formerly the residence of the kings of Austrasia and dukes of Lorraine, 10 miles W.N.W. of Epinal.

DOMREMY-LA-PUCELLE, a village of France, in the department of Meuse, remarkable for the birth of Joan of Arc, the Maid of Orleans. It is seated on the Meuse, five miles from Neufchateau.

DON, a river in Yorkshire, which waters Sheffield, Rotherham, and Doncaster, and joins the Aire near its termination with the Ouse.

DONAGHADEE, a sea-port of Ireland, in the county of Down, 20 miles W. by S. of Port Patrick, in Scotland, between which two places a packet-boat sails every day.

DONATUS (JEROM), a nobleman of Venice, who died in the beginning of the 16th century. He was very useful to his country; served it as a commander more than once: and was the means of reconciling that republic and pope Julius II. though he had the misfortune to be carried off by a violent fever at Rome before the treaty was concluded between them. He was also a man of learning: and published a translation of Alexander Aphrodisæus de Anima. His letters are likewise well written; and he made Erasmus say of him, that he was capable of performing any thing in the way of learning, if his mind had not been dissipated by other employments. Pictorius Valerianus has placed him in the list of unfortunate learned men, for which he gives three reasons: first, because his domestics obeyed him ill; secondly, because he did not live to see the happiness which would arise to his country from the conclusion of his treaty; thirdly, because a great many books, which he had written to immortalise his name, remained unpublished. Now, as it seems to us, the first of these grievances might have been redressed; the second was no grievance at all, since he had actually attained his point; and, thirdly, we cannot think it any misfortune to a dead man,

that such a number of syllables, as used to compose his name, are no longer put together and founded amongst the living.

DONAUESCHINGEN, or **DONESCHINGEN**, a town of Suabia, in the principality of Furlenburg. It is the chief residence of the prince; in the court-yard of whose palace are some springs, collected in a reservoir about 30 feet square, from which issues a little brook; and though the rivulets Bribach and Brege, uniting below the town, are far more considerable than this stream, which flows into them soon after their junction, yet has this alone the honour of being called the head of the Danube.

DONCHERRY, a town of France, in the department of Ardennes, seated on the Meuse, three miles from Sedan. Long. 5. 2. E. Lat. 49. 42. N.

DONEGAL, a county of Ireland, in the province of Ulster, 68 miles long and 44 broad; bounded on the E. by Londonderry and Tyrone, on the W. and N. by the ocean, and on the S. by Fermanagh and the bay of Donegal. It contains 40 parishes, and lends 12 members to parliament. It is in general a champaign country, and abounds with harbours.

DONEGAL, a town of Ireland, capital of a county of the same name, seated on the bay of Donegal, 10 miles N. of Ballyshannon. Long. 7. 47. W. Lat. 54. 42. N.

DONERAILE, a town of Ireland, in the county of Cork. Near it are quarries of beautiful variegated marble. It is situate on the Awbeg, 19 miles N.W. of Cork, and 113 S.W. of Dublin. Long. 8. 42. W. Lat. 52. 5. N.

DONGALA, or **DONCALA**, a town of Nubia, with a castle. It contains 10,000 houses of wood, and is seated on the Nile, among mountains, 150 miles N. of Sennar. Long. 30. 35. E. Lat. 21. 0. N.

DONJON, a town of France, in the department of Allier, 24 miles S.E. of Moulins. Long. 3. 42. E. Lat. 46. 21. N.

DONZY, a town of France, in the department of Nièvre, 22 miles N. of Nevers. Long. 3. 14. E. Lat. 47. 22. N.

DOOAB, or **DOABAB**, a fertile tract of Hindoostan Proper; between the Ganges and Jumna, and formed by the confluence of those rivers. It is so named by way of eminence; the word signifying a tract of land formed by the approximation of two rivers. The principal part of it is subject to the nabob of Oude.

DOON, LOCH, a lake of Ayrshire, in the district of Kyle, six miles in length, and of considerable breadth. On an island in this lake stands Balloch Castle.

DOON, a river of Scotland, which issues from Loch Doon, and taking a N.W. direction, divides the district of Kyle from Carrick; the southern division of Ayrshire, and falls into the frith of Clyde.

DOOR-CLOSER, a machine or contrivance, calculated to be morticed into the bottom of a door, in order to keep the wind from coming in, and so that the door may yet pass freely over the carpet, &c. It is shewn in Plate 20, where, Fig. 1. represents the machine laid open to shew the work.

Fig. 2. the same represented as if the door were shut.

a. A spring, which, when the door is open, by compressing the inner ends of the rods, *bb*, turning on the centres, *cc*, cause the outer ends to rise along with the slip of wood, *d*, by which the door may pass over the carpet; *e* is the end of one rod, which, when shut against the friskening-plate, *f*, on the door-post, causes the slip of wood, *d*, to close on the door, and prevent any wind coming underneath the door.

DORAN, a town of Arabia, in Yemen, 28 miles S. of Sanaa. Long. 44. 4. E. Lat. 14. 55. N.

DORAT, a town of France, in the department of Upper

Vienne, seated on the Abran, near its junction with the Sevre, 25 miles N. of Limoges. Long. 1. 24. E. Lat. 46. 12. N.

DORCHESTER, a town in Oxfordshire, which was a station of the Romans, and ruined in the wars with the Danes. It was a bishop's see, till 1086, when William the Conqueror translated it to Lincoln; and it had five stately churches, though now but one. It gives the title of baron to the family of Carleton, and is seated on the Tame, 10 miles S.E. of Oxford, and 49 W.N.W. of London. Long. 1. 0. W. Lat. 51. 39. N.

DORDOGNE, a department of France, which includes the late province of Perigord. It receives its name from a river, which rises in the mountains of Auvergne, and falls into the Garonne, near Bourdeaux.

DORN, a village in a detached part of Worcesterhire, three miles S.E. of Camden in Gloucestershire. The Roman highway runs through it. There are evident tokens of its antiquity, and of its having been a Roman colony; abundance of coins, both Roman and British, having been found here.

DORNBURG, a town of Upper Saxony, in the principality of Weimar, 14 miles E. of Weimar.

DORNOCH, the county-town of Sutherlandshire, at the entrance of a frith of the same name, over which it has a ferry to Tain. It is a small place, and half in ruins, but was the residence of the bishops of Caithness. Part of the cathedral serves for the parish church; the other part is in ruins. It is 40 miles N.E. of Inverness. Long. 3. 48. W. Lat. 57. 52. N.

DORPT, or DORPAT, a town of Livonia, on the Embere, between the lakes Woiero and Pepas, 60 miles S. of Narva. Long. 27. 52. E. Lat. 58. 18. N.

DORSTEN, a town of Germany, in the circle of Lower Rhine. Though strong, it was several times taken and retaken by the Swedes and Hessians during the long war of Germany. It is seated on the Lippe, 30 miles N. of Dusseldorf, and 31 S.W. of Munster. Long. 6. 50. E. Lat. 51. 42. N.

DOUBLE-EMPLOYMENT (*Encycl.*). With respect to what M. D'Alembert adds in his Elements of Music, p. 80, and which he repeats in the Encyclopédie, article DOUBLE-EMPLA, viz. that the chord of the seventh *re fa la ut*, though we should even regard it only as an inversion of *fa la ut re*, cannot be followed by the chord *ut mi sol ut*; "I cannot (says Rousseau) be of his opinion in this point.

"The proof which he gives for it is, that the dissonance *ut* of the first chord cannot be resolved in the second; and this is true, since it remains in its place: but in this chord of the seventh *re fa la ut*, inverted from this chord of the superadded sixth *fa la ut re*, it is not the *ut*, but the *re*, which is the dissonance; which, of consequence, ought to be resolved in ascending upon *mi*, as it really does in the subsequent chord; so that this procedure in the bass itself is forced, which, from *re*, cannot without an error return to *ut*, but ought to ascend to *mi*, in order to resolve the dissonance.

"M. D'Alembert afterwards shews, that this chord *re fa la ut*, when preceded and followed by that of the tonic, cannot be authorized by the double-employment: and this is likewise very true; because this chord, though figured with a 7, is not treated as a chord of the seventh, neither when we make our entrance to it, nor our exit from it; or at least that it is not necessary to treat it as such, but simply as an inversion of the superadded sixth, of which the dissonance is the bass: in which case we ought by no means to forget, that this dissonance is never prepared. Thus, though in such a transition the double-employment is not in question, though the chord of the seventh be no more than apparent, and impossible to be resolved by the rules, this does not hinder the transition from being proper and regular, as I have just proved to theorists, Vol. X.

and as I shall immediately prove to practical artists, by an instance of this transition; which certainly will not be condemned by any one of them, nor justified by any other fundamental bass except my own. (See the Musical Dictionary, Plate D, fig. 14.)

"I acknowledge, that this inversion of the chord of the sixth superadded, which transfers the dissonance to the bass, has been censured by M. Rameau. This author, taking for a fundamental chord the chord of the seventh, which results from it, rather chose to make the fundamental bass descend diatonically, and resolve one seventh by another, than to unfold this seventh by an inversion. I had dissipated this error, and many others, in some papers which long ago had passed into the hands of M. D'Alembert, when he was composing his Elements of Music; so that it is not his sentiment which I attack, but my own opinion which I defend."

For what remains, the double-employment cannot be used with too much reserve, and the greatest masters are the most temperate in putting it in practice.

DOUBLET (*Encycl.*). The manner of making doublets is as follows:

Let the crystal or glass be first cut by the lapidaries in the manner of a brilliant, except that, in this case, the figure must be composed from two separate stones, or parts of stones, formed in the manner of the upper and under parts of a brilliant, if it was divided in an horizontal direction, a little lower than the middle. After the two plates of the intended stone are thus cut, and fitted so exactly that no division can appear when they are laid together, the upper part must be polished ready for setting; and then the colour must be put betwixt the two plates by this method. "Take of Venice or Cyprus turpentine two scruples; and add to it one scruple of the grains of mastich chosen perfectly pure, free from foulness, and previously powdered. Melt them together in a small silver or brass spoon ladle, or other vessel, and put to them gradually any of the coloured substances below mentioned, being first well powdered; stirring them together as the colour is put in, that they may be thoroughly commixed. Warm then the doublets to the same degree of heat as the melted mixture; and paint the upper surface of the lower part, and put the upper one instantly upon it, pressing them to each other, but taking care that they may be conjoined in the most perfectly even manner. When the cement or paint is quite cold and set, the redundant part of it, which has been pressed out of the joint of the two pieces, should be gently scraped off the side, till there be no appearance of any colour on the outside of the doublets: and they should then be skillfully set; observing to carry the mounting over the joint, that the upper piece may be well secured from separating from the under one."

The colour of the ruby may be best imitated, by mixing a fourth part of carmine with some of the finest crimson lake that can be procured.

The sapphire may be counterfeited by very bright Prussian blue, mixed with a little of the above-mentioned crimson lake, to give it a cast of the purple. The Prussian blue should not be very deep-coloured, or but little of it should be used: for otherwise, it will give a black shade that will be injurious to the lustre of the doublets.

The emerald may be well counterfeited by distilled verdigrease, with a little powdered aloes. But the mixture should not be strongly heated, nor kept long over the fire after the verdigrease is added: for the colour is to be soon impaired by it.

The resemblance of the garnet may be made by dragon's blood; which, if it cannot be procured of sufficient brightness, may be helped by a very small quantity of carmine.

The amethyst may be imitated by the mixture of some
7 M.

Prussian-blue with the crimson lake; but the proportions can only be regulated by directions, as different parcels of the lake and Prussian blue vary extremely in the degree of strength of the colour.

The yellow topazes may be counterfeited by mixing powdered ashes with a little dragon's blood, or by good Spanish anotto: but the colour must be very sparingly used, or the tinge will be too strong for the appearance of that stone.

The chrysolite, hyacinth, vinegar garnet, eagle marine, and other such weaker or more diluted colours, may be formed in the same manner, by lessening the proportions of the colours, or by compounding them together correspondently to the hue of the stone to be imitated; to which end it is proper to have an original stone, or an exact imitation of one, at hand when the mixture is made, in order to the more certain adapting the colours to the effect desired: and when these precautions are taken, and the operation well conducted, it is practicable to bring the doublets to so near a resemblance of the true stones, that even the best judges cannot distinguish them, when well set, without a peculiar manner of inspection.

DOUBS, a department of France, including part of the late province of Franche Comté. It is so named from a river which falls into the Rhone.

DOUE, a small town of France, in the department of Maine and Loire. It has one of the finest fountains in France; and near it is a vast Roman amphitheatre, cut out of the solid rock. It had, in the time of the monarchy, a considerable manufacture of druggets and tammies. It is nine miles S.W. of Saumur.

DOVE, a river in Derbyshire, which rises in the Peak, parts the county from Staffordshire, and falls into the Trent, four miles N. of Burton.

DOVEDALE, one of the most romantic spots in Derbyshire, in the neighbourhood of Ashborn. Here the river Dove runs in a chasm between precipitous rocks.

DOUERO, or DOURO, a river of Spain, which rises in Old Castile, in the mountains of Urbion, runs W. by several towns, and crossing Portugal, falls into the Atlantic Ocean, near Oporto.

DOUGLAS, CAPE, a lofty promontory, on the W. coast of America, within the entrance of Cook's Inlet. Its summit appears above the clouds, forming two very high mountains. Long. 153. 30. W. Lat. 58. 56. N.

DOUGLAS (Gavin), bishop of Dunkeld in Scotland, was the third son of Archibald earl of Angus, and born in the year 1474. Where he was educated, is not known; but it is certain that he studied theology: a study, however, which did not estrange him from the muses; for he employed himself at intervals in translating into beautiful verse the poem of Ovid *de Remedio Amoris*. The advantages of foreign travel, and the conversation of the most learned men in France and Germany, to whom his merit procured the readiest access, completed his education. With his superior recommendations and worth, it was impossible he could remain unnoticed. His first preferment was to be provost of the collegiate church of St. Giles in Edinburgh; a place, at that time, of great dignity and revenue. In the year 1514, the queen mother, then regent of Scotland, appointed Douglas, abbot of Aberbrothock, and soon after archbishop of St. Andrew's; but, the queen's power not being sufficient to establish him in the possession of that dignity, he relinquished his claim in favour of his competitor Foreman, who was supported by the pope. In 1515 he was by the queen appointed bishop of Dunkeld; and that appointment was soon after confirmed by his holiness Leo X. Nevertheless it was some time before he could obtain peaceable possession of his see. The duke of Albany, who in this year was declared regent, opposed him because he was sup-

ported by the queen; and, in order to deprive him of his bishopric, accused him of acting contrary to law in receiving bulls from Rome. On this accusation he was committed to the castle of Edinburgh, where he continued in confinement about a year; but the regent and the queen being at last reconciled, he obtained his liberty, and was consecrated bishop of Dunkeld. In 1517 he attended the duke of Albany to France; but returned soon after to Scotland. In 1521, the disputes between the earls of Arran and Angus having thrown the kingdom into violent commotion, our prelate retired to England, where he became intimately acquainted with Polydore Virgil the historian. He died in London, of the plague, in 1522; and was buried in the Savoy.

He wrote, 1. The Palace of Honour: a most ingenious poem under the similitude of a vision; in which he paints the vanity and inconsistency of all worldly glory. It abounds with incidents, and a very rich vein of poetry. The palace of happiness, in the picture of Cebes, seems to be the ground-work of it.—2. Aureæ Narrationes: a performance now lost; in which, it is said, he explained, in a most agreeable manner, the mythology of the poetical fictions of the ancients.—3d. Comedie aliquot Sacre: none of which are now to be found. 4. Thirteen Books of Eneades, of the famous Poet Virgil, translated out of Latin verses into Scottish metre, every buke having its particular prologue. Imprinted at Lond. 1553, in 4to.; and reprinted at Edinburgh 1710, in folio.—The last is the most esteemed of all his works. He undertook it at the desire of Lord Henry Sinclair, a magnificent patron of arts in those times; and he completed it in 18 months; a circumstance which his admirers are too fond of repeating to his advantage. David Hume of Godscroft, an author of uncommon merit, and an admirable judge of poetry, gives the following testimony in his favour: "He wrote (says he), in his native tongue, divers things; but his chiefest work is his translation of Virgil, yet extant, in verse: in which he ties himself so strictly as is possible; and yet it is so well expressed, that whosoever will essay to do the like, will find it a hard piece of work to go through with it. In his prologues, before every book where he hath his liberty, he sheweth a natural and ample vein of poetry, so pure, pleasant, and judicious, that I believe there is none that hath written before or since, but cometh short of him."

It has been said, that he compiled an historical treatise *De Rebus Scoticis*; but no remain of it hath descended to the present times.

DOULAINCOURT, a town of France, in the department of Upper Marne, 10 miles S.W. of Joinville.

DOURAK, a town of Persia, near the confluence of the Euphrates and Tigris, remarkable for the reed of which they make pens. Long. 56. 57. E. Lat. 32. 15. N.

DOURDAN, a Town of France, in the department of Seine and Oise, with a manufacture of silk and worsted stocking. It is seated on the Orge, 25 miles S. W. of Paris. Long. 2. 10. E. Lat. 48. 35. N.

DOURLACH, a town of Suabia, capital of Baden Dourlach. It was burnt by the French in 1680. The inhabitants are Protestants. It is seated on the Gießen, 12 miles S. of Philippsburg. Long 9. 28. E. Lat. 49. 2. N.

DOURENS, or DOULENS, a town of France, in the department of Somme, with two citadels. It is seated on the Autie, 15 miles N. of Amiens. Long. 2. 25. E. Lat. 50. 10. N.

DOUSA (Janus), a very learned man, was born of a noble family at Nortwick in Holland, in 1545. He lost his parents when very young, and was sent to several schools; to one at Paris, among the rest, where he made a great progress in Greek and Latin learning. When he had finished his educa-

tion, he returned to his own country, and married; and though he was scarcely grown up, he applied himself to affairs of state, and was soon made a curator of the banks and ditches, which post he held above twenty years, and then resigned it.

Doufa was not only a scholar and a statesman, but likewise a soldier; and he behaved himself so well in that capacity at the siege of Leyden 1574, that the Prince of Orange thought he could commit the government of the town to none so properly as to him. In 1575 the university was founded there, and Doufa made first curator of it; which place he was very fit for, as well on account of his learning, as for his other defects. His learning was indeed prodigious; and he had such a memory, that he could at once give an answer to any thing that was asked him, relating to ancient or modern history, or, in short, to any branch of literature. He was, says Melchior Adam, and Thuanus says the same, a kind of living library; the Varro of Holland, and the oracle of the university of Leyden. His genius lay principally towards poetry, and his various productions in that way were numerous; and what seems remarkable enough, he composed the annals of his own country, which he had collected from the public archives, in verse. He wrote also a great many things in the critical way; as, notes upon Horace, Sallust, Plautus, Petronius, Catullus, Tibullus, &c. His moral qualities are said to have been no less meritorious, than his intellectual and literary; for he was modest, humane, benevolent, and open. He was admitted into the supreme assembly of the nation, where he kept his seat, and discharged his office worthily, for the last thirteen years of his life. He died in 1604, and his funeral oration was made by Daniel Heinfius.

He left four sons behind him; the eldest of which, Janus Doufa, had he lived, have been a more extraordinary man than his father. Joseph Scaliger called him the ornament of the world; and says, that in the flower of his age he had reached the same maturity of wisdom and erudition, as others might expect to reach after a life spent in study. Grotius also assures us, that his poems exceeded those of his father; and that he assisted his father in composing the Annals of Holland. He was born in 1572; and before he was well out of infancy, became, through the great care of his father, not only a good linguist and poet, but also a good philosopher and mathematician. To all this he afterwards added an exquisite knowledge of the civil law and of history. Besides a great many poems, which he composed in a very tender age, we have notes and observations which he made upon several Latin poets. Those upon Plautus were the produce of his 16th year; and he was not above 19 when he published his book *De Rebus Cœlestibus*, and his Panegyric upon a Shadow. His commentaries upon Catullus, Tibullus, and Propertius, were published the same year. His extraordinary fame and merit caused him to be made preceptor to the Prince of Orange, and afterwards first librarian of the university of Leyden. He died at the Hague, in his return from Germany; very immaturely, for his death happened in 1597, when he had not quite completed his 26th year.

Doufa's three other sons, George, Francis, and Theodorus, were all of them men of learning, though not so much above the common rate as Janus was. George was a good linguist; travelled to Constantinople; and published a relation of his journey, with several inscriptions which he found there and elsewhere. Also, in 1607, he printed George Codrenus's book, entitled, *De Originibus urbis Constantinopolitaneæ*, with Meursius's notes upon it. Francis was far from wanting learning; for, in 1600, he published the epistles of Julius Cæsar Scaliger; his annotations upon Aristotle's History of Animals; and some fragments of Lucilius, with notes of his own upon them. Theodorus, lord of Barkeniten, published

the Chronicon of George Logotheta with notes, in 1614; and, in 1638, wrote a treatise, called *Farrago Ethica variarum Linguarum, variorumque auctorum*, &c.

DOWLATABAD, formerly called Amednagar, a province of the Deccan of Hindoostan. It is bounded on the N. by Candeleth and Malway, on the W. by the Gauts, on the S. by Visapur and Golconda, and on the E. by Berar. Auringabad is the capital.

DOWLATABAD, a fortress in the Deccan of Hindoostan, 15 miles N.W. of Auringabad. In the neighbourhood are the pagodas of Elora, most of which are cut out of the natural rock. Long. 76. o. E. Lat. 19. 55. N.

DRABICIUS (Nicholas), a celebrated enthusiast, was born about 1587, at Stranitz in Moravia, where his father was burgomaster. He was admitted minister in 1616, and exercised his function at Drakotutz; and, when he was obliged to seek a retreat in foreign countries, on account of the severe edicts of the emperor against the Protestant religion, he retired to Leidnitz, a town in Hungary, in 1629. Having no hopes of being restored to his church, he turned woollen-draper; in which occupation his wife, who was the daughter of one, was of great service to him. Afterwards he forgot the decorum of his former character so much that he became a hard drinker; but the other ministers, justly displeased at his conduct, informed their superiors of it, who, in a synod which was called in Poland, examined into the affair. Here it was resolved, that Drabicius should be suspended from the ministry, if he did not live in a more edifying manner; and this obliged him to behave himself with more decency.

When he was upwards of 50 years of age, he commenced prophet. He had his first vision in the night of Feb. 23, 1638, and the second in the night of Jan. 23, 1643. The first vision promised him in general great armies from the North and East, which should crush the house of Austria; the second declared particularly, that Ragotki, prince of Transylvania, should command the army from the East, and ordered Drabicius to inform his brethren, that God was about to restore them to their own country, and to revenge the injuries done to his people; and that they should prepare themselves for this deliverance by fasting and prayer. He received orders to write down what had been revealed to him; and to begin in the manner of the ancient prophets, "The words of the Lord came unto me." His visions, however, were not paid much regard to at first. These two were followed by many others in the same year 1643; and there was one, which ordered, that he should open the whole affair to Comenius, who was then at Elbing in Prussia. One of his visions in 1644 assured him, that the imperial troops should not destroy the refugees. They committed great ravages upon the territories of Ragotki, plundered the town of Leidnitz, and besieged the castle. Drabicius shut himself up there, and did not depend so entirely upon the Divine assurances, as to think human means unnecessary. He even set his hand to the work: and fired one of the cannon himself. The Imperialists raised the siege; but soon after, besieged the place again, and took it. The refugees were plundered, and Drabicius fell into the hands of the Imperialists. This did not prevent him from going to Ragotki, and telling him, Aug. 1645, that God commanded him to destroy the house of Austria and the pope; and that, "if he refused to attack that nest of vipers, he would draw down upon his family a general ruin, which should not spare even him that pisteth against the wall." The prince already knew, that Drabicius had assumed the character of a prophet: for Drabicius, according to the repeated orders which he had received in his extasies, had sent him a copy of his revelations, which Ragotki threw into the fire. The death of that prince, in Oct. 1647, plunged Drabicius into extreme sorrow; who

was in the utmost fear, left his revelation should vanish into smoke, and himself be exposed to ridicule. But he had one extatic consolation, which re-animated him; and that was, that God would send him Comenius, to whom he should communicate his writings. Comenius, having business in Hungary in 1650, saw Drabicius there, and his prophecies; and made such reflections as he thought proper, upon the vision's having for three years before promised Drabicius, that he should have Comenius for a coadjutor. Must it not seem strange, that Sigismund Ragotzki, being urged by Drabicius to make war against the emperor, and by his mother to continue in peace with him, could not tell what to do, being attacked on both sides with terrible threats? Drabicius denounced against him the judgments of the Almighty, in case of peace; and his mother threatened him with her curse, in case of war. Should not the prince have followed where reason and good policy would have led, and have left these mad people to have raved as long as they pleased, each in their own way? He fat down however in the utmost perplexity, recommended himself to the prayers of Drabicius and Comenius, and kept himself quiet till his death.

June 1654, Drabicius was restored to his ministry, and his visions presented themselves more frequently than ever; ordering from time to time, that they should be communicated to his coadjutor Comenius, that he might publish them to all nations and languages, and particularly to the Turks and Tartars. Comenius found himself embarrassed between the fear of God, and that of men: he was apprehensive, that by not printing the revelations of Drabicius he should disobey God, and that by printing them he should expose himself to the ridicule and censure of men. He took a middle way: he resolved to print them, and not to distribute the copies; and upon this account, he entitled the book, *Lux in Tenebris*. But his resolution to conceal this light under a bushel did not continue long: it gave way to two remarkable events, which were taken for a grand crisis, and the unravelling of the mystery. One of these events was the irruption of George Ragotzki into Poland: the other, the death of the emperor Ferdinand III. But these events, far from answering the predictions, served only to confound them. Ragotzki perished in his descent upon Poland; and Leopold king of Hungary was elected emperor in the room of his father Ferdinand III. by which election, the house of Austria was almost restored to its former grandeur, and the Protestants in Hungary absolutely ruined. Drabicius was the greatest sufferer by this; for the court of Vienna, being informed that he was the person who founded the trumpet against the house of Austria, sought means to punish him, and, as it is said, succeeded in it. What became of him, we cannot learn: some say, that he was burnt for an impostor and false prophet; others, that he died in Turkey, whither he had fled for refuge: but neither of these accounts is certain.

The *Lux in Tenebris* was printed by Comenius at Amsterdam in 1657; and contains not only the revelations of our Drabicius, but those also of Christopher Kotterus, and of Christina Poniatovia. Comenius published an abridgment of it in 1660, with this title, *Revelationum divinarum in Usum Sæculi nostri factarum Epitome*: that is, An Epitome of the divine Revelations communicated for the Use of this our Age. He reprinted the whole work, with this title, *Lux e Tenebris novis Radiis aucta*, &c. These new rays were a sequel of Drabicius's revelations, which extended to the year 1666.

DRACHENFELS, a town of Germany, in the electorate of Cologne, with a citadel, seven miles N.W. of Lintz.

DRAG-CART, an invention of Lord Somerville, which

promises to be eminently useful to the farmers of this country. The following description of it and of the method of adjusting the centre of gravity of the load, is published in the Communications of the Honourable Board of Agriculture.

Fig. 1, in Plate 24, is a perspective-view of a cart, for a single horse, calculated to carry 35 cwt.; in the front of which is represented the method of adjusting the position of the centre of gravity of the load, to prevent its pressing too much on the cattle in going down hill, the front of the cart being elevated by means of a toothed rack screwed to the front of the cart, and worked by a pinion, and the handle *a* immediately connected with the shaft *e*. By means of this pinion and racks, the front of the carriage is elevated more or less, in proportion to the declivity of the hill, by which means the weight of the load is made to bear more on the axis, and less on the horse.

On the side-view of the cart is represented the manner of applying the *friction-drag*, which is made to press, more or less, on the side of the wheel, according to the steepness of the descent: *b b*, is the friction-bar, or drag; one end of which is connected with the tail of the cart by a small chain, and the other end to the front, by means of a toothed-rack *b d*, which catches on a staple in the front of the cart, by which the friction-bar may be made to press on the side of the wheel, more or less, at the discretion of the driver; the notches of teeth in this rack should be as close to each other as circumstances will permit.

The friction-bar is here applied lower upon the wheel than was at first purposed, in order to divide the pressure and friction more equally on the opposite side of the wheel, so that the pressure on each is diminished; the risk of over-heating and destroying the friction bars is also rendered less than if the whole pressure was applied in one point at the top of the wheel.

Fig. 2, in Plate 24, is a view of a drag-cart calculated to carry 25 cwt.

As the advantages of the friction-drag have been fully stated in Mr. Cumming's observations on wheel-carriages, it would be superfluous to repeat them here.

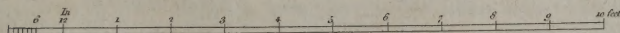
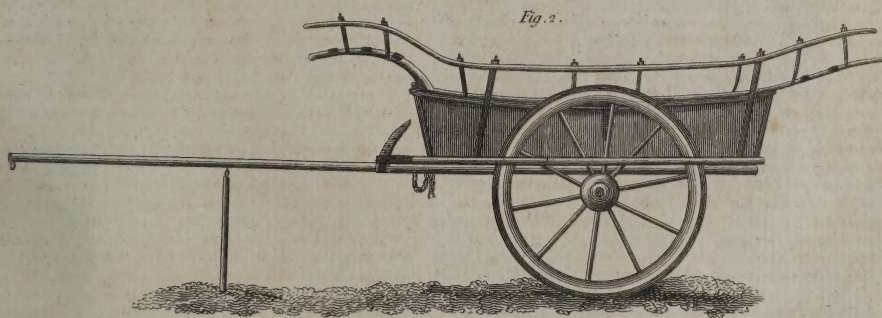
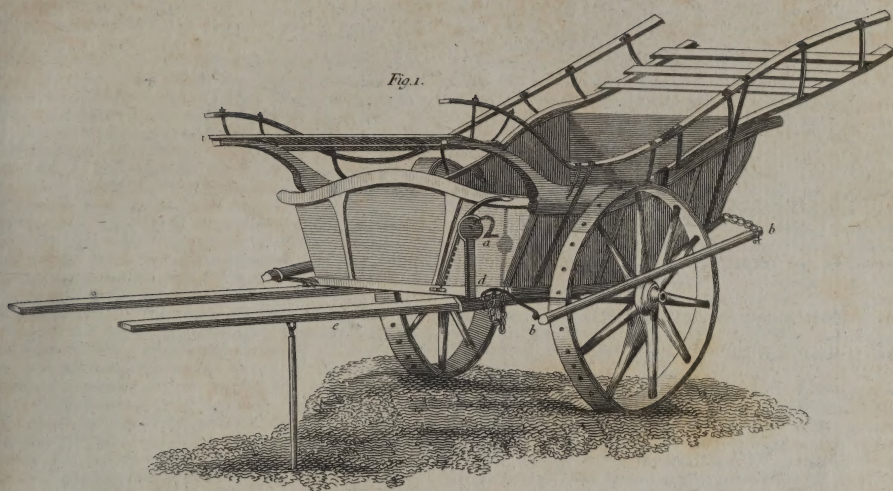
By an attentive comparison of carts drawn by shafts with those drawn by the yoke and bows, the superiority of the pole to the shafts *, and the advantage of making the cattle draw by the yoke, in preference to drawing by the forehead, become evident.

When cattle draw by the shafts (the one before the other), it is impossible for the driver to know that each exerts an equal force, so as to contribute equally to the draught; but when they draw by the pole and yoke, the point of draught being in the middle of the yoke, when the beast draws equally, the yoke will stand square with the pole, and the position of the yoke will always enable the driver to discover the default, and to bring it to a proper exertion: it is this harmony of draught, and equality of exertion, that gives so great an advantage to drawing by the yoke, that it is scarcely possible to say what weight of a lead too good large oxen can draw on a level road. The powers of cattle drawing by the forehead, on Lord Shannon's estate, are recorded by Mr. Young and Mr. Billingley: an ox of the late Mr. Tatterfall, near Ely, drew four ton of wood on a level surface without apparent difficulty. What then might not be expected from the equal exertions of two such powerful animals, acting at the equal ends of the same yoke!

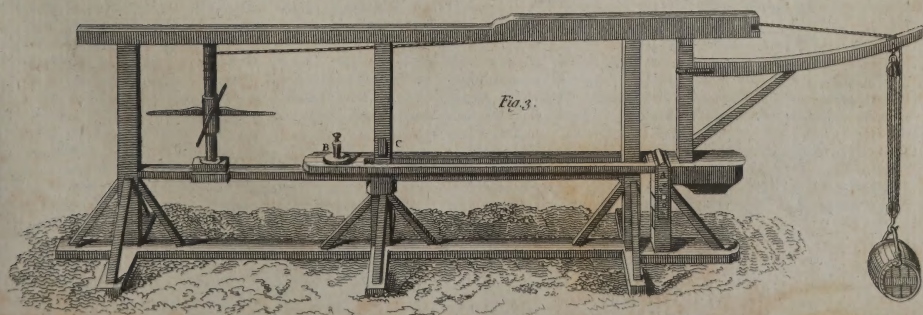
WHEEL-DRAW, an implement of iron, which, being chained to the wheel of a cart or waggon, supports it while the horses stop upon a hill. See CART, *Supp.* and PL. 19.

* The apparatus for adjusting the centre of gravity of the load may in such case be fixed to the pole of the cart, in the same manner as above described to be fixed on the shaft.

Drag Cart.



M. Andrews's Weighing-Crane.



DRAGOMESTRO, a town of European Turkey, in Li-vadia, taken by the Venetians in 1684, but abandoned soon after. It is 44 miles W.N.W. of Lepanto.

DRAGUIGNAN, a town of France, in the department of Var, 10 miles N.W. of Frejus. Long. 6. 35. E. Lat. 43. 31. N.

DRAIN (*Encycl.*). The following sketch of the drainage and improvement of a marsh, near Marazion in Cornwall, describing a peculiar mode of taking off the water, and securing the land from the overflowing of the sea, by Mr. Richard Moyle, of Marazion, is taken from the Communications to the Board of Agriculture.

A piece of land called the marsh, or bog, near Marazion in Cornwall, containing thirty-six statute acres, has, from time immemorial, been covered with two or three feet of water, and which, at spring-tides, was overflowed with the sea, by means of a river which passed through the land. This ground looks towards the south, and is separated from the sea by a long skirting of sand of about seventeen acres; over which the turnpike road passes towards Penzance, on its most elevated part: on the north of the marsh lies some croft ground (i. e. higher and not subject to inundations), which gradually rises as it retires from the bog, so that the marsh is surrounded on the north and south by elevated spots; and the water on its surface usually crept away to the sea by means of a river, through which the water at high spring-tides always had access. From the depressed situation of this marsh, it was impossible to take off all the surface water through the river, and recourse was had, for this purpose, to a square wooden pipe of nine inches diameter, which was introduced at that part of the shore called half-ebb, and which was eight feet lower than the surface of the marsh. This pipe was introduced through the sandy soil, in some places twenty-four feet deep, till it arrived at the fourth part of the bog, where it was found to be six feet under the surface. At this place a reservoir of eighteen feet square, and eight feet deep, was immediately cut out; and the water draining from the marsh, during the time the tide was in, was received in the reservoir, and discharged when the tide was out, through the pipe with great velocity. The sea, at high water, covers this pipe with nine or ten feet of water: a long trench, of three feet deep and five wide, was extended from this place, east and west, on the fourth side of the bog, for its whole length, bordering on the sandy soil; and at the distance of every sixty yards, a similar trench was cut up directly north towards the croft, which divided the whole marsh into oblong square fields. By the means of these trenches, or open drains, the whole surface water was conveyed directly to the reservoir, and thence to the sea. The pipe at both its extremities was guarded with valves, which shut at the approach of the tide; and during its flowing, the water accumulated about two, or two and a half feet high in the reservoir; and as the sea retires, the collected water runs off without any interruption, till the next return of the tide: the pipe is covered with the sea six hours in every twelve. This singular mode of drainage answers uncommonly well, and has never once failed in five years: the extremities of the pipe have also iron bars placed before them, to prevent the intrusion of extraneous bodies. As soon as the surface water was removed, a strong embankment of turf was made on the south and east sides, to prevent the overflowing of the tides; and the water, which formerly diffused itself over the whole of this ground, was collected into a river, and carried to the sea on the outside of this embankment. In cutting the open drains, a pot of copper coins, containing about a thousand, was discovered three feet under the surface, and which appeared to belong to the Emperor Victorinus, who reigned in the third century. These coins were much injured

by the corrosion of the salt water; but several were still perfect enough to trace the outlines of the Emperor. As soon as the evaporation had assisted the consolidation of the surface, the air, within a mile of the marsh, became so strongly impregnated with a sulphureous smell, as to render the place quite obnoxious to passengers.

On examining the different strata, we found that two feet and a half of the surface consisted of mud and a peaty substance, most strongly interwoven with the roots of goss (*Arundo phragmites*) and common rushes, which were the only substance that grew spontaneously on its surface; below this, was a stratum of three feet and a half of pure peat, of a very inflammable nature, and which seems to have extended over twenty acres of the marsh; under the peat lay a bed of sand, from four to six feet deep; from which we may conjecture that the whole was formerly an arm of the sea, and that the dropping of vegetables, and deposition of mud (which possibly formed the peat), had gradually expelled the sea; except at spring-tides. This stratum of sand does not appear to be the original bed of the sea; for, on streaming for tin, another floor from six to ten feet deeper was discovered, consisting of round smooth pebbles, and gravelly substances, containing tin; among which were willow trees and hazel nuts, in the most perfect state.

The mode of improvement adopted was the following:—The surface was pared and burned; and after repeated ploughings, &c. for two years, large bodies of clay, with manure, were then, carried on its surface, and a slight crop of white oats with ever-grass (ray), common and Dutch clover, sown in the spring. The saltness of this ground was so very powerful for the first three years, as to destroy every crop; on the fourth, the land began to vegetate partially; but on the fifth, or present year, 1798, every part seems to be quite alive; so that every kind of vegetable now flourishes with great luxuriance. It has afforded this summer very good crops of hay, and an abundant and rich pasture, with a prospect of improvement the next season. The expenses of draining this ground, with trenching, paring, ploughing, burning, and manuring it, with the failure of three years' crops, amount to a very considerable sum; and this distressing circumstance is increased, on its being only a leasehold for three lives.

The sandy land has been partly inclosed, and covered with large bodies of clay and manure; it has afforded remarkably fine crops of turnips, and the grass of this season has been very luxuriant. The crofty land on the north (twenty-two acres) has been all cultivated, first with potatoes, and afterwards sown with wheat, barley, oats, and turnips, and produced very good crops.

The whole of this improved ground has been productive of considerable advantages to the public, particularly to the poor. Four hundred persons yearly receive turf from it; two hundred and fifty are fed most plentifully with potatoes, which are planted here by very poor people, who are, in consequence of having land given them, become uncommonly industrious; and the whole neighbourhood, by its drainage, have got rid of low nervous fevers and agues, with which it was continually pestered.

The whole ground under improvement consists of seventy-five acres, of which thirty-six are marsh, twenty-two croft, and seventeen of sand. In 1798, forty acres were under different crops; viz. wheat two acres and a half, barley nine, oats eight, turnips two, potatoes five, hay and pasture thirteen and a half.

On the sides of every open trench is planted a row of quicksets, interspersed with a few planes and pineastres. These are defended from the cattle and blights by means of a temporary turf hedge, and promise to afford a pleasing division of the land

in a few years. To every inclosure of the marsh a part of the rising ground of the croft is annexed to accommodate cattle in wet seasons.

In the year 1798 this land was visited and examined on the spot as to the facts, by Sir John Call, and the above particulars given him by the proprietor.

We shall conclude this article with an account of the effect of a luxuriant weed, called by botanists the *Equisetum Palustre*, upon drains. Sir Joseph Banks, in a letter to the Secretary of the Board of Agriculture, communicates the following particulars:

"Few objects of agricultural utility, says the Baronet," "have ever interested me so much, and I have no hesitation in saying that none are, in my opinion, so interesting to the increasing prosperity of the landed interest of this kingdom, as the theory of draining whole districts, by tapping the mother springs that overflow their surface, and conducting drains through the principal valleys, so contrived as not only to render the boggy parts of them found land, but also to free the sides of the hills which form them, from all out-bursts of water.

"Mr. Ellington is certainly the father of this system of drainage, but Mr. Farey has perfectly comprehended all the works done by that gentleman, for the Duke of Bedford, and in the mode of conducting the operations now carrying on, has, in some instances, excelled them, founding his practice on an extensive and enlightened theory, applicable to all valley bogs, in the drainage of which, it appears to me almost impossible that his method should fail, under any circumstances.

"One thing, however, has occurred, in the short experience of the Woburn operations (about five years), which appears to me of consequence enough to warrant the trouble this will give to you and the Board. Some bogs, drained by under drains made at a great expence through the moist mry parts of them, appeared at first perfectly dry, but have since been found to grow by degrees less and less so. On examination, these drains have been found more or less choked up by a plant vegetating within them, and forming both stems and roots, the whole several yards in length, intercepting the course of the water, weakening the current by degrees, and at last wholly choking up the drain.

"This plant is the *equisetum palustre*, a weed common in moorish and swampy places, but hitherto little noticed by naturalists; its root, or rather its stem under ground, is a yard or more in length, and in size like packthread; from this, a root of twice the size of the stem runs horizontally in the ground, taking its origin from a lower root, which strikes downwards perpendicularly to a depth I have not hitherto been able to trace, as thick as a small finger; this perpendicular root forms in some places beds, which occupy a large portion of the more solid part of a peaty bog, as may be seen in some parts of the banks of the Duke's open drains.

"As the bud by which the plant appears to renew itself in spring, is situated on the horizontal root, a yard or more in depth, the shoot must, in its progress upwards, be liable to meet with under drains, and penetrate into them, through the openings left for the passage of the water. When once entered, nature, which has given to the plant the power of piercing the soil upwards from a great depth, enables it to live in the confined atmosphere of a drain, where, as it is continually drawn forward by the current, the joints lengthen themselves beyond their natural dimensions; hence it is probable that when drains choked with it, are taken up and carefully examined, the length of the plants will be found very much to exceed those I have observed."

The author hopes that this will lead to further discussion, and to the discovery of a remedy for this evil, which seems likely to put a stop to the practice of draining bogs, where

this mischievous plant grows, by under drains. It is necessary for the evil to be known, in order that those who possess bogs that have become mry after being drained, may be apprised of an evil, which can certainly be cured by the simple expedient of casting the under drains into open ones.

Common earth-drains are sometimes dug two or three spits deep, with a broad spade, the bottom is taken out with a narrow one, and filled with stones.—Sometimes a furrow is drawn with a plough, and cleared by a common spade: the draining instrument fig. 1, Plate 17, is then introduced to the depth of 18 inches from the surface; afterwards taking out the loose mold with the scoop fig. 2.

Hollow drains, without stones, have been tried on stiff lands: they are made narrow at the bottom, and covered half way up with fods, or square pieces of the surface-soil, resting on ledges cut for that purpose.

It is much to be lamented, that we possess, in this cold climate, no grain similar to *rice*, that would grow in watery grounds which cannot be drained, nor indeed any esculent roots or foliage, except water-cresses. In such situations, some plants may perhaps be cultivated with profit to the proprietor, as the *scilla maritima*, or floating fescue; *calitriche*, or star-grass, or star-wort; to which may be added the *orchis*, for the purpose of making salep, by drying the peeled roots in an oven. If these plants should not completely succeed, other vegetables of quick growth may be raised for manures, such as the *typha*, or cat's-tail; the *caltha*, or marsh-marigold, &c.; which should be mown twice a-year, while they are young, and abound with saccharine and mucilaginous matter, ready to pass into fermentation.

DRAKE (James), a celebrated political writer and physician, was born at Cambridge, in 1667; and, at 17, admitted a member of that university, where he soon distinguished himself by his uncommon parts and ingenuity. Some time before the Revolution, he took the degree of B. A. and after that of M. A. but, going to London, in 1693, and discovering a particular genius to the study of physic, he was encouraged in the pursuit of it by Sir Thomas Millington, and the most eminent members of the college of physicians. In 1696 he took the degree of doctor in that faculty; and was soon after elected F. R. S. as likewise of the college of physicians. But whether his own inclination led him, or whether he did it purely to supply the defects of a fortune, which was not sufficient to keep him a proper equipage as a physician in town, he applied himself to writing for the bookellers. In 1697 he was concerned in the publication of a pamphlet, entitled, *Compendary Verbes upon the Author of Prince Arthur and King Arthur*. In 1702 he published, in 8vo. *The History of the last Parliament*, begun at Westminster Feb. 20, in the 12th year of King William, A.D. 1700. This created him some trouble; for the House of Lords, thinking it reflected too severely on the memory of King William, summoned the author before them in May 1702, and ordered him to be prosecuted by the attorney-general; who brought him to a trial, at which he was acquitted the year following.

In 1704, being dissatisfied with the rejection of the bill to prevent occasional conformity, and with the disgrace of some of his friends who were fickle for it, he wrote, in concert with Mr. Poley, member of Parliament for Ipswich, *The Memorial of the Church of England*; humbly offered to the Consideration of all true Lovers of our Church and Constitution, 8vo. The treasurer, Godolphin, and the other great officers of the crown in the Whig interest, being therein feverely reflected on, were so highly offended at the publication of it, that they represented it to the queen as an insult upon her honour, and intimation that the church was in danger under her administration. Accordingly her Majesty took ho-

fice of it in her speech to the ensuing parliament, Oct. 27, 1705; and was addressed by both houses upon that occasion. Soon after, the queen, at the petition of the House of Commons, put out a proclamation for discovering the author of the Memorial; but no discovery could be made. The parliament was not the only body that shewed their resentment to this book; for the grand jury of the city of London having presented it at the sessions, as a false, scandalous, and traitorous libel, it was forthwith burnt in the sight of the court then sitting, and afterwards before the Royal Exchange, by the hands of the common hangman. But though Drake then escaped, yet as he was very much suspected of being the author of that book, and had rendered himself obnoxious upon other accounts to persons then in power, occasions were sought to ruin him if possible; and a newspaper he was publishing at that time under the title of *Mercurius Politicus*, afforded his enemies the pretence they wanted. For, taking exception at some passages therein, they prosecuted him in the Queen's Bench in 1706. His case was argued at the bar of that court April 30; when, upon a flaw in the information, the trial was adjourned, and in November following the doctor was acquitted; but the government brought a writ of error. The severity of this prosecution, joined to repeated disappointments and ill usage from some of his party, is supposed to have flung him into a fever, of which he died at Westminster, March 2, 1706-7, not without violent exclamations against the rigour of his prosecutors. The Memorial was reprinted in 8vo. in 1711, with an introductory preface containing the author's life and death.

Besides the performances already mentioned, he made an English translation of Herodotus, which was never published. He wrote a comedy, called, *The Sham-Lawyer*, or the *Lucky Extravagant*; which was acted at the Theatre-Royal in 1697. It is chiefly borrowed from two of Fletcher's plays, namely, *The Spanish Curate*, and *Wit without Money*. He was the editor of *Historia Anglo-Scotica*; or, an impartial History of all that happened between the Kings and Kingdoms of England and Scotland, from the Beginning of the Reign of William the Conqueror to the Reign of Queen Elizabeth, 1703, 8vo. But whatever merit there might be in his political-writings, or however they might distinguish him in his life-time, he is chiefly known now by his medical works: by that *New System of Anatomy* particularly, which was finished a little before his decease, and published in 1707, with a preface by W. Wagstaffe, M. D. and reader of anatomy at Surgeons-Hall.

Drake (Francis), a surgeon at York, and an eminent antiquary, was much esteemed by Dr. Mead, Mr. Folkes, the two Mr. Gales, and all the principal members of the Royal and Antiquarian Societies. He published, in 1736, *Eboracum*; or, the History and Antiquities of the City of York, from its Original to the present Time; together with the History of the Cathedral Church, and the Lives of the Archbishops of that See, &c. By Francis Drake of the City of York, Gent. F. R. S. and Member of the Society of Antiquaries in London; a copy of which, with large MS. additions by the author, is in the hands of his son, the Rev. William Drake, F. A. S. late master of the free-school at Felsted in Essex, and, in 1783, vicar of Illeworth, Middlesex, who has distinguished himself by several curious articles in the *Archæologia*, IV. 143, V. 137, 139, and would republish his father's book if the plates could be recovered. A metzotinto print of Mr. Drake, by Val. Green, was published in 1771, from a picture by N. Drake, with this inscription: Franc. Drake, Armiger, Eboracensis, Reg. Soc. neonon Antiqu. Socius.

Drake (Samuel), was fellow of St. John's College, Cambridge, and contemporary with the above Dr. Drake, who published in 1729, in folio, a fine edition of Archbishop Parker's work, *De Antiquitate Britannicæ Ecclesiæ, & Privilegiis Ecclesiæ Cantuariensis, cum Archiepiscopis ejusdem LXX.* The archbishop's own edition, published by himself in 1572, was exactly followed, which contained not only the lives of the archbishops, but also a catalogue of the chancellors, vice-chancellors, proctors, and commencers in the university of Cambridge, from the year 1500 to 1571, with many other matters relating to that university. The copies of the archbishop's edition almost all varying from one another, the correctest was made the text, and the variations of the rest were taken notice of. Copper-plates were taken, by the best hand, of all the arms, frontispieces, and other decorations, in the edition of 1572.

DRAMA (*Encycl.*). To what has been already offered under this head, we purpose to add a brief history of the German Drama.

The German theatre continued a long time an object of little curiosity to other nations. It was about the year 1760 that the Arminius of Schlegel was translated into the French language; and about the same period the Death of Adam, by Klopstock, also appeared in the same tongue. In the year 1769 was published at Amsterdam, a volume, entitled, *Théâtre Allemand, ou Recueil de diverses Pièces traduites de l'Allemand, en Prose et en Vers, avec des Remarques: par C. D.* This volume comprises the Cato of Gottsched; the False Devotee, an excellent comedy by Gellert; and the Sick Woman, an interlude, by the same. The translator has prefixed some curious introductory matter, concerning the history of the German stage, to which the following remarks are greatly indebted.

The history of the German theatre may be divided into four periods.

PERIOD I.

Germany, like the other countries of Christendom, had its mysteries, or religious plays. The knights of the Teutonic order had recourse sometimes to dramatic exhibitions, in order to explain the mysteries of the faith to the rude understandings of the inhabitants of Courland and Livonia. It is not a little remarkable that Hrosvitha, a German nun, about the year 950, composed not only religious dramas, but some plays in imitation of Terence. They were printed at Nuremberg, A.D. 1500, in a very scarce folio volume, ornamented with wooden plates. Whether this attempt excited any imitators, must be left to the investigation of German antiquaries.

PERIOD II.

In the sixteenth century, the religious plays gave way to a kind of moral farces. Hans Sachsén is the earliest German dramatist, in his native language, whose name merits record. He was a shoemaker of Nuremberg, and has rivalled the famous Lopez de Vega, in the astonishing multitude of his dramatic performances.

PERIOD III.

A company of Dutch comedians passing into Germany, about the year 1620, operated the first reform in the German theatre. The Dutch had, at that time, made considerable progress in the dramatic art, and their theatre was on a respectable footing. They taught the Germans greater regularity and skill in the construction of the drama. Yet the Dutch tragedy was then very atrocious and sanguinary, and was intermingled with gross buffoonery; and their comedy was little better than an unnatural farce. In the latter department, Veis was one of the most celebrated writers of Germany.

Nevertheless, the Germans to this day boast of John Opitz, Andrew Gryphius, and Gasper de Lohenstein. Riccoboni, in his *Recherches sur les différents Théâtres de l'Europe*, has given a list of their pieces, which may be consulted by the curious reader. Opitz is regarded as a father of German poetry: he wrote a didactic treatise on the drama; and composed lyric poems and operas. National vanity has compared Gryphius to Shakpeare; and with more justice to Corneille, whom he somewhat resembles in the pomp of his verse, the depth of his thought, and the abundance of maxims and political discourse. To Shakpeare he can only be compared on account of the inequality of his scene. When Lohenstein is paralleled with Seneca, we sufficiently discover that he is only the skeleton of a dramatic author.

About this time pantomime also began to appear on the German stage; but their Harlequin bore as little resemblance of the Italian gentleman without bones, as a bear does of a monkey. They called him *hans roursi*, in plain English, jack-pudding. Mr. Addison has remarked, that most nations have expressed their delight in this witty personage, by bestowing upon him the appellation of their favourite food. In one instance, however, he is unfortunate, by supposing that the Dutch term corresponds with our *pickled herring*; whereas, in the original, *pickel heeren* implies a facetious little master.

PERIOD IV.

At length the German drama gradually became worthy of attracting the attention of Europe. Gottsched, anxious to redeem his country from dramatical barbarism and low buffoonery, about the year 1740 produced his *Cato*, constructed in imitation of the French regular drama. This tragedy deserves, however, very little praise; it is feeble and languid; faults not to be redeemed by the merit of regularity. Not contented with exercising his pen in this laudable design, he used his personal influence and advice; and the theatre of Leipzig, where he resided, became one of the best in Germany. A remarkable circumstance relative to that theatre must not be omitted: it is said, that for some time the company of actors there consisted of only one family; the father being manager, while the mother, the sons, the daughters, and the sons-in-law, shared the labours of the stage; and gave complete satisfaction to an audience not accustomed to severe criticism, nor disposed to exchange their cheap and easy pleasure for the vanity of finding fault.

Prior to this epoch, people of rank and taste had been accustomed to attend only the French and Italian representations; leaving the German drama to the *Bourgeoisie*, to whose uneducated taste its plain morality and gross buffoonery were adapted. But when Gottsched had been followed by Bodmer, Schlegel, Gellert, Klopstock, and others, who either produced original pieces, or good translations from the Dutch, the Italian, the Danish, and the English, and particularly from the French, the case became changed; and the German stage began to share the favour of the noble, the opulent, and the learned. By degrees the French drama, which had at first delighted by its regularity of plot, and artificial concatenation of scenes, began to disgust by its monotony; and the English theatre, which, with less regularity and art, presents far more variety and animation, obtained the preference. Almost the whole plays of Shakpeare were clothed in the Teutonic language; and even feeble transfusions of his wonderful page obtained the warm applause of a foreign audience.

Miraturque moros fructus, et non sua poma.

To the plays of Shakpeare, and the novels of Richardson, modern German dramatists appear to be deeply indebted; but it is not the intention of this slight essay to criticize the

late celebrated productions of the German theatre, many of which have been translated into English, and have become generally known. It is sufficient to have arranged these few notices, concerning the origin and progress of the German drama.

When Gottsched was endeavouring to reform the German drama, about the year 1740, he asked one of the actors why they never represented any of the plays of Gryphius, a grave writer, and good dramatist, of the preceding century? The actor answered that such pieces could not be endured, because they were in verse, were too serious, and had not one buffoon to divert an audience!

When the Germans began to translate plays from the English, their most favourite pieces were our domestic tragedies, such as the *Orphan*, the *Gamester*, &c. &c. The German language seems more adapted to this kind of composition, than to the heroic and sublime.

The German Theatre, by Gottsched, was published between the years 1746 and 1750, in 6 vols. 8vo. The first volume begins with a translation of the *Thoughts of the great Fenelon*, upon the dramatic Art: but perhaps the discourse of Corneille upon the three Unities ought to have been preferred. Many of the pieces are translated from the French; such as the *Misanthrope* of Moliere, which is disfigured with the ceremonious expression of the Germans, and the *Cid* of Corneille. Some are from the Danish; for instance, the *Political Pewterer* by the celebrated Holberg, a piece somewhat similar to our *Upholsterer*. The *Drummer of Addison* is given in the second volume: and few original pieces of consequence appear till we come to the fourth volume, which contains the *Arminius* of Schlegel; and the *Unequal Marriage*, a comedy, by Madame Gottsched, &c. In the same volume is the *Banish* of Grimm, a piece that deserves to be better known. The scene is laid in Pegu in Asia; and the stage effect, and catastrophe, are conceived, and expressed, with great vigour. The fifth and sixth volumes are wholly filled with original German productions, of various merit.

All plays, say the ancient critics, must be either tragedy or comedy. Shakpeare, or some other about his age, however, added to these, history and tragi-comedy. These terms need no explanation. Modern times have invented the *Comédie larmoyante*, which is censured for producing the contrary effect to that which is peculiarly the province of comedy. This cannot be denied; but it is a great mistake to consider the tears shed at these representations as arising from grief, and perhaps it is this mistake which has occasioned the censure.

Tears are the natural consequence of being strongly affected, from whatever cause arising. We weep at Sealand's discovery of his daughter, and at the reconciliation of Lord and Lady Townly; but they are not tears of sorrow; therefore the sensation is as far distant from tragedy as comedy, but may, by accident, belong to either.

Modern times have also given birth to the sentimental comedy, which is still further removed from this species of the drama; for a grave, moral, or religious thought, is much less connected with comedy than a tender incident: indeed, as it never has the effect of fairly growing out of the piece, it may be considered as perfectly out of place.

Many of the German pieces, but especially the play of *Lovers' Vows*, cannot be made to belong to either of these classes. The character of Agatha is as much tragic as Jane Shore, and yet it is not a tragedy. Amelia is much more comic than many of our comic characters, and yet it is not a comedy. The incidents all tend to fill the mind with those sensations which produce tears; but yet we cannot call it a crying comedy, and most certainly these tears cannot with

propriety be referred to tragic feelings, nor are we satisfied to call it a *tragi-comedy*. It is, in our opinion, a new species of drama, and this is easier said than to define its principles. The author possibly might wish to give a story with such tender sentiment, such tragic adventure, and such comic character, as might naturally belong to it, and held tragedy and comedy equally from his design. If we judge from immediate perception, we find a great deal to commend, and but little to censure.

It may not be improper to add to the many modern variations from the ancient drama, that union of romance, magic, music, and spectacle, which at present has taken such firm possession of the stage as almost to exclude the old tragedy and comedy. If amusement be the end of theatrical representations, it is undoubtedly best attained by a variety of attraction. If feelings of a better sort are to be gratified, it must be by the drama as it was invented by the Greeks, continued by the Romans, and practised, with many improvements, on the theatres of modern Europe.

DRAMBURG, a town of Germany, in Upper Saxony, 40 miles S.E. of Colberg, and 118 N.E. of Berlin.

DRAPER (Sir William), was a gentleman who distinguished himself much in the war that was conducted with such spirit and success by Pitt. He is supposed to have received his grammar learning at Eton, and to have completed his education at the King's College, Cambridge. After going through the regular gradations of service, he was employed about the period of the capture of Fort St. David's, to raise a regiment of foot (the 79th) to serve in the East Indies. The regiment was soon completed at Chelmsford, in Essex; and Colonel Draper, while the regiment lay in that town, exhibited the model of an excellent officer, not merely by the strictest attention to military evolutions and discipline, but by taking care to inculcate in his men a becoming reverence for the Supreme Being, as well as of the necessity of a life of sobriety and decorum. That they might not want, moreover, the best means of instruction, he purchased, at his own expence, a large number of bibles and common-prayers, to be distributed among them. In 1759 he behaved with the greatest gallantry at Madras; and to his efforts, in conjunction with those of Colonel Laurence and Major Breton, the raising of the siege of that important fortress was owing. In 1760 he returned to England; and, in 1761, he was promoted to the rank of brigadier-general in the expedition against Belleisle. Being sent again to the East Indies, he conducted, in conjunction with Admiral Cornish, the expedition against Manila, the capital of the Philippine Islands, which surrendered on the 6th of October, 1763, and was preserved from plunder by a ransom of four millions of dollars, which, however, the Spaniards never paid. The colours taken at this place were presented to King's College, Cambridge, and hung up, with proper solemnity, in its beautiful chapel. The services of Colonel Draper were rewarded by a red ribbon; and, upon the reduction of his regiment, the 79th, which had served so gloriously in the East Indies, his majesty, unsolicited, gave him the 10th regiment of foot as an equivalent. This he resigned to Colonel Giltborne, for his half pay, 1200*l.* Irish annuity. In 1769 we find him a literary character engaged in defence of his friend the Marquis of Granby, in a contest with the celebrated political writer Junius. Unequal perhaps to his antagonists, he claimed nevertheless the praise of excellence in this kind of writing. In October of the same year, he made a voyage to South Carolina for the recovery of his health, and took that opportunity of making the tour of North America. He married, in this year, Miss De Lancey, the daughter of the chief justice of New-York. She died, July 1778, leaving him a

VOL. X.

daughter, born in 1773, who survived her father and enjoyed an ample fortune which came to her from her mother's relations. In 1779, Sir William Draper, having then the rank of lieutenant-general, was appointed lieutenant-governor of Minorca. During the siege of that important place, he was unfortunately upon ill terms with the governor-general Murray, and, upon their return to England, the conqueror of Manila exhibited 29 charges against the gallant veteran of Quebec. The court-martial deemed 27 frivolous and groundless, and for the other two the governor was ordered to be reprimanded; which order was remitted, and Sir William Draper then ordered to make an apology to the general for having instituted the trial against him: this Sir William did, and afterwards lived in retirement at Bath. He died January 8, 1787.

DRAWING (*Enceyl.*). The following is extracted from the specification of a patent granted to Mr. Gueff, of Portsmouth, for his invention of certain boxes of a new construction, of various forms and sizes, to contain materials and other necessary articles for drawing and painting, to be arranged on scientific principles. It is dated June 2, 1801, and runs thus:

"My said invention consists of a new box or boxes, and materials, for painting and drawing, and my new manner of arranging the pallet of colours, and certain new materials that are to be contained therein, by which the art of drawing or painting in colours will be rendered more simple and generally useful, is described as follows.

"The boxes, of whatever size or shape or material they may be made, are to be so formed as to contain, with convenience, either a round, or square, or oval, or any other shaped piece of marble, or wood, or metal, or stone, or porcelain, or pottery, or glass, or other proper material or composition, or combination of materials of any kind, either coated or plain; which piece of marble, or wood, or metal, or stone, or porcelain, or pottery, or glass, or other material, is *absolutely necessary* for or to my new arrangement of the pallet of colours, and which I shall hereafter, in this specification, call by the name of a *pallet of colours*. And the box or boxes will be made subservient to it, and so contrived, that this *pallet of colours* will be sometimes fitted in the top or cover, or in a drawer, either in the front, end, or side, or some other convenient place, for the purpose of receiving it, but in such a manner that this *pallet of colours* may be easily removed, if wanted for use, by the artist or person, drawing or painting; and that the colours are to be arranged or fixed on, or let into it, by certain places being made or sunk into the pallet to receive them; and these places will sometimes be of a long square, or of an oval or a round, or indeed any other shape that may be found best adapted for the purposes intended, by which means the colours are guarded from all dirt or dust, they cannot be misplaced, the artist has no occasion to apply to a plate or other material to rub his colours on when used, the pallet on which they are arranged and fixed serving for that purpose, and which may be easily cleaned, when necessary, with a damp sponge. The colours are to be fixed, or let into the pallet, so as not to be removed, or to fall out, which is done by first caking them in the usual manner, and afterwards fastening them in, while damp, by some mucilaginous mixture, such as gum-water, or any other that will not injure them. It is hardly necessary to observe, that of whatever material the pallet be made, it should be presented in an unglazed or unpolished state: thus, if made of marble or other stone, it should be left as smooth as possible, but unpolished. If of wood, it must be coated with a composition of oil, flake white, and calx of tin, or any other composition that will answer the purpose of resisting the penetration of water, and left as smooth as possible, but not polished nor glazed. If of metal,

it should be enamelled, and ground smooth, but left with a tooth, and without polish. If of porcelain, to be left in the biscuit state. If of glass, it should, in the vitrification, be mixed with the calx of tin, or any other material that will make an opaque white enamel of it, and when made of the proper shape it should be ground, and left without polish. Let it be observed, that I do not wish to state that the colours may not be mixed on glazed or polished substances, but unglazed and unpolished bodies for that purpose are much superior.

"The convenience and utility of this *pallet of colours* every experienced and professional man will see; and it will remove the inconvenience above mentioned, which the younger practitioners have hitherto laboured under. The colours will likewise be arranged, and fixed on or into the pallet, in the following order, according to the *principia optica*, viz. The three original colours, yellow, red, and blue, will be fixed on or into the pallet, and so arranged as to shew their intermediate shades, viz. from yellow, the degrees of orange to red; from red the degrees of purple to blue, with the different degrees of green and the browns resulting from a mixture of the three original colours: which arrangements will include every possible tone or tint that can be presented to the eye, and the colours and tints will be arranged on or in the pallet, so that the numbers 1, 2, 3, &c. will indicate the tone or tint of each, and may be called yellow, orange, red, purple, blue, green, and brown, &c. without any reference to the original name of any particular pigment or chemical preparation at present in use, unlike the present method, which by naming the pigment contrary to its real tone or colour (though the experienced artist may remove the difficulties from himself), serves only to mislead the student, and those not previously acquainted with the use of colours, without conveying any idea of the tone or tint of colour wanted; but by the above arranged pallet of colours the master is eased, the student improved, and a rational and simple theory will go hand in hand with the practical part. The colours in the larger boxes, and on the larger pallets, will likewise be divided into *transparent*, or *glazing*, and *opaque*, or *body colours*. The transparent being fixed on, or let into one side, and the opaque on or into the other side of the pallet, to prevent confusion. And the transparent and opaque colours are to be arranged in the same manner with regard to the degrees of tone and situation, which will enable the artist to produce the effect he wishes, according to his style or mode of practice with the opaque; and he may, by turning his pallet, enrich and glaze his painting with the transparent colours without rendering them foul or muddy."

Having described the nature of his invention, as regards the boxes, and the *arrangement of the pallet of colours*, Mr. Gueff proceeds to state the means of rendering his invention still more convenient to the public, in adding to the boxes such articles as will supply the artist with every utensil and material that he can want; but in this it is not necessary we should follow him.

DRAYTON, a town in Shropshire, with a market on Wednesday, seated on the river Torn, which separates this county from Staffordshire. It is 17 miles N.E. of Shrewsbury, and 154 N.W. of London. Long. 2. 22. W. Lat. 52. 54. N.

DRENTELBURG, a town of Germany, in the principality of Hesse, 18 miles N.N.W. of Cassel, and 32 E.S.E. of Paderborn. Long. 8. 57. E. Lat. 51. 23. N.

DRESDEN (*Encycl.*). J. G. Lippius has published a description of the gallery of antiques, at Dresden, in a quarto volume of 526 pages, with thirty pages of tables and ten plates. The origin of this gallery is as old as the reign of

Augustus, elector of Saxony, by whose order, medals, and other remains of antiquity, were purchased in 1560. Under his successors, this collection continued to increase, till by the munificent exertions of several sovereigns it became of the highest value and importance. Till the year 1785, the collection lay scattered in different pavilions of the large garden, where it was very ill arranged, and in such a state as to be of very little use to artists. The present elector, therefore, assigned a place for it in the Japanese palace, and enriched it with several new and valuable acquisitions. M. Wacker, the inspector of this gallery, had made out a description of every thing it contains; but as he died before it was published, M. Lippius made use of his manuscript for the work there announced, and which must be of great utility to artists and amateurs, as the ten plates at the end of the volume exhibit plans on which the different articles are indicated by letters corresponding to the descriptions.

DRESSERUS (Matthew), a learned German, was born at Erfurt, the capital of Thuringia, in 1536. The first academical lectures which he heard, were those of Luther and Melancthon, at Wittenberg; but he had not the advantage of them long, because the air of that country not agreeing with his constitution, he was obliged to return to Erfurt, where he studied Greek. When he had taken the degree of M.A. in 1559, he read lectures in rhetoric at home, and afterwards taught polite literature and the Greek tongue in the college of Erfurt. When he had gone on in this way sixteen years in his own country, he was invited to Jena, to supply the place of Lippius, as professor of history and eloquence. He pronounced his inaugural oration in 1574, which was afterwards printed with other of his orations. Some time after, he went to Meissen, to be head of the college there; and having continued there six years, he obtained, in 1581, the professorship of polite learning in the university of Leipzig; and a particular pension was settled on him to continue the History of Saxony. Upon his coming to Leipzig, he found dreadful disputes among the doctors. Some endeavoured to introduce the subtleties of Ramus, rejecting the doctrine of Aristotle, while others opposed it; and some were desirous of advancing towards Calvinism, while others would suffer no innovations in Lutheranism. Dresserus desired to avoid both extremes: and because the dispute concerning the novelties of Ramus greatly disturbed the philosophical community, he was very solicitous to keep clear of it. But the electoral commissary diverted him from his pacific design; and he became the most zealous opposer of Ramism that ever was known in that country.

Dresserus spent the remainder of his life at Leipzig, where he died in 1607. He married in 1565; and, becoming a widower in 1598, he married again two years after. He was a man of great industry, and not easily tired with applying, as he shewed at Erfurt; for he brought all his colleagues, who, except one, were Roman-catholics, to consent, that the confession of Augsburg and Hebrew should be taught in the university. He was the author of several works, which now are not useful or curious enough to deserve a particular account.

DREIENEN, a town of Germany, in the new march of Brandenburg, with a strong fort, on the river Warta, 20 miles E. of Landsparg. Long. 15. 43. E. Lat. 52. 53. N.

DRINAWARD, a town of Turkey in Europe, in Servia. It stands on a small island formed by the Drino, on the confines of Bosnia.

DRINKER (Edward), was born on the 24th of December 1680, in a small cabin near the present corner of Walnut and Second streets in the city of Philadelphia. His parents came from a place called Beverly, in Massachusetts's Bay. The banks of the Delaware, on which the city of Philadelphia

now stands, were inhabited, at the time of his birth, by Indians, and a few Swedes and Hollanders. He often talked to his companions of picking waterberries, and catching rabbits, on spots now the most populous and improved of that city. He recollected the second time William Penn came to Pennsylvania, and used to point to the place where the cabin stood, in which he and his friends that accompanied him were accommodated upon their arrival. At twelve years of age he went to Boston, where he served an apprenticeship to a cabinet-maker. In the year 1745 he returned to Philadelphia with his family, where he lived till the time of his death. He was four times married, and had eighteen children, all of whom were by his first wife. At one time of his life he sat down at his own table with fourteen children. Not long before his death he heard of the birth of a grand-child to one of his grand-children, the fifth in succession from himself.

He retained all his faculties till the last years of his life; even his memory, so early and so generally diminished by age, was but little impaired. He not only remembered the incidents of his childhood or youth, but the events of later years, and so faithful was his memory to him, that his son said that he never heard him tell the same story twice, but to different persons and in different companies. His eye-sight failed him many years before his death, but his hearing was uniformly perfect and unimpaired. His appetite was good till within a few weeks before his death. He generally ate a hearty breakfast of a pint of tea or coffee, as soon as he got out of his bed, with bread and butter in proportion. He ate likewise at eleven o'clock, and never failed to eat plentifully at dinner of the grossest solid food. He drank tea in the evening, but never ate any supper. He had lost all his teeth thirty years before his death (his son says, by drawing excessive hot smoke of tobacco into his mouth); but the want of suitable mastication of his food did not prevent its speedy digestion, nor impair his health. Whether the gums, hardened by age, supplied the place of his teeth in a certain degree, or whether the juices of the mouth and stomach became so much more acrid by time, as to perform the office of dissolving the food more speedily and more perfectly, is not known; but it has been often observed, that old people are more subject to excessive eating than young ones, and that they suffer fewer inconveniences from it. He was inquisitive after news in the last years of his life; his education did not lead him to increase the stock of his ideas in any other way. But it is a fact well worth attending to, that old age, instead of diminishing, always increases the desire of knowledge. It must afford some consolation to those who expect to be old, to discover, that the infirmities to which the decays of nature expose the human body, are rendered more tolerable by the enjoyments that are to be derived from the appetite for intellectual food.

Drinking was remarkably sober and temperate. Neither hard labour, nor company, nor the usual afflictions of human life, nor the wailes of nature, ever led him to an improper or excessive use of strong drink. For the last twenty-five years of his life he drank twice every day a draught of toddy, made with two table-spoonfuls of spirit in half a pint of water. His son, a man of 50 years of age, declared he had never seen him intoxicated. The time and manner in which he used spirituous liquors, contributed to lighten the weight of his years, and probably to prolong his life.

He enjoyed an uncommon share of health, inasmuch that in the course of his long life he was never confined more than three days to his bed. He often declared that he had no idea of that most distressing pain called the head ach. His sleep was interrupted a little in the last years of his life with a de-

fluxion in his breast, which produced what is commonly called the old man's cough.

The character of this aged citizen was not summed up in his negative quality of temperance; he was a man of a most amiable temper; old age had not curdled his blood; he was uniformly cheerful and kind to every body; his religious principles were as steady as his morals were pure; he attended public worship above thirty years in the Rev. Dr. Sprout's church, and died in a full assurance of a happy immortality. The life of this man is marked with several circumstances which perhaps have seldom occurred in the life of an individual; he saw and heard more of those events which are measured by time, than have ever been seen or heard by any man since the age of the patriarchs; he saw the same spot of earth in the course of his life covered with wood and bushes, and the receptacle of beasts and birds of prey, afterwards become the seat of a city, not only the first in wealth and arts in the new, but rivaling in both many of the first cities in the old world. He saw regular streets where he once pursued a hare; he saw churches rising upon morasses, where he had often heard the croaking of frogs; he saw wharfs and warehouses where he had often seen Indian savages draw fish from the river for their daily subsistence; and he saw ships of every size and use in those streams where he had been used to see nothing but Indian canoes; he saw a stately edifice filled with legislators on the same spot, probably, where he had seen an Indian council fire; he saw the first treaty ratified between the newly-confederated powers of America and the ancient monarchy of France, with all the formalities of parchment and seals, on the same spot, probably, where he once saw William Penn ratify his first and last treaty with the Indians without the formalities of pen, ink, or paper; he saw all the intermediate stages through which a people pass from the most simple to the most complicated degrees of civilization; he saw the beginning and end of the empire of Great Britain in Pennsylvania.

He had been the subject of seven crowned heads, and afterwards died a citizen of the newly-created republic of America, Nov. 17, 1782, aged 102.

DRINO, a river of Turkey in Europe, which has its source on the frontiers of Albania, and falls into the bay of Drino, in the gulf of Venice.

DRINO, a sea-port of Turkey in Europe, on a bay of the same name, in the gulf of Venice, 50 miles S.E. of Ragusa. Long. 10. 19. E. Lat. 42. 48. N.

DROME, a department of France, including part of the late province of Dauphiny. It is so called from a river of the same name.

DRONERO, a town of Piedmont, seated at the foot of the Alps, on the river Macra, over which is a bridge of prodigious height, 14 miles S.S.W. of Saluzzo.

DRONFIELD, a town in Derbyshire, with a market on Thursday. It is situate at the edge of the Peak, in so wholesome an air, that the inhabitants commonly live to a great age; and it is therefore much resorted to, and has many fine buildings. It is 28 miles N. of Derby, and 155 N.W. of London. Long. 1. 25. W. Lat. 53. 18. N.

DRONTHEIM, a city of Norway, capital of a government of the same name, with an archbishop's see, and a good harbour. It carries on a great trade; is almost surrounded by the sea and the river Piddet; and it is 270 miles N.W. of Stockholm. Long. 11. 9. E. Lat. 63. 26. N.

DROSENDORF, a town of the Archduchy of Austria, on the Taya, 46 miles N.W. of Vienna. Long. 15. 38. E. Lat. 48. 45. N.

DROSSEN, a town of Germany, in the new march of

Brandenburg, 12 miles S.E. of Cuftrin, and 14 E. of Frankfurt on the Oder.

DROWNED LANDS, a valuable tract of about 50,000 acres, in the state of New York, on the N. side of the mountains, in Orange County. The waters which descend from the surrounding hills, being slowly discharged by the river Wallkill, cover these vast meadows every winter, and render them extremely fertile; but they expose the inhabitants in the vicinity to intermittents. The river Wallkill, which passes through this extensive tract, and falls into Hudson's River, is, in the spring, very plentifully stored with large eels.

DROWNING (*Encycl.*). To what has been said already, we think it of importance to add Dr. Cullen's observations on this subject.—“With respect,” says he, “to the particular means to be employed for the recovery of drowned persons, it is to be observed, in the first place, That such as were recommended and practised, upon a supposition that the suffocation was occasioned by the quantity of water taken into the body, and therefore to be evacuated again, were very unhappily advised. The hanging up of persons by the heels, or setting them upon the crown of the head, or rolling the body upon a cask, were generally practised, upon a supposition altogether false; or upon the supposition of a case which, if real, is apprehended to be irrecoverable. At the same time, these practices were always attended with the danger of bursting some vessels in the brain or lungs, and of rendering thereby some cases incurable, that were not so from the drowning alone. All such practices, therefore, are now very properly disapproved of and forbid.

“In those cases in which the body has not been long in the water, and in which therefore the natural heat is not entirely extinguished, nor the irritability of the moving fibres very greatly impaired, it is possible that a good deal of agitation of the body may be the only means necessary to restore the action of the vital organs; but in other cases, where the heat and irritability have ceased to a greater degree, it is to me very doubtful, if much agitation can be safe, and if any degree of it can be useful, till the heat and irritability are in some measure restored. In all cases, any violent concussion cannot be safe, and, I believe, is never necessary. It may be proper here to observe also, that, in transporting the body from the place where it is taken out of the water, to the place where it may be necessary for applying the proper means of its recovery, all postures exposing to any improper compression, as that of the body's being carried over a man's shoulder, are to be avoided. The body is to be kept stretched out, with the head and upper parts a little raised; and care is to be taken to avoid the neck's being bent much forward. In this manner, laid upon one side, and upon some straw in a cart, it may be most properly conveyed; and the agitation which a pretty brisk motion of the cart may occasion, will, in most cases, do no harm.

“From the account I have given above of the causes, or of the appearances, of death, in drowned persons, it is evident, that the first step to be taken for their recovery is to restore the heat of the body, which is absolutely necessary to the activity of the moving fibres. For this purpose, the body, as soon as possible, is to be stripped of its wet clothes, to be well dried, and to be wrapped up in dry, and (if possible) warm, coverings: and it is to be wished, in all cases, as soon as the report of a person's being drowned is heard, that blankets should be immediately carried to the water-side; so that, as soon as the body is got out of the water, the change of covering just now mentioned may be instantly made; or, if the body has been naked when drowned, that it may be immediately dried, and

defended against the cold of the air. Besides covering the body with blankets, it will be further of advantage, if it can be done without loss of time, to cover the drowned body with a warm shirt or waistcoat immediately taken from a living person.

“When, at the time of a person being drowned, it happens that the sun shines out very hot, I think there can be no better means of recovering the heat, than by exposing the naked body, in every part, to the heat of the sun; while, at the same time, all other means necessary or useful for the recovery of life are also employed.

“When the heat of the sun cannot be employed, the body should be immediately transported to the nearest house that can be got convenient for the purpose: the fittest will be one that has a tolerably large chamber, in which a fire is ready, or can be made; and, if possible, the house should afford another chamber, in which also a fire can be provided.

“When the drowned body is brought into such house, and care is at the same time taken that no more people are admitted than are absolutely necessary to the service of the drowned person, every endeavour must be immediately employed for recovering the heat of the body, and that by different measures, as circumstances shall direct.

“If, in the neighbourhood of the place, there be any brewery, distillery, dyery, or fabric, which gives an opportunity of immediately obtaining a quantity of warm water and a convenient vessel, there is nothing more proper than immersing the body in a warm bath. Even where a sufficient quantity of warm water cannot be had at once, the bath may be still practised, if the accident has happened in or very near a town or village, when a great many fires may be at once employed in heating small quantities of water; for in this way the necessary quantity may be soon obtained. To encourage this practice, it is to be observed, That one part of boiling water is more than sufficient to give the necessary heat to two parts of spring or sea-water, as it is not proper to apply the bath at first very warm, nor even of the ordinary heat of the human body, but somewhat under it; and, by the addition of warm water, to bring it gradually to a heat very little above it.

“If the drowned body be of no great bulk, it may be conveniently warmed by a person's lying down in bed with it, and taking it near to their naked body, changing the position of it frequently, and at the same time chafing and rubbing with warm clothes the parts which are not immediately applied to their warm body.

“If none of these measures can be conveniently practised, the body is to be laid upon a bed before a moderate fire, and frequently turned, to expose the different parts of it; and thus, by the heat of the fire gradually applied, and by rubbing the body well with coarse towels, or other cloths well warmed, pains are to be taken for restoring its heat. This will be promoted by warm cloths applied and frequently renewed under the arms and arm pits; and by hot bricks, or bottles of warm water, laid to the feet.

“In the practice of rubbing, it has been proposed to moisten the cloths applied with camphorated spirits, or other such stimulating substances: but I think this must prove an impediment to the rubbing; and I would not recommend any practice of this kind, except, perhaps, the application of the volatile spirit of sal ammoniac to the wrists and ankles only.

“For recovering the heat of the body, it has been proposed, to cover it all over with warm grains, ashes, sand, or salt; and where these, sufficiently warm, are ready at hand, they may be employed; but it is very seldom they can be ob-

^{Food.}
(Digestion.)
^{ETC.}

Diet. Selections from "Dr. Christ's Practical Treatise on Diet."

Fowls. - These afford a more wholesome and delicate diet than quadrupeds. It is easier also of digestion; but they afford at the same time a less proportion of real nourishment. Nor is their nourishment so general as that of quadrupeds, some parts of them being always tough & unsipid from their manner of life. Of birds a greater number of the Carnivorous kinds are eaten than of quadrupeds; but they are indeed chiefly those that live on fish, from which indeed they acquire a peculiar taste, but this is by no means so unpleasant as that of Carn^{iv}-^(quadrupeds) animals.

The time of using fowls requires more to be studied than that of quadrupeds, as they frequently are out of season, particularly in spring, when they pair; & where they are birds of passage, or migrate from one place to another, they require some rest & residence, or to be in case before they are fit for use. Fowls are improved by domestication in two ways, by making them 'barndoor fowls', or by cramping them, that is shutting them up for the sole purpose of

feeding them. These arts of ~~feeding~~ ^{feeding} no doubt give more succulence & tenderness to the food and increase its alkalescency. From giving succulence they are an improvement; but from increasing alkalescency, they render the food more unfit for weak stomachs & Convalescents, by whom this species of food is much used, though at the same time they render it more easy of (digestion?) Solution. Exercise is necessary to give perfection to all food, for by this means the fat of the animal is equally distributed through the muscular parts; while, when fatted hastily, it is accumulated in the cellular membrane. By the domestication, also, of fowls in general, their peculiar flavour, on which their excellence depends is lessened, and by cramming them it becomes entirely lost. Hence also, unless their fibres are very tough, roasting is to be preferred to boiling them, on the same account.

Salmon, not too old or too young, it is of a tender substance, sufficiently succulent & nourishing, but rather oily & heavy on stomach. —

Salmon Trout = do + soft & gelatinous

Pike = short, compact & close (in its parts) flesh

river pike best
= least heating
hard of digestion

tained, and the application might often interfere with other measures that may be necessary. All therefore that I can propose, with respect to the use of these, is to observe, that bags of warm and dry salt may be amongst the most convenient applications to the feet and hands of drowned persons: and the quantity necessary for this purpose may be got pretty quickly by heating the salt in a frying-pan over a common fire.

"While these measures are taking for recovering the heat, means are at the same time to be employed for restoring the action of the moving fibres. It is well known, that the intestines are the parts of the body which, both from their internal situation and peculiar constitution, retain the longest their irritability; and therefore, that, in drowned persons, stimulants applied may have more effect upon the intestines than upon other parts. The action, therefore, of the intestines is to be supported or renewed as soon as possible; as the restoring and supporting the action of such a considerable portion of moving fibres as those of the intestines, must contribute greatly to restore the activity of the whole system.

"For exciting the action of the intestines, the most proper mean is, the application of their ordinary stimulus of dilatation; and this is most effectually applied, by forcing a quantity of air into them by the fundament. Even the throwing in cold air has been found useful; but it will certainly be better if heated air can be employed; and further, if that air can be impregnated with something which, by its acrimony, also may be powerful in stimulating the intestines.

"From all these considerations, the smoke of burning tobacco has been most commonly applied, and has upon many occasions proved very effectual. This will be most properly thrown in by a particular apparatus, which, for other purposes as well as this, should be in the hands of every surgeon; or at least should, at the public expence, be at hand in every part of the country where drownings are likely to happen. With regard to the use of it, I have to observe, that till the tobacco is kindled in a considerable quantity, a great deal of cold air is blown through the box and tube; and as that, as hinted above, is not so proper, care should be taken to have the tobacco very well kindled, and to blow through it very gently, till the heated smoke only passes through. If, upon certain occasions, the apparatus referred to should not be at hand, the measure however may be executed by a common tobacco pipe, in the following manner: A common cyfler-pipe that has a bag mounted upon it, is to be introduced into the fundament, and the mouth of the bag is to be applied round the small end of a tobacco-pipe. In the bowl of this, tobacco is to be kindled; and, either by a playing card made into a tube and applied round the mouth of the bowl, or by applying upon this the bowl of another pipe that is empty and blowing through it, the smoke may be thus forced into the intestines, and, in a little time, in a considerable quantity.

"If none of these means for throwing in the smoke can be employed, it may be useful to inject warm water to the quantity of three or four English pints. This may be done by a common cyfler-bag and pipe, but better by a large syringe; and it may be useful to dissolve in the water some common salt, in the proportion of half an ounce to an English pint; and also, to add to it some wine or brandy.

"While these measures for recovering the heat of the body and the activity of the moving fibres are employed, and especially after they have been employed for some time, pains are to be taken to complete and finish the business, by restoring the action of the lungs and heart.

"On this subject, I am obliged to my learned and ingenious colleague, Doctor Monro, who has made some experiments for ascertaining the best manner of inflating the lungs

of drowned persons. By these experiments he finds it may be more conveniently done by blowing into one of the nostrils, than by blowing into the mouth. For blowing into the nostril, it is necessary to be provided with a wooden pipe, fitted at one extremity for filling the nostril, and at the other for being blown into by a person's mouth, or for receiving the pipe of a pair of bellows, to be employed for the same purpose. Dr. Monro finds, That a person of ordinary strength can blow into such a pipe with a sufficient force to inflate the lungs to a considerable degree; and thinks the warm air from the lungs of a living person will be most conveniently employed at first; but when it is not soon effectual in restoring the respiration of the drowned person, and that a longer continuation of the inflation is necessary, it may be proper to employ a pair of bellows, large enough at once to contain the quantity of air necessary to inflate the lungs to a due degree.

"Whether the blowing-in is done by a person's mouth, or by bellows, Dr. Monro observes, that the air is ready to pass by the gullet into the stomach; but that this may be prevented, by pressing the lower part of the larynx backwards upon the gullet. To persons of little knowledge in anatomy, it is to be observed, that the pressure should be only upon the cricoid cartilage, by which the gullet may be frightened, while the passage through the larynx is not interrupted.

"When, by blowing thus into the nostril, it can be perceived, by the raising of the chest or belly, that the lungs are filled with air, the blowing-in should cease; and, by pressing the breast and belly, the air received into the lungs should be again expelled; then the blowing and expulsion should be again repeated: and thus the practice is to be continued, so as to imitate, as exactly as possible, the alternate motions of natural respiration.

"It is hardly necessary to observe, that when the blowing into the nostril is practised, the other nostril and the mouth should be accurately closed.

"If it should happen, that, in this practice, the air does not seem to pass readily into the lungs, Doctor Monro informs me, it is very practicable to introduce directly into the glottis and trachea a crooked tube, such as the catheter used for a male adult. For this he offers the following directions: The surgeon should place himself on the right side of the patient; and, introducing the forefinger of his left hand at the right corner of the patient's mouth, he should push the point of it behind the epiglottis; and using this as a directory, he may enter the catheter, which he holds in his right hand, at the left corner of the patient's mouth, till the end of it has passed beyond the point of his forefinger; and it is then to be let fall, rather than pushed into the glottis; and through this tube, by a proper syringe applied to it, air may be with certainty blown into the lungs. I observe, that some such method had been proposed by Mons. Le Cat in France; but I have not learned that it has ever been put in practice, and I am afraid it may be attended with several difficulties, and must be left to the discretion of surgeons, who may be properly provided and instructed for this purpose.

"For throwing air with more certainty into the lungs, it has been proposed to open the windpipe in the same manner as is done in the operation which the surgeons call *bronchotomy*, and by this opening to blow into the lungs; and when the blowing into the nostril does not seem to succeed, and a skilful operator is at hand, I allow that the measure may be tried; but I can hardly suppose, that it will be of any advantage when the blowing-in by the nostril has entirely failed.

"It is to be hoped, that by blowing into the lungs one way or other, even a quantity of water which had been taken into the lungs may be again washed out; and the same seems to

be the only effectual means of washing out that frothy matter which is found to fill the lungs of drowned persons, and which proves, if I mistake not, the most common cause of their mortal suffocation. This practice, therefore, is to be immediately entered upon, and very assiduously continued for an hour or two together.

"I have now mentioned the measures chiefly to be pursued and depended upon for the recovery of drowned persons; but must still mention some others that may prove considerable helps to it.

"One of these is, the opening the jugular veins to relieve the congestion, which almost constantly occurs in the veins of the head, and is probably a frequent cause of the death of drowned persons. For relieving this congestion, the drawing some blood from the jugulars, very early, may certainly be of service; and it will be particularly indicated by the livid and purple colour of the face. It may even be repeated, according to the effect it seems to have in taking off that suffusion; but when the drowned person is in some measure recovered, and some motion of the blood is restored, it will be proper to be very cautious in making this evacuation, and at least to take care not to push it so far as to weaken too much the recovering, but still weak, powers of life.

"Another measure for recovering the activity of the vital principle, is the application of certain stimulants to the more sensible parts of the body, such as holding the quick-lime spirit of sal ammoniac to the nose, or putting a little of it upon a rag into the nostrils. It has been usual to pour some liquids into the mouth; but it is dangerous to pour in any quantity of liquid, till it appear that the power of swallowing is in some measure restored.

"When a surgeon is at hand, and is provided with proper apparatus, a crooked pipe may be introduced into the gullet; and by this a gill or two of warm wine may be poured down into the stomach, and probably with advantage. But when no such apparatus is at hand, or surgeon to employ it, and the power of swallowing is still doubtful, the trial of pouring liquids into the mouth should be made by a small quantity of warm water alone; and when, from such trial, the power of swallowing shall appear to be recovered, it may then be allowable to favour the further recovery of the person, by pouring in some wine or brandy.—In short, till some marks of the recovery of swallowing and respiration appear, it will not be safe to apply any stimulants to the mouth, excepting that of a few drops of some acid substance to the tongue, and which are not of bulk enough to slide back upon the glottis: I can think of no stimulant, more conveniently and safely to be applied to the mouth and nostrils, than a moderate quantity of tobacco-smoke blown into them.

"Though I do not imagine that drowned persons are ever hurt by the quantity of water taken into their stomach, yet, as a stimulus applied to the stomach, and particularly as the action of vomiting proves a stimulus to the whole system, I can have no objection to the French practice of throwing in an emetic as soon as any swallowing is restored. For this purpose, I would successively throw in some tea-spoonfuls of the ipecacuanha wine; and, when it does not interfere with other necessary measures, the fauces may be gently irritated by an oiled feather thrust into them.

"With regard to the stimulants, I must conclude with observing, That when a body has lain but for a short time in the water, and that therefore its heat and irritability are but little impaired, the application of stimulants alone has been often found effectual for the recovery: but, on the contrary, when the body has lain long in the water, and the heat of it is very much extinguished, the application of any other stimu-

lants than that of tobacco-smoke to the intestines can be of very little service; and the application of others ought never to interfere with the measures for recovering heat and the motion of respiration.

"With respect to the whole of these practices, I expect, from the principles upon which they are in general recommended, it will be understood, that they are not to be soon discontinued, though their effects do not immediately appear. It is obvious, that, in many cases, it may be long before the heat of the body, and the activity of the vital principle, can be restored, although, in a longer time, it may very possibly be accomplished. In fact, it has often happened, that though means, employed for one hour, have not succeeded, the same continued for two or more hours, have, at length, had the wished-for effects. It should therefore be a constant rule, in this business, that the proper means should be employed for several hours together; unless it happen, that, while no symptoms of returning life appear, the symptoms of death shall, at the same time, go on constantly increasing.

"In the whole of the above I have kept in view chiefly the case of drowned persons: but it will be obvious, that many of the measures proposed will be equally proper and applicable in other cases of suffocation; as those from strangling, the damps of mines, the fumes of charcoal, &c.; and a little attention to the difference of circumstances will lead to the measures most proper to be employed."

Mr. Hunter, in the before-mentioned paper, differs pretty considerably from De Haen and Dr. Cullen. He observes, that when assistance is soon called in after immersion, blowing air into the lungs will in some cases effect a recovery; but when any considerable time has been lost, he advises stimulant medicines, such as the vapour of volatile alkali, to be mixed with the air; which may easily be done, by holding spirits of hartshorn in a cup under the receiver of the bellows. And, as applications of this kind to the olfactory nerves tend greatly to rouse the living principle, and put the muscles of respiration into action, it may probably, therefore, be most proper to have air impregnated in that manner, thrown in by the nose. To prevent the stomach and intestines from being too much distended by the air so injected, the larynx is directed to be gently pressed against the oesophagus and spine. But having detailed, in our original article, the means to be employed for the recovery of the drowned, we shall here close this part of the subject, and proceed to describe the implements represented in Pl. 25. to be employed in searching for the bodies of drowned persons when sunk in the water.

Fig. 1, is a forked instrument with blunt points, for making a superficial search after the drowned body, and sounding the particular situation in which it sunk.

Fig. 2, a ladder with a long, jointed handle, and which we have already mentioned (*Supp.* p. 403), when treating of the Ice-boats: a model of these boats may be inspected in the Repository of the "Society for the Encouragement of Arts, Manufactures," &c. Adelphi, London.

Fig. 3, An extractor, or a linked pair of tongs, which in the plate appears closed; but, on immersing it into water, opens by its own weight, as well as by the sliding down of the iron ring *o* from the part marked *x* to that of *u*. It may again be closed, by pulling the double rope fastened to the ring *o*, which is thus thrust upward from *u* to *x*: by means of expanding the iron arms *an*, which are likewise connected with this ring, the mouth or flaps of the instrument *rr* may be shut: and to prevent their opening till required, the two ropes are firmly tied round the iron bolt *ss*; in which situation they remain till the body is extracted.—This instrument, together with that represented, Fig. 4, cost about 2l. at Hamburg.

Great attention is required in preserving them from the effects of rust; and, independently of the weight of iron-work, fig. 3 is perhaps the most complete piece of machinery that can be contrived for this purpose.

Description of the Engraving in which the "Implements of respiration from drowning" are represented (Pl. 25).

Fig. 1. A pair of bellows with two separate bags, so contrived that by opening them, when applied to the nostrils or mouth of a patient, one bag will be filled with common air, and the other with the mephitic air extracted from the lungs; and, by shutting them again, pure atmospheric air will be introduced into these organs, and that drawn out consequently discharged into the room. Thus, the artificial breathing may be continued, while the other operations on the surface of the body are carried on; which could not be conveniently done, if the muzzle of a common pair of bellows were introduced into the nostril.

a, Is an intermediate board, but which admits of no communication between the two bags. In the external board of each side, there is the usual hole, marked *b*, provided with a valve; and the cylindrical part through which the air is expelled in common bellows, is here folded to a copper box, within which two other valves are applied to the tubes conducting the air. The cover *d* of this box, which may be unscrewed by means of an interposed leather ring, is almost of the shape of a funnel, to the neck of which is fastened a flexible tube *e* made of varnished silk cloth, and a spiral wire that forms the cavity. To the extremity of this tube is attached a small ivory pipe *f*, the front of which may either be tubular and round, for introducing it into the nostril; or flat, like the top-piece of a clarinet, if it be intended for the mouth. The valves (which cannot be represented in a plate) consist of stiffened taffety, and are so arranged, that the corresponding ones stand in an inverted order. If, therefore, both bags of the bellows be expanded, *two* of the valves open themselves towards the internal part of the machine: one of these is fixed to one of the side-boards, but the other is within the box, on the mouth of the conducting tube belonging to the opposite bag of the bellows. By this contrivance, the air enters both bags of the bellows at the same time, and is, on compression, again expelled by means of two other valves, which open from within toward the external parts. Both bags of the bellows terminate below the valve in one principal tube of communication; because, though the action of both bellows is *simultaneous*, the stream of air, conformably to the arrangement before pointed out, can only enter, and escape, *alternately*.—In using this machine, the small ivory pipe is applied either to one of the nostrils, or put into the mouth: in the former case, the other nostril and the mouth must be closed; in the latter, both nostrils. When the bellows are set in action, one of the bags receives a column of atmospheric air through its valve; while the other, by means of its flexible tube and its valve, extracts a portion of air from the lungs. But, if the bellows are again shut, one of the bags parts with the impure gas drawn out of the pulmonary vessels; and the second conveys pure atmospheric air to the organs of respiration. By properly repeating this alternate process, the patient may again be enabled to exercise the important function of breathing. As, however, a precipitate and irregular method of proceeding might be productive of injury, this delicate operation ought to be performed by persons who are acquainted with the mechanism of respiration.—In some cases, where the patient has, for a considerable time, lain under water, or was afterwards neglected for want of due assistance, it would be desirable to introduce into his lungs *oxygen*, or pure vital dephlogisticated air, instead of that of the common atmosphere; as the latter is generally more or less cor-

rupted on such occasions by the breath of many persons in the same room. For this purpose, may be used a bladder, marked *g*, which is provided with a cock and pipe fitted or screwed to the board of the inspiring valve and bag of the bellows. If, therefore, after opening the cock, the machine is set in motion; it will extract the pure air contained in the bladder, and, on the subsequent compression of the bellows, force it into the lungs of the patient.

Fig. 2. A machine for injecting the smoke of tobacco by way of clyster, in those desperate cases which require the application of this remedy. It consists of a pair of bellows, to the muzzle of which is fitted a metal box, *a*, provided with a ring, in the middle of which it may be unscrewed, and again closed, after being filled with tobacco, and set on fire: the pipe *c* (which, by mistake, is represented with a sharp point in our plate, but should be perfectly round and blunt at the top) of the flexible tube *b*, is introduced into the fundament; and thus, by means of the bellows *d*, the smoke is forced into the rectum.

Fig. 3. A bier of wicker-work, in the form of a slanting, oblong basket, for conveying the body of the drowned, in a posture somewhat raised. This simple contrivance has the advantage, that the water may easily run off, while the patient is carried: and, as many unfortunate persons are materially injured by rough treatment, before they arrive at a house of reception, so that their recovery is thus often frustrated, we recommend the universal adoption of this useful implement. It costs at Hamburg only ten marks currency, or about 15s.

Fig. 4. The *Warning Machine* of block tin, or other metal, was originally invented by Mr. Harvey, of London, who suggested it to our Royal Humane Society, and it was subsequently improved by M. Braich, an ingenious mechanic of Hamburg. Its object is to procure an uniform degree of warmth, throughout the apparatus, in the most expeditious manner, by filling the hollow or double bottom and sides of the whole implement with boiling water.—*a* is the body of the machine, seven feet long, and made of solid pieces of block-tin, to prevent the necessity of folding them, and consequently the formation of iron-rust: it rests on two wooden legs *ff*, and may be easily carried by the handle *gg*. The water is poured in through both funnels *d, d*, in order to warm it more speedily; and each of these is provided with a stopper (as represented in the plate, suspended on a chain), with a view to prevent, if necessary, too sudden evaporation and cooling of the water:—*h* is the intermediate space between the two metallic plates, producing a vacuum of 2½ inches, in which the fluid is diffused over the whole machine:—*b* is a wooden desk to support the head of the patient, and to protect it from the immediate contact with the heated parts; but, on the opposite end of the machine, there is an enlarged intermediate space, *c*, for holding such a quantity of water and vapours as will procure an additional, or at least a more permanent, degree of heat towards the lower extremities, than to the trunk of the body. For discharging the water, when it is not wanted, or changing it when too cold, there is a cock at *e*. The hollow sides of this machine are about twelve inches high; and in order to ensure an uniform warmth, the body apparently dead should be placed on a straw mattress, and tucked in with blankets. A pailful of water is required to fill the whole machine, as a smaller quantity would warm the sides only for a short time, by means of the vapour.

It deserves to be remarked, that this ingenious contrivance may also be used for a *warm bath*; for which purpose, the inner space in which the body lies, should be supplied with water. The whole apparatus, in its present improved state,

made of copper, costs at Hamburg about 200 marks, or from 14 to 15*l*.

Lastly, we cannot conclude this subject without affording the reader a view of the different articles belonging to a complete chest of instruments, and other materials, employed in the various processes for recovering suspended animation from drowning. The merit of these institutions in England, is due to Drs. Cogan and Hawes, the founders of the Royal Humane Society at London; but the improved arrangement of the chest now to be described, together with the choice of internal and external remedies, were made by a respectable surgeon at Deptford, Mr. Kite, in 1788, though considerably extended in 1790, by Mr. Redlich, medical practitioner of respectability at Hamburg. This gentleman is likewise one of the most active members of the Humane Society in that city, and has offered the following articles for sixty-five marks, or about four guineas and a half. His complete chest contains :

A small bottle of rectified spirit of wine.

Ditto, white-wine vinegar.
Ditto, sweet oil.
Ditto, white French brandy.
Ditto, volatile sal ammoniac.
Ditto, vitriolic æther.
Ditto, mustard-feed.

A machine for injecting the smoke of tobacco.

A leather tube, together with a pair of bellows, for inflating the lungs.

Another tube of leather, for introducing medicines into the stomach.

A small syringe for clearing the throat of mucus.

Three woollen covers or blankets.

Four brushes, and six woollen cloths, for performing friction.

Several emetics.

Two lancets for blood-letting.

One pound of tobacco.

A roller and cushion, to be used in venesection.

Two quills, a sponge, and some lint.

A pocket-knife.

An apparatus for striking fire.

Chamomile and elder-flowers.

Common salt :—and a printed copy (in German) of rules and directions for treating the drowned.

Conceiving that a chest containing all these articles could not be purchased in London for less than double the price above stated, beside the additional trouble of procuring them, we have borrowed this account from our respectable fellow-labourer, the Editor of the Domestic Encyclopedia ; especially as the commercial intercourse between Hamburg and this country is daily increasing.

On Thursday, 15th October, 1801, trial was made on the river Thames, off Greenwich Hospital, in presence of several respectable gentlemen, of a copper tube, invented by Lawrence Collin, brazier and tinman, for floating the heaviest person, though unacquainted with swimming, having his feet at rest, while the arms might be freely used out of the water. The instrument can be fixed by any person on himself in about half a minute, and keeps him upright in the water ; so as to have the full use of his hands ; and he may either float on his side, back, or belly, with his hands and feet at rest, or take a sitting posture, with his legs at right angles to his body. This instrument, which is called a *collinette*, may be made portable of copper, tin, or leather. The weight of the copper one, with which the late successful trial was made, was about five pounds ; but if leather can be well manufactured so as to resist the fluid and retain atmospheric air, it would be so light, that no person going on an excursion on

the water would be without one of them. In cases of shipwreck, many lives that would otherwise perish would be saved, since a dozen or twenty of these instruments might facilitate the means of extending ropes to a lee-shore, and thereby save a numerous crew. A certificate was given to the ingenious inventor by the gentlemen before whom the trial was made.

DRUMBOTE, a town of Ireland, in the county of Monaghan, eight miles W. of Dundalk. Long. 6. 31. W. Lat. 54. 10. N.

DRUMLANRIG, a town in Dumfriesshire, in the district of Nithdale ; remarkable for a wood of oak six miles in length. Here is a noble seat of the Duke of Queensbury, screened by woody hills, and adorned with beautiful gardens. In one of the parks here, Mr. Gilpin saw a few of the wild cattle which anciently inhabited the woods of Scotland. Drumlannrig is seated on the river Nith, 13 miles N. of Dumfries. Long. 5. 31. W. Lat. 55. 25. N.

DRUNKENNESS (*Encycl.*). To save the lives of persons who are in danger of dying from having drank large draughts of any spirituous liquors, Dr. Houlston recommends *diluting it in the stomach* by pouring in, through a tin tube, or even a common funnel, carefully passed into the *throat*, large quantities of water.

DRUSENHEIM, a fortified town of France, in the department of Lower Rhine, seated on the river Moser, near the Rhine, five miles S.E. of Haguenau.

DRYDEN (John). Notwithstanding we have already introduced the life of this great poet in our third volume, and that at some length, the following account of his life and writings, extracted from Mr. Malone's recent publication of Dryden's Critical and Miscellaneous prose Works, abounds with so many curious circumstances, not recorded by any other of his biographers, that we are tempted to present it to our readers without alteration.

In whatever point of view he is contemplated, whether as a poet, a critic, or a man, the character of Dryden is highly interesting, and the labour undertaken for the purpose of making him better known, is entitled to the most grateful consideration. Mr. Malone's account of this distinguished ornament of British literature is a specimen of laudable exactness, the fruit of an unwearied solicitude to render the desire of describing elegantly subservient to the necessity of recording truly. The diligence employed in tracing genealogies, comparing dates, and searching amid the records of public offices, has afforded a topic for the sarcasms of some men whose vivacity outruns their judgment ; but those who know how to appreciate truth, and who feel its importance in matters apparently minute, will discriminate between raillery and argument, and not suffer the momentary illusion of a fanciful image to divert their attention from those objects which, in biography and criticism, afford the greatest, perhaps the only genuine, satisfaction. To narrate on trust, and repeat, without any other novelty than that of expression, the hackneyed falacies of preceding writers, is indeed a mean servility ; but if, in order to avoid this disgrace, a writer of more judgment and industry takes the pains to explore those recesses in which truth lies concealed, his meed of fame ought to be commensurate with the extent of his labour : the dust which affords occasion to sneer, constitutes rather a title to glory ; nor can the laurel be ignobly worn which is tarnished with the dust of Shakspeare and of Dryden. It is not the intention of this essay to criticise Mr. Malone's work, but as the account of Dryden, which he has supplied, corrects many misstatements received by Dr. Johnson, and adopted by his successors, and records many new facts, it would have appeared unjust to omit that laudatory notice which the subject so fairly claimed. Let it not, however, be considered that the errors of Johnson

Fig. 1.

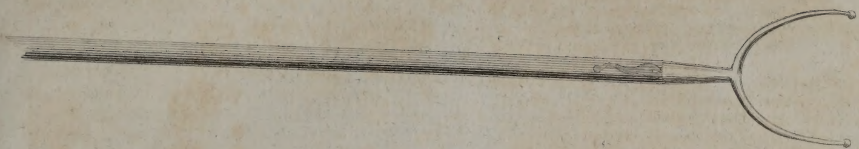


Fig. 2.

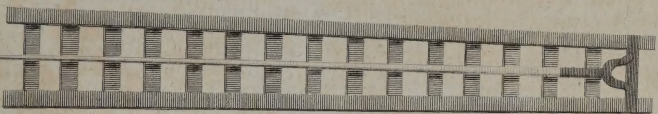


Fig. 3.

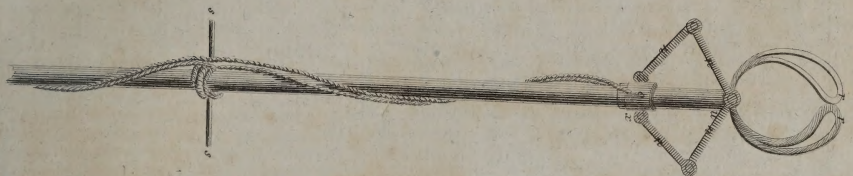


Fig. 1.

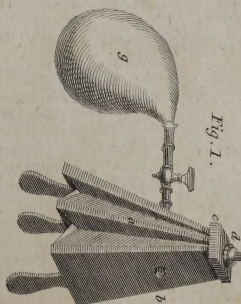


Fig. 2.

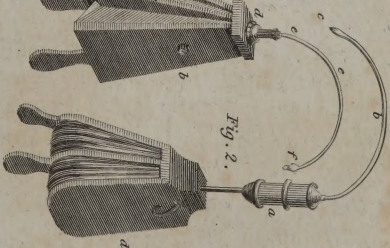


Fig. 3.

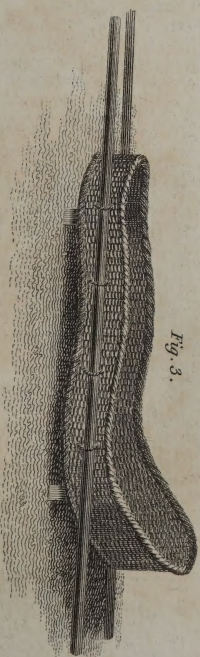
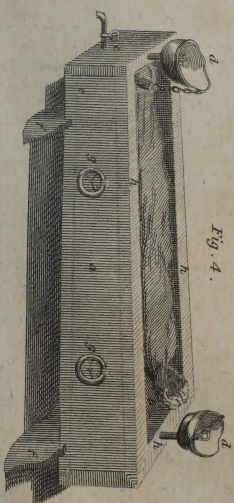


Fig. 4.



are irreverently mentioned. Mr. Malone is so perfectly sensible of the great talents of that illustrious biographer, that he has purposely avoided all critical discussion of the merits of Dryden, from a conviction that such an examination may be well dispensed with, after Dr. Johnson's elaborate and admirable disquisition; than which a more beautiful and judicious piece of criticism, perhaps, has not appeared since the days of Aristotle. On the subject of Johnson's mistakes, Mr. Malone thus expresses himself:—"When I mention these slight inaccuracies of Dr. Johnson, for whom personally when living I had the greatest respect and veneration, and for whose writings I have the highest admiration, I hope not to be misunderstood. Such trivial errors can diminish little from the value of his incomparable Lives of the Poets, and, as I have elsewhere observed, but with to repeat it here, are merely specks in the finest body of criticism extant in any language."

John Dryden was the eldest son of Erasmus, third son of Sir Erasmus Driden*, bart. and Mary, daughter of the Rev. Henry Pickering. The time of his birth is uncertain, it is commonly supposed to have been the 6th of August, 1631, but the date thus assumed rests only a mistake in the quarto edition of Pope, published in 1735, where the inscription on Dryden's tomb is erroneously given. Nor is the account correct which fates the stock of his family to have been in the county of Huntingdon; it was in Cumberland. The place of his birth was Aldwinlee, in Northamptonshire. He received the first rudiments of learning at Tichmarsh, and probably was indebted for part of his education to the school at Oundle. From one of these seminaries he was removed to Westminster, where he was admitted a king's scholar, under the tuition of the celebrated Dr. Busby; he was contemporary with Locke, South, Dr. Henry Stubbe, Dr. Walter Pope, Dr. John Mapletot, Henry Bagshaw, and Edward Bagshaw. While at Westminster he gave proof of his extraordinary talent, by translating the third satire of Persius for a Thursday night's exercise; but the tradition which assigns to him the celebrated pentameter on the miracle of changing water into wine,

"Lympha pudica Deum, vidit et erubuit."

is unfounded. The line is found, with a slight variation, in an epigram on the subject by Richard Crafshaw, published in his *Epigrammata Sacra*, 1634. At Westminster, Dryden, in 1649, made his first attempt in English poetry, by a copy of verses on the death of Lord Hastings, which are disgraced by the conceits usually found in the poetry of that period.

He was elected to one of the scholarships of Trinity College, Cambridge, where he was admitted the 11th of May, 1650, and matriculated the 6th of July. In the same year, he wrote some commendatory verses, prefixed to the poems of John Hoddedon. It is erroneously asserted that Dryden obtained no degree; he was made a bachelor at the regular time in January 1653-4, and in 1657 was made master of arts, but did not obtain a fellowship in his college. It has excited surprise that his name is not found in any of the Cambridge verses composed in his time on public occasions, but that sensation is removed by the accuracy of Mr. Malone; from him we learn, that only one general collection of verse was issued out by the university of Cambridge during the unfortunate and disgraceful period of Dryden's being a

member. It appeared in August or September, 1654, under the title of *Oliva Pacis*, &c. To this volume Dryden might have been expected to contribute; but his father died in June, 1654, and the necessity of attending him during his last illness, and the coincidence of the academic vacation, account for his apparent omission of an opportunity to display his poetic talent.

The patrimony to which he now succeeded, did not induce him to abandon his studies. He returned to the university, but his habits and modes of life cannot be ascertained. In all probability the fair sex, who even at seventy "still inspired his wit," then claimed much of his attention, and gave occasion to some productions of his muse, which are now lost. Mr. Malone has recovered a letter written about the year 1655, to Honour Dryden, the poet's cousin, containing a copy of amatory verses, distinguishable only for those conceits which were the vice of the age.

In 1657, after residing seven years at Cambridge, he removed to London. On the credit of one of that host of foes whom his subsequent celebrity excited, it has been believed that he quitted the university from fear of being expelled for a libel on a nobleman's son, but there is no evidence of this fact, nor any probability in the circumstances by which it is supported. He had staid at the university three years beyond the usual period, and had reason to expect advancement from the influence of his relation Sir Gilbert Pickering, who was extremely intimate with Oliver Cromwell.

What benefits he derived from this connection are not known; the death of the Protector destroyed his prospects, and gave a subject to his muse. He produced "Heroic Stanzas on the Death of Oliver Cromwell," which were published separately in the beginning of 1659, and afterwards united with the verses of Waller and Sprat on the same occasion. Like many other panegyrics of the usurper, he with equal facility paid homage to the restored monarch, and in 1660 published *Alfreda redux*, a Poem on the happy Restoration of his most sacred Majesty. Both these productions gave promise of greater efforts.

Dryden is represented by his enemies to have been now a mere literary drudge under Herringman the bookseller, and to have been reduced to dine at a three-penny ordinary, till raised to affluence by his connection with Sir Robert Howard; but this account is obviously fictitious, founded only on the circumstances of his intimacy with Howard, to whose poems, printed for Herringman in 1660, he prefixed some encomiastic verses. His own fortune was sufficient to preserve him from a state so abject. It was probably through Sir Robert that Dryden became acquainted with Lady Elizabeth Howard, daughter of Thomas earl of Berkshire, whom he married about the year 1665. The libellers of the poet have asserted that the circumstances attending this match were not honourable to either party. Johnson repeats the allegation, but evidence of a better kind is not found, and the proof rests principally on the sarcasms with which the poet occasionally alluded the marriage state.

In 1661 he addressed A Panegyric to the King on his Coronation, and on New Year's-day, 1662, An encomiastic Poem to the Lord Chancellor Clarendon. In 1663 he prefixed some elegant lines to his friend Dr. Charleton's *Ac-*

* Dryden changed the orthography of the family name; for some time he wrote it Dreyden: this licence gave great offence to his relatives.

† Anderson says 6th August.

‡ See Andrews's Anecdotes, p. 290.

§ They are not noticed by Johnson. Anderson mentions them in his Life of Dryden, but they are not found among the poems Mr. Malone has given them, p. 14.

count of Stonehenge. A tribute was paid to his rising reputation, by electing him a member of the newly-instituted Royal Society, 19th November, 1662.

We now enter on Dryden's dramatic career: Eusden, Gildon, Jacob, and others, have expressed surprise at his tardiness in beginning, as he produced no play till after he had attained his thirtieth year. But these persons did not reflect that from 1640 to 1660 plays were not permitted, and Dryden himself informed a more attentive peruser, that in the very year of the restoration he began his first play, *The Duke of Guise*. This piece being shown to his friends, was not deemed sufficiently correct for representation, and, therefore, it was kept back for some years.

In February 1662-3, his first play, *The Wild Gallant*, was put on the stage. It was only saved from total condemnation by the Councils of Cuddecombe, afterwards Dukes of Cleveland, to whom he addressed some verses on the occasion.

Mr. Malone divides Dryden's dramatic life into four periods: 1. From his outset as a play-writer to the temporary suspension of dramatic exhibitions in 1665. 2. From their revival to the time when the king's theatre was destroyed by fire in 1671-2. 3. From that era to 1682, when he discontinued writing for the stage. 4. From 1690 to 1694, in which period his last five plays were produced. In the first period, besides the *Wild Gallant*, Dryden wrote *The Rival Ladies*, in 1663; he assisted Sir Robert Howard in the *Indian Queen*, and wrote the *Indian Emperor*, acted in 1664-5.

The plague broke out soon afterwards, and in consequence of that, and the fire in 1666, dramatic entertainments were suspended for eighteen months. During this interval, Dryden married, and resided principally in the country. Here he amused himself by writing his elegant *Essay of Dramatic Poesy*; it is a colloquy between Eugenius, Crites, Liffideus, and Neander. By Eugenius was represented Charles lord Buckhurst, afterwards earl of Dorset; Crites was Sir Robert Howard; Liffideus, Sir Charles Sidley (commonly called Sedley), transposed from Sidleyus; and Neander, Dryden himself. In this retirement he seems to have projected, and perhaps written, his poem in quatrains, called *Annus mirabilis*, which was published in 1667. He also wrote *Secret Love*, or the *Maiden Queen*, and revised his unsuccessful drama, *The Wild Gallant*.

Soon after the recommencement of dramatic exhibitions in London, Dryden took a more secure method of obtaining emolument than the patronage of any individual, however elevated by rank or fortune, could afford; that of contracting with the king's theatre for an annual stipend, on condition of furnishing a certain number of plays in each year. The emolument was agreed to be one share and a quarter, out of twelve shares and three quarters, into which the theatrical stock was divided; the number of plays to be supplied was not four, as Johnson, misled, perhaps, by the Key to the Rehearsal, has stated, nor two, as Cibber has advanced, but three. The mistakes which have prevailed respecting this contract, have given rise to many stories of Dryden's writing for bread, and producing three, four, and even six, plays in a year. Malone, by a more accurate investigation, disproves these fallacies: between 1667 and 1674, that is, in about seven years, Dryden produced but ten plays; and if the examination is extended to a later period, December 1682, it will be found that in sixteen years he had written but eighteen. The era of his greatest exertion seems to have been from 1667 to 1670; in which period probably he wrote five or six plays. This statement is important to the fame of Dryden, for his facility and elegance of composition are recorded by so many indubitable facts, that they can derive no advantage from fiction.

On the death of Sir William d'Avenant, April 7th, 1668,

Dryden was made Laureat, but not immediately, as has been supposed; he did not obtain the appointment till the 18th of August, 1670. The death of James Howell in 1666; occasioned a vacancy in the office of Historiographer, which was also conferred on Dryden. The patent granted him the salary of 200*l.* a-year retroactively from Midsummer 1668, with the privilege of receiving each year a butt of canary wine from the king's cellars at Whitehall.

The conduct of Dryden and Sir Robert Howard towards each other is considered, by Dr. Johnson, as not easily to be explained. They disagreed on the subject of writing plays in rhyme; and as the contest was carried on with great earnestness in several publications, a degree of rancour ensued, but the interposition of friends and the placability of Dryden, facilitated a reconciliation, and they continued ever after on good terms.

From the re-opening of the theatres in the beginning of the year 1667, to the middle of 1670, Dryden produced five original plays, and two in which he was assisted by others. The five are: *The Maiden Queen*; *The Mock Astrologer*; *Tyrannic Love*, or the *Royal Martyr*; and the *Conquest of Grenada*, in two parts. The others are, *The Tempest*, altered from Shakspeare, in conjunction with d'Avenant; and *Sir Martin Mar-all*, translated from the French by the Duke of Newcastle, and revised for the stage by Dryden.

He was now sufficiently eminent to be an object of envy, and on the 7th of December, 1671, the Rehearsal was produced. This play was the joint production of George Villiers duke of Buckingham; Martin Clifford, master of the Charter-house; Butler, Sprat, and others; and is stated to have engaged their attention for ten years. An examination of its merits would extend this sketch to too great a length, and may, therefore, occupy a separate paper. It is a mistake that the success of the Rehearsal banished plays in rhyme from the stage; they continued to be acted for many years, and several pieces condemned in it were afterwards revived with applause.

Dryden, though he never answered the Rehearsal, had the good sense and forbearance not to oppose the current, and in 1672 produced two comedies, *Marriage à la Mode*, and *The Assignation*, or *Love in a Nunnery*; the first was successful, the latter damned. In 1673, he wrote *Amboyna*, for the purpose of exasperating the nation against the Dutch. After the production of these pieces the author seems to have suspended his dramatic labours, for *The State of Innocence*, published in 1674, could not have been intended for a stage exhibition. It is said that before he entered on this task, Dryden waited on Milton, and asked leave to turn his poem into rhyme; "Aye," said the blind bard, "you may tag my verses if you please."

As the *State of Innocence* only employed a month, Dryden had full leisure for the composition of *Aurengzebe*, which was acted in 1675. Charles II. perused the piece in manuscript, and "the most considerable event it was modelled by his royal pleasure." In 1676 and 1677 he was engaged in writing *All for Love*, and the comedy of *Limberham*. All for Love, Dryden says, was the only play he wrote for himself, the rest were given to the people. *Limberham* expired on the third night: various reasons are alleged for its want of success; the author attributes it to his having "expressed too much of the vices it decries;" Langbaine suggests that it was condemned for exposing the *keeping* part of the town. It has also been affirmed that in the character of *Limberham*, Dryden had Lord Shaftesbury particularly in view, and his partisans contributed to its fate.

Dryden's contract with the king's company was dissolved about this time, in consequence of disagreements, the causes of

which cannot now be discovered. Limberham was acted by the rival company, as well as *Œdipus*, written in conjunction with Lee, about 1679, and Truth found too late, altered from Shakespeare's *Troilus and Cressida*. His next play, *The Spanish Friar*, was acted with great success about February 1681-2. The two companies of players, called the King's and Duke's, now united, and Dryden furnished a prologue and an epilogue on their opening the theatre, 16th November, 1682. On the 30th was performed *The Duke of Guise*, of which Lee contributed two-thirds. The subject of this play was political, and the aim of it, to form a parallel between the leaguers of France and the Scottish covenanters. For some time after this, Dryden was chiefly occupied in political controversy; this, therefore, terminates the third portion of his dramatic life.

In this period Dryden was at first patronised, and afterwards persecuted, by the fickle and profligate Rochester, who raised up as rivals Otway, Settle, and Crowne. Dryden's sensibility was excited to a degree which prudence did not justify by the temporary success of Settle's *Empress of Morocco*, in contributing to which, Rochester contrived to occasion some personal affronts to the laureat. After his controversy with Settle, a sufficient specimen of which is preserved by Johnson, Dryden, in conjunction with the Duke of Buckingham, wrote *An Essay on Satire*, in which Rochester was treated with great severity. In revenge, on the 18th of December, 1679, he caused Dryden to be way-laid, and cudgelled, as he was returning home from Will's, through Rose-street, Covent-garden. As *Louise de Querouaille*, duchess of Portsmouth, was also mentioned in terms of great contempt in this production, it is supposed to have joined with Rochester in his revenge.

The constant labour in which he was engaged for the theatres, hindered Dryden from turning any great portion of his attention to productions either in poetry or prose which were not of a dramatic form. From the year 1667 to 1680 he wrote only a few papers of verses, and translated two epistles of Ovid—*Canace to Macareus*, and *Dido to Æneas*; to which may be added, that from Helen to Paris, which he englightened in conjunction with Lord Mulgrave. He often lamented his servile drudgery, and traced the plan of two epic poems, either of which would not only have immortalised the author, but have been an inestimable addition to the stock of British literature. The subject proposed for the one was the Conquest of the Saxons by King Arthur; the other that of Edward the Black Prince subduing Spain, and restoring it to Don Pedro, the lawful sovereign. This noble design he was never sufficiently at ease to execute.

In 1681 he relieved and diversified his dramatic pursuits by that exquisite political satire, *Abraham and Achitophel*, which he is said to have undertaken at the express desire of the king, and calculated to have completed in nine months. It was read with such avidity, that in four years six editions were published; a prodigious circulation in those days. In the second edition, twelve new lines were added to the character of Shaftesbury, in which he was praised for his integrity and discernment as chancellor. This circumstance gave rise to a report, that the poet received a bribe for his complaisance; and others assert that he was actuated by gratitude for Shaftesbury's liberality in nominating his son to a scholarship in the Charter-house, without any solicitation. This story is disproved by the laudable diligence of Mr. Malone, who has ascertained that Dryden's son was not admitted at the Charter-house till after Shaftesbury's death, and then, at the recommendation of the king. The added lines were, in fact, a mere amplification of the same thought less clearly expressed in the first edition of the poem.

On the 24th of November, 1681, the Grand Jury at the Old Bailey returned *ignoramus* on the bill presented against

Shaftesbury, and he was taken from the Court-house with shouts of applause, which lasted for an hour. To perpetuate their triumph on this occasion, his adherents soon afterwards employed George Bower, an able sculptor, to engrave a medal in commemoration of that event, which gave rise to Dryden's poem, entitled *The Medal*, or a *Satire against Sedition*. The king suggested the subject, while walking in the Mall with Dryden, and made him a present of a hundred broad pieces when it was finished. It was composed with vigour and poignancy, equal to *Abraham and Achitophel*.

While he attacked with such vigour and success, Dryden was necessarily exposed to the efforts of many opponents. A poem, entitled *Dryden's Satire to his Mule*, which appeared about this period, is said to have given him some uneasiness. The author was never ascertained: it was ascribed to Lord Somers, but he disclaimed all knowledge of it. Among the foremost of Dryden's avowed adversaries, was Shadwell, a poet of very little talent, and who had been in some degree protected by the poet-laureat, for whom he frequently avowed his friendship. In his former satires, Dryden took no notice of the inferior retainers of the whig party, but, at length, roused by repeated injuries, he discharged his resentment against Shadwell, in the poem called *Mac Flecknoe*; an admirable satire, which afforded him an ample triumph over his corpulent antagonist, and afterwards formed the model of the *Dunciad*. This poem was published the 4th of October, 1682. It has been erroneously asserted by Dryden's biographers, Dr. Johnson not excepted, that this poem proceeded from the poet's resentment at being succeeded in the laureathip by Shadwell, but it was published upwards of six years before that event took place. Although he might seem in this great effort to have exhausted the whole quiver of satire, he returned to the charge in less than a month, and in the second part of *Abraham and Achitophel*, which was published November the 10th, 1682, exposed Shadwell, under the name of Og, to additional contempt, with every grace of variety, and the same charms of novelty, which characterised his first attack. Under the appellations of Doeg, Judas, and Ben Jochanan, he stigmatised Settle, Ferguson, and Samuel Johnson, and at the same time punished three or four scribblers of inferior note. All these characters are wrought with no less felicity than those of Zimri and Achitophel. The rest of the poem, which has great merit, is written by Tate.

In the same month, Dryden produced his *Religio Laici*, a sensible and well-written poem, highly deserving attentive and frequent perusal. At this period began his intimacy with Southerne, which ended only with his life. He was also constantly attached to the unfortunate Lee, who was generally called by his contemporaries, "Honest Nat Lee," and after his infamy, "Poor Nat Lee." Having now discontinued writing for the stage, and the state of the exchequer not permitting a regular discharge of his stipend, Dryden became seriously distressed, and addressed Lawrence earl of Rochester, to remove at once his apprehensions of poverty, by assigning to him a place in the customs or the excise, but, to the disgrace of the age, neither his poetry nor his loyalty were sufficient recommendations to ensure success.

Yet did he not resign himself to unmanly despair, or permit his enemies to triumph over the misery resulting from an union of poverty and indolence. He translated, by the king's command, *De Maimbourg's History of the League*, which appeared in 1684; and, in the mean time, wrote a Preface and Life of the Author to a new translation of *Plutarch's Lives*, which was then undertaken by a number of persons. He also, in 1683-4, published the first volume of his *Miscellanies*, containing translations of detached pieces, from Virgil, Horace, and Theocritus, and some of his smaller poems, together with

occasional prologues and epilogues already published. Early in 1685 he published a second volume of Miscellanies.

A few days afterwards he was deprived of his gracious protector and patron, Charles II. whose death he consecrated in a pindaric ode, or elegy, called, *Threnodia Augustalis*. Before this event, Dryden had finished a political opera, called *Albion and Albanus*; it was rehearsed before the king, who expressed himself highly pleased, and the poet probably formed great expectations from its success. It was afterwards performed, but always unfortunate. On the sixth night, the 13th of June, 1685, during the representation, news arrived that the Duke of Monmouth was landed in the west; the playhouse was immediately deserted, and the piece was not again produced*.

Soon after King James the Second's accession, Dryden was converted to popery. The bulk of mankind, ever happy to credit such allegations as tend to diminish the pride of genius, have imputed this change to sordid motives, but there is no reason for such a charge. In the early part of his career, Dryden, like his contemporaries, laughed at religion and derided priests. When he wrote *Religio Laici*, he was advanced in years, but seems rather to have been impressed with the grand truths of Christianity, than attached to any particular church; the poem was rather occasional than the fruit of long premeditation, as it was addressed to a friend who had recently translated Father Simon's *Critical History of the Old Testament*. In the reign of King Charles, religion was left to make its own impression on the minds of individuals, but after the accession of James, converts were assiduously sought, and no means were left for evading religious discussion. Dryden's wife was suspected to be a papist; her brother Charles, the second earl of Berkshire, undoubtedly was one; and thus surrounded and biased, it is not surprising that the poet, now first called upon to choose a creed, chose that of Rome. He could not have done so on speculative probabilities, and of certain reward he does not appear to have had a promise. He knew how great a triumph he was going to afford his enemies, but yet pursued the dictates of his conscience: he might, after the Revolution, have retained the situation of Laureat and Historiographer, and have insured splendid patronage by a time-serving re-conversion, but constantly refused to do any thing derogatory to his principles, or injurious to his honour.

Dryden's attachment, at a period when the Duke of York was very unpopular, entitled him to expect from his accession to the throne the provision he had before solicited. But he only obtained a pension of one hundred pounds a-year, which was granted by letters patent dated the 4th of March, 1685-6. About this time he wrote his much-admired Ode on the death of Mrs. Anne Killegrew, and a Poem to Northleigh, author of the *Parallels*.

He also entered into a controversy with Dr. Stillingfleet, in defence of a paper, written by Anne Hyde, duchess of York, in vindication of her change of religion; and he is said to have entertained a design of translating Mous. Varilla's *History of Heresies*, but to have abandoned it.

In 1687 Dryden published *The Hind and the Panther*, the longest of his original poems. It was read with avidity, and speedily went through three or four editions. It is an allegorical dialogue between the churches of Rome and England, represented by two beasts, the first milk-white, unpotted, and unchanged; the other beautiful, but spotted. The thought was not fortunate, though the poem contains many beauties.

Such an argument conducted by such personages afforded a fine subject for ridicule; and one of the happiest efforts in this way was *The Country Mouse and City Mouse*, transferred from the Hind and the Panther. This was the production of Charles Montague, afterwards earl of Halifax, and Matthew Prior, but chiefly the latter: Dryden felt this attack with great sensibility, and was the more hurt as it proceeded from two young men whom he had always treated with great civility.

During the latter years of King James, and immediately after the Revolution, Dryden seems to have relaxed in his efforts; he did not publish so much; but probably perceiving himself to be unpopular, and the season unfit, he preferred a delay, which would be ultimately beneficial. In 1687 he wrote his first Ode on St. Cecilia's day, which was set to music by Giovanni Baptista Draghi; and in June, 1688, produced *Britannia Rediviva*, an ode on the birth of the prince, afterwards known by the title of the Pretender. In the same or the preceding year, he wrote, in Hudibrastic verse, and with great vigour and sprightliness, *An Epistle to Sir George Etherege*, on his being appointed envoy to Ratibon. He was also a subscriber to the folio edition of Milton, published in 1688, by Jacob Tonson, and supplied that elegant Epigram which has ever since accompanied the picture of the author of *Paradise Lost*.

After the Revolution, an oath became necessary to be taken by those who held certain offices; Dryden could not take this oath, and was therefore deprived of his places of Laureat and Historiographer, which he had the mortification to see bestowed on Shadwell.

He was now compelled again to direct his attention to the theatre, and in 1690 produced *Don Sebastian*, which was acted with great success. In the same year he brought out *Amphytrion*, altered from Plautus and Moliere, which was equally well received. King Arthur was written before the death of Charles II. but not acted till 1691; it was set to music by Purcell, and formed a popular entertainment: it still keeps possession of the stage, under the name of Arthur and Emmeline. In the summer of 1691; Dryden was employed in writing the tragedy of *Cleomenes*; but being prevented by illness from finishing it, he assigned it to the care of his friend Southerne, and it was acted in May 1692. About December 1693, he concluded his dramatic labours with *Love Triumphant*, a tragi-comedy, which was damned on the first representation.

Having thus quitted the stage, of which, with only a few intervals, he had kept possession one-and-thirty years, producing seven-and-twenty pieces, which included every species of dramatic composition; he was compelled for the last ten years of his life to exert himself with increased activity to keep off poverty, the bitterest enemy of genius. In 1691 he wrote a Preface to Walf's *Dialogue on Women*, and an Elegy on the Death of the Countess of Abington, whom he had never seen, but whom he celebrated under the name of Eleanora. In 1692, assisted by his two sons and some of the contemporary poets, he gave to the world a complete translation of Juvenal and Persius; and he wrote for his friend Sir Henry Sher, who had translated Polybius, a *Life of that historian*. In 1693 he published his third *Miscellany*, and appears to have translated from the Greek, the poem of *Hero and Leander*, but it was not printed, and the manuscript cannot be found. He

* Dr. Johnson has inadvertently transferred this anecdote to a piece afterwards written by Dryden, called *Prince Arthur*; the mistake was noticed by Anderson.

† To this must be added, that in the course of his life he wrote near a hundred Prologues and Epilogues of extraordinary merit.

also assisted Congreve, to whom he was much attached, in preparing the *Old Bachelor* for representation, and wrote a commendatory copy of verses on the *Double Dealer*. In 1694, Tonson published a volume under the title of the *Annual Miscellany*, to which Dryden contributed only a version of the third *Georgic* of Virgil and an Epistle to Kneller.

He now commenced his most arduous literary labour, the complete translation of Virgil. Many efforts were made to induce him to undertake this task, and the nation seemed to consider its honour interested in the event: Mr. Gilbert Dolben gave him the various editions of his author; Dr. Knightly Chetwood furnished him with the *Life* of Virgil, and the Preface to the Pastorals; and Addison supplied the arguments of the several books, and an Essay on the *Georgics*. The first lines of this great poet which he translated, he wrote with a diamond on a pane of glass in one of the windows of Cheterton-house, in Huntingdonshire, the residence of his kinsman and namesake, John Driden, esq. The version of the first *Georgic* and a great part of the last *Æneid* was made at Denham-Court, in Buckinghamshire, the seat of Sir William Bowyer, baronet; and the seventh *Æneid* was translated at Burligh, the noble mansion of the Earl of Exeter. These circumstances endear those places to the votaries of the muses, and give them a kind of celebrity which neither the beauties of nature nor the exertions of art can bestow. The work was printed by subscription, as *Paradise Lost* had been some years before, and Wood's *Athenæ Oxoniensis* in 1691. Dryden completed this great task in three years, and not in six, as Pope has asserted. For this translation, which Pope with justice pronounced the most noble and spirited translation that he knew in any language, Dryden acquired, at the utmost, but 1396l. 12s. 6d. Swift, who hated Dryden, though he might have derived honour from their relationship, derides him for dedicating the different parts of his works to three several patrons. The practice was not new; as Spenser, Chapman, Fuller, and others, had done the same. Dryden has been often censured for the praises which he lavished on his patrons, but that was the vice of the times. Every dedicatior did the same, and Dryden in that instance, as in most others, shewed a pre-eminence in facility and elegance. Tonson was extremely anxious that the *Æneid* should be dedicated to King William, and made the engraver who retouched the old plates used by Ogilby, always represent the hero with a hooked nose*; but the poet, persevering in his attachment to King James, refused to offer incense to his successor. The translation was published in July 1697, and the whole impression was sold, and a new edition demanded, in the course of a year.

From the time employed in this great work, Dryden borrowed two months in 1695, to translate Du Fresnoy's *Art of Painting*, and in the same year he wrote *An Ode on the Death of Purcell*. In the next year he wrote the *Life of Lucian*, to

be prefixed to a translation of his works, which was not published till after Dryden's death.

In 1697, at the solicitation of the stewards of the Anniversary Musical Festival, he wrote the celebrated ode called *Alexander's Feast*, a poem which transcends all praise, and places the British lyric poetry above that of any other nation. It does not, however, appear to be true, that it was composed and finished at one sitting; nor is this circumstance necessary to insure our admiration of a poem which alone would have sufficed to immortalise its author. It was first composed by Jeremiah Clarke, afterwards by Clayton, and lastly by Handel.

In March 1697-8, Jeremy Collier, a non-juring clergyman, published his *Short View of the Immorality and Profaneness of the British Stage*, in which he pointedly attacked Dryden, Congreve, and Vanburgh. The two latter defended themselves; but Dryden, with great candour, acknowledged such parts of his works as were reprehensible, and merely advanced circumstances in extenuation. He at this time meditated a translation of Homer, and by the experiment of the first *Iliad* was led to believe the Grecian bard a poet more according to his genius than Virgil.

In the middle of 1698 he began to modernise Chaucer, and having completed two-thirds of his undertaking, contracted in the spring of 1699 to furnish his bookseller with ten thousand verses for three hundred pounds. The accomplishment of this task gave to the public that beautiful collection of poetry known by the name of *Dryden's Fables*, which was published in March 1699-1700. About this time one of his friends having revised Fletcher's *Pilgrim* for the stage, stipulated that Dryden should have the benefit of the third night's performance, which was allowed, in consequence of his supplying a prologue and epilogue, a dialogue between two mad lovers, and other additions.

Conceiving that the seventeenth century ended with the year 1699, Dryden wrote a secular masque to be presented at the end of this play, which was to have been performed on the 25th of March, the day when the new year then began. If Dryden was mistaken in this particular, he did not live to see the eighteenth century. He had for some years been harassed with the gravel and gout, and in December 1699 was afflicted with an erysipelas in one of his legs. He recovered sufficiently to resume his labours, but in March and April was again confined, and in consequence of neglecting an inflammation in one of his feet a mortification ensued. He refused to submit to an amputation, and having taken an affectionate leave of his friends, died with perfect composure, and in the profession of the Roman-catholic religion, on the 1st of May, 1700.

He was interred in Westminster-abbey, after laying in state ten days, on Monday, the 13th of May; his funeral was splendid, and most honourably attended†. A monument was

* This circumstance gave rise to the following Epigram, which is preserved among the Harleian MSS. in the British Museum:

"To be published in the next edition of Dryden's Virgil:

Old Jacob, by deep judgment sway'd,
To please the wise beholders,
Has plac'd old Naisan's hook-nos'd head
On poor *Æneas*'s shoulders.

To make the parallel hold tack,
Methinks there's little lacking;
One took his father pick-a-pack,
And t'other sent his packing."

† An account was printed thirty years after his death, of a scene of riot and indecorum excited by Lord Jefferies, but this is proved to be a mere fiction, invented by a Mrs. Elizabeth Thomas, better known by the name of Corinna, who founded her narrative on a letter of Farquhar. The unravelling of this invention does great credit to Mr. Malone's sagacity, and merits perusal as an antidote against literary credulity.

erected by Sheffield duke of Buckingham, in 1720, with a short Latin inscription.

Soon after Dryden's death, Henry Playford, a publisher of music, solicited the followers of the muses to express their sorrow for the loss of so great a poet, and was, in less than two months, enabled to publish a collection of English and Latin verses, under the title of *Lucus Britannici, or the Tears of the British Muses for the Death of John Dryden*. This was preceded or followed by several separate elegies, and a collection of plaintive verses, entitled the *Nine Muses*, written by nine ladies.

In person, Dryden was short and fat, with a florid complexion. He is supposed by Mr. Malone not to have been so entirely deficient in talents for conversation as is generally believed. His being a constant frequenter of Will's coffee-house, in Russel-street, Covent-garden, is too well known to be circumstantially repeated. He lived in Gerard-street; his house was the fifth on the left hand in coming from little Newport-street. His predilection for astrology is mentioned by all his biographers*, and he had some faith in oneirocriticism, or the prognostication of future events by dreams.

Dryden does not appear to have been happy in marriage, which, considering the acknowledged sweetness and placability of his disposition, could hardly be considered his fault. His wife was remarkable for a waywardness of temper, which ended in a total derangement of intellect, and in that state she survived till the year 1714. By this lady, Dryden had three sons, Charles, John, and Erasmus Henry, all of them fine, ingenious, and accomplished gentlemen.

The education of these three young men, in which their father was honourably liberal, occasioned many of the complaints of poverty found in his works, for a more selfish man might have accumulated considerable sums with the same advantages. His paternal estate was worth 40*l.* a-year. On his marriage with Lady Elizabeth Howard, an estate in Wiltshire was settled on her, which is computed at 60*l.* a-year. From the theatre his emoluments may be calculated at 100*l.* and during his contract at 200*l.* a-year. In 1670 he was made poet-laureat and historiographer, and from that period to the end of 1676, his income was about 557*l.* per annum, equal to, at least, 1500*l.* in these times. From 1685 to 1689 he derived nothing from the stage, but his salary was increased to 300*l.* and that, with his own estates augmented by the death of his mother, made 420*l.* or full 1200*l.* a-year. In August 1689 his distress truly began; for being then deprived of his places, his revenue was reduced to 120*l.* a-year, with contingent accessions derived from his literary exertions, or the benevolence of his patrons. But distress could never make him deviate from the honourable firmness of his principles, though a prospect of immediate reward presented itself as a motive. "The court," he says in a letter to Mrs. Steward, dated 7th November, 1699, "rather speaks kindly of me, than does any thing for me, though they promise largely; and perhaps they think I will advance as they go backward; in which they will be much deceived, for I can never go an inch beyond my conscience and honour. If they will consider me as a man who has done my best to improve the language, and especially the poetry, and will be content with my acquiescence under the present government, and forbearing satire on it, that I can promise, because I can perform it; but I can neither take the oaths, nor forsake my religion."

This copious extract will place many points of Dryden's character and literary history in a new light, and sufficiently

excuse us with the reader for introducing it: but an ample fund of information and delight awaits the readers of Mr. Malone's elegant publication; the biography abounds in anecdote, and just and useful discussion; and the prose of Dryden is enriched with notes remarkable for learning, good taste, and critical acumen.

DUAREN (Francis), professor of civil law at Bourges, was born at St. Erien, a city of Bretagne in France, 1509. He was the son of John Duaren, who exercised a place of judicator in Bretagne; which place he succeeded his father in, and performed the functions of it for some time. He read lectures on the *Pandects* at Paris, in 1536; and, among other scholars, had three sons of the learned Budæus. He was sent for to Bourges in 1538 to teach civil law, three years after Alciat was retired; but quitted his place in 1548, and went to Paris, in order to frequent the bar: for he was very desirous to join the practice to the theory of the law. He attended the bar of the parliament of Paris, but conceived a prodigious aversion to the chicanery of the court: disgusted therewith, Duaren had great reason to rejoice at the advantageous offers made him by the *Duchess of Berri*, sister of Henry II. which gave him a favourable opportunity to retire from the bar, and to resume with honour the employment he had at Bourges. He returned to his professorship of civil law there, in 1551; and no professor, except Alciat, had ever so large a stipend in the university, as himself. He seems to have deserved it: for to his honour it may be said, that he was the first of the French civilians who cleared the civil-law chair from the barbarism of the glossators, in order to introduce the pure sources of the ancient jurisprudence. He was indeed unwilling to share this honour with any person; and therefore viewed with an envious eye his colleague Eguinard Baron, who blended likewise polite literature with the study of the law. This jealousy prompted him to write a book, in which he endeavoured to lessen the esteem the world had for his colleague; however, after the death of Baron, he shewed himself one of the most zealous to immortalize his memory, and erected a monument in honour of the deceased at his own expence. He had other colleagues, who revived his uneasiness. He could not behold without pain the great reputation of *Baldunus* or *Baudouin*, who was younger than himself; and, after he was delivered from that thorn, he perceived, that *Cujacius*, who succeeded Baudouin, had still greater merit. He did not at all lose this new-comer; and there arose between them such disputes, that the consequences of them might have occasioned great disorders in the university of Bourges, if *Cujacius* had not left the field, and retired to Valence, in order to teach civil law there.

He died in 1559, without having ever married. He had great learning and an excellent judgment, but a very bad memory; so that he was obliged always to read his lectures from his notes. His *Treatise of Benefices*, which he published in 1550, rendered him suspected of heresy; and it was inserted in the *Index Expurgatorius* at Rome. Baudouin treated him as a prevaricator and dissembler, and reproached him with being a plagiarist from Calvin, in his book relating to the priesthood: which reproach Baudouin is supposed to have cast upon him, in order to expose him to the rage of persecutors. Duaren was highly incensed at it, and complained by letter, as well as by word of mouth, to Calvin, who pacified him.

A collection of his works was made in his life-time, and printed at Lyons in 1554: but, after his death, another edition more complete was published in 1579, under the inspec-

* He calculated the nativity of one of his sons, but the prognostic founded on it, and its subsequent verification, are fictions of Corinna.

tion of Nicholas Cifner, who had been his scholar, and was afterwards professor of civil law at Heidelberg, which contains: 1. *Commentaria in varios Titulos Digesti et Codicis.* 2. *Disputationum Anniversariarum, Libri duo.* 3. *De Jure Accrescendi, Libri duo.* 4. *De Ratione docendi discipulorum Juris.* 5. *De Jurisdictione et Imperio.* 6. *Apologia adversus Eugularium Baronem.* 7. *De Plagiariis.* This Bayle calls "a curious treatise, but too short for so copious a subject." 8. *In Consuetudines Fendorum Commentarius.* 9. *De sacris Ecclesiæ Ministeriis ac Beneficiis.* 10. *Pro Libertate Ecclesiæ Gallicæ adversus Artes Romanas Defensio.* 11. *Epistola ad Sebasti. Albespinum, Regis Galliæ Oratorem.* 12. *Epistola de Francisco Balduino.* 13. *Defensio adversus Baldum Sy-cophante Maledicta.*

DUBLIN (*Encycl.*) In the beginning of the year 1797, an act of parliament was passed in Ireland, for the regulation of the Dublin house of industry. It had been under the direction of the corporation for the relief of the poor in Dublin; consisting of the principal officers of state, the aldermen of the city, and others, in all about 200 governors; a number, which promised very little regular attention, and afforded no personal responsibility. Count Rumford had, in May 1796, visited Dublin, at the instance of Mr. Secretary Pelham; and had conferred with him the necessary arrangements, for the improvement of the establishment, and for the correction of the existing defects. By the new act (which was brought into the Irish house of commons by Mr. Pelham in the ensuing session) the conduct of the institution was confided to seven acting governors, or directors, to be annually elected by, and out of, the members of the corporation.

The average number of the persons then in the house exceeded 1700. These were formed into classes, according to their ages, conduct, abilities, and other peculiar circumstances; and from among them was selected a *class of merit* (lodged and fed apart from the others) consisting of those who had distinguished themselves by superior industry, by moral and regular conduct, and by obedience to the rules of the house.

Each class was placed under the immediate superintendence of one of the directors; who engaged to pay daily attention to it, and to make his report regularly to the board: so that a register was obtained of the circumstances and conduct of all the persons in the house; a line was drawn between the idle vagrant and the distressed manufacturer; their wants were accurately known, and immediately attended to.—For the religious duties of the poor, there were two chaplains on the establishment; one a Protestant, the other a Roman-catholic.

Many persons had originally entered the house with an expectation of receiving better and more food, *without any labour*, than what they could have obtained by *their industry* out of the house. In order to diminish the effect of this potent encouragement to idleness (the inconvenience of which is not confined to the city of Dublin exclusively) the directors resorted to the principle, which had been acted upon at Hamburg,

and which has been stated in a preceding Report. They reduced the *ordinary* diet of the house below what any industrious labourer, out of the house, could obtain by his earnings at the lowest rate of wages: at the same time, in order that the poor persons upon the establishment might *enjoy* the profits of their work, in the manner most pleasant and most advantageous to themselves, the directors opened a shop in the house; where every article of reasonable luxury, and innocent gratification, is sold at prime cost, upon a plan similar to that of the shop established at Mongewell by the Bishop of Durham; an account whereof is given in another place.

The expence of the diet of the house had been very great. This had been occasioned, partly by the kind of food with which they had been supplied, and partly by the peculation of the persons employed. In order to correct the latter, the following mode of distribution has been adopted: the head porter, every morning early, returns to the secretary the number to be provided with food for the day. The secretary then calculates the quantity necessary to be issued from the stores; and the several officers acknowledge the receipt in pass books, which being compared once a week with the steward's store book, the balance is ascertained.

The directors also adopted a cheaper and more nutritive system of diet. An ox-head stew, and soups prepared upon Count Rumford's principle (*see SOUP*), have been distributed to the poor: and the practice which existed among them, of exchanging their bread for whiskey, has been put an end to; the bread being now mixed with the soup, before the distribution.—The improvement in the health of the poor, in consequence of the new system, has been almost commensurate to the increased economy of the house: the expence of diet for the half-year from Midsummer 1797 (when the new regulations took place), being very little more than half, and the proportionate mortality in the house less than three-fifths, of what they had been in the preceding half year.

In promoting the health and the economy of the house, the directors have also had the benefit of Count Rumford's assistance. His double boilers, with close covers, have been put up under his direction. He has invented, and constructed in one of their lumber rooms, a *perpetual oven*, which would be very useful in all our public establishments. It occupies a circular space, about 7 feet in diameter, in the centre of the room; and contains six cells for baking bread, or dressing food, all heated by one small fire, and ready in succession (or at the same time if wanted) for baking or for any operation of cookery.

What Count Rumford has done for warming and ventilating their larger rooms, is very deserving of imitation. There are two fire-places, one in the office of the master of the work, the other in the hall of merit; with flues extending horizontally, at the height of five feet from the floor, to a chimney in the centre. These communicate a sufficient and equable degree of heat, through the two great dining halls. Two of Count Rumford's *louvres* * carry off the vitiated air; and a fresh supply of *atmospheric* air is ob-

* These *louvres* ought to be used, not only in houses of industry, manufactories, and gaols, but in all crowded rooms, where those who have the misfortune to be confined in them, suffer extremely both in health and spirits, by exhausted and corrupted air. They are made on a very simple construction; and they not only act very powerfully, and are easily regulated, but their action may be totally suspended at pleasure. They are so constructed, that every wind that blows, acts at the same time, both by *compression* and by *exhaustion*, to ventilate the apartments with which they communicate. Part of those put up by Count Rumford at Dublin, were intended for a long garret over the hall. This garret, which was fitted up as a dormitory for some of their most industrious children, was so very low, that those who were destined to sleep in it, would certainly have felt the want of fresh air, had not some extraordinary means been used to procure a supply of it. The necessary ventilation is obtained by means of three six-sided vertical wooden tubes, which, passing through the roof of the building, project 3 or 4 feet above it, and communicate with the room below. By two of these tubes, placed at the two ends of the dormitory, and terminating in two long wooden

tained by small apertures, which are made at the bottom of the side walls, and covered with perforated boxes.

Difficulties have always existed with regard to the mode of supplying the necessitous poor with clothing. Where it is given *gratuitously and indiscriminately*, it is neither sufficiently valued, nor properly preserved; it is often commuted for spirituous liquors, and it *always* has a tendency to relax industry. By the regulations adopted at Dublin, the clothing of all persons capable of labour, is to be supplied solely from their own exertions. At the same time, instead of *one-sixth*, their former allowance, they have *two-thirds of all their earnings*; the remaining third being deemed nearly sufficient to defray the expense of machinery and superintendence. As an additional encouragement, they whose clothing is furnished by their own industry, are permitted to have one day in the week to go out and visit their friends; the indulgence being, in their case, not liable to the general objection, that, while they were out of the house, they often made away with part of their clothes.

The labour of the directors of the house of industry at Dublin, has been extremely diminished by a proper distribution of attention, of authority, and of responsibility; by the power being placed in very few hands, and by each director having the *whole merit of his own personal exertions*. But, where there is much misery * and depravity to correct, which appears to have been the case with the paupers on this establishment, it is requisite that prudence, activity, firmness, and perseverance, should all be employed, as they have been in this instance, much to the honour of the directors.

It must give great satisfaction to every one, who is aware that religion, morality, industry, and prudence, have, like the arts, a common bond of union, and produce their full effects in those instances only where they act in concert, to observe, that in this establishment, where there are so many Roman-catholics, objects of its protection, there is a priest of their own persuasion, provided for their religious improvement.—No reformation of the poor can be *completely* brought about, without the aid of religion.—This must be the *foundation* of every thing effectual, to be done for them—the *superstructure* should be aid, encouragement, and distinction.

In respect also of that superstructure, the arrangement in the Dublin house of industry is wise and judicious. The aid and encouragements given to industry, in this instance, have exceeded those of any similar establishment. But the peculiar feature of the institution, is the *distinction of classes*, particu-

larly that of the separate and favoured *class of merit*;—which must, gradually, become an object of ambition to every person in the house, to the amendment even of the most idle, and the most profligate.

The regulation which fixes (as at Hamburg) their standard of the common diet, below what may be obtained by the earnings of the industrious labourer out of the house, is deserving of observation, and of imitation in England. Much injury is done to the spirit and feelings of the English cottager, not merely by the wanton and ostentatious profuseness of the rich and vain, but also by the gross and offensive waste that is apparent in most of our workhouses and public charities.

It is no small merit in the directors (we wish we could offer our public establishments in England the same tribute of commendation), that they have readily adopted the improvements suggested by Count Rumford; and, by attention and proper management, have given them their due success. They have taken the full benefit of his assistance in respect of the diet of the house—of the boilers and oven which he has constructed for them—and of the economical mode which he has suggested of warming and purifying the air of their larger rooms. The introduction of his improvements into *all our public establishments*, particularly those improvements which contribute to temper and sweeten the air in crowded buildings, would be an important and national benefit. Indeed, we are unreasonable enough to wish, that the other classes of society in England, instead of being kept from the habitations of the poor by their want of cleanliness, and by the dread of offensive or contagious air, would exert themselves effectually in assisting and enabling them to correct the evil.

It must be a subject of real satisfaction to every well-wisher to his country, that, in the course of the preceding spring, a society has been formed at Dublin, *for promoting the comforts of the poor*; the President of which is the Marquis Cornwallis, the Lord Lieutenant of that kingdom; the six Vice-presidents, the Chancellor, the Speaker, and four other persons of the first rank; and the 34 members of the committee, some of the most respectable characters in that country.

In their account of the plan and regulations of the society, they state, that some individuals having observed with pleasure the progress of a society, instituted in England in the year 1796, "*for bettering the condition, and increasing the comforts of the poor*," were encouraged by their success to form themselves into a society, founded upon similar principles, to be

boxes, which are bored full of small holes, and rest on the floor of the room, fresh atmospheric air from without is *forced* into the room, while the foul air is carried off by means of the third tube, placed over the middle of the room, with its lower opening even with the ceiling. This tube is furnished with a register, or damper. The whole of this machinery is made of wood; and as no part of it is moveable, except the register, it is not expensive, nor liable to be put out of order.

* It is hardly possible to enter into a detail of the late improvements in the Dublin house of industry, without adverting to the general situation of the lower class of our fellow-subjects in Ireland. Much, indeed, has been recently done by individuals, in particular districts; by Mr. Pelham, in encouraging the industry and good habits of the poor in the vicinity of Dublin, and in introducing a friendly communication between them and their more opulent neighbours; and by the Speaker, Mr. Foster, in the promotion of agriculture, manufactures, and commerce. There are of the highest order of national improvement; and afford a fair prospect, that what is so well begun, will be pursued with that energy and perseverance, which the importance of the subject demands.—The disadvantages of many of the poor in Ireland, originate in want of education, in a total ignorance of the comforts of life, and a consequent indifference about them. With such persons, the spur that should impel them to action, and the bond that should connect them with society, are wanting. Having neither property, nor the means of preserving it—consisting in the mildness of the climate, in the fertility of the soil, and in the facility of obtaining those mere necessities of existence with which they are acquainted—what security can their country possess for conduct, what impulse to industry and exertion?—The necessary remedies—the introduction of a proper system of education, of habits of cleanliness, and of a taste for the comforts of life, as applied to food, habitation, and clothes;—the extending of the power of acquiring property, and the means of preserving it;—the promoting of more connection, and more intercourse of kindness and benevolence, between the different ranks of life—these are measures, which require *superior talents and industry* to arrange and conduct;—measures, essential, not merely to the prosperity of Ireland, but, at the present crisis, to the security of Great Britain.

denominated "the society for promoting the comforts of the poor."—That the general object of the society (being the same as the declared object of the English society) is to collect and circulate such useful and practical information, derived from experience, respecting the circumstances and situation of the poor, and the most effectual means of meliorating their condition, as may induce and enable all well-disposed persons to unite in the promotion of measures so important to the happiness and welfare of the community at large.—That they are determined ever to keep in view this principle—"that the best relief the poor can receive, is from themselves; and that the most effectual method of improving their condition, is by the encouragement of *industry, prudence, and cleanliness*;" and they trust that the local experience of humane individuals, whether employed for the encouragement of industry and increase of comfort, for the prevention and relief of distress, or for the general improvement of the morals and condition of the lower classes, being thus collected, and afterwards diffused over the kingdom at large, will animate and instruct the nation in the pursuit of these important objects.

Their regulations do not materially differ from those of the English Society.—See SOCIETY, in this SUPPLEMENT.

It cannot but be flattering to the latter, to see another institution, professedly originating out of the success attending its progress, founded in a neighbouring island, on the same principles, and under the highest patronage.

Nothing can be more honourable to this country, than the disposition to generally prevalent amongst individuals in the higher orders of society, to exert themselves for the benefit of the poorer classes of their fellow-subjects; and nothing can be of greater importance, than to give this disposition a proper direction, that the efforts of benevolence may not be defeated, by a misapplication of its assistance.

The knowledge required for this purpose must be the result of experience, to which nothing can more certainly lead, than investigations how the comforts of the poor may be best promoted; not by relaxing their industry, or weakening their habits of frugality, but by strengthening and increasing the motives to both; for "if the manner in which relief is given, is not a spur to industry, it becomes, in effect, a premium to sloth and profligacy."

The reports of the London society prove, that the object, though difficult of attainment, is not impracticable:—that the means for this purpose may be so adapted, as to relieve the poor, and excite their industry; to increase their means of subsistence, and yet encourage economy, and render the effects of liberality subservient to the best of moral uses, that of promoting good habits.

Every new institution having the same objects in view, must in its progress augment the general mass of experimental information; and whilst we anticipate with pleasure the prospect of our own gains in this respect, from the establishment of the Dublin society, we cannot but participate the satisfaction which the poor of that country must feel, from the public demonstration which this establishment affords, of a general attention to their interests, and an anxiety to promote their comforts; nor could any more effectual means be devised to conciliate their affections.

The comparative experience, which will be found in the reports of similar societies in different countries, must lead to important and beneficial conclusions. The same modes of relieving the industrious poor, are not adapted to all states and situations, although the principle which should govern the application of them cannot be varied. Much has been done, and more may be successfully performed by the efforts of individuals in England, in correcting the prejudicial effects of the poor laws, workhouses, mendicity, &c. and in Ireland the

field appears to be equally extensive for the exertions of individual benevolence.

Amongst other recent improvements calculated to encourage industry and promote good habits among the poor in this city, is a society of farmers, who confer rewards on those who exert themselves in the labours of agriculture.

At a quarterly-meeting of the farmers' society, established by Mr. Pelham, for the district of Castleknock, Blanchertown, and Portertown, near Dublin, held in March 1798, the following premiums were offered to labourers and their families within the district.

Premiums proposed by the Farmers' Society for the Union of Castleknock, for the year 1798.

- | | £. | s. | d. |
|---|----|----|----|
| 1. To the best ploughman with oxen - - - | 2 | 2 | 0 |
| 2. To ditto, with horses - - - | 2 | 2 | 0 |
| The qualifications necessary to gain the above premiums, to be settled by a committee appointed for that purpose. | | | |
| 3. To the labourer who shall appear to have brought up the greatest number of legitimate children in the habits of industry to the age of twelve years - - - | 2 | 2 | 0 |
| 4. To the labourer, for the next greatest number - - - | 1 | 1 | 6 |
| 5. To the labourer, for the third greatest number - - - | 1 | 1 | 0 |
| 6. To the labourer in farming, who shall have lived the greatest number of years (not less than five) in the same service, and behaved with sobriety, honesty, and industry, during that time, and who shall produce a satisfactory certificate from his master, of such continued good behaviour - - - | 2 | 2 | 0 |
| 7. To the dairy-maid, who shall have lived the greatest number of years under the above conditions - - - | 1 | 1 | 0 |
| 8. To the wife or widow of a labourer or manufacturer, who shall have done the greatest number of days' work in husbandry - - - | 1 | 1 | 0 |
| 9. To ditto, for the next greatest number - - - | 0 | 10 | 6 |
| The above Premiums not to exceed 3d. a-day for the first, nor 2d. a-day for the second. | | | |
| 10. To six labourers, who shall obtain from their respective clergymen and employers, certificates of their being most attentive to religious duties, the most sober, honest, and industrious, and in every respect the best-conducted labourers within the union - - - | 3 | 3 | 0 |
| 11. To six boys and six girls, who shall be returned from the school of Castleknock, Blanchertown, and Portertown, as being the most attentive to learning, and the best-behaved children of said schools - - - | 3 | 3 | 0 |
| The certificates to be signed by the masters, and countersigned by their respective clergymen; these premiums to be given in books or clothes. | | | |
| 12. Resolved, that we will every year give the sum of one guinea, to purchase useful tracts for each of the three schools in the union - - - | 3 | 3 | 0 |
| The tracts to be chosen by a committee appointed for the purpose: an examination to be held, and premiums given to such of the scholars as shall give the best account of said tracts. | | | |
| 13. To three boys and three girls, under the age of twelve years, who shall appear to the society by certificates from their employers, to have earned the most money in the year in country business - - - | 3 | 3 | 0 |
| 14. To the same number of boys and girls, from twelve to sixteen years old, under the same conditions - - - | 3 | 3 | 0 |
| The first premium not to exceed 2d. nor the other 3d. per day. | | | |

15. To three labourers, or widows of labourers, who shall be returned, by inspectors appointed for the purpose, as having kept their children, cabbins, and gardens, in the neatest, cleanliest, and most decent order (gentlemen's lodge excepted), one guinea for each division of the union

16. To the wife or widow of a labourer, who shall (with the assistance of her children, under the age of sixteen years) have spun the greatest quantity of linen or woollen yarn, and prepared the same for the loom, within the year

17. To ditto, for the next greatest quantity

18. To ditto, for the third greatest quantity

19. To the wife or widow of a labourer, who with the assistance of her children under sixteen years of age, shall have knit the greatest number of pairs of stockings within the year

20. To ditto, for the next greatest number

21. To ditto for the third greatest number

The quantity of yarn, and number of pairs of stockings, to be certified on oath.

22. To three labourers, who shall be returned by judges appointed for the purpose, as being the most expert and handy in the different works of husbandry, viz. ditching, draining, thatching, plashing hedges, &c. (ploughing excepted)

Total of premiums

The premiums for ploughing, ditching, draining, and for handy labourers, &c. to be determined by a committee appointed for that purpose.

Premiums No. 1, 2, 3, 4, 5, 6, 7, and 22, to be determined the last Monday in June, 1798: all claims for said premiums to be sent in to the secretary, on or before the 11th of June, 1798. The other premiums require a year for their determination; which year begins the 1st of April, 1798, and ends the 1st of April, 1799. All claims for said premiums to be sent in to the secretary, on or before the 1st of April, 1799, and to be determined at the quarterly meeting of the society, on the last Monday in June following.

The beneficial tendency of the measures adopted by this society, for encouraging the virtues of the poor, is so obvious, and the expediency and utility of them so apparent, that it is difficult to suggest any observation on the subject, which the good sense and intelligence of the reader will not have already anticipated. No accumulation of criminal law, no penalties on imprudence and idleness, no repairs of the flocks and the cage, no additions to our goals and houses of correction—in short, no severity of punishment, though it may in some degree deter from crimes, can ever produce, among the great mass of the people, any increase of energy and good habits, which will bear a comparison with that which must necessarily spring from the judicious and benevolent encouragement afforded to their poor neighbours, in this instance, by the fifth gentlemen and farmers.

There is so little trouble, expence, or difficulty in the measure, that we may venture to call upon the inhabitants of our different parishes and districts, as they regard either their own interest or the welfare of others, to imitate this useful example; and generally to adopt a plan, the good effects of which must be unquestionable. There are several societies in England, which have done very essential service to their neighbourhoods, by embracing part of these objects: but the framer of these resolutions has contrived, in this instance, to awaken at once all orders and all ages of the labouring poor in his neighbourhood; and, by the kindest and most acceptable

encouragement to action, to stimulate them all to progress and perseverance in those courses of life, which will prove most useful and most beneficial to themselves and their country.

DUCHAL (James), a learned minister among the Dissenters, was born in Ireland in 1697. He had his early education under the direction of an uncle; his preparatory studies were greatly assisted by the well-known and justly-admired Mr. Abernethy; and he finished his course of study at the university of Glasgow: which, in testimony of his merit, conferred on him the degree of D.D. He resided for ten or eleven years at Cambridge, as the pastor of a small congregation there; where he enjoyed his beloved retirement, the advantage of books, and of learned conversation, which he improved with the greatest diligence. On Mr. Abernethy's removal from Antrim, he succeeded him in that place; and, on the death of the said worthy person, was chosen to be minister to the Protestant Dissenting congregation of Woodstreet, Dublin. In this situation he continued to his death, which happened in 1761.

It is very remarkable, and worth recording, that, during his residence here, when he was in the decline of life, of a valetudinary habit, and had frequent avocations in the way of his profession, he composed and wrote sermons to an amount almost beyond belief: more, it appears on the best computation, than 700. From this mass, a collection was taken after his death, and published in 3 vols, 8vo: in 1764. They are mostly on new and uncommon subjects; and a vein of strong manly sense and rational piety runs through the whole.

During his life, he published a volume of excellent discourses on the presumptive arguments in favour of the Christian religion: and many occasional tracts both in England and Ireland.

DUCHAT (Jacob le), a Frenchman, distinguished among the literati, was born at Metz in 1658. He was trained to the law, and followed the bar, till the Reformed were driven out of France, by the revocation of the edict of Nantz. In 1701 he settled at Berlin; became a member of the Academy of Sciences; and died there in 1735. He was regarded as a very learned person, yet is distinguished as an editor, rather than an author. He had, it seems, a great taste for the ancient French writers; and gave new editions of the Menippean Satires, of the Works of Rabelais, of the Apologie for Herodotus, by Henry Stephens, &c. all accompanied with remarks of his own. He held a correspondence with Bayle, whom he furnished with many particulars for his Dictionary. After his death was published a "Ducatiana," at Amsterdam, in 1738, 2 vols. 12mo.

DUCK (Arthur), a civilian, was born in Devonshire in 1580, of a considerable family; and at fifteen years of age became a student at Exeter College in Oxford, where he took a degree in arts in 1599. From thence he removed to Hart-hall, and afterwards was elected fellow of All-Souls; but his genius leading him to the study of the civil law, he took his other degrees in that faculty. He travelled into France, Italy, and Germany; and, after his return, was made chancellor of the diocese of Bath and Wells. He was afterwards made chancellor of London, and at length master of the Requests; but the confusions, which were then beginning, probably hindered him from rising higher. In 1640 he was elected burgess for Minehead in Somersetshire, and soon after siding with King Charles in the time of the rebellion, became a great sufferer in the fortunes of his family. In 1648 he was sent for by his majesty to Newport in the Isle of Wight, to be assisting in his treaty with the commissioners from the parliament; but, that treaty taking no effect, he retired to his habitation at Chiswick near London, where he died, in 1649. He was an excellent civilian, a tolerable poet, especially

in his younger days, and very well versed in history, ecclesiastical, as well civil. He left behind him "Vita Henrici Chichele, &c." and "De Ufu & Authoritate Juris Civilis Romanorum in Dominiis Principum Christianorum:" a very useful and entertaining work, which has been printed several times at home and abroad. He was greatly assisted in this work by the learned Dr. Gerard Langbaine.

DUCK CREEK, a town of the state of Delaware, which carries on a considerable trade with Philadelphia. It is 12 miles N. W. of Dover.

DUDLEY (Robert), baron of Denbigh, and earl of Leicester, son to John duke of Northumberland, and brother to Ambrose earl of Warwick, before mentioned, was born about 1532; and coming early into the service and favour of King Edward, was knighted in his youth. June 1550 he espoused Amy, daughter of Sir John Robbarts, at Sheen in Surrey, the king honouring their nuptials with his presence; and was immediately advanced to considerable offices at court. In the first year of Mary, he fell into the same misfortunes with the rest of his family; was imprisoned, tried, and condemned; but pardoned for life, and set at liberty in October 1554. On the accession of Elizabeth, he was immediately entertained at court as a principal favourite: he was made master of the horse, installed knight of the Garter, and sworn of the privy-council, in a very short time. He obtained moreover prodigious grants, one after another, from the crown: and all things gave way to his ambition, influence, and policy. In his attendance upon the queen to Cambridge, the highest reverence was paid him: he was lodged in Trinity College, consulted in all things, requests made to the queen through him; and, August 10, 1564, he on his knees entreated the queen to speak to the university in Latin, which he accordingly did. At court, however, Thomas earl of Suffex shewed himself averse to his counsels, and strongly promoted the overture of a marriage between the queen and the Archduke Charles of Austria; as much more worthy of such a princess, than any subject of her own, let his qualities be what they would. This was resented by Dudley, who insinuated, that foreign alliances were always fatal; that her sister Mary never knew an easy minute after her marriage with Philip: that her majesty ought to consider, she was herself descended of such a marriage as by those lofty notions was decreed: so that she could not condemn an alliance with the nobility of England, but must at the same time reflect on her father's choice, and her mother's family. This dispute occasioned a violent rupture between the two lords, which the queen took into her hands, and composed; but without the least diminution of Dudley's ascendancy, who still continued to solicit and obtain new grants and offices for himself and his dependants, who were so numerous, and made so great a figure, that he was styled by the common people "The Heart of the Court."

To give some colour to these marks of royal indulgence, which, indeed, seemed to require an offensive motive, the queen proposed him as a suitor to Mary queen of Scots; promising to that princess all the advantages she could expect or desire, either for herself or her subjects, in case she consented to the match. The sincerity of this was suspected at the time, when the deepest politicians believed that, if the Queen of Scotland had complied, it would have served only to countenance the preferring him to his sovereign's bed. The Queen of Scots rejected the proposal in a manner that, some have thought, proved as fatal to her, as it had done to his own lady, who was supposed to be sacrificed to his ambition of marrying a queen. The death of this unfortunate personage happened September 8, 1560, at a very unlucky juncture for his reputation;

because the world at that time conceived it might be much for his convenience to be without a wife, this island having then two queens, young, and without husbands. The manner too of this poor lady's death, which was by a fall from a high station, filled the world with great consternation.

Sept. 1564, the queen created him baron of Denbigh, and, the day after, earl of Leicester, with all the pomp and ceremony imaginable; and, before the close of the year, he was made chancellor of Oxford, as he had been some time before high-steward of Cambridge. His great influence in the court of England was not only known at home, but abroad, which induced the French king, Charles IX. to send him the order of St. Michael, then the most honourable in France; and he was installed with great solemnity in 1565. About 1572, it is supposed that the earl married Douglas, baroness-dowager of Sheffield; which, however, was managed with such privacy, that it did not come to the queen's ears, though a great deal of secret history was published, even in those days, concerning the adventures of this unfortunate lady. We call her unfortunate, because, though the earl had actually married her, and there were legal proofs of it, yet he never would own her as his wife. Some of the wits in Queen Elizabeth's court, after the earl's public marriage with the Countess-dowager of Essex, styled these two ladies, Leicester's two Testaments; calling Lady Douglas the Old, and Lady Essex the New Testament. The earl, in order to stifle this affair, proposed every thing he could think of to Lady Douglas Sheffield, to make her desist from her pretensions: but, finding her obstinate, and resolved not to comply with his proposals, he attempted to take her off by poison. It is however beyond all doubt, that the earl had by her a son, Sir Robert Dudley, of whom we have spoken elsewhere, and to whom, by the name of his *bastard son*, he left the bulk of his fortune; and also a daughter.

In 1576 happened the death of Walter earl of Essex, which drew upon Lord Leicester many suspicions, especially after his marriage with the Countess of Essex was declared; as it was two years after. For, in 1578, when the Duke of Anjou pressed the match that had been proposed between himself and the queen, his agent, believing Lord Leicester to be the greatest bar to the duke's pretensions; informed the queen of his marriage with Lady Essex; upon which her majesty was so enraged, that, as Camden relates, he commanded him not to stir from the castle of Greenwich, and would have committed him to the Tower, if she had not been dissuaded from it by the Earl of Suffex. Lord Leicester being now in the very height of power and influence, many attempts were made upon his character, in order to take him down: and, in 1584, came out a most virulent book against him, commonly called Leicester's Commonwealth. The drift of it was to shew, that the English constitution was subverted, and a new form imperceptibly introduced, to which no name could be so properly given, as that of a Leicesterian Commonwealth. To make this pass the better, the earl was represented as an atheist in point of religion, a secret traitor to the queen, an oppressor of her people, an inveterate enemy to the nobility, a complete monster with regard to ambition, cruelty, and lust; and not only so, but as having thrown all offices of trust into the hands of his creatures, and usurped all the power of the kingdom. The queen, however, did not fail to countenance and protect her favourite; and, to remove as much as possible the impression this bitter performance was sure to make upon the vulgar, caused letters to be issued from the privy-council, in which all the facts contained therein were declared to be absolutely false, not only to the knowledge of those who signed them, but also of the queen herself. Nevertheless, this book was universally read, and the contents of it generally received for true; and

the great secrecy with which it was written, printed, and published, induced a suspicion, that some very able heads were concerned either in drawing it up, or at least in furnishing the materials. It is not well known what the original title of it was, but supposed to be *A Dialogue between a Scholar, a Gentleman, and a Lawyer*; though it was afterwards called *Leicester's Commonwealth*. It has been several times reprinted, particularly in 1600, 8vo. in 1631, 8vo. the running-title being *A Letter of State to a Scholar of Cambridge*; in 1641, 4to. and 8vo. with the addition of *Leicester's Ghost*; and again in 1706, 8vo. under the title of *Secret Memoirs of Robert Dudley, Earl of Leicester*, with a preface by Dr. Drake, who pretended it to be printed from an old manuscript. The design of reprinting it in 1641, was, to give an ill impression of the government of Charles I. and the like was supposed to be the design of Dr. Drake in his publication. Indeed, it may be considered as a standing check upon all overgrown ministers, and governments by faction.

Dec. 1585, Lord Leicester embarked for the Protestant Low-countries, whither he arrived in quality of governor. At this time the affairs of those countries were in a perplexed situation; and the States thought that nothing could contribute so much to their recovery, as prevailing upon Queen Elizabeth to send over some person of great distinction, whom they might set at the head of their concerns, civil and military: which proposition, says Camden, so much flattered the ambition of this potent earl, that he willingly consented to pass the seas upon this occasion, as being well assured of most ample powers. Before his departure, the queen admonished him to have a special regard to her honour, and to attempt nothing inconsistent with the great employment to which he was advanced: nevertheless, she was so displeased with some proceedings of his and the States, that the year after the sent over very severe letters to them, which drew explanations from the former, and deep submissions from the latter. He returned to England, Nov. 1585; and, notwithstanding what was said, was well received by the queen. What contributed to make her majesty forget his offence in the Low-countries, was the pleasure of having him near her, when she wanted his counsel extremely; for now the affair of Mary queen of Scots was upon the carpet, and the point was, how to have her taken off with the least discredit to the queen. The earl thought it best to have her poisoned; but that scheme was not found practicable, so that they were obliged to have recourse to violence. The earl set out again for the Low-countries in June 1587; but, great discontents arising on all sides, was recalled in November. Camden relates, that on his return, finding an accusation preparing against him for mal-administration there, and that he was summoned to appear before the council, he privately implored the queen's protection, and besought her "not to receive him with disgrace upon his return, whom at his first departure she had sent out with honour; nor bring down alive to the grave, whom her former goodness had raised from the dust." These expressions of humility and sorrow wrought to far upon her, that he was admitted into her former grace and favour.

In 1588, when the nation was alarmed with the apprehensions of the Spanish armada, Lord Leicester was made lieutenant-general, under the queen, of the army assembled at Tilbury. This noble personage stood high in the favour of his mistress to the last: for he died this year, Sept. 4, at his house at Cornbury in Oxfordshire, while he was upon the road to Kenilworth. His corpse was removed to Warwick, and buried there in a magnificent manner. He is said to have inherited the parts of his father. His ambition was great, but his abilities seem to have been greater. He was a finished courtier in

every respect; and managed his affairs so nicely, that his influence and power became almost incredible. He had a competent knowledge of the Latin tongue, and was thoroughly versed in the French and Italian.

DUDLEY, a town in Worcestershire, with a market on Saturday, and a great manufacture of nails and other ironwares. There is a church at each end of the longest street. It is 10 miles N. W. of Birmingham and 120 of London. Long. 2. o. W. Lat. 52. 33. N.

DUFFET (Thomas). This author was a milliner in the New-Exchange; but, his genius leading him to dramatic poetry, he wrote several pieces for the stage, which at first met with good success, but afterwards sunk into contempt and oblivion. Traveltie and burlesque will ever create a laugh; but, however intended, can never do any essential hurt to performances of real worth; nor could *The Mock Tempest*, *Psyche*, or *Empress of Morocco*, lessen, in the opinion of the judicious, the value of the originals on which they are founded. The pieces Mr. Duffet has left behind him, the best of which were those which met with the worst success, are fix in number. They are enumerated in the *Biographia Dramatica*.

DUGARD (William), an eminent school-master and learned man, was the son of Henry Dugard, a clergyman, and born at Bromsgrove in Worcestershire in 1606. He was instructed in classical learning at a school in Worcester; and from thence sent, in 1622, to Sidney College, Cambridge. In 1626 he took the degree of B.A. and that of M.A. in 1630. Soon after he was appointed master of Stamford-school in Lincolnshire; from whence, in 1637, he was elected master of the free-school in Colchester. He resigned the care of this school Jan. 1642-3; and, May 1644, was chosen head-master of Merchant-Taylors' school in London. This school flourished exceedingly under his influence and management; but for shewing, as was thought, too great an affection to the royal cause, and especially for being concerned in printing Salmasius's defence of Charles I. he was deprived of it Feb. 1649-50, and imprisoned in Newgate; his wife and six children turned out of doors; and a printing-office, which he valued at a thousand pounds, seized. That he was very well affected to Charles I. and to the royal interest, appears from a curious register he kept of his school, which is still extant in Sion-College library, wherein are entered two Greek verses, on the beheading of that monarch, to this effect: "Charles, the best of kings, is fallen by the hands of cruel and wicked men, a martyr for the laws of God and of his country." There are also two more Greek verses on the burial of Oliver Cromwell's mother in Westminster Abbey to this effect: "Here lieth the mother of a cursed son, who has been the ruin of two kings, and of three kingdoms." However, it was not for these verses that he was dismissed the school, but for being concerned in printing Salmasius's book.

Being soon released from this confinement, he opened, April 1650, a private school on Peter's-hill, London; but, in September, was restored to his former station, by means of the same council of state who had caused him to be removed. There he continued with great success and credit, till about 1661; when he was dismissed for breaking some orders of the Merchant-Taylors, though he had been publicly warned and admonished of it before. He presented a remonstrance to them upon that occasion, but to no purpose; whereupon he opened a private school in Coleman-street, July 1661, and, by March following, had gathered an hundred and ninety-three scholars: so great was his reputation, and the fame of his abilities. He lived a very little while after, dying in 1662. He gave by will several books to Sion-College library. He published some few pieces for the use of his schools; as,

1. *Lexicon Græci Testamenti Alphabeticum*; una cum Explicatione Grammatica Vocum singularum, in usum Thronum, Neemon Concordantiâ singulis dictionibus appositâ, in usum Theologiæ Candidatorum, 1660. 2. *Rhetorices compendium*, 8vo. 3. *Luciani Samosatensis dialogorum selectiorum libri duo*. A. G. Dugard recogniti, et variis collatis exemplaribus, multo castigatius quam antea editi. Cum interpretatione Latina, multis in locis emendata, et ad calcem adjecta, 8vo. 4. A Greek Grammar.

DUGUET (James-Joseph), a French writer, and author of almost twenty works in the French language, was born in 1649, and became a priest of the Oratory. In 1685 he quitted the Oratory, and went to Brussels to his great friend Arnauld: but, the air of this place not agreeing with him, he returned the same year to France, and lived a very retired life in the midst of Paris. He afterwards lived with president Le Menars. His opposition to the Bull Unigenitus, and his attachment to the doctrine of his friend Quesnel, occasioned him much trouble, by obliging him often to shift his quarters. He was in Holland, at Troyes, and Paris; but there was a sweetness and moderation in his make, which kept him always tranquil. He died at Paris in 1733. All his works are upon subjects of theology and piety, except *De l'Education d'un Prince*; first printed in 4to. and afterwards in 4 vols. 12mo, with his life prefixed by Abbé Goujet. The style of Duguet is clear, pure, and elegant, but too diffuse.

DUINS, or **DOINO**, a sea-port of Germany, in the duchy of Carniola, eight miles N. W. of Trieste. Long. 13. 46. E. Lat. 45. 55. N.

DUISBURGH, a town of Westphalia, in the duchy of Cleves, with a university; seated on the Roer, near the Rhine, 12 miles N. of Dusseldorf. Long. 6. 50. E. Lat. 51. 22. N.

DUITZ, or **DURTZ**, a town of Westphalia, on the E. side of the Rhine, opposite Cologne. It is chiefly inhabited by Jews, who are not allowed to dwell at Cologne, or even enter that city without permission.

DUKE (Richard), was bred at Westminster and Cambridge, and was some time tutor to the Duke of Richmond. He appears from his writings to have been well qualified for poetical compositions: and, conscious of this when he left the university, he enlisted himself among the wits. He was the familiar friend of Otway, and was engaged, among other popular names, in the translations of Ovid and Juvenal. In his Review, though unfinished, are some vigorous lines. With the wit he seems to have shared the dissoluteness of the times; for some of his compositions he must have reviewed himself with detestation in his later days, when he published those sermons which Featon has commended. In 1683, being then M. A. and fellow of Trinity College in Cambridge, he wrote a poem on the marriage of Lady Anne with George prince of Denmark. He took orders, and being made prebendary of Gloucester, became a proctor in convocation for the church, and chaplain to Queen Anne. In 1710 he was presented by the Bishop of Winchester to the wealthy living of Witney in Oxfordshire, which he enjoyed but a few months. Feb. 10, 1711, having returned from an entertainment, he was found dead the next morning.

DUKE OF YORK'S ISLAND, an island in the S. Pacific Ocean, discovered by commodore Byron in 1765, lying N. of the Friendly Islands. The ground was covered by land-crabs, but no other animal was seen. Long. 172. 30. W. Lat. 8. 0. S.

DUKE OF YORK'S ISLAND, an island in the S. Pacific Ocean, about 10 miles long, lying between Lord Howe's Group and the S. E. point of New Ireland. The natives go entirely naked; are stout, well made, and of a light copper colour: their hair is woolly, but they dress it with grease and

powder, and make it hang straight. Their huts are neatly made, chiefly of bamboo, and placed under the shade of coconut trees, with a fence before them, within which the plantain, banana, yam, sugar-cane, &c. are cultivated. The island is a perfect garden, and produces, besides the plants above mentioned, betel-nut, mangoes, bread-fruit, and guavas. Here are also dogs, hogs, poultry, and some spices. The nutmeg was seen by Captain Hunter, who anchored in Port Hunter Bay, in this island, in May 1791. Long. 152. 42. E. Lat. 4. 7. S.

DULAS, a village on the N. E. side of the ile of Anglesey, much frequented on account of the corn and butter trade; and for fern-alhes. Near it is a red ochrey earth, and veins of lead ore.

DULCIGNO, a town of Turkey in Europe, in Albania, on the coast of the Adriatic, with a good harbour, 15 miles S. W. of Scutari. Long. 18. 56. E. Lat. 42. 23. N.

DULDERSTADT, a town of Germany, in the duchy of Brunswick, subject to the elector of Mentz, seated on the Whipper, 15 miles E. of Gottingen, and 130 N. E. of Mentz. Long. 10. 14. E. Lat. 51. 28. N.

DULMEN, a town of Westphalia, in the bishopric of Munster, 18 miles S. W. of Munster. Long. 7. 4. W. Lat. 51. 47. N.

DULVERTON, a town in Somersetshire, with a market on Saturday, seated on a branch of the Ex, 24 miles E. of Barnstaple, and 164 W. by S. of London. Long. 3. 30. W. Lat. 51. 3. N.

DULWICH, a village in Surrey, five miles S. of London. It is famous for a college, founded by Edward Alleyn, a principal performer of Shakspeare's plays, in the reign of Elizabeth. He called it The College of God's Gift, and endowed it for a master, warden, and four fellows; three of whom were to be divines, and the fourth an organist; for six poor men and six poor women, and for 12 poor boys, to be educated by two of the fellows. The master and warden are always to be of the name of Alleyn or Allen, and to be single men.

DUMARING, a town of the island of Borneo, on the E. coast. Long. 117. 30. E. Lat. 2. 10. N.

DUMBLANE, a village in Perthshire, remarkable for a battle, called the battle of Sheriff-muir, between the Duke of Argyle and the rebel Earl of Mar, in 1715. At the upper end of the village is a ruinous cathedral. It is 30 miles N. W. of Edinburgh.

DUMFRIES, a town of Virginia, on the N. side of Quantico Creek, four miles above its entrance into the Potomac. It is 185 miles S. W. of Philadelphia. Long. 77. 26. W. Lat. 38. 36. N.

DUN, a town of France, in the department of Meuse, situate on the Meuse, 15 miles N. N. W. of Verdun.

DUNAMOND, a town of Russia, in the government of Riga. It formerly belonged to the duchy of Courland, but was taken by the Swedes in their wars with the Poles. In 1700 it was taken by the Poles, but was retaken the next year, by Charles XII. In 1710 it was taken by the czar, Peter the Great. It is situate at the mouth of the Dwina, 15 miles N. W. of Riga, and 20 N. of Mittau. Long. 23. 41. E. Lat. 57. 5. N.

DUNEBURG, a town of Livonia, on the Dwina, 90 miles S. E. of Riga. Long. 27. 0. E. Lat. 56. 8. N.

DUNGNESS, a cape on the coast of Kent, eight miles S. by W. of Romney. Long. 0. 59. E. Lat. 50. 52. N.

DUNLEER, a borough of Ireland, in the county of Louth, seven miles N. of Drogheda.

DUNLOP, sometimes pronounced **DELEP**, a village in Ayrshire, in the district of Cunningham, celebrated for rich and delicate cheese.

DUNNINGTON, a town in Lincolnshire, with a market on Saturday, 27 miles S.E. of Lincoln, and 111 N. of London. Long. 0. 7. W. Lat. 52. 55. N.

DUNNOSE, a cape on the S. side of the Isle of Wight. Long. 116. W. Lat. 50. 33. N.

DUNSE, a town in Berwickshire, situated between the forks of the rivers Blackadder and Whiteadder, in a rich and fertile country, 12 miles W. of Berwick upon Tweed. Long. 2. 5. W. Lat. 55. 46. N.

DUNSTER, a town in Somersetshire, with a market on Friday, and a harbour on the Bristol Channel. It has a castle on a steep knoll; and at one corner of the terrace is an ancient turret, supposed to be a part of the original castle, built in the time of the Conqueror. A priory stood on the N.W. side of the castle, the church of which now serves for the parish church. It is 20 miles N.W. of Taunton, and 158 W. of London. Long. 3. 41. W. Lat. 51. 13. N.

DUNWICH, a borough in Suffolk, with a market on Saturday. It is seated at the top of a loose cliff, and was formerly a bishop's see, but it is now only the remains of a town, all but two parishes being washed away by the sea. It sends two members to parliament, and is 24 miles S. of Yarmouth, and 99 N. of London. Long. 1. 55. E. Lat. 52. 21. N.

DUPORT (James), a learned English divine, and particularly skilled in the Greek language, was born in the beginning of the 17th century, and educated at Cambridge; in which university he was afterwards chosen Greek professor, and master of Magdalen College. He was preferred at length to the deanery of Peterborough, and died in 1680. He left behind him several learned works, amongst which is a Latin version of the Psalms. His *Gnomologia Homeri cum duplici parallelismo*, viz. ex sacra scriptura et gentium scriptoribus, printed at Cambridge, in 1660, shews his extensive reading, and great knowledge of the Greek tongue, and was then deemed very useful for the understanding of that poet. In 1712, when Theophrastus's Characters were published by Needham, there were printed along with them some lectures of Professor Duport upon the first sixteen characters, the fifth excepted. These lectures had lain in the library of More bishop of Ely for many years, and were at first supposed to have been drawn up by the learned Stanley, who wrote *The Lives of the Greek Philosophers*; but, upon their being communicated, they were soon known to belong to Professor Duport, and to be what he had read to his pupils at Cambridge, during the time of the great rebellion.

DUQUELLA, a province of Morocco, about 80 miles long and 60 broad, exceedingly fertile in corn and pasture.

DURAMPUR, a town of the Decan of Hindoostan, in the province of Guzarat, 45 miles S.E. of Surat, and 96 N.N.E. of Bombay. Long. 73. 14. E. Lat. 20. 32. N.

DURANCE, a river of France, which is formed near Briançon, of the rivulets Dure and Ancy, and watering Embrun, Tallard, Sisteron, Monobéque, and Cavillon, falls into the Rhone, below Avignon.

DURANGO, a populous town of Spain, in Biscay, 14 miles S.E. of Bilbao. Long. 2. 56. W. Lat. 43. 18. N.

DURANGO, a town of New Spain, in New Biscay, with a bishop's see, and good salt-works, in a fertile country. Long. 105. 0. W. Lat. 24. 50. N.

DURAZZO, a village of Albania, with a Greek archbishop's see. It has a ruined fortress, and a good harbour on the gulf of Venice, 50 miles N. of Valona. Long. 19. 19. E. Lat. 41. 54. N.

DURBY, a town of French Luxembourg, capital of a county of the same name, seated on the Ourte, 20 miles S. of Liege. Long. 5. 28. E. Lat. 53. 18. N.

DURCKEIM, a town of Germany in the palatinate of

the Rhine, 12 miles N.E. of Neustadt. Long. 8. 21. E. Lat. 49. 26. N.

DURELL (John), a celebrated divine, was born in the Isle of Jersey in 1626, and sent to Merton College in Oxford when he was fifteen years old: but when that city came to be garrisoned for Charles I. and the scholars took arms for him, he left it, at the end of two years, and went to France; where, at Caen in Normandy, he was admitted to the degree of master of arts in 1644. Afterwards he returned to his own country: but driven from thence a second time, he received episcopal ordination at Paris, in the chapel of Sir Richard Brown, his majesty's then resident in France, from the hands of Thomas bishop of Galloway, about 1651; so that, as Wood says, being a native of Jersey, ordained in France, and by a Scotch bishop, did make some doubt whether he was, what he calls himself in his books, "ecclesiæ Anglicanæ presbyter." Soon after he was invited by the Reformed Church at Caen, by an express on purpose, to come and supply the place of the famous orientalist and critic Samuel Bochart, who was then going into Sweden upon an invitation from Queen Christina; and by the Landgrave of Hesse, to preach in French at his highness's court: but it happened, that he could not accept of either of these invitations, being made chaplain to the Duke de la Force, father to the Princes of Turenne. Upon the restoration of Charles II. he returned to England; and was very instrumental in setting up the new episcopal French church at the Savoy in London. In 1663 he had a prebend conferred upon him in the church of Salisbury, another soon after in that of Windsor, and another after that in the church of Durham; being all the while chaplain in ordinary to his majesty. In 1669 he was created doctor in divinity at Oxford, by virtue of the chancellor's letters. In 1677 he was made dean of Windsor, but did not live long enough to be a bishop, though he lived some years after. All these preferments he obtained, partly through his own qualifications, being not only a good scholar, but also a perfect courtier; and partly through his interest with Charles II. to whom he was personally known both in Jersey and France. He published several things; and, among the rest, 1. *The Liturgy of the Church of England asserted*, in a sermon preached in French at the chapel of the Savoy before the French congregation. Translated into English by G. B. doctor in physic, 1662. 2. *A View of the Government and public Worship of God in the reformed Churches beyond the Seas*: wherein is shewed their conformity and agreement with the church of England, as it is established by the act of uniformity, 1662. Exceptions being made to this book by the Nonconformists, he published, 3. *A Vindication of the Church of England against the unjust and impudent Accusations of the Schismatics*, 1669. He died in 1683, and was buried at Windsor.

DUREN, a town of Germany, in the duchy of Juliers, on the river Roer, 12 miles S. of Juliers. Long. 6. 40. E. Lat. 50. 44. N.

DURSLEY, a town in Gloucestershire, with a market on Thursday, and a castle, now in ruins. It is inhabited by clothiers, and seated near the Severn, 13 miles S.W. of Gloucester, and 107 W. of London. Long. 2. 23. W. Lat. 51. 40. N.

DURTAL, a town of France, in the department of Mayne and Loire. Its chief trade is tanning. It is 16 miles N.E. of Angers.

DUSKY BAY, a bay of the island of New Zealand, in the S. Pacific Ocean. The country here is steep, and the hills near the sea-side are covered with intricate and impenetrable forests. Long. 166. 18. E. Lat. 45. 47. S.

DUTTLINGEN, a town of Suabia, with a bridge over the Danube, and a castle, seated on a mountain. It belongs to

the Duke of Wirtemberg, and is 33 miles N.W. of Constance. Long. 9. 2. E. Lat. 48. 10. N.

DYEING OF WOOD. The methods by which that process is effected are fully set forth in the "*Annales des Arts et Manufactures*" by Mr. Nils Nyström, of Norköping in Sweden, who also has invented a superior mode of preparing a proper varnish for wood with amber. See AMBER in this SUPPLEMENT.

After describing the process for making the varnish of amber, he proceeds to direct the method of preparing the iron dye for staining wood.

Iron dye.—Take eight parts of iron filings, and thirty-two of aqua fortis. The nitric acid (or aqua fortis) should previously be diluted with sixteen parts of water, in a vessel of stone-ware, before we add the iron filings. We should then stir this mixture with a wooden spatula. This preparation ought to be made under a chimney; on account of the effervescence and disengagement of inflammable air (hydrogene gas) which takes place. The vessel which we use ought to be twice as large, at least, as the quantity of the mixture would fill, in order that it may be prevented from overflowing during the effervescence. When the iron has been dissolved, the mixture has acquired a yellowish-brown colour, and as soon as it has cooled, let it be put into an open bottle, and placed upon a sand-bath; and there let it remain for the space of eight-and-forty hours, taking care frequently to shake the bottle during that time. When the deposition has taken place, the solution should be poured into flasks, which ought to be carefully corked: it will then be fit for use.

If this preparation has been made with the requisite care, we shall obtain a solution of a yellowish colour, which is fit for colouring different kinds of wood. If we have added too much water, or if the aqua fortis has been too weak, a deep brown colour is produced; in which case, we must add a quantity of nitric acid, till the yellow shade appears.

This dye may be applied to every kind of wood, except the oak, which, as soon as it is applied to it, becomes entirely black; it also communicates to other kinds of wood different colours, according as it is applied in a larger or smaller quantity. The most common shades are the yellow-brown, and the deep-brown, with streaks or spots of a brownish red.

The experience of four years has demonstrated the durability of this kind of dye; it resists the action of the air, of the light, and even of the direct rays of the sun, without undergoing any alteration. M. Nyström has exposed specimens of wood, stained in this manner, in the most disadvantageous situations, without their colours having been perceptibly affected.

Dye of Fernambouc wood.—Take eight parts of Fernambouc wood, four of alum, and four of red ochre pulverised. Pour water upon this mixture, and let it infuse for the space of twenty-four hours; then reduce it to a quarter of the quantity, by boiling, after which, strain it through a piece of fine linen, and put the liquid into bottles, to be used as you may have occasion for it.

When we make use of these dyes, we may plunge the pieces of wood into them, so that they may penetrate into them on all sides. If we take one part of the iron dye, and dilute it again with three parts of water; if we then pour it upon several pieces of wood, which are to be kept by force under the fluid; and finally, if we deposit this preparation in a warm chamber, the wood will in a short time be penetrated by the liquor to the depth of a quarter of an inch, and in some parts the liquor will penetrate still deeper.

It is to be observed, that the dyeing liquid should be more or less diluted with water, according as the natural colour of the wood is more or less deep, or charged with gallic acid. The pieces of wood must be frequently turned in order that all their

surfaces may be equally exposed to the action of the dye, and acquire an uniform tinge. The same process may also be used with the Fernambouc dye. This method, however, is only applicable to pieces of wood of certain dimensions; for dyeing large pieces a different one must be adopted.

In order to dye the white woods with the two compositions already described, the piece of wood ought to be rubbed, five different times, with a sponge dipped in the iron dye, till it has acquired a mahogany colour. During this application, the wood must remember frequently to shake the liquor, as the oxyde of iron always falls to the bottom. It is also necessary that we should suffer the wood to dry, after each application, before we proceed to the next. When the wood has properly dried, it must be rubbed once or twice with linseed oil, always letting it dry after each application. The more the wood is imbued with the linseed oil, the more mellow are the colours. Another advantage which results from this process is, that the wood does not absorb so much of the amber-varnish, which is expensive, and which is thus compelled to remain upon the surface, to which it gives a gloss.

The wood being prepared in this manner, it is done over with an uniform coat of amber-varnish, by passing once or twice over it a sponge dipped in this varnish, till the surface has acquired a very bright gloss. If the wood has been well imbued with linseed oil, a single coating of varnish will be sufficient; though some articles of furniture, such as bedsteads, chests of drawers, chairs, &c. which are exposed to constant use, and to considerable friction, require the application of several coatings, between each of which the varnish should be suffered to dry.

When the wood has been varnished, any inequalities or ruggednesses that may remain upon it are removed, after the varnish has completely dried, by polishing it with reeds, after which one more coating of varnish is applied, to cover the parts that have been laid bare. For applying the varnish, a sponge has been found to be by far the best instrument. It covers the wood in a more uniform manner than the painter's brush, which in general forms streaks in the coating, and frequently leaves hairs in it, which afterwards separate themselves from the surface of the wood. The varnishing-sponge ought, as soon as we have done using it, to be put into a bottle, to preserve it from the contact of the air; for, without this precaution, it would grow hard, and crack, so as to become unfit for use.

In applying the Fernambouc dye, we may proceed according to the same method. When this dye is applied to the wood of the birch, or knotty alder, undulated streaks are formed upon the surface, the dye running in the direction of the fibres. The same effect takes place with the wood of the pine and red fir: for the resinous veins do not attract the dye so strongly as the rest of the wood: but this circumstance, instead of being a disadvantage, frequently adds very much to the beauty of the wood.

These varnishes have been employed by M. Nyström, after the manner that we have described, for all kinds of furniture, and with great success. They have been used for the space of nearly three years, and no change has as yet been observed in their appearance. When the varnish has become dry and hard, it resists the effects of friction and of boiling water; neither is it subject to lose its gloss by age, provided it be not scratched by any hard substance. If ink, or any other coloured liquid, should drop upon it, it does not penetrate, but may be removed by washing the surface of the varnish with warm water. This advantage might alone be sufficient to recommend the application of this varnish to mahogany itself. It possesses the property of hardening the surface of soft woods. Its use is not attended with much expense, eight ounces being sufficient

for varnishing a common table—a card-table for instance. If streaks form in it, the spots that have been injured may be repaired with a new coating of varnish; finally, by varnishing furniture in this manner every four or five years, we may make it appear perpetually new.

Tables, and other large pieces of furniture, made of stained wood, which require a high degree of polish, may be finished with pumice-stone: those of the most even grain and the smoothest surface are to be preferred. The white, or soft woods, generally puff up when the varnish is applied, and thus lose their polish; it is therefore very necessary that they should previously be rubbed with pumice-stone.

In treating of amber-varnish, it might perhaps have been observed, that it may be applied to gilding without producing any considerable change in its lustre, particularly if applied in very thin layers, and in an uniform manner. It is easy to

conceive the advantage of an application, which enables us to clean gilt frames, or other furniture, by washing them with spirit of wine, or even with soap and water, without injury to their brilliancy. It cannot, however, be used for covering false gilding, as this is attacked and discoloured by the varnish. We shall still remark, that it may be used for varnishing all sorts of oil colours, except the blue, to which it gives a greenish tinge. This varnish possesses the advantage, that it never cracks, like those which are prepared with gum-lac and spirit of wine. A prodigious quantity of amber grows on the coasts of the Baltic, from whence it might easily be obtained.

DYNAMICS, a name applied to that department of physico-mathematical science which contains the *abstract doctrine of moving forces*; that is, whatever necessarily results from the relations of our idea of motion, and of the immediate causes of its production and variations.

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EAOOWE, one of the Friendly Islands, in the S Pacific Ocean, discovered by Tasman, in 1643, and by him named Middleburg. The land gently rises to a considerable height, presenting a beautiful prospect of extensive meadows, adorned with tufts of trees, and intermixed with plantations. Long. 174. 30. W. Lat. 21. 24. S.

EARLSTON, or EARSILTON, a town in Berwickshire, seated on the river Leader, 35 miles S.E. of Edinburgh. It is the birth-place of the celebrated Thomas the Rhymer, whose real name was Thomas Lermont: the ruins of the little tower he possessed, still remain at the west end of the town. A little below Earlston, on a rocky bank overlooking the Leader, stands Cowdenknows, an old building, now somewhat modernized; and on the adjacent knolls may be seen the remains of its *broom*, so renowned in Scottish ditty.

EARN, a river, which issues from a lake of the same name, in Perthshire. It meanders for above 20 miles, through the valley of Strathearn, and joins the Tay, below Perth.

EARNE, a lake of Ireland, in the county of Fermanagh, 30 miles in length. It is narrow in the middle; and in this part is an island on which stands Inniskilling.

EARTH (*Encycl.*). In that article, from a supposition that our limits would not admit of the detailed opinions of philosophers on so copious a subject, we avoided an account of the different theories of the Earth. In this place, however, we think it necessary to trace those which are allowed to deserve the greatest share of attention.

For a long time, the philosophy of Aristotle prevailed, and the world was thought to be upheld by forms, qualities, and other unintelligible and imaginary beings.—At last the French philosopher, Descartes, superseded the Aristotelian, by introducing the atomic, or Democritic, and Epicurean philosophy. The Cartesian system, however, was quickly superseded by the Newtonian; which still continues, though considerably different from what it was left by that great man.—His opinions, indeed, concerning the cosmogony seem to have been in a fluctuating state; and hence he delivers himself in such a manner, that he hath often incurred the charge of contradicting himself.—He maintained, for instance, that matter was infinitely divisible, and the mathematical demonstrations of this proposition are well known. Notwithstanding this, however, when he comes particularly to speak of the original construction of the world, he seems to retract this opinion, and adopt

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the atomic philosophy. He tells us, that it seems probable, that in the beginning God formed matter in *solid, massy, impenetrable* particles, &c.; and that of these particles, endowed with various powers of attraction and repulsion, the present system of nature is formed. His primary laws of nature are only three in number, and very simple. The first is, that all matter has a tendency to continue in that state in which it is once placed, whether of rest or motion. If it is at rest, for example, it will continue at rest for ever, without beginning motion of itself; but if it is once set in motion, by any cause whatever, it will for ever continue to move in a right line, until something either stops it altogether, or forces it to move in another direction. 2. That the change of motion is always equivalent to the moving force employed to produce it, and in the direction of the right line in which it is impressed; that is, if a certain force produces a certain motion, double that force will produce double that motion, &c. 3. Reaction is always contrary and equal to action; or the actions of two bodies upon one another are always equal and contrary to one another.

From these three laws, together with the two contrary forces of attraction and repulsion, Sir Isaac Newton and his followers have attempted to explain all the phenomena of nature. When they come to explain the nature of the attractive and repulsive forces, however, they are exceedingly embarrassed. Sir Isaac hath expressed himself in two different ways concerning them. In his Principia, he prettily positively determines them to be owing to a cause that is not material; and in his queries, he supposes they may be effects of some subtle matter which he calls *ether*. This disagreement with himself hath produced no small disagreement among his followers. One party, laying hold of his assertions in the Principia, determine the world to be upheld by immaterial powers; while the other, neglecting the Principia, and taking notice only of the queries at the end of the Optics, strenuously maintain, that attraction and repulsion are owing to the action of some exceedingly fine and subtle ether.—The first of these suppositions, it is argued, necessarily involves us in one of the following dilemmas. 1. If the attractive and repulsive forces are not material, they must either be occasioned by spiritual beings, or they must be qualities of matter. If they are occasioned by the action of immaterial beings, these beings must either be created or uncreated. If they are produced by the action of created beings,

we run into the supposition of some of the ancient heathens, that the world is governed by demons or subordinate intelligences; and thus may make an easy transition to polytheism. If attraction and repulsion are the immediate action of the Deity himself, we run into the doctrine of making God the soul of the world.—This last hypothesis hath been most strenuously adopted by Mr. Baxter in his treatise of the Immateriality of the human Soul. Mr. Boscovich, Mr. Mitchell, and Dr. Priestley, have likewise adopted the hypothesis of immaterial powers to such a degree, that, according to them, the whole world consists of nothing else but attractions and repulsions mixed with physical points. 2. If we suppose the attractive and repulsive powers to be only properties, qualities, or laws, impressed on matter by the Deity, we might as well have been contented with the occult qualities of Aristotle.—If attraction and repulsion are occasioned by the action of mere matter, and all the powers in nature are only material, the charge is incurred of making nature direct itself in such a manner, that there is no occasion for the interposition, or even the existence, of a Deity at all.

Thus we see, the Newtonian cosmogony must incline either to the Platonic and Aristotelian, or to the Atomic or Epicurean; according to the hypothesis we lay down concerning the nature of attraction. Des Cartes's system was plainly a revival of that of Democritus and Epicurus, with some corrections and improvements. It was further improved and corrected by Mr. Hutchinsohn, who added to it the authority of revelation. The created agents he chose in his cosmogony were fire, light, and air. These, we see, have indeed a very considerable share in the operations of nature; but unless we explain the manner in which they operate, our knowledge is not at all increased, and we might as well have been contented with the Newtonian attraction and repulsion, or even the occult qualities of Aristotle. Attempts have indeed been made to solve the phenomena of nature, from the action of these three agents, both by Hutchinsohn himself, and many of his followers.—These attempts, however, have always proved unsuccessful. Some phenomena indeed may be explained pretty plausibly from the known action of these three; but when we come to speak of what may be called the *nicer operations* of nature, such as the growth of plants or animals, we are utterly at a loss.

The manifest deficiency of active principles in all the theories of the earth that have yet been invented, hath occasioned a constant search after others which should be able, by their superior activity, to fill up the blank which necessarily remained in the system.—Pythagoras, Plato, and Aristotle, being unable to account for the formation of the earth from their four elements, called in the assistance of a *fifth*, which was never yet discovered. Epicurus, finding the motions attributed to his atoms by Democritus to be insufficient, had recourse to an imaginary, and on his own principles impossible, declination of the atoms. Descartes finding the atoms themselves insufficient, asserted that they were not atoms, but might be broken into smaller parts, and thus constitute matter of various degrees of subtilty. The Newtonian philosophers have found Des Cartes's system insufficient; but being greatly distressed in their attempts to solve all the phenomena of nature by mere attraction and repulsion, have been obliged to call in the action of *mind* to their assistance. The Hutchinsohnians were hardly put to it in accounting for every thing by the action of fire, light, and air, when luckily the discoveries in electricity came to their assistance. It must be owned, that this fluid does indeed come in like a kind of fifth element, which in many cases appears to be the animating principle of nature. For some time past, almost all the remarkable phenomena in na-

ture have been explained by electricity, or the action of the electric fluid. But unless this action is explained, we are got no further than we were before. To say any thing is done by electricity, is not more intelligible than to say it was done by attraction. If we explain an effect by a material cause, it ought to be done upon mechanical principles. We ought to be sensible how one part of matter acts upon another part in such a manner as to produce the effect we desire to explain. The electrical philosophers, however, have not yet been able to investigate the manner in which this subtle fluid operates; and hence the many discoveries in electricity have not contributed to throw that light on the theory of the earth, which perhaps they may do hereafter. With some philosophers, however, the electric fluid itself, and indeed all the powers of nature, seem in danger of being superseded by a principle, at present very little known, called the *phlogiston*.—Thus, Mr. Henly tells us (*Phil. Trans.* vol. 67), that Mr. Clarke, an ingenious gentleman in Ireland, hath discovered all the different kinds of air produced from metals, &c. by Dr. Priestley, to be only *phlogistic vapours* arising from these substances. Dr. Priestley himself supposes, that the electric light is a modification of *phlogiston*; and consequently thinks it probable, that all light is a modification of the same. Fire or flame is thought to be a chemical combination of air with the phlogiston; and phlogiston is thought to give the elasticity to air, and every other elastic fluid, &c.—Be this as it will, however, the late discoveries in electricity have tended very much to change the form of the Newtonian philosophy, and to introduce that *materialism* into our theories of the natural phenomena which is by some people so much complained of.

From this general history of the different agents which philosophers have chosen to account for the original formation of the earth, and for its preservation in the present form, it appears, that scarce any advance in true knowledge hath yet been made. All the agents have been prodigiously defective; electricity itself, as far as yet known, not excepted. But, before entering into a particular consideration of those theories which seem most worthy of notice, it will be necessary to point out the principal difficulties which stand in the way of one who attempts to give a complete theory of the earth.

1. The earth, although pretty much of a spherical figure, is not completely so; but protuberates considerably about the equatorial parts, and is proportionally flattened at the poles, as is undeniably proved by the observations of modern mathematicians. The question here is, Why the natural cause which gave the earth so much of a spherical figure, did not make it a complete and exact sphere?

2. The terraqueous globe consists of a vast quantity of water as well as dry land. In many places, such as the isthmus of Darien, a narrow neck of land is interposed betwixt two vast oceans. These beat upon it on either side with vast force; yet the isthmus is never broke down nor diminished. The case is the same with the isthmus of Suez which joins Asia and Africa, and with that which joins the Morea or ancient Peloponnesus to the continent. The difficulty is, By what natural power or law are these narrow necks of land preserved amidst the waters which threaten them on both sides with destruction?

3. The surface of the earth is by no means smooth and equal; but in some places raised into enormous ridges of mountains, and in others sunk down in such a manner as to form deep valleys. These mountains, though they have been exposed to all the injuries of the weather for many thousand years, exhibit no signs of decay. They still continue of the same size as before, though vast quantities of earth are frequently washed down from them by the rains, which, together with the force of gravity, tending to level and bring them on

an equality with the plains on which they stand, we might reasonably think, ought by this time to have rendered them smaller than before. It must therefore be enquired into, By what natural cause the mountains were originally formed, and how they come to preserve their size without any remarkable diminution?

4. The internal parts of the earth are still more wonderful than the external. The utmost industry of man, indeed, can penetrate but a little way into it. As far as we can reach, however, it is found to be composed of dissimilar strata lying one upon another, not commonly in a horizontal direction, but inclined to the horizon at different angles. These strata seem not to be disposed either according to the laws of gravity or according to their density, but as it were by chance. Besides, in the internal parts of the earth are vast chasms and vacuities. By what means were these strata originally deposited, the fissures and chasms made, &c.?

5. In many places of the earth, both on the surface, and at great depths under it, vast quantities of marine productions, such as shells, &c. are to be met with. Sometimes these shells are found in the midst of solid rocks of marble and lime-stone. In the very heart of the hardest stones also, small vegetable substances, as leaves, &c. are sometimes to be found. The question is, By what means were they brought thither?

These are some of the most striking difficulties which present themselves to one who undertakes to write a natural history or theory of the earth. The most remarkable attempts to produce a theory of this kind are those of Burnet, Woodward, Whiston, and Buffon.

According to Dr. Burnet, the earth was originally a fluid mass, or chaos, composed of various substances differing both in density and figure. Those which were most heavy sunk to the centre, and formed there a hard solid body: those which were specifically lighter remained next above; and the waters, which were lightest of all, covered the earth all round. The air, and other ethereal fluids, which are still lighter than water, floated above it, and surrounded the globe also. Between the waters, however, and the circumambient air, was formed a coat of oily and unctuous matters lighter than water. The air at first was very impure, and must necessarily have carried up with it many of those earthy particles with which it was once blended; however, it soon began to purify itself, and deposit those particles upon the oily crust above mentioned; which, soon uniting together, the earth and oil became the crust of vegetable earth, with which the whole globe is now covered. His account of the destruction of the primeval world by the flood, by the falling down of the shell of earth into the waters of the abyss, is given under the article *DELUGE*. It only remains then to give his account of the manner in which he relieves the earth from this universal destruction; and this he does as follows. These great masses of earth, says he, falling into the abyss, drew down with them vast quantities also of air; and by dashing against each other, and breaking into small parts by the repeated violence of the shock, they at length left between them large cavities filled with nothing but air. These cavities naturally offered a bed to receive the influent waters; and in proportion as they filled, the face of the earth became once more visible. The higher parts of its broken surface, now become the tops of mountains, were the first that appeared; the plains soon after came forward; and at length the whole globe was delivered from the waters, except the places in the lowest situations; so that the ocean and seas are still a part of the ancient abyss, that have had no place to which they might return. Islands and rocks are fragments of the earth's former crust; continents are larger masses of its broken substance; and all the inequalities that are to be found

on the surface of the present earth are effects of the confusion into which both earth and water were at that time thrown.

Dr. Woodward begins with asserting, that all terrene substances are disposed in beds of various natures, lying horizontally one over the other, somewhat like the coats of an onion: that they are replete with shells, and other productions of the sea; these shells being found in the deepest cavities, and on the tops of the highest mountains. From these observations, which are warranted by experience, he proceeds to observe, that these shells, and extraneous fossils, are not productions of the earth, but are all actual remains of those animals which they are known to resemble; that all the strata or beds of the earth lie under each other in the order of their specific gravity, and that they are disposed as if they had been left there by subsiding waters. All this he very confidently affirms, though daily experience contradicts him in some of them; particularly, we often find layers of stone over the lightest soils, and the softest earth under the hardest bodies. However, having taken it for granted, that all the layers of the earth are found in the order of their specific gravity, the lightest at top, and the heaviest next the centre, he consequently asserts, that all the substances of which the earth is composed, were originally in a state of dissolution. This dissolution he supposes to have taken place at the flood: but being aware of an objection, that the shells, &c. supposed to have been deposited at the flood are not dissolved, he exempts them from the solvent power of the waters, and endeavours to shew that they have a stronger cohesion than minerals; and that, while even the hardest rocks are dissolved, bones and shells may remain entire.

Mr. Whiston supposes the earth to have been originally a comet; and considers the Mosaic account of the creation as commencing at the time when the Creator placed this comet in a more regular manner, and made it a planet in the solar system. Before that time, he supposes it to have been a globe without beauty or proportion; a world in disorder, subject to all the vicissitudes which comets endure; which, according to the present system of philosophy, must be alternately exposed to the extremes of heat and cold. These alternations of heat and cold, continually melting and freezing the surface of the earth, he supposes to have produced, to a certain depth, a chaos resembling that described by the poets, surrounding the solid contents of the earth, which still continued unchanged in the midst; making a great burning globe of more than 2000 leagues in diameter. This surrounding chaos, however, was far from being solid: he resembles it to a dense, though fluid atmosphere, composed of substances mingled, agitated, and shocked against each other; and in this disorder he supposes the earth to have been just at the eve of the Mosaic creation. But upon its orbit being then changed, when it was more regularly wheeled round the sun, every thing took its proper place, every part of the surrounding fluid then fell into a certain situation according as it was light or heavy. The middle, or central part, which always remained unchanged, still continued so; retaining a part of that heat which it received in its primeval approaches towards the sun; which heat he calculates may continue about 6000 years. Next to this fell the heavier parts of the chaotic atmosphere, which serve to sustain the lighter; but as in descending they could not entirely be separated from many watery parts, with which they were intimately mixed, they drew down these also along with them; and these could not mount again after the surface of the earth was consolidated: they therefore surrounded the heavy first-descending parts in the same manner as these surrounded the central globe. Thus the entire body of the earth is composed next the centre of a great burning globe: next this is placed an heavy terrene substance that encompasses it; round which is

circumsufed a body of water. Upon this body of waters is placed the crust of earth on which we inhabit : so that, according to Mr. Whiston, the globe is composed of a number of coats, or shells, one within the other, all of different densities. The body of the earth being thus formed, the air, which is the lightest substance of all, surrounded its surface, and the beams of the sun darting through, produced the light, which, we are told by Moses, first obeyed the Divine command.

The whole economy of the creation being thus adjusted, it only remained to account for the risings and depressions on the surface of the earth, with the other seeming irregularities of its present appearance. The hills and valleys are by him considered as formed by their pressing upon the internal fluid which sustains the external shell of the earth, with greater or less weight ; those parts of the earth which are heaviest sink the lowest into the subjacent fluid, and thus become valleys : those that are lightest rise higher upon the earth's surface, and are called *mountains*.

Such was the face of nature before the deluge : the earth was then more fertile and populous than it is at present ; the life of men and animals was extended to ten times its present duration ; and all these advantages arose from the superior heat of the central globe, which has ever since been cooling. As its heat was then in its full power, the genial principle was also much greater than at present ; vegetation and animal increase were carried on with more vigour ; and all nature seemed teeming with the seeds of life. But as these advantages were productive only of moral evil, it was found necessary to destroy all living creatures by a flood ; and in what manner this punishment was accomplished, according to Mr. Whiston, is taken notice of under the article *DELUGE*.

Mr. Buffon's theory differs very widely from all the rest. He begins with attempting to prove, that this world which we inhabit is no more than the ruins of a world. " The surface of this immense globe (says he), exhibits to our observation, heights, depths, plains, seas, marshes, rivers, caverns, gulfs, volcanoes ; and, on a cursory view, we can discover in the disposition of these objects neither order nor regularity. If we penetrate into the bowels of the earth, we find metals, minerals, stones, bitumens, sands, earths, waters, and matter of every kind, placed as it were by mere accident, and without any apparent design. Upon a nearer and more attentive inspection, we discover sunk mountains, caverns filled up, shattered rocks, whole countries swallowed up, new islands emerged from the ocean, heavy substances placed above light ones, hard bodies inclosed within soft bodies ; in a word, we find matter in every form, dry and humid, warm and cold, solid and brittle, blended in a chaos of confusion, which can be compared to nothing but a heap of rubbish, or the ruins of a world."

When taking a particular survey of the external surface of the globe, he begins with the ocean, and the motion communicated to it by the influence of the sun and moon which produces the tides.—" In examining the bottom of the sea (says he), we perceive it to be equally irregular as the surface of the dry land. We discover hills and valleys, plains and hollows, rocks and earths of every kind ; we discover likewise, that islands are nothing but the summits of vast mountains, whose foundations are buried in the ocean. We find other mountains whose tops are nearly on a level with the surface of the water ; and rapid currents which run contrary to the general movement. These currents sometimes run in the same direction ; at other times their motion is retrograde ; and they never exceed their natural limits, which seem to be as immutable as those which bound the efforts of land-rivers. On one hand we meet with tempestuous regions, where the winds blow with irresistible fury ; where the heavens and the ocean, equally con-

vulsed, are mixed and confounded in the general shock ; violent intestine motions, tumultuous swellings, water-spouts, and strange agitations, produced by volcanoes, whose mouths, though many fathoms below the surface, vomit forth torrents of fire ; and puff, even to the clouds, a thick vapour, composed of water, sulphur, and bitumen ; and dreadful gulfs or whirlpools, which seem to attract vessels for no other purpose than to swallow them up. On the other hand we discover vast regions of an opposite nature, always smooth and calm, but equally dangerous to the mariner. To conclude, directing our eyes toward the southern or northern extremities of the globe, we discover huge masses of ice, which, detaching themselves from the polar regions, advance, like floating mountains, to the temperate climates, where they dissolve and vanish from our view. The bottom of the ocean and the shelving sides of rocks produce plentiful crops of plants of many different species : its soil is composed of sand, gravel, rocks, and shells ; in some places it is a fine clay, in others a compact earth : and in general, the bottom of the sea has an exact resemblance to the dry land which we inhabit.

" Let us next take a view of the dry land. Upon an attentive observation of this, we shall find, that the great chains of mountains lie nearer the equator than the poles ; that in the old continent their direction is more from east to west than from south to north ; and that, on the contrary, in the new continent they extend more from north to south than from east to west. But what is still more remarkable, the figure and direction of these mountains, which have a most irregular appearance, correspond so wonderfully, that the prominent angles of one mountain are constantly opposite to the concave angles of the neighbouring mountain, and of equal dimensions, whether they be separated by an extensive plain or a small valley. I have further remarked, that opposite hills are always nearly of the same height ; and that mountains generally occupy the middle of continents, islands, and promontories, dividing them by their greatest lengths. I have likewise traced the courses of the principal rivers, and find that their direction is nearly perpendicular to the sea-coasts into which they empty themselves ; and that, during the greatest part of their courses, they follow the direction of the mountains from which they derive their origin. The sea-coasts are generally bordered with rocks of marble, and other hard stones ; or rather with earth and sand accumulated by the waters of the sea, or brought down and deposited by rivers. In opposite coasts, separated only by small arms of the sea, the different strata or beds of earth are of the same materials. I find that volcanoes never exist but in very high mountains ; that a great number of them are entirely extinguished ; that some are connected to others by subterranean passages, and their eruptions not unfrequently happen at the same time. There are similar communications between certain lakes and seas. Some rivers suddenly disappear, and seem to precipitate themselves into the bowels of the earth. We likewise find certain mediterranean or inland seas, that constantly receive from many and great rivers prodigious quantities of water, without any augmentation of their bounds ; probably discharging by subterraneous passages all those extraneous supplies. It is likewise easy to distinguish lands which have been long inhabited, from those new countries where the earth appears in a rude state, where the rivers are full of cataracts, where the land is nearly overflowed with water or burnt up with drought, and where every place capable of producing trees is totally covered with wood.

" Proceeding in our examination, we discover that the upper stratum of the earth is universally the same substance : that this substance, from which all animals and vegetables derive their growth and nourishment, is nothing but a composition of the decayed parts of animal and vegetable bodies,

reduced into such small particles that their former organic state is not distinguishable. Penetrating a little deeper, we find the real earth, beds of sand, limestone, clay, shells, marble, gravel, chalk, &c. These beds are always parallel to each other, and of the same thickness throughout their whole extent. In neighbouring hills, beds or strata of the same materials are uniformly found at the same levels, though the hills be separated by large and deep valleys. Strata of every kind, even of the most solid rocks, are uniformly divided by perpendicular fissures. Shells, skeletons of fishes, marine plants, &c. are often found in the bowels of the earth, and on the tops of mountains, even at the greatest distances from the sea. These shells, fishes, and plants, are exactly similar to those which exist in the ocean. Petrified shells are to be met with almost every-where in prodigious quantities; they are not only enclosed in rocks of marble and lime-stone, as well as in earths and clays, but are actually incorporated and filled with the very substances in which they are enclosed. In fine, I am convinced, from repeated observation, that marbles, lime-stones, chalks, marbles, clays, sand, and almost all terrestrial substances, wherever situated, are full of shells and other spoils of the ocean."

From these positions, which he lays down as facts, Mr. Buffon draws the following conclusions:

1. The changes which the earth has undergone within these last 2000 or 3000 years must be inconsiderable, when compared with the great revolutions that took place in those ages immediately succeeding the creation. The reason he gives for this assertion is, that terrestrial substances could not acquire solidity but by the continued action of gravity: hence, the earth must have been originally much softer than it is now, and therefore more apt to be changed by causes which cannot now affect it.

2. It seems an uncontrovertible fact, that the dry land which we now inhabit, and even the summits of the highest mountains, were formerly covered with the waters of the sea; for shells and other marine bodies are still found upon the very tops of mountains.

3. The waters of the sea have remained for a long track of time upon the surface; because in many places, such immense banks of shells have been discovered, that it is impossible to great a multitude of animals could exist at the same time.

4. From this circumstance it likewise appears, that although the materials on the surface of the earth were then soft, easily disunited, moved, and transported by the waters, yet these transportations could not be suddenly effected: they must have been gradual and successive, as sea-bodies are sometimes found more than 1000 feet below the surface: and such a thickness of earth, or stone, could not be accumulated in a short time.

5. It is impossible these effects could be owing to the universal deluge. For, though we should suppose that all the shells in the bottom of the ocean should be deposited upon the dry land; yet, besides the difficulty of establishing this supposition, it is plain, that as shells are found incorporated in marble, and in the rocks of the highest mountains, we must suppose these rocks and marbles to have been formed all at the very instant when the deluge took place; and that before this grand revolution, there were neither mountains, nor marbles, nor rocks, nor clays, nor matter of any kind similar to what we are now acquainted with; as they all, with few exceptions, contain shells, and other productions of the ocean. Besides, at the time of the universal deluge, the earth must have acquired a considerable degree of solidity, by the action of gravity for more than 16 centuries. During the short time the deluge lasted, therefore, it is impossible that the waters

should have overturned and dissolved the whole surface of the earth to the greatest depths.

6. It is certain (for what reason he does not mention), that the waters of the sea have, at some period or other, remained for a succession of ages upon what we now know to be dry land; and consequently that the vast continents of Asia, Europe, Africa, and America, were then the bottom of an immense ocean, replete with every thing which the present ocean produces.

7. It is likewise certain, that the different strata of the earth are horizontal and parallel to each other. This parallel situation must therefore be owing to the operation of the waters, which have gradually accumulated the different materials, and given them the same position which the water itself invariably assumes.

8. It is certain that these strata must have been gradually formed, and are not the effect of any sudden revolution; because nothing is more frequent than strata composed of heavy materials placed above light ones; which never could have happened, if, according to some authors, the whole had been blended and dissolved by the deluge, and afterwards precipitated.

9. No other cause than the motion and sediments of water could possibly produce the regular position of the various strata of which the superficial part of this earth consists. The highest mountains are composed of parallel strata, as well as the lowest valleys. Of course, the formation of mountains cannot be attributed to the shocks of earthquakes, or to the eruptions of volcanoes. Such small eminences as have been raised by volcanoes or convulsions of the earth, instead of becoming composed of parallel strata, are mere masses of weighty materials, blended together in the utmost confusion.

Having now, as he thinks, *proved*, that the dry and habitable part of the earth has remained for a long time under the waters of the sea, and consequently must have undergone the same changes that now take place at the bottom of the sea, he proceeds to enquire what these changes are.

10. The ocean, since the creation of the world, has been constantly agitated by the tides, occasioned by the action of the sun and moon; and this agitation is greater in the equatorial than in the other parts of the globe, because the action of the sun and moon is there strongest.

11. The earth performs a rapid motion on its axis; and consequently its parts have a centrifugal force, which is also greatest at the equator.

12. From the combined action of the two last-mentioned causes, the tides, and the motion of the earth, it may be fairly concluded, that although this globe had been originally a perfect sphere, its diurnal motion, and the ebbing and flowing of the tides, must necessarily, in a succession of time, have elevated the equatorial parts, by gradually carrying mud, earth, sand, shells, &c. from other climates, and depositing them at the equator.

13. On this supposition, the greatest inequalities on the surface of the earth ought to be found, and in fact are found, in the neighbourhood of the equator.

14. As the alternate motion of the tides has been constant and regular since the existence of the world, it is natural to think, that at each tide, the water carries from one place to another a small quantity of matter, which falls to the bottom as a sediment, and forms those horizontal and parallel strata that every-where appear. Here it may indeed be objected, that as the flux is equal to, and regularly succeeded by, the reflux, the two contrary motions will balance each other; and whatever is brought in by the flux will be carried back by the reflux. The motion of the ocean, therefore, could

never be the cause of the formation even of parallel strata; much less of mountains, and all the inequalities to be observed in this globe. To this Mr. Buffon replies, that the alternate motion of the waters is by no means equal; for the sea has a continual motion from east to west: the agitations occasioned by the winds likewise produce great inequalities in the tides. It must also be acknowledged, that, by every motion of the sea, particles of earth and other matter must be carried from one place and deposited in another; and that these collections of matter must assume the form of parallel and horizontal strata. Lastly, this objection is obviated by a well-known fact. On all coasts where the ebbing and flowing of the sea is discernible, numberless materials are brought in by the flux, which are not carried back by the reflux. The sea gradually increases on some places and recedes from others; narrowing its limits by depositing earth, sand, shells, &c. which naturally take a horizontal position. These materials when accumulated, and elevated to a certain degree, gradually shut out the water, and remain for ever in the form of dry land.

15. The possibility of a mountain's being formed at the sea by the motion and sediments of the water, will appear from the following considerations. On a coast which the sea washes with violence during the flow of tide, some part of the earth must be carried off at every stroke of the waves. Even where the sea is bounded by rock, it is a known fact, that the rock itself is greatly wasted by the water; and consequently that small particles are carried off by the retreat of every wave. Those particles of earth or stone are necessarily transported to some distance. Whenever the agitation of the water ceases, the particles are precipitated in the form of a sediment, and lay the foundation of a first stratum, which is either horizontal or inclined, according to the situation of the surface on which they fall. This stratum is soon succeeded by another, produced by the same cause; and thus a considerable quantity of matter will be amassed, and deposited in parallel beds. In process of time this gradually accumulating mass will become a mountain in the bottom of the sea, exactly resembling both in external and internal structure, those mountains which we see on the dry land. If there happened to be shells in that part of the bottom of the sea where we have supposed the sediments to be deposited, they will be covered, filled, and incorporated with the deposited matter, and form a part of the general mass. These shells will be lodged in different parts of the mountain, corresponding to the times in which they were deposited: those which lay at the bottom before the first stratum was formed, will occupy the lowest situation; the others will be found in places more elevated.

16. It has been imagined that the agitation of the sea produced by the winds and tides is only superficial, and does not affect the bottom, especially where it lies very deep. But it ought to be remembered, that whatever be the depth, the whole mass is put in motion by the tides at the same time; and that, in a fluid globe, this motion would be communicated even to the centre. The attractive power, which occasions the flux and reflux, is penetrating. It acts equally upon every particle of the mass; so that the quantity of its force at different depths may be determined by calculation. We cannot therefore hesitate in pronouncing, that the tides, the winds, and all other causes of motion in the sea, must produce heights and inequalities in its bottom; and that these heights must uniformly be composed of regular strata either horizontal or inclined. The heights thus produced will gradually augment; like the waves which formed them, they will mutually respect each other; and if the extent of the base be great, in a course of years they will form a vast chain of mountains.

Whenever eminences are formed, they interrupt the uniform motion of the waters, and produce currents. Between two neighbouring heights in the bottom of the ocean there must be a current which will follow their common direction, and, like a river, cut a channel, the angles of which will be alternately opposite through the whole extent of its course. These heights must continually increase: for, during the flow, the water will deposit its ordinary sediment upon their ridges; and the waters which are impelled by the current will force along, from great distances, quantities of matter, which will subside between the hills, and, at the same time, scoop out a valley with corresponding angles at their foundation. Now, by means of these different motions and sediments, the bottom of the ocean, though formerly smooth, must soon be furrowed and interspersed with hills and chains of mountains, as we actually find it at present. The soft materials of which the eminences were originally composed, would gradually harden by their own gravity. Such of them as consisted of sandy and crystalline particles, would produce those enormous masses of rock and flint, in which we find crystals and other precious stones. Others, composed of stony particles mixed with shells, give rise to those beds of lime-stone and marble in which vast quantities of sea-shells are still found incorporated.

18. These causes, as before observed, act with greater force under the equator than in other climates; for there the tides are higher, and the winds more uniform. The mountains of Africa and Peru are the highest in the world; often extending through whole continents, and stretching to great distances under the waters of the ocean. The mountains of Europe and Asia, which extend from Spain to China, are not so high as those of Africa and South America. According to the relations of voyagers, the mountains of the north are but small hills, when compared with the mountains of the equatorial regions. Those prodigious chains of mountains which run from east to west in the old continent, and from north to south in the new, must have been formed by the general motion of the tides. But the origin of the less considerable hills must be ascribed to particular motions occasioned by the winds, currents, and other irregular agitations of the sea.

Having thus discussed some very important points respecting the theory of the earth, our author now proceeds to answer other questions which seem still more difficult of solution.

19. But how has it happened that this earth, which we and our ancestors have inhabited for ages, which, from time immemorial, has been an immense continent, dry, compact, and removed from the reach of water, should, if formerly the bottom of an ocean, be now exalted to such a height above the waters, and so completely separated from them? Since the waters remained so long upon the earth, why have they now deserted it? What accident, what cause, could introduce a change so great? A little reflection, says he, will furnish us with at least plausible solutions to these seemingly so difficult questions. We daily observe the sea gaining ground on certain coasts, and losing it on others. We know that the ocean has a general and uniform motion from east to west; that it makes violent efforts against the rocks and low grounds which encircle it; that there are whole provinces which human industry can hardly defend against the fury of the waves; and that there are instances of islands which have but lately emerged from the waters, and of regular inundations. History informs us of inundations and deluges of a more extensive nature. Ought not all this to convince us, that the surface of the earth has experienced very great revolutions, and that the sea may have actually given up possession of the greatest part of the ground which it formerly occupied? For example, let us suppose,

that the old and new worlds were formerly but one continent ; and that, by a violent earthquake, the ancient Atlantis of Plato was sunk. The consequence of this mighty revolution must necessarily be, that the sea would rush in from all quarters, and form what is now called the *Atlantic ocean*; and vast continents, perhaps those we now inhabit, would of course be left dry. This great revolution might be effected by the sudden failure of some immense cavern in the interior parts of the globe, and an universal deluge would infallibly succeed.

20. But, however conjectures of this kind may stand, it is certain that such a revolution hath happened ; and we may even believe that it hath happened naturally ; for if a judgment of the future is to be formed from the past, we have only to attend carefully to what passes before our eyes. It is a fact established by the repeated observation of voyagers, that the ocean has a constant motion from east to west. This motion, like the trade-winds, is not only perceived between the tropics, but through the whole temperate climates, and as near the poles as navigators have approached. As a necessary consequence of this motion, the Pacific ocean must make continual efforts against the coasts of Tartary, China, and India ; the Indian ocean must act against the east coast of Africa ; and the Atlantic must in a similar manner act against all the eastern coasts of America. Hence the sea must have gained, and will always continue to gain, on the east, and to lose on the west. This of itself would be sufficient to prove the possibility of the change of the sea into land, and land into sea. If such is the natural effect of the sea's motion from east to west, may it not reasonably be supposed, that Asia, and all the eastern continent, is the most ancient country in the world ; and that Europe, and part of Africa, especially the west parts of these continents, as Britain, France, Spain, &c. are countries of a more recent date ?

21. The cause of the perpendicular fissures with which the earth abounds, is easily investigated. As various materials constituting the different strata were transported by the waters, and deposited in the form of sediments, they would at first be in a very dilated state, and would gradually harden and part with the superfluous quantity of moisture they contained. In process of time, drying, they would naturally contract and split at irregular distances. These fissures necessarily assumed a perpendicular direction ; because in this direction the action of gravity of one particle upon another is equal to nothing : but it acts directly opposite to this description, in a horizontal situation : the diminution in bulk could have no sensible effect but in a vertical line. The contraction of the parts in drying, therefore, and not the contained water forcing an issue, as has been alleged by some, is the cause of perpendicular fissures ; for it may be often remarked, that the sides of those fissures, through their whole extent, correspond as exactly as the two sides of a split piece of wood.

22. Perpendicular fissures vary greatly as to the extent of their openings. Some are about half an inch or an inch ; others a foot or two feet ; some extend several fathoms, and give rise to those vast precipices which so frequently occur between opposite parts of the same rocks, in the Alps and other high mountains. It is plain, that the fissures, the openings of which are small, have been occasioned solely by drying. But those which extend several feet are partly owing to another cause ; namely, the sinking of the foundation upon one side, while that of the other remains firm. If the base sinks but a line or two, when the height is considerable, an opening of several feet, or even fathoms, will be the consequence. When rocks are founded on clay or sand, they sometimes slip a little to one side ; and the fissures are of course augmented by this motion.

23. The large openings, however, and prodigious cuts,

which are to be met with in rocks and mountains, are to be ascribed to another cause. They could be produced no other way than by the sinking of immense subterraneous caverns, that were unable any longer to sustain their incumbent load. But these cuts or intervals in mountains are not of the same nature with the perpendicular fissures : they appear to have been ports opened by the hand of nature for the communication of nations. This seems to be the intention of all large openings in chains of mountains, and of those straits by which different parts of the ocean are connected ; as the straits of Thermopylæ, of Gibraltar, &c. the gaps or ports in mount Caucasus, the Cordilleras, &c.

24. But the greatest changes upon the surface of the earth are occasioned by rains, rivers, and torrents from the mountains. These derive their origin from vapours raised by the sun from the surface of the ocean, and which are transported by the winds through every climate. The progress of these vapours, which are supported by the air, and transported at the pleasure of the winds, is interrupted by the tops of the mountains, where they accumulate into clouds, and fall down in the form of rain, dew, or snow. At first, these waters descended into the plains without any fixed course ; but they gradually hollowed out proper channels for themselves. By the power of gravity they ran to the bottom of the mountains ; and penetrating or dissolving the lower grounds, they carried along with them sand and gravel, cut deep furrows in the plains, and thus opened passages to the sea, which always receives as much water by rivers as it loses by evaporation. The windings in the channels of rivers have uniformly corresponding angles on their opposite banks ; and as mountains and hills, which may be regarded as the banks of the valleys by which they are separated, have likewise sinuosities with corresponding angles, this circumstance seems to demonstrate, that the valleys have been gradually formed by currents of the ocean, in the same manner as the channels of rivers have been produced. Rivers produce considerable changes on the surface of the earth ; they carry off the soil, wear away the most solid rocks, and remove every thing that opposes their passage. The waters of the clouds also, which descend upon the mountains, by continually washing away some part of the earth, tend to level them with the plains ; and would undoubtedly do so, if time enough were allowed for that purpose.

25. From what has been advanced, we may conclude, that the flux and reflux of the ocean have produced all the mountains, valleys, and other inequalities on the surface of the earth : that currents of the sea have scooped out the valleys, elevated the hills, and bestowed on them the corresponding directions : that the same waters of the ocean, by transporting and depositing earth, &c. have given rise to the parallel strata : that the waters from the heavens gradually destroy the effects of the sea, by continually diminishing the heights of the mountains, filling up the valleys, and choking up the mouths of rivers ; and by reducing every thing to its proper level, they will in time restore the earth to the sea, which by its natural operations will again create new continents interspersed with mountains and valleys, and every way similar to those which we now inhabit.

Thus far our author preserves some degree of plausibility in his reasoning ; but in his account of the original formation of the earth, he certainly goes to the utmost verge of *probability*, or perhaps of *possibility*, in his suppositions. According to him, all the planets in our system were originally parts of the sun himself. They were detached from his body all at once by a mighty stroke of a comet. The possibility of driving off such a quantity of matter from the sun by a single stroke, he labours hard to prove ; but this is far from being the greatest difficulty in his system.—“ To this theory,” says he, “ it may

be objected, that if the planets had been driven off from the sun by a comet, in place of describing circles round him, they must, according to the law of projectiles, have returned to the same place from whence they had been forced; and therefore, that the projectile force of the planets cannot be attributed to the impulse of a comet.

"I reply, that the planets issued not from the sun in the form of globes, but in the form of torrents; the motion of whose anterior particles behaved to be accelerated by those behind, and the attraction of the anterior particles would also accelerate the motion of the posterior; and that this acceleration, produced by one or both of these causes, might be such as would necessarily change the original motion arising from the impulse of the comet; and that, from this cause, might result a motion similar to what takes place in the planets; especially when it is considered, that the shock of the comets removes the sun out of its former station. This reasoning may be illustrated by an example. Suppose a musket-ball discharged from the top of a mountain, and that the force of the powder was sufficient to send it beyond a semidiameter of the earth: it is certain that this ball would revolve round the earth, and return at every revolution to the place from whence it had been discharged. But, instead of a musket-ball, if a rocket were employed, the continued action of the fire would greatly accelerate the original impulsive motion. This rocket would by no means return to the same point like the ball; but, *ceteris paribus*, would describe an orbit, the perigee of which would be more or less distant from the earth in proportion to the greatness of the change produced in its direction by the accelerating force of the fire. In the same manner, if the original projectile force impressed by the comet on the torrent of solar matter was accelerated, it is probable, that the planets formed by this torrent acquired their circular or elliptical movements around the sun."

In like manner, he accounts for the formation and circulation of the secondary planets. The revolutions of the primaries on their axes, he accounts for from the obliquity of the original stroke impressed by the comet. The oblate spheroidal figure of the earth is easily deduced from its diurnal motion, and the fluidity of the whole at its first formation. The flattening at the poles he estimates at about one 230th part of the whole. As this computation differs considerably from the account given by the mathematicians who were sent to different parts of the world on purpose to determine the figure of the earth, and who made the flatness at the poles equal to one 175th part of the whole, he supposes this difference to have arisen from changes that have since taken place on the surface of the earth, occasioned by the causes already mentioned. He then proceeds to account for the formation of all things, in the following manner.—"It is therefore evident, that the earth assumed its figure when in a melted state: and, to pursue our theory, it is natural to think, that the earth, when it issued from the sun, had no other form but that of a torrent of melted and inflamed matter: that this torrent, by the mutual attraction of its parts, took on a globular figure, which its diurnal motion changed into a spheroid: that when the earth cooled, the vapours, which are expanded like the tail of a comet, gradually condensed, fell down in the form of water upon the surface, depositing at the same time a slimy substance mixed with sulphur and salts; part of which was carried by the motion of the waters into the perpendicular fissures of the strata, and produced metals; and the rest remained on the surface, and gave rise to the vegetable mold, which abounds in different places, with more or less of animal or vegetable particles, the organization of which is not obvious to the senses.

"Thus the interior parts of the globe were originally composed of vitrified matter; and, I believe, they are so at present. Above this vitrified matter were placed those bodies which the fire had reduced to the smallest particles, as sands, which are only portions of glass; and above these, pumice-stones, and the scoriae of melted matter, which produced the different clays. The whole was covered with water to the depth of 300 or 600 feet, which originated from the condensation of the vapours when the earth began to cool. This water deposited a stratum of mud, mixed with all those matters which are capable of being sublimed or exhaled by fire: and the air was formed of the most subtle vapours, which, from their levity, rose above the water.

"Such was the condition of the earth when the tides, the winds, and the heat of the sun, began to introduce changes on its surface. The diurnal motion of the earth, and that of the tides, elevated the waters in the equatorial regions, and necessarily transported thither great quantities of slime, clay, and sand; and by thus elevating those parts of the earth, they perhaps sunk those under the poles about two leagues, or a 230th part of the whole, as was formerly remarked: for the waters would easily reduce into powder, pumice-stones, and other spongy parts of the vitrified matter upon the surface; and by this means excavate some places and elevate others, which, in time, would produce islands and continents, and all those inequalities on the surface, which are more considerable towards the equator than towards the poles. The highest mountains lie between the tropics and the middle of the temperate zones, and the lowest from the polar circles towards the poles. Indeed, both the land and sea have most inequalities between the tropics, as is evident from the incredible number of islands peculiar to those regions."

From the preceding extracts, the theories of Drs. Burnet and Woodward, as well as Meir's, Whiston and Buffon, will be easily understood; but the deficiency of all of them must be exceedingly obvious even to the most superficial reader. They all assume only the powers of attraction and repulsion as agents; without considering, that these two powers, or indeed any other two with which mankind are acquainted, could only have composed matters nearly similar to each other. If the original particles of matter are homogeneous, and endowed with similar powers, all the matters we see ought to be homogeneous also. But this is far from being the case. Some parts of it we see are exceedingly hard, others proportionably soft. The parts of some bodies attract each other violently; those of others have hardly any attraction for each other, but are separable by the smallest force. And though it should be granted, that the powers of attraction and repulsion were originally different in different parts of matter, we have still to explain by what means the similar parts of matter found out each other in such a chaos as the earth originally was. This seems an insuperable difficulty in the systems of Drs. Burnet and Woodward; and is equally, though less conspicuously so, in those of Whiston and Buffon.

EARTH-NUTS, or GROUND-NUTS (*Encycl.*). The roots of the water-hemlock, a poisonous plant which bears some general resemblance to that of the arachis, are sometimes mistaken for the latter. See an instance of this under **POISONS** in this SUPPLEMENT.

EAR-WAX, or CERUMEN (*Encycl.*). Citizens Fourcroy and Vauquelin have analysed the ear-wax, and found that it consists of the following substances. 1. Of an oily matter, more resembling the fat which is contained in the gall than any other animal fat. 2. Of an albuminous animal substance. 3. Of a colouring principle, which, by its bitter taste and its close combination with fat, comes near to the colouring principle of the bile.

EASTBOURN, a town in Suffex, noted for plenty of the birds called wheatears, and as a place of resort for bathing. It is seated near the English Channel, 15 miles E.S.E. of Lewes, and 65 S.E. of London.

EAST-LOOE, a mean borough in Cornwall; 16 miles W. of Plymouth; 232 from London.

EASTON, a town of Pennsylvania, capital of the county of Northampton, seated at the confluence of the Leigh and Delaware, 46 miles N. by W. of Philadelphia. Long. 75. 17. W. Lat. 40 21. N.

EASTONNESS, the most easterly cape on the coast of Suffolk, and the N. point of Southwold Bay.

EAU-DE-LUCE (*Encycl.*), is prepared in the following manner: ten or twelve grains of white soap are dissolved in four ounces of rectified spirit of wine; after which the solution is strained. A dram of rectified oil of amber is then added, and the whole filtrated: with this solution should be mixed such a proportion of the strongest volatile spirit of sal-ammoniac, in a crystal glass bottle, as will, when sufficiently shaken, produce a beautiful milk-white liquor. If a kind of cream should settle on the surface, it will be requisite to add a small quantity of the spirituous solution of soap.—Those who may wish to have this liquor perfumed may employ lavender or Hungary water instead of the spirit of wine.

This composition is, however, seldom obtained in a genuine state when purchased at the shops. Its use, as an external remedy, is very extensive; for it has not only been employed for curing the bites of vipers, wasps, bees, gnats, ants, and other insects, but also for burns, and even the bite of a mad dog, though not always with uniform success. Besides, it affords one of the safest stimulants in cases of suffocation from mephitic vapours, and in that state of apoplexy which is termed *serous*, as likewise after excessive intoxication, and in all those paralytic complaints where the vessels of the skin, or the muscular fibre, require to be excited into action. Nevertheless, it ought to be used with due precaution.

Mr. Nicholson, in his Journal, has related the following experiments, made to procure this liquid. He considers *mastic* as a principal ingredient, and the great secret by which the *milkins* has been communicated to it.

One dram of the rectified oil of amber was dissolved in four ounces of the strongest ardent spirit of the shops; its specific gravity being .840 at 60 degrees of Fahrenheit. A portion of the clear spirit was poured upon a larger quantity of fine powdered mastic than it was judged could be taken up. This was occasionally agitated without heat; by which means the gum resin was for the most part gradually dissolved. One part of the oily solution was poured into a phial, and to this was added one part of the solution of mastic. No opacity or other change appeared. Four parts of strong caustic volatile alkali were then poured in, and immediately shaken. The fluid was of a dense opaque white colour, affording a slight ruddy tinge when the light was seen through a thin portion of it. In a second mixture, four parts of the alkali were added to one of the solution of mastic; it appeared of a less dense and more yellowish white than the former mixture. More of the gum resinous solution was then poured in; but it still appeared less opaque than that mixture. It was ruddy by transmitted light. The last experiment was repeated with the oily solution instead of that of mastic. The white was much less dense than either of the foregoing compounds, and the requisite opacity was not given by augmenting the dose of the oily solution. No ruddiness nor other remarkable appearance was seen by transmitted light. These mixtures were left at repose for two days; no separation appeared in either of the compounds containing mastic; the compound consisting of the

oily solution and alkali became paler by the separation of a cream at the top.

It appears, therefore, that the first of these three mixtures, subject to variation of the quantity of its ingredients, and the odorant additions which may be made, is a good eau-de-luce.

In a subsequent number of the same journal, we have the following recipe by one of the author's correspondents, who had often proved its value by experience. "Digest ten or twelve grains of the whitest pieces of mastic, selected for this purpose, and powdered, in two ounces of alcohol; and, when nearly dissolved, add twenty grains of elemi (see *AMYRIS*, *Encycl.*). When both the resins are dissolved, add ten or fifteen drops of rectified oil of amber, and fifteen or twenty of essence of bergamot; shake the whole well together, and let the fæces subside. The solution will be of a pale amber colour. It is to be added, in very small portions, to the best aqua ammoniac puræ, until it assumes a milky whiteness, shaking the phial well after each addition, as directed by Macquer. The strength and causticity of the ammoniac are of most essential consequence. If, upon the addition of the first drop or two of the tincture, a dense opaque coagulated precipitate is formed, not much unlike that which appears on dropping a solution of silver into water slightly impregnated with common salt, it is too strong, and must be diluted with alcohol. A considerable proportion of the tincture, perhaps one to four, ought to be requisite to give the liquor the proper degree of opacity."

EAUSE, an ancient town of France, in the department of Gers, 17 miles S.W. of Condon. Long. 10. 10. E. Lat. 43. 51. N.

EBENEZER, a town of the United States, in Georgia, situate on the Savannah, 25 miles N.N.W. of Savannah. Long. 81. 22. W. Lat. 32. 28. N.

EBENFURTH, a town of the archduchy of Austria, built by the Knights Templars, on the Leyta; 18 miles S. of Vienna.

EEBERBACH, a town of Germany, in the palatinate of the Rhine, remarkable for its wine. It is seated on the Neckar, 10 miles N.E. of Heidelberg. Long. 8. 56. E. Lat. 49. 26. N.

EEBERBERG, a castle of Germany, in the palatinate of the Rhine, seated at the confluence of the Nahe and Alsen, eight miles S.W. of Creutznach. Long. 7. 52. E. Lat. 49. 38. N.

EEBERSTEIN, a district and castle of Suabia, subject to the margrave of Baden. The castle is the chief place, six miles S.E. of Baden. Long. 8. 20. E. Lat. 48. 46. N.

EEBERSTEIN, a town of France, in the department of Lower Rhine, eight miles S.W. of Strasbourg. Long. 7. 46. E. Lat. 48. 29. N.

EEBERVILLE, a town of France, in the department of Puy-de-Dome, with a late rich Benedictine abbey. It is seated on the Scioule, eight miles N.E. of Riom. Long. 3. 15. E. Lat. 45. 59. N.

EBULLITION, the same with **BOILING**. The word is also used in a synonymous sense with **EFFERVESCENCE**.

EECLEFECHAN, a village in Dumfriesshire, noted for its great monthly market for cattle. It is 10 miles S.E. of Dumfries.

ECCLESAL, a town in Staffordshire, with a market on Friday. It is seated on a branch of the river Sow, and the bishop of Lichfield and Coventry has a castle here. It is six miles N.W. of Stafford and 143 of London. Long. 2. 9. W. Lat. 53. 2. N.

ECHTERNACH, a town of Luxemburg, on the river Sout, in a valley surrounded by mountains, 18 miles N.E. of Luxemburg. Long. 6. 33. E. Lat. 49. 50. N.

ECKEREN, a village of Brabant, five miles N. of Bra-

bant. A battle was fought here in 1703, between the French and the allies.

ECYA, or EXIA, an episcopal town of Spain, in Andalusia. It contains 20 convents, and about 9,000 inhabitants, whose principal trade is in wool and hemp. It is seated on the Xenil, 28 miles S.W. of Cordova. Long. 4. 27. W. Lat. 37. 39. N.

EDAM, a town of North Holland, famous for its red-rind cheeses; seated on the Zuider-Zee, 20 miles N. by E. of Amsterdam. Long. 4. 58. E. Lat. 52. 32. N.

EDDYSTONE, the name of some rocks in the English Channel, which cause variety of contrary sets of the tide or current in their vicinity. They are situate S.S.W. from the middle of Plymouth Sound, at the distance of 14 miles. They are almost in the line which joins the Start and the Lizard Points, and their situation with regard to the Atlantic is such, that all the heavy seas from the S.W. come uncontrolled upon the Eddystone rocks, and break over them with the utmost fury. On the principal rock (for the rest are under water) Mr. Winifley, in 1696, undertook to build a lighthouse; and he completed it in 1700. This architect was so certain of the stability of this structure, that he declared it to be his wish to be in it during the most tremendous storm. Unfortunately he had his wish: it was destroyed in the dreadful storm, November 27, 1703, when he perished in it. In 1709, another built of wood, but on a different construction, was erected by Mr. Rudyard, which was consumed by fire in 1755. Another, of stone, was begun by Mr. Smeaton, on April 2, 1757, and finished August 4, 1759. The rock, which slopes towards the S.W. is cut into horizontal steps, into which are dove-tailed, and united by a strong cement, Portland stone, and granite. The whole, to the height of 35 feet from the foundation, is a solid of stones, engrafted into each other, and united by every means of additional strength. The building has four rooms, one over the other, and at the top a gallery and lantern. The stone floors are flat above, but concave beneath, and are kept from pressing against the sides of the building by a chain let into the walls. It is nearly 80 feet high, and since its completion has been assailed by the fury of the elements, without suffering the smallest injury. Its distance from the Ram Head, the nearest point of land, is 12 miles. Long. 4. 24. W. Lat. 50. 8. N.

EDEN, a river which rises in Westmoreland, on the confines of Yorkshire, and running N. by Appleby and Carlisle, falls into Solway Frith.

EDENTON, a town of North Carolina, on the N. side of Albemarle Sound, with an episcopal church. It is the capital of the Chowan County, and 78 miles S. by W. of Willsborough. Long. 76. 40. W. Lat. 35. 58. N.

EDGHILL, a village in Warwickshire, where the first battle was fought between Charles I. and the parliament, in 1642. It is 14 miles S. of Warwick.

EDGWARE, a town in Middlesex, with a market on Thursday, eight miles N.W. of London. Long. 0. 14. W. Lat. 51. 37. N.

EDIKOFEN, a town of Germany, in the palatinate of the Rhine, near which a battle was fought between the French and Prussians on July 12, 1794; the contest was long and bloody, and the victory doubtful; but the battle was renewed the next day, and terminated in favour of the French.

EDINBURGH (*Encycl.*). As many of our readers may feel a satisfaction in being acquainted with the manner in which medical education is conducted in a seminary so much celebrated as that of Edinburgh, we here insert it, from vol. VI. of the Medical and Physical Journal.

The university of Edinburgh was founded by James the Fifth of Scotland, about the year 1581, and is denominated in

all official writings, *Academia Jacobi Sexti, Regis Scotorum quæ Edinburgi est*. It consists of a principal and professors, who have small salaries, and all of them, except the regius professors, are appointed by the town-council of Edinburgh, who have likewise the power of instituting new professorships when they shall see occasion. The principal, with the whole body of professors, form the *Senatus Academicus*, which enacts laws for the regulation of the college, and settles all matters relating thereto. Degrees are confirmed, at certain periods, by the principal with the consent and approbation of this body. There is an endowment of a few pounds per annum for a small and limited number of bursars, but there are no fellows.

Most of the professors, and the whole number of students, live in the town; the latter wear no particular drefs, are subject to no college laws, and may attend the lectures at such times only as they please. There is indeed a small fine for absence or inattention, at one or two of the junior classes, as the Latin and Greek. The college exercises, besides those of construing, translating, or demonstrating, at the Latin, Greek, or mathematical classes, are writing occasional essays on subjects connected with their studies; at the logic, the higher Latin and Greek classes, the divinity, and of late years at the moral philosophy. The only class, we believe, at which there is any examination on what has been previously heard, is the logic. It is rather to be lamented that there are not more frequent opportunities of competition in the various classes of this university; and it is a circumstance which must naturally excite considerable wonder among those who are informed of it, that there is not a single medal or prize of any kind ever offered for the best essay on any subject, whether literary or philosophical. When it is considered how great is the inducement afforded to industry by an honorary reward of this kind, how trifling is the expence attending it, and how very many there are of distinguished rank, fortune, and reputation, who have had the elements, if not the whole of their education, at this university, it is extremely singular that no endowment of this nature has ever been made. The professors themselves, who amount to a considerable number, and are highly respectable for their learning and talents, might, by a very small individual contribution, raise a sufficient sum annually for defraying the expence of a small number of prize medals.

The professorships in the university of Edinburgh are divided into four faculties, viz. the *faculty of theology*, of *law*, of *medicine*, and of *arts*; and the whole number of professors amounts to about twenty-four.

In the *faculty of theology* is comprised divinity, church history, Hebrew and oriental languages:

In the *faculty of law*, civil law, law of nature and nations, universal history, and Scott's law:

In the *faculty of medicine*, anatomy and surgery, practice of physic, chemistry, materia medica, theory of physic, botany, and midwifery.

In the *faculty of arts*, Latin or humanity (literæ humaniores), Greek, mathematics, logic, moral philosophy, natural philosophy, rhetoric and belles-lettres, natural history, practical astronomy, agriculture.

Till near the revolution there were no medical professors at this university, and even till the year 1720 they were merely titular. About that period the late celebrated Professor Monro commenced his anatomical lectures, and from that we may date the formation of the medical school in Edinburgh, which has gradually arisen to a degree of celebrity unequalled by any other in Europe.

From the above enumeration, it appears that the medical professorships are seven in number. That of midwifery is not however on the same footing with the others, as the pro-

feſſor has no ſhare in the medical examinations, nor is it neceſſary for a ſtudent to attend this claſs before he is eligible to a medical degree.

The lectures commence in the latter end of October, with the exception of midwifery, of which there are three courſes in the year, viz. two in the winter and one in the ſummer, and laſt until the latter end of April or the beginning of May. The botanical lectures are only given in the ſummer ſeaſon, during the months of May, June, and July, at the Botanical Garden, a ſhort diſtance from Edinburgh. The preſent profeſſor of chemistry has for ſome time given a ſummer courſe of lectures which laſts three months.

The firſt few lectures in the ſeaſon are always occupied with the hiſtory of the ſcience, by way of introduction: and as the ſacraments of the church of Scotland, which occur twice a year, give an interruption to them for a week in the beginning of November, the particular buſineſs of the courſe is not entered upon till about the 10th or 11th of that month. The lectures are an hour each in length, except the anatomical, which is an hour and a half at leaſt. They are given on every week-day except Saturday, and on that day ſome of the profeſſors have occaſion to lecture during a part of the ſeaſon, in order to get through the buſineſs of the courſe.

The following are the names of the preſent profeſſors, and the hours at which they lecture:

Dr. Monro	{ anatomy	- - - - -	1 P. M.
Dr. Monro, jun.			
Dr. Gregory	- - practice of medicine	- - -	9 A. M.
Dr. Hope	- - chemistry	- - -	10 A. M.
Dr. Duncan	- - theory or inſtitutes of med.	- - -	11 A. M.
Dr. Home	{ materia medica	- - -	8 A. M.
Dr. Home, jun.			
Dr. Rutherford	- botany	- - -	8 A. M.
Dr. Hamilton	{ midwifery	- { in winter	3 P. M.
Dr. Hamilton, jun.		- { in ſummer	10 A. M.

Any perſon who fees a claſs may attend the lectures; it is neceſſary, however, to be afterwards enrolled in the college books at the matriculation, to be able to procure any official document of academical education, and to have acceſs to the valuable collection of books of which the college library conſiſts. This noble library is enriched with a copy of every book which is entered at Stationers' Hall, and is aided by a ſmall ſum paid by each ſtudent at his matriculation. The books may be procured, to a limited number, by ſtudents, on their depoſiting the value with the librarian, who returns it on receiving the book.

The whole number of ſtudents at the univerſity is from 1000 to 1300, of whom between four and five hundred are medical. The profeſſor of anatomy has never fewer than three hundred attending him, and ſometimes many more. The other claſſes, particularly thoſe of the practice of medicine and chemistry, are alſo well attended.

To the profeſſor of anatomy belongs a very capital collection of preparations, which may be inſpected, by the ſtudents in the lecture-room, or in ſome cloſets adjoining it, in the courſe of the ſeaſon. He is always able to provide a ſufficient number of ſubjects for public demonſtration, but there are no opportunities of private diſſection afforded in the college.

Students who attend the midwifery claſs have the advantage of practice at the lying-in hospital. Connected with the medical education of the college is the attendance at the royal infirmary, which is a building capable of containing above two hundred patients, and ſupported principally by voluntary contributions. The medical and ſurgical patients are kept in different wards, and from the medical are ſeleſted about fifteen males, and as many females, with the moſt intereſting complaints, who are put into ſeparate wards, denominated *clinical*, and are attended by a medical profeſſor of the college, of whom there are generally four who take the duty alternately. The profeſſional buſineſs of the infirmary is performed by two ordinary phyſicians, appointed for a permanence, with ſalaries; two ſurgeons*, a clinical phyſician, two phyſicians' clerks, a houſe ſurgeon, and two clinical phyſicians' clerks. The phyſicians' clerks and houſe ſurgeon are appointed by the managers, and reſide in the hospital; the clinical phyſicians' clerks are appointed by the clinical phyſician for the time of his attendance, and do not reſide. The patients are ſeen by the phyſician or ſurgeon having the care of them, every day, except Sunday, at twelve o'clock.

The manner in which the buſineſs of the hospital is conducted, reflects much credit on all concerned in it, and is extremely conducive to the improvement of the ſtudent. On the admission of any patient, whether ſurgical or medical, the houſe ſurgeon or phyſicians' clerk, take down an accurate account of the ſymptoms, and hiſtory of the complaint, in a book for the purpoſe, in which are inſerted the daily progreſs and treatment, dictated by the attending ſurgeon or phyſician. Theſe books are, at certain times of the day, left in a particular room for the inſpection of the ſtudent; and as they are liable to the ſeverity of criticiſm, both as to ſtyle and accuracy, it is the intereſt of all parties that they ſhould be correct. The ſurgical caſes of the hospital form the baſis of a valuable courſe of lectures, given twice a week during the winter months, by Mr. Ruſſell.

Patients admitted into the clinical wards are the peculiar objects of attention. An accurate hiſtory of their complaints is taken by one of the clerks on their admission, and a very full report of the ſtate of the patient, with the progreſs and treatment of the diſeaſe, is every day dictated by the clinical phyſician, who alſo gives lectures on theſe caſes at the college every Tueſday and Friday, at five o'clock. There are two clinical phyſicians in winter and one in ſummer, each of them officiating in this ſituation three months.

The fee for the clinical, and each courſe of medical lectures at the college, is three guineas, with a ſmall ſum to the janitor and ſervants. Every part of the hospital, whether medical, ſurgical, or clinical, is open to the ſtudent for three guineas annually; and this fee, as well as that for the clinical lectures, is, we believe, leſſened after a certain attendance. The ſtudents are at liberty to viſit any part of the hospital, at any time of the day, to make their perſonal obſervations on the ſtate of the patients, and compare the reports dictated by the phyſicians or ſurgeons with the appearances of the diſeaſe.

Before any gentleman can be examined for a medical degree in Edinburgh, he muſt bring forward documents of hav-

* The care of the ſurgical patients of the hospital formerly belonged to the whole college of ſurgeons, who took the duty by rotation, for two months at a time; the ſucceſſor acting as an aſſiſtant until it became his turn to officiate. Dr. Gregory, while preſident of the college of phyſicians in Edinburgh, publiſhed an addreſs to the managers on the ſubject of the ſurgical attendance of the infirmary, and ſucceeded ſo far as to induce them to make material alterations in it. There are now on the eſtabliſhment ſix hospital ſurgeons, who are appointed for a permanence, with ſix aſſiſtant ſurgeons under them. Two of theſe ſurgeons act for two years at a time, and divide the patients. There is alſo a certain number of diſpenſers appointed by the ſurgeons.

ing studied medicine three years, at that or some other university. The testimonial of that part of his education which he received in Edinburgh, is given him from the records of the university by the secretary. As it may be acceptable to some of our readers to be informed of the regulations with regard to medical degrees in Edinburgh, we shall present them with nearly a literal translation of the statutes on this subject, known by the name of *Statuta Solemnia*.

Statutes of the university of Edinburgh on the subject of medical degrees; proposed by the faculty of medicine, and enacted by the senate.

1. No one shall be admitted to the degree of doctor of medicine, except on the 24th of June and the 12th of September, or the days immediately subsequent.

2. No one shall be admitted into the number of candidates unless he shall have, for the space of three years, studied, in this or some other university, medicine and the branches comprised in it, to wit, *anatomy and surgery, chemistry, botany, materia medica, and pharmacy, and the theory and practice of medicine*, and unless he shall have attended the clinical lectures given by the professors of medicine, on the cases in the infirmary.

3. Three months at least before the above-mentioned days, every one desirous of the honours of medicine, must deliver a *medical inaugural dissertation* to one of the medical professors, who is to read it over, amend it if necessary, and annex to it, in writing, his *perlegi*, or certificate of having read it, with the day on which it was received.

4. On or before the 20th of April, or July, he must communicate his with to the dean of the faculty of medicine*; and at the same time deliver to him his inaugural dissertation (with the certificate of the professor who has read it annexed), to be subjected to the opinion of the faculty of medicine, in order that they may, by this specimen, as well as by a private examination, be acquainted with his progress in learning, particularly in the science of medicine, before they admit him into the number of candidates.

5. On the 18th of May, or the 6th of August, the candidates shall be examined by the two medical professors before the faculty of medicine, in the various branches of medical science above enumerated.

6. Should the candidate be approved, an aphorism of Hippocrates shall be proposed to him by one of the medical professors, and a medical question by another. The former, explained and illustrated by a commentary; the latter, with an answer supported by proper arguments, he shall deliver on the 28th of May, or the 16th of August, to the professors who proposed them; and he shall defend his commentary and answer on the 30th of May, or the 18th of August, before the faculty of medicine.

7. Should the candidate be thus far approved, there shall be delivered to him by two professors, two histories of diseases, with questions annexed, that he may illustrate and answer them in writing. The cases thus illustrated, together with the answers, he shall deliver to the professors proposing them on the 12th of June or the 1st of September, and shall defend them before the faculty of medicine on the 15th of June or the 3d of September.

8. If the candidate be approved after the first trial on the 18th of May, or the 6th of August, he is at liberty to print his inaugural dissertation, and must deliver six correct copies of it (wanting the page which expresses the title and the authority of the university) to the dean of the faculty of medicine, on the 15th of June, or the 3d of September.

9. Should the candidate be a third time approved by the faculty of medicine, the dean of the faculty shall report to the senate every thing which has been done, and by their authority and approbation, he shall be ordered to publish and defend it, on the 24th of June or the 12th of September. He shall then, if agreeable to the senate, receive in the usual way, the reward of his studies and labour, the degree of doctor of medicine.

10. The faculty of medicine shall always meet at the college on the above-mentioned days at nine o'clock in the morning.

11. All the aforesaid examinations and exercises shall be in the Latin language.

No examinations can be conducted with more candour than those in Edinburgh. Questions are never asked with a view to puzzle or perplex, nor are any ever proposed which a student should not be able to answer. On the other hand, the examinations are not merely formal, as the professors never hesitate in rejecting a man, whom they do not conceive properly qualified. The principal examination is that mentioned as a private one at No. 4 of the Statuta Solemnia; it is held at the house of one of the professors; and is attended by the whole of the faculty of medicine as examiners. The gentleman at whose house the meeting is held, begins by an examination of the general functions of the body, and then selects a particular viscus, of the structure and uses of which he requires an explanation. The others confine themselves to practical and pathological questions on the diseases of this organ, in which the prognosis, diagnosis, treatment, and nature of the remedies employed in the cure, come under review.

The other examinations are in the college hall. The degree is conferred by the principal, after an oath taken by each graduate to practise his profession in a just and honourable way. The diplomas are signed by the principal and the whole of the members of the *Senatus Academicus*.

The graduation fees to the college amount to between thirteen and fourteen pounds, and are paid to the proper officer immediately after the examination at No. 5 of the statutes.

A gentleman who has passed this examination may, if he please, defer taking his degree for some time, and resume his exercises at the stage at which they were left off.

Having given this general account of the mode in which medical education is conducted in the college of Edinburgh, the same writer transmits the following supplementary observations on the subject. (Med. and Ph. Jour. No. 35.)

The opportunities afforded at this university of prosecuting the study of medicine are not confined to the college. Private lectures are also given in anatomy, surgery, physiology, and chemistry, by men of merit and eminence, which are of considerable advantage to the student, particularly in the study of anatomy. This science is the only one in which Edinburgh has not arrived at a considerable degree of eminence, and it is in a great measure owing to the difficulty there has been in procuring a sufficient number of subjects for private dissection. The exertions of the private teachers have, however, in some measure, done away this disadvantage, and the more frequent opportunities of prosecuting practical anatomy which are now enjoyed, must necessarily be of material service to the university. Anatomy cannot be learnt from lectures alone, for however perspicuous the demonstrations may be which accompany them, the ideas which they produce must remain in some measure indistinct and imperfect without the aid of dissection, and the more so when they are given to a very large number of students at one time, as is the case in Edinburgh.

* This is generally, if not always, the youngest professor of that faculty.

It is of extreme importance in the study of any science, that the first rudiments should be correct and distinct. Imperfect ideas are easily acquired, but they greatly retard the after-progress, and are sometimes never entirely removed. If there is, therefore, a desideratum in the medical education of Edinburgh, it is, that more opportunities should be afforded to the student of prosecuting the study of anatomy. There are certainly many obstacles in the way of procuring subjects sufficient to enable the greater number of medical students to cultivate practical anatomy, and it is not improbable that the popular prejudices against dissection, and the more limited opportunities of obtaining bodies in Edinburgh than in London, will make it always inferior to the latter as an anatomical school. The societies which are instituted in Edinburgh for discussing medicine and medical philosophy have a considerable tendency to encourage the desirable habits of study and investigation. It must be admitted, however, that they have their disadvantages; for to young men, who have just assumed the right of thinking for themselves, without having obtained that information which is necessary as the foundation of their opinions, they frequently hold out a dangerous and successful allurements, which diverts them from the more substantial parts of their studies, renders them disputatious, and encourages habits of self-complacency and conceit. It is, perhaps, a good deal owing to the effects of societies in general, that the students of Edinburgh obtained the character from Dr. Franklin of being, with lawyers, particularly fond of dispute. Upon the whole, however, it appears, that the more respectable of the medical societies are conducive to professional improvement, if they are only regarded as subservient to the other parts of education, if they are not attended too early, and if the student does not, as is too frequently the case, take a part in the discussion beyond his information.

The *royal medical*, and the *royal physical*, are two principal societies devoted to subjects connected with medicine. The former stands highest in point of general respectability and importance, and has, in the list of its members, many of the most distinguished medical characters in Europe. It was here, as Dr. Gregory remarks in his lectures, that the Boerhaavian doctrines were first freely discussed, and such objections urged against their solidity, as gradually led to their abandonment. The members assume the full right of freedom of discussion on any opinions, by whatever authorities they may be supported, and are extremely jealous of the smallest endeavour, on the part of the professors, to control them. During the time that the celebrated doctrines of Brown first began to be canvassed, the warmth of debate was carried on so far, as to render it necessary to pass a law (which still exists) to enact, that any gentleman who should challenge another, on account of any thing which might take place during debate, should be expelled the society.

The Royal Medical Society was instituted in the year 1737, and obtained a charter of corporation in 1778. It is governed by four presidents, and by committees chosen annually from the members by ballot. The meetings are held once a-week, and last from 7 in the evening till 12. An essay on a medical case, and a dissertation on some subject connected with medicine (which are written by the ordinary members in rotation, and are termed a set of papers), are discussed every evening, and not more than two sets of those papers are expected from any gentleman during the time of his being in the society. They are circulated among the members before discussion, and are copied into proper books, which are open to their inspection in the library. Fines are exacted for absence either during the whole or part of the evening, and these are so considerable as to enforce a pretty

punctual attendance. The admission fee is five guineas; one guinea is paid in the beginning of the second year of attendance, and half a guinea in the beginning of the third, after which no further sum is required. A member, after having written two sets of papers, and completed two sessions in the society, becomes extraordinary, and is then freed from fines or contributions.

This society is possessed of a very valuable library and philosophical apparatus, which are under excellent regulation. Periodical publications and new works lie a certain time upon the library table, for the use of the members, before they are put into the body of the library.

There are several circumstances which have tended to establish the reputation of Edinburgh, and to make it a very general resort for medical students. Two or three of those it may not be improper to mention.

The celebrity of its professors, without doubt, brought it first into notice, and on this, its estimation in the eyes of Europe must still depend. The establishment of professors in Edinburgh has a powerful tendency to preserve that zeal and activity in the prosecution of the subjects which they teach, so necessary to the advancement of science and the increase of personal reputation. The salaries are very small, their emoluments must therefore principally depend upon the manner in which their lectures are attended, and this again on the estimation in which they are held. In Edinburgh, too, the practice of a physician is very much limited. Lecturing is not, therefore, as is often the case in London, employed as an introduction merely to public notice, but is regarded as a profession to which a man feels it his interest to direct all his abilities and attention.

Without having the most distant intention of making any application on the subject, we may be allowed to observe, that, a more respectable phalanx of medical men could scarcely be brought together, than filled the professional chairs of this university a few years ago. Any one conversant with its history, must know that weallude to the period at which Dr. Calten, Dr. Black, Dr. Gregory, Dr. Hope, Dr. Monro, and Dr. Home, were all of them at one time engaged in teaching the different branches of medical science. It is extremely difficult to point out that mode of electing professors, which is, most likely to ensure their being properly qualified for their office.

The members of a town-council do not appear to be the men best adapted for this purpose, and yet it is with them, that the nomination rests. Hitherto, there has been little ground of complaint; it may easily however be seen, that the utmost circumspection is necessary to preserve the respectability of the professional chairs in the eyes of Europe, and that the system which has been adopted of late years, of appointing the son as the successor or colleague of his father, if carried too far, will be highly injurious to the interests of the university.

The habits of life, both of the students and the inhabitants in general of Edinburgh, are very favourable to the steady pursuit of scientific knowledge. The students are not men of fortune, who come to the university for the purpose of *loazing away* two or three years for the sake of form or fashion, but are such as depend for their success on their perseverance, assiduity, and attention in the pursuits to which they are devoted. Enquiry is encouraged by the professors, excited by the easy intercourse which takes place among the students, and readily gratified by the facility with which books can be procured, whether from the college-library or that of the royal medical society. The desire of distinction among themselves, and the wish to come off with credit on an application for a degree, have also a very considerable and salutary influence upon the students.

The inhabitants of Edinburgh are, in general, distinguished for information and propriety of behaviour, which may be attributed to a variety of causes. Learned and literary men, particularly those connected with the college, are held in great estimation, and are received with cordiality into the highest circles. By far the most numerous class of the respectable inhabitants are in the professions; and commerce, which sometimes suddenly raises ignorant and ill-educated men to affluence, has scarcely any place in the Scottish capital. These circumstances must be without some effect upon the minds of young men who go thither for the purpose of improvement.

The lectures themselves are more comprehensive than those which, as far as we know, are delivered in any other university in Europe; and the infirmary, as mentioned in a former place, is under regulations, which render it productive of much advantage to the student.

The estimation in which Edinburgh is held as a school of medicine, is sufficiently marked by the general resort of students to it from every part of Europe. Few medical men, who can boast of a regular course of study, have not enjoyed the advantages of this school; and by much the greater number of the most respectable physicians of this island, have graduated in Edinburgh. It may hardly be thought necessary to make any observations on the respectability of Edinburgh degrees, after the detail which we have given, and the general estimation in which they are held with the public; we think it proper however to observe, that, to the disgrace of an honourable profession, and of an enlightened nation, which ought, on account of its usefulness, to preserve its respectability, the right of practising medicine is at this time to be purchased at a Scotch university without study, attendance, or examination; simply by a certificate of fitness from two physicians, who, it is to be feared, too often sign it from courtesy, without being adequately informed of the education or acquirements of the person whom they recommend. It ought therefore to be recollected by those who, from this circumstance, depreciate the value of Scotch degrees, that it is unfair and uncandid to class the university of St. Andrew's with that of Edinburgh, where the eligibility to examination for a degree can only be obtained by three years' regular study, and where the examination itself is well adapted to discover how far the student has availed himself of the opportunities he has enjoyed.

It seems highly preposterous, that a qualification to practise a liberal profession, like that of medicine, which has not only its general character for learning to support, but which also requires no small share of study and application to become acquainted with its principles, should be able to be purchased by any one who chooses to be at the expence of it; for though it be admitted, that the certificate of qualification be in some measure a check upon the introduction of any improper persons to the honours of medicine, yet is it to be imagined, that medical men cannot occasionally be found, who will so far forget their own honour and the honour of their profession, as to recommend men very ill adapted to support its credit and respectability? In the professions of law and divinity, it is required that a man should spend a certain time in the study of his profession before he is admitted to practise it; or, at least, that he should be of so long a standing as to give him a full opportunity of having turned his attention to it; and even then a certificate of fitness is required previous to admission. If such be proper or necessary in the professions which we have mentioned, is it not doubly so in that of medicine, where the health or the life of individuals depend upon the knowledge and judgment of one man, and where there is often no time for looking into sources of information, or endeavouring to supply a deficient knowledge of the subject? The evil is

serious; and it is the duty of every good man, who wishes well to the profession of medicine and to the public, to do his endeavours to remedy it. For though some individual instances may occur, in which a man may be possessed of every qualification necessary for a physician, and would be much inconvenienced by not having a medical degree without the loss of time incurred by an attendance at an university for the purpose of obtaining it, yet the possibility of such an occurrence ought not to prevent any measure of universal public and professional advantage. It would not be thought sufficient for a person in a subordinate part of the law, who had been all his life engaged in the practice of his profession, to say, that he expected to be once admitted to the bar, because he conceived himself qualified to practise as a counsel. He would be expected to pursue the same course, as if he had been just entering upon the study of the law, however inconvenient might be the delay. And it does not appear particularly unreasonable, that when a profession is either entered upon or changed, a sacrifice of two or three years should be made, in order to obtain a qualification to practise it, though it may occasionally be attended with some personal inconvenience.

The Royal College of Physicians of London seem perfectly convinced of the propriety of requiring a certain academical attendance from every one, previous to examination for the liberty of practising in the metropolis; when they make it necessary for such as present themselves, to produce documents of having studied two years at the same university where they graduated. This by-law appears to be founded upon the most judicious principles, and does credit to the judgment of that learned body. The latter part of it is clearly with a view to prevent those from applying for admission as licentiates, who were rejected on their examination for a degree at the university where they were educated, and afterwards procured one by purchase.

The Royal College of Physicians of Edinburgh have a defect in their charter, which prevents their being able to adopt the same salutary regulations with that of London, on the mode of admitting licentiates or fellows. By their charter it is enacted, that not only graduates of Edinburgh, but of any other Scotch university, shall be admitted by right a licentiate of the college, without examination; and by the constitution of the college, a licentiate, after remaining twelve months in that probationary state, is admitted a fellow as a matter of course.

That Edinburgh graduates should be admitted without examination into the college of physicians, is not improper, because the heads of this college are members of the faculty of medicine of the university, and the persons who on examination thought him duly qualified to practise medicine. But, that any person who has purchased a St. Andrew's degree, should be able to claim the same privilege, completely does away any idea of honour from a connection with that body. The absurdity of the clause above mentioned, more clearly appears from a case which is not only possible, but may at any time occur. A student may be thought unqualified for the honour of a degree in Edinburgh, and may be rejected. He may afterwards procure a degree from St. Andrew's, and insist upon admission into the college of physicians of Edinburgh, though he will be there associated with the very men who thought him unworthy of a degree from the university. Thus it appears, that the degree of doctor from the university is more honourable than that of fellow of the royal college of physicians, a circumstance far from being generally known, though it may be very fairly inferred from the respectable evidence of Dr. Gregory, who made the observation to which we alluded above, when actually president of the college.

On a comparison of the advantages afforded by Edinburgh and the English universities, in the study of medicine, there can be no hesitation in preferring the former. As an argument in favour of Oxford and Cambridge, much stress has been laid upon the length of time which it is necessary to be connected with those universities, before the degree of doctor can be obtained. But in this point of view, the balance must be on the side of Edinburgh, for a great part of the attendance at the English universities is merely nominal, half terms only being sufficient before taking the degree of bachelor of medicine; and from that time until the period at which the degree of doctor is conferred, no attendance is necessary at all. Does the period of absolute attendance, therefore, which is necessary previous to taking a doctor's degree, predominate in Edinburgh, or in the English universities? Much of the advantages derived from a place of education, necessarily depends upon the time and punctuality of attendance; and this applies more strongly in medicine, than perhaps any other profession. When we therefore consider that the period of *actual attendance* in Edinburgh is equal to that which is requisite at either of the English universities; and when we also recollect, that during the whole of that attendance, the time is occupied in the proper business of the profession, little doubt can exist on the comparative merits of those seminaries as schools of medicine. It is usual, and indeed necessary, that gentlemen educated to physic at either of the English universities, should prosecute the study of their profession elsewhere; but is it not a circumstance of a most singular nature, that the only advantage in medicine from those illustrious seminaries, is the obtaining a degree? and that the previous acquirements which are necessary to qualify a man to practise with honour to himself, or advantage to the world, must be made in another place?

Establishment for the poor.—There has been opened at Edinburgh, an house for the employment and relief of the poor. Notice had been publicly given that mendicity would no longer be permitted in that city; there being both employment and the means of subsistence in the house, for every beggar and destitute person who was disposed to work. They were also informed that they would receive the full amount of their earnings, with such additional gratuitous assistance, as might, in the whole, be equal to their decent maintenance.

From the 22d of January, 1801, to the 16th of March, ninety persons of different ages were admitted into the house. The number has since been considerably increased. Of these, few, comparatively speaking, were of the ordinary class of beggars; they, in general, fled upon the alarm; and retired to quieter situations, in London, and other municipalities, where similar measures of prudential charity have not been adopted. Of those distressed persons who have been admitted into the house, almost all have been received on their own application; many of them widows advanced in life, whom the high price of provisions, and the want of occupation, had compelled to dispose of the greater part of their furniture and clothes, for immediate subsistence;—or young women, who, with characters apparently unimpeached, were exposed to a course of pilfering and prostitution.

It was fixed that they should have the *whole produce of their earnings*; besides they receive *gratis*, a cheap dinner, and two pence a-day each in money. The pecuniary allowance has, for the present, been rendered expedient by the peculiar circumstances of the times, the high price of food, and the state of weakness and indigence to which the poor are reduced. The continuance of that part of the relief, it is to be hoped, will not be universally necessary.

Their earnings are small;—but it is not a small object to be obtained, that such a class of persons should be virtu-

ously and industriously employed; that they should be *earning something*, and acquiring the habit and skill to earn more. They express very generally, and very strongly, their gratitude for the advantages, which they derive from the charity; and look forward to its continuance with eager and solicitous expectation. Only two of them have merited serious reprehension; and they are now dismissed the house, to the advantage and apparent satisfaction of the rest.—Of the ninety persons admitted, seventy-four have been employed in spinning flax,—three in spinning hemp,—and one in spinning wool: all of these have been furnished by the manufacturer with the raw materials, and are paid by him, according to the usual rates, for the quantity they respectively spin.—Besides these, six have been employed in making lace, three in knitting stockings, two in reeling yarn, and assisting in the house, and one (a joiner with five children in great distress for want of work) in mending the spinning-wheels, and in making a variety of little articles for sale.

To occupation, and the means of subsistence, the directors of this excellent charity have added medical advice and aid. Of this department, an eminent physician, Dr. William Farquharson, has taken the direction; the institution being put to no other expence, than that of the wholesale price of the medicines which the poor may require.

The establishment is supported by voluntary contributions, not only of money, but of clothing and spinning-wheels, supplied by public bodies at Edinburgh, as well as by individuals. In consequence of a report made by the Rev. Dr. Baird (*principal of the university* at Edinburgh, and a most active conductor of the charity) the society lately established at Edinburgh, “for encouraging the industry and increasing the comforts of the poor,” has taken this charity under its peculiar patronage and administration; and has added considerably to its funds.

BDNAM, a village near Kelfo, in Roxburghshire, seated on the Tweed. It is the birth-place of the poet Thomson.

EFFINGHAM, a village in Surrey, 12 miles N.E. of Guildford. It was once, according to tradition, a populous town, containing 16 churches. There are, certainly, proofs of its having been a much larger place; for wells and cavities like cellars, have been frequently found in the neighbouring fields and woods; and in the church are some ancient stalls and monuments.

EGG, a fertile little island, one of the Hebrides of Scotland, to the S. of Syke.

EGHAM, a village in Surrey, four miles N.N.W. of Chertsey. Here is a neat almshouse for six men and six women, with a school for the education of 20 boys, founded by Mr. Henry Strobe, in 1706; and another almshouse, for six men and six women, founded by Judge Denham, father of the poet of that name. Near this place is the celebrated Runnymede.

EGLINGEN, a town of Suabia, capital of a lordship of the same name, six miles N. of Dillengen.

GLISAU, an ancient town of Switzerland, in the canton of Zurich, seated on the Rhine, 13 miles N. of Zurich. Long. 8. 30. E. Lat. 47. 33. N.

EGMONT BAY, a bay on the S.W. of the Island of St. John, in the gulf of St. Lawrence. Long. 64. 0. W. Lat. 46. 30. N.

EGMONT ISLAND, a low woody island in the South Pacific Ocean. Long. 138. 30. W. Lat. 19. 20. N.

EGREMONT, a town in Cumberland, with a market on Saturday. It is seated near the Irish Sea, on the river Ehen, over which are two bridges; and on the peak of a hill is a castle. It sent members to parliament in the reign of Ed-

ward I. and is 14 miles S.W. of Cockermonth, and 299 N.W. of London. Long. 3. 35. W. Lat. 54. 32. N.

EGYPTEN, a town of the duchy of Courland, 100 miles S.E. of Mittau. Long. 26. 40. E. Lat. 56. 2. N.

EHIGEN, the name of two small towns of Susbia, the one near the Danube, and the other on the Neckar. They belong to the House of Austria. The former is in long. 9. 45. E. lat. 48. 18. N. and the latter in long. 8. 45. E. lat. 48. 25. N.

EHRENBREITSTEIN, a very ancient fortress, in the electorate of Treves, on the E. bank of the Rhine, opposite Coblenz. It stands on the summit of a stupendous rock, not less than 800 feet above the level of the river, and is thought, when supported by a competent garrison, to be impregnable. It has a communication with Coblenz by subterraneous passages cut out of the solid rock; and is plentifully supplied with water from a well 280 feet deep. In the centre of a large square in this fortress, is placed a cannon, supposed to be the largest in Europe; it was cast in 1528, weighs 300 quintals, and projects a ball of 180 pounds, upwards of 12 miles. The prospect from this castle is majestic, extensive, and variegated; and the stream at its foot is decorated with two small islands, on each of which is a convent. In the vale of Ehrenbreitstein is the old palace of the elector. The fortress surrendered to the French, after a long siege, and a blockade of above a year's continuance, in February 1799.

EHRENFELS, a fortress of Bavaria, in the duchy of Neuburg, which gives name to a lordship. It is 13 miles N.W. of Ratibon.

EJECTION, in Scots law, is the turning out the possessor of any heritable subject by force; and is either *legal* or *illegal*. Legal ejection is where a person having no title to possess, is turned out by the authority of law. Illegal ejection, is one person's violently turning another out of possession without lawful authority.

EILENBURG, or EULENBURG, a town of Upper Saxony, 12 miles N.E. of Leipzig.

EIMBECK, a town of Germany, in the territory of Grubenhagen, 25 miles S. of Hildesheim. Long. 10. 0. E. Lat. 51. 46. N.

EIMEO, one of the Society Isles, in the S. Pacific Ocean, lying near Otaheite. The products of the two islands, and the manners of the people, are much the same. Eimeo has steep rugged hills, running in different directions, leaving large valleys, and gently rising ground about their sides. The hills, though rocky, are generally covered with trees almost to their tops.

EISLEBEN, a town of Upper Saxony, in the county of Mansfeld, famous as the birth-place of Luther. It is five miles E. of Mansfeld.

EISNACH, a town of Thuringia, capital of a district of the same name, with a celebrated college, 36 miles W. of Erfurt. Long. 10. 25. E. Lat. 50. 59. N.

EITHAN, or YTHAN, a river in Aberdeenshire, which crosses that county in a S.E. direction, and falls into the British Ocean at Newburgh.

EKERFORD, a town of Denmark, in the duchy of Sleswick, seated on the Baltic, 12 miles S.E. of Sleswick. Long. 10. 30. E. Lat. 54. 56. N.

ELBA, an island on the coast of Tuscany, remarkable for mines of iron and loadstone, and quarries of marble. It is subject to the Prince of Piombino, under the protection of the King of Naples, who is in possession of Porto-Longone; and the Grand Duke of Tuscany has Porto-Ferrajo.

ELEASSANO, a town of Turkey in Europe, in Albania, 45 miles S.E. of Durazzo. Long. 20. 9. E. Lat. 41. 34. N.

ELBOGEN, a town of Bohemia, capital of a circle of the

same name, with a citadel, on the river Eger, 16 miles N.E. of Egra. Long. 13. 0. E. Lat. 50. 16. N.

ELBURG, a town of the United Provinces, in Guelderland, on the E. coast of the Zuider-Zee, 10 miles N.E. of Harderwick. Long. 5. 50. E. Lat. 52. 30. N.

ELCATIE, a sea-port of Arabia Felix, on the W. coast of the gulf of Perlia, 300 miles S. of Bufohar. Long. 53. 5. E. Lat. 26. 0. N.

ELCHE, a town of Spain, in Valencia, 20 miles S.W. of Alicante. Long. 0. 23. W. Lat. 38. 7. N.

ELECTRICITY, GALVANIC. See GALVANISM in this SUPPLEMENT.

ELECTRICAL DOUBLER, an ingenious and useful invention of Mr. Bennet, well known to electricians, and much improved by Mr. Cavallo. The original instrument would be freed from its principal imperfections, we apprehend, by interposing a plate of air between the three plates of the doubler. Thus, if we stick on one of the plates three very small spheres, made from a capillary glass tube, or from a thread of sealing-wax; the other plate, when laid on, will rest merely on so many points; and there will be scarcely any friction capable of hindering the process of the experiment. Mr. Nicholson's contrivance for expediting the effect of the doubler is very ingenious.

ELECTROPHORUS, a machine, represented in Plate 26, the phenomena of which are somewhat singular. It consists of two plates, A and B, usually of a circular form; though they may be made square, or of the figure of a parallelogram, with more ease, and with equal advantage. At first the under plate was of glass, covered over with sealing-wax; but there is little occasion for being particular either with regard to the substance of the lower plate, or the electric which is put upon it. A metallic plate, however, is perhaps preferable to a wooden one, though the latter will answer the purpose very well. This plate is to be covered with some electric substance. Pure sulphur answers very near as well as the dearer electrics, sealing-wax, gum-lac, &c.; but it hath this bad quality, that, by rubbing it, some exceeding subtle steams are produced, which infect the person's clothes, and even his whole body, with a very disagreeable smell, and will change silver in his pocket to a blackish colour. The upper plate of the electrophorus is a brass plate, or a board or piece of pasteboard covered with tinfoil or gilt paper, nearly of the same size with the electric plate, though it will not be the worse that it is somewhat larger. It is furnished with a glass handle (I), which ought to be screwed into the centre. The manner of using this machine is as follows.—First, the plate B is excited by rubbing its coated side with a piece of new white flannel, or a piece of hare's skin. Even a common hard brush, having the hair a little greased, will excite sulphur extremely well. When this plate is excited as much as possible, it is set upon the table with the electric side uppermost. Secondly, the metal plate is laid upon the excited electric, as represented in the figure. Thirdly, the metal plate is touched with the finger or any other conductor, which, on touching the plate, receives a spark from it. Lastly, the metal plate A, being held by the extremity of its glass handle (I), is separated from the electric plate; and, after it is elevated above that plate, it will be found strongly electrified with an electricity contrary to that of the electric plate; in which case, it will give a very strong spark to any conductor brought near it. By setting the metal upon the electric plate, touching it with the finger, and separating it successively, a great number of sparks may be obtained apparently of the same strength, and that without exciting again the electric plate. If these sparks are repeatedly given to the knob of a coated phial, this will presently become charged.

"As to the continuance of the virtue of this electric plate, (says Mr. Cavallo), when once excited, without repeating the excitation, I think there is not the least foundation for believing it perpetual, as some gentlemen have supposed; it being nothing more than excited electric, it must gradually lose its power by imparting continually some of its electricity to the air, or other substances contiguous to it. Indeed its electricity, although it could never be proved to be perpetual by experiments, lasts a very long time, it having been observed to be pretty strong several days, and even weeks, after excitation. The great duration of the electricity of this plate, I think, depends upon two causes: first, because it does not lose any electricity by the operation of putting the metal plate upon it, &c. and, secondly, because of its flat figure, which exposes it to a less quantity of air, in comparison with a tick of sealing-wax, or the like, which, being cylindrical, exposes its surface to a greater quantity of air, that is continually robbing the excited electric of its virtue.

"The first experiments that I made, relative to this machine, were with a view to discover which substance would answer best for coating the glass plate, in order to produce the greatest effect. I tried several substances either simple or mixed; and at last I observed, that the strongest in power, as well as the easiest, I could construct, were those made with the second sort of sealing-wax, spread upon a thick plate of glass. A plate that I made after this manner, and no more than six inches in diameter, when once excited, could charge a coated phial several times successively, so strongly as to pierce a hole through a card with the discharge. Sometimes the metal plate, when separated from it, was so strongly electrified that it darted strong flashes to the table upon which the electric plate was laid, and even into the air, besides causing the sensation of the spider's web upon the face brought near it, like an electric strongly excited. The power of some of my plates is so strong, that sometimes the electric plate adheres to the metal when this is lifted up, nor will they separate even if the metal plate is touched with the finger or other conductor. It is remarkable, that sometimes they will not act well at first, but they may be rendered very good by scraping with the edge of a knife the shining or glossy surface of the wax. This seems analogous to the well-known property of glass, which is, that new cylinders or globes, made for electrical purposes, are often very bad electric at first; but that they improve by being worked, *i. e.* by having their surface a little worn. Paper also has this property.

"If, after having excited the sealing-wax, I lay the plate with the wax upon the table, and the glass uppermost, *i. e.* contrary to the common method; then, on making the usual experiment of putting the metal plate on it, and taking the spark, &c. I observe it to be attended with the contrary electricity: that is, if I lay the metal plate upon the electric one, and, while in that situation, touch it with an insulated body, that body acquires the positive electricity; and the metallic, removed from the electric plate, appears to be negative; whereas it would become positive, if laid upon the excited wax. This experiment, I find, answers in the same manner if an electric plate is used which has the sealing-wax coating on both sides, or one which has no glass plate.

"If the brass plate, after being separated from, be presented with the edge toward the wax, lightly touching it, and thus be drawn over its surface, I find that the electricity of the metal is absorbed by the sealing-wax, and thus the electric plate loses part of its power; and if this operation is repeated five or six times, the electric plate loses its power entirely, so that a new excitation is necessary in order to revive it.

"If, instead of laying the electric plate upon the table, it is

placed upon an electric stand, so as to be accurately insulated, then the metal plate set on it, acquires so little electricity, that it can only be discovered with an electrometer; which shews, that the electricity of this plate will not be conspicuous on one side of it, if the opposite side is not at liberty either to part with, or acquire more of the electric fluid. In consequence of this experiment, and in order to ascertain how the opposite sides of the electric plate would be affected in different circumstances, I made the following experiments:

"Upon an electric stand E, I placed a circular tin-plate, nearly six inches in diameter, which by a slender wire H communicated with an electrometer of pith-balls G, which was also insulated upon the electric stand F. I then placed the excited electric plate D of six inches and a quarter in diameter, upon the tin-plate, with the wax uppermost; and on removing my hand from it, the electrometer G, which communicated with the tin-plate, *i. e.* with the under side of the electric plate, immediately opened with negative electricity. If, by touching the electrometer, I took that electricity off, the electrometer did not afterwards diverge. But if now, or when the electrometer diverged, I presented my hand open, or any other uninsulated conductor, at the distance of about one or two inches, over the electric plate, without touching it, then the pith-balls diverged; or, if they diverged before, came together, and immediately diverged again with positive electricity:—I removed the hand, and the balls came together;—approached the hand, and they diverged: and so on.

"If, while the pith-balls diverged with negative electricity, I laid the metal plate, holding it by the extremity K of its glass handle, upon the wax, the balls came, for a little time, towards one another, but soon opened again with the same, *i. e.* negative electricity.

"If, whilst the metallic rested upon the electric plate, I touched the former, the electrometer immediately diverged with positive electricity; which if, by touching the electrometer, I took off, the electrometer continued without divergence.—I touched the metal plate again, and the electrometer opened again; and so on for a considerable number of times, until the metal plate had acquired its full charge. On taking now the metal plate up, the electrometer G instantly diverged with strong negative electricity.

"I repeated the above-described experiments, with this only difference in the disposition of the apparatus, *i. e.* I laid the electric plate D with the excited sealing-wax upon the circular tin-plate, and the glass uppermost; and the difference in their result was, that where the electricity had been positive in the former disposition of the apparatus, it now became negative, and *vice versa*; except that, when I first laid the electric plate upon the tin, the electrometer G diverged with negative electricity, as well in this as in the other disposition of the apparatus. I repeated all the above experiments with an electric plate, which, besides the sealing-wax coating on one side, had a strong coat of varnish on the other side, and their result was similar to that of those made with the above-described plate."

This is Mr. Cavallo's account of the electrophorus; but there is one part of it in which he must certainly be mistaken. He tells us, that "instead of laying the electric plate upon the table, it is set upon an electric stand, so as to be accurately insulated, then the metal plate set on it acquires so little electricity, that it can only be discovered by an electrometer." In what manner this gentleman came to mistake a plain fact so egregiously, is not easy to determine; but it is certain, that an electrophorus, instead of having its virtue impaired by being insulated, has it greatly increased, at least the sphere of its activity is greatly enlarged. When lying on the table,

Escapement

Fig. 1.

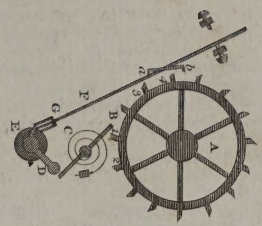


Fig. 2.

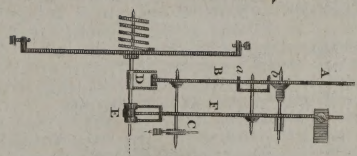


Fig. 4.

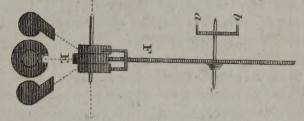


Fig. 5.

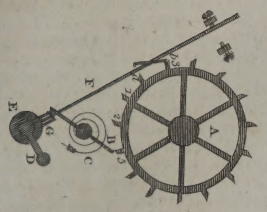
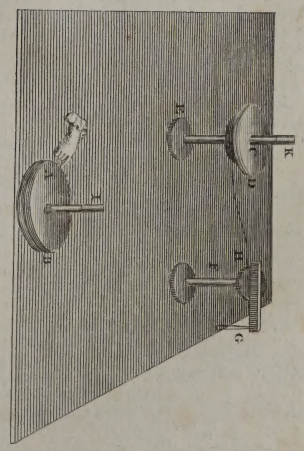


Fig. 3.

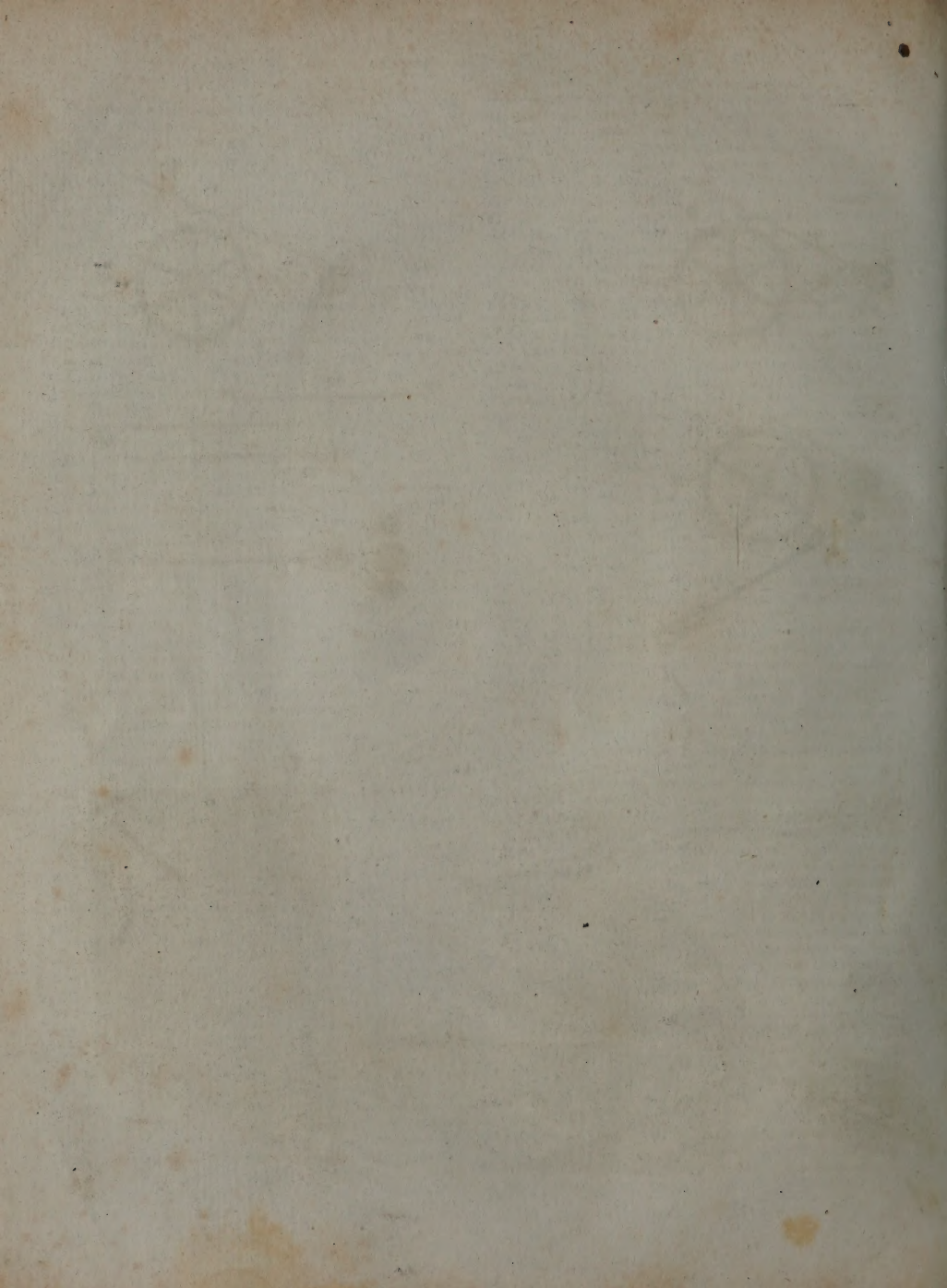


Electrophorus



Eracaria Agallocha





If the upper plate is put upon it without being touched with the finger, it will not shew much sign of electricity. But as soon as it is put on the electric stand, both the upper and under side appear strongly negative. A thread will be attracted at the distance of eight or ten inches. If both the upper and under side are touched at the same time, a strong spark will be obtained from both, but always of the same kind of electricity, namely, the negative kind. If the upper plate is now lifted up, a strong spark of positive electricity will be obtained from it; and on putting it down again, two sparks of negative electricity will be produced.

The singularity of this experiment is, that it produces always double the quantity of negative electricity that it doth of the positive kind; which cannot be done by any other method yet known. Another very surprising circumstance is, that when the electrophorus remains in its insulated situation, you need not always touch the upper and under side of the plates at once, in order to procure positive electricity from the upper plate: it is sufficient to touch both sides only once. On lifting up the upper plate, a spark of positive electricity is obtained as already mentioned. On putting it down again, a spark of the negative kind is obtained from the upper plate, even though you do not touch the lower one. On lifting up the upper plate, a spark of positive electricity is obtained, but weaker than it would have been had both sides been touched at once. Putting down the upper plate again without touching both, a still weaker spark first of negative and then of positive electricity will be obtained from the upper one. Thus, the sparks will go on continually diminishing, to the number perhaps of two or three hundred. But at last, when the electricity of the whole machine seems to be totally lost, if both sides are touched at once, it will instantly be restored to its full strength, and the double spark of negative, with the single one of positive electricity, will be obtained without intermission as before.

To account for all these phenomena very particularly, is perhaps impossible, without a greater degree of knowledge concerning the internal fabric of bodies than we have access to attain. In general, however, it is evident, that the phenomena of the electrophorus arise from the disposition that the electric matter hath to keep up an equilibrium within itself throughout every part of the universe. In consequence of this, no motion of the electric matter can be produced upon the one side of a body, but it must immediately be balanced by a corresponding one on the opposite side; and in proportion to the strength of the one, so will the strength of the other be. When the under plate of the electrophorus is excited, the negative electricity, or vibratory action of the electric matter towards the excited side, is produced; and the moment that such an action is produced on one side, it is resisted by a similar one on the opposite side, and thus the electrophorus becomes negatively electrified on both sides. As long as the under part of the machine communicates with the earth, the vibratory motion is impeded by the progressive one towards the earth. This makes the resistance on the under side less, and therefore the vibratory motion on the upper part extends but a small way. When the plate is insulated, the electric matter has not an opportunity of escaping to the earth as before, because it is strongly resisted by the air; a vibration therefore takes place on both sides, and extends to a great distance from the plate. When the upper plate is set upon the electrophorus, the same kind of electricity, viz. the negative kind, is communicated to it. When both sides are touched, with the finger, or with any other conducting substance, both electricities are suddenly taken off, because the electric matter running along the conducting substance on both sides, puts an end to the vibratory motion in the air, which constitutes the

very essence of what we call electricity. There is now a quiet and equal balance of the electric matter on both sides, and therefore no signs of electricity are shewn. But as soon as the upper plate is taken off, this balance is destroyed. The fluid in the metal plate had not been able to penetrate the electric substance in such a manner as to put a stop to the vibrations of what was within it. As soon then as the plate is taken off, the electricity, or vibratory motion towards the electric, breaks out at that side. But this motion inwards to the electric, which constitutes negative electricity, necessarily becomes outward from the plate; and as no motion of the fluid can be produced on one side of a body, but what is immediately communicated to the other, the upper plate becomes electrified positively, and the under one negatively on both sides.

ELEVATOR, a mechanical contrivance for raising any thing to an height from the surface of the earth.—The following description of a machine called a *speedy elevator*, invented by Dr. Collin, appears in the Transactions of the American Philosophical Society, and the doctor was honoured with the Magdallian gold medal for this invention.

The main body of the base is a rectangular solid floor. (See F. W. Plate 27). To its corners are jointed four horizontal legs, of equal thickness with it, but half the length, having their nether sides even with its bottom. When the machine is used, these are displayed so that their ends form a rectangle; the diagonals of which may be on those of the main body, or vary from them in a position most promotive of stability.

The pillars A A stand vertical on the long diameter of the base, equally distant from its ends. Their feet enter into it, and are by strong fastenings incorporated with its body. These pillars are pairs. Their form is a rectangular parallelepiped. Their inner sides have grooves from top to bottom, which terminate by offsets in cylindric segments. Near the tops are central embrasures, whose sides are fortified with iron plates that reach within the solid parts above and below. The pulleys are of metal, with steel axes and brass naves for easy turning, and deep channels for securing the cords.

The pillars are joined by three pairs of ribs. These are rectangular; and wide, but comparatively thin; placed horizontally, between the tops and embrasures, above the middles, and near the feet. Their ends are closely fitted within the pillars, and well fastened.

The piers B B are more slender than A A; with shorter heads; but the length of their bodies is equal to the whole of these. They have similar grooves, embrasures, pulleys, and joining ribs. Their faces are parallel rectangles. The backs of their bodies have tongues along the middles that fit the grooves of A A. These are vertical rectangular ridges, and parts of the very pieces, formed by cutting down both sides to a proper level. These lower surfaces, being even and smooth, will thus move close along the corresponding plain parts of A A while the tongues glide in contact with the sides of the grooves.

The cords a a are well paired in length and texture; They ply over the pulleys of A A in the said hollows behind the grooves; having their ends fixed under the feet of B B, and on the boxes of the windlafs. This is well secured in the base, close to and right beneath the pillars.

The cords b b are fastened by one end on the heads of A A. They pass over the pulleys of B B, and reach as far below them as a a reach below the pulleys of A A, which is the distance of these pulleys from the base. Their other ends are tacked a little above the bottoms of the piers C C.

These piers are with their apparatus framed like B B; have less bulk and shorter heads. Their pulleys clear the tops of B B when the machine is down.

The cords c c have the same length with b b, below the

pulleys of CC; plying over these; fastened on the heads of BB, and somewhat above the bottom of the pier D.

This is a single piece. It has two backs to fit the grooves of CC, formed like the backs of the other pieces.

A frame is accurately fixed and poised on the top of D. In this the load L is placed, so that its centre of gravity is exactly or very nearly over the centre of the frame.

When the power begins to wind the cords *aa*, these raise the piers BB. As they rise, their pulleys recede from the tops of AA, and by stretching the cords *bb* lift the piers CC. These recede at the same time from the tops of BB, and lift the pier D. Thus while BB are wound up from the base to the height of the pulleys of AA, D rises treble that height; and, however great may be the number of moving pieces, it multiplies the celerity and acquired elevation of the uppermost by that of the first.

As the duration and celerity of all the movements is the same, the lengths of all the cords below the respective pulleys must be equal.

As the whole acquired elevation is by those parts of the piers which are drawn out of their folds, these ought to have a very great proportion. Therefore BB reach the base when down; and the heads of AA are but long enough to keep them safe in their grooves, when drawn up. Again, as the ends of the cords *bb* will be above the base according to the length of the heads of AA, the heads of BB are shortened, and the bodies of CC are prolonged below those ends, in order to save room, and yet afford these piers a secure depth in the grooves of BB, when drawn up. On the same principle the heads of CC are shortened, and a part of D left under the ends of *cc*. As these additions of said pairs cannot increase the elevation, the cords ought to be fixed above them in order to shorten the bearings, and so far make the bodies firmer. In a longer series of piers this shortening of the heads can only be continued to the limit of depth necessary to support the frames.

The pier D prels the cords *c c* by its own weight, and the load L. This pressure causes an equal pulling and consequential resistance in the tops of the piers BB. The pulleys of the piers CC must bear this double pressure $= 2L + 2D$. These therefore press the cords *bb* with said weight and their own $= 2L + 2D + CC$. This doubled $= 4L + 4D + 2CC$ is the pressure on the pulleys of BB; but their heads are pulled up by $L + D$: the difference of these forces added to their own weight is the pressure of these piers on the cords *aa*, $= 3L + 3D + 2CC + BB$. The power on the windlafs must be equal to this.

In any series the power must lift a weight equal to the first piers, double the second, and so forth, till the last pier and its load multiplied by the number of moving pieces.

The pulleys, cords, and ribs, have some weight, and are to be counted as parts of their respective piers. A competent allowance is likewise required for the friction of the pulleys, which impedes the ascent, though the descent is advantageously retarded by it.

The pressure on the pulleys of the pillars AA is double the power. The strain in their tops is half of the weight on the pulleys of BB. The difference of these forces, $= 4L + 4D + 3CC + 2BB$, added to their own weight, is the pressure on the base.

The strain in the tops of any piers in a series is equal to what the power would be, if the pair next above was the last. The weight on the pulleys of the same pair is double the strain in the tops of the pair next below. The strain on their feet is equal to the strain in the tops of the pier two ranks below.

It is very necessary to compute the strains and pressures in

order to secure all the parts, and to save needless bulk, which would be a great disadvantage in the piers by the additional expence of power. The pressure of vertical pieces by their own weight must be counted, though not as equal to the same quantity of external burthen laid upon them: its operation is visible in high massive beams, which bend without any load; but in short though slender pieces it is not sufficient to break the internal cohesion of the parts. The effect of external weight is according to its quantity, and to the height and firmness of the piers; but not in uniform proportions. Divers kinds of wood have also different degrees of weight, and of vertical firmness: some are both stiff and light to an admirable degree: piers made of these can under slender forms bear weights many times greater than their own. These qualities are in their blended effects of different value in this machinery: the pillars are the most pressed, but they cause no weight to the power, and therefore their bulk is the less detriment. BB being the heaviest laden piers are the most solid, but they have only a simple moment: CC bearing less are lighter, but their moment is double: D has a treble moment, but the lightest burthen, and thus the least weight of its own. These continually growing increments of solidity are necessary consequences of the constant double bearings; but ought to be small in comparison to the pressures thus produced, which become very great, when the load to be lifted and the elevation are considerable. Lightness is then most beneficial in the upper ranks, and firmness in the lower, at these must lift but these be lifted many times: accordingly different sorts of wood may be chosen by their degrees of lightness and firmness; they being otherwise proper, especially for close and smooth folding.

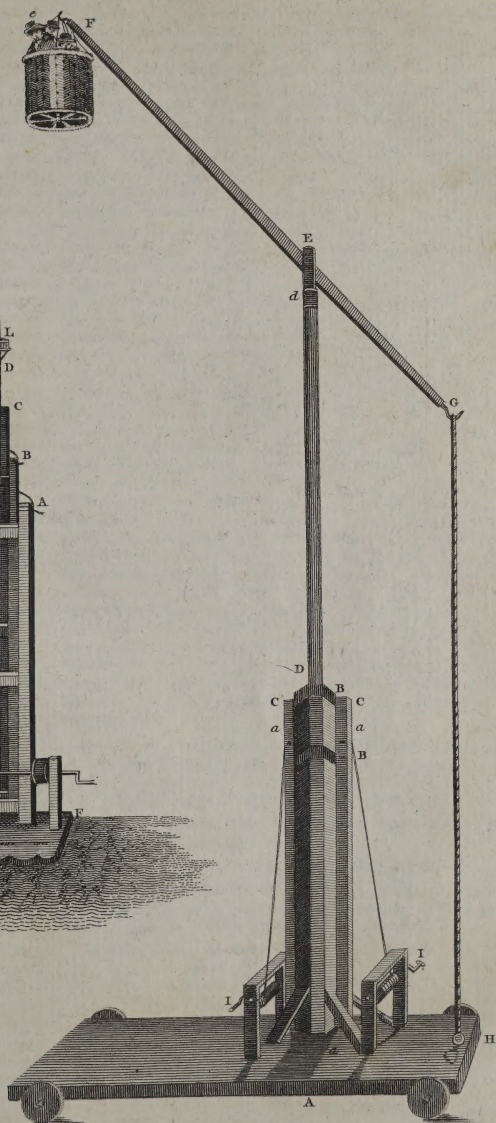
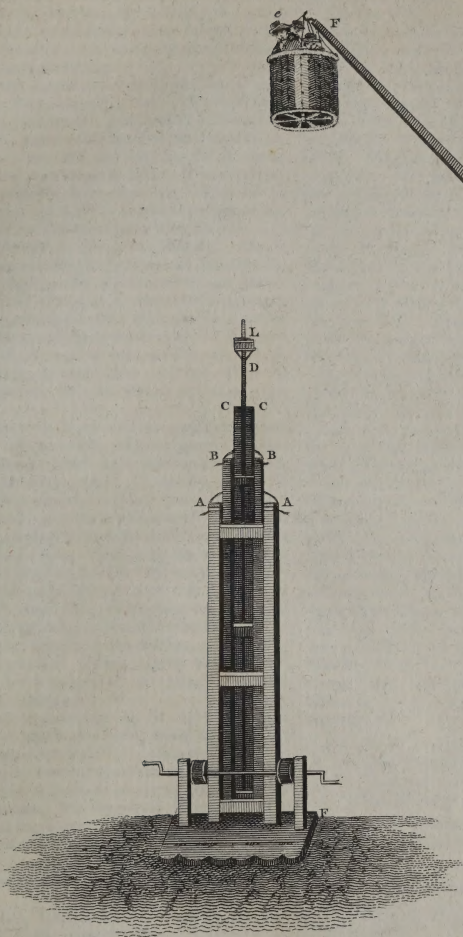
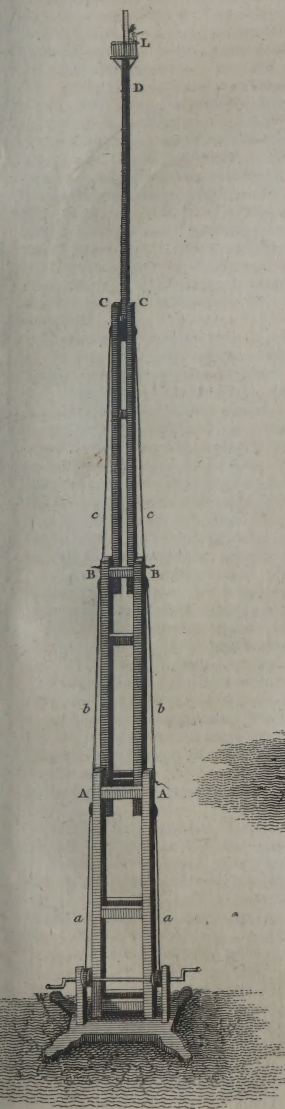
On account of the grooves and tongues, the pieces cannot have those regular forms that give the greatest solidity; nor can the pulleys be placed exactly over the line of central strength. In practice, these defects must not exceed necessary limits. Moreover, when the pressures and strains on the several parts of the pieces are estimated, hollows may be contrived in places that can bear it.—These niceties cannot be marked in a model.

When the load, the elevation, and quality of the wood, are given; the lightest series of piers is found by computing the results from different numbers. A greater number must effect a greater proportion of the whole elevation than a smaller, because the pillars, by becoming shorter, contribute less; this addition is a new expence of power. The weight of the load is essential, as it must be multiplied by the whole number of piers; it imparts the same moment to its own pier of competent bulk; and in conjunction with it thickens with continual increase all the others. On the other hand the firmness of piers affects greatly with the decrease of their height within certain limits. Some species of wood have also corresponding degrees of strength. The co-operation of these advantages may therefore render a considerable number of short piers light, and proportionally so in their respective multiple moments. The more numerous the piers are, the sooner is the machine wound up, and let down, which is an advantage, so far as men can make greater exertions for a short time.

The form of the windlafs determines, in combination with the preceding, the speed of operation, and the degree of power. It admits various modes: for example, one might be placed on either side of the pillars, with long handles on the winches; by which eight men can work together. This model is intended to shew considerable effects from an easy apparatus: accordingly two men lift another, and three tiers of piers: they are aided by a sufficient projection of the winches beyond the semidiameter of the boxes: this has such proportion to the height of the pulleys in the pillars, and the equal

Fire Escape

Elevator





length of the cords *aa* below them, that the whole winding is done by a few turns. The dimensions of the piers are not effected, as my experiments are not sufficient; but I estimate them so, that the elevation is at least fifty feet. The power increases, though the velocity decreases, by lessening the width of the boxes; and this can be done while their length can so correspond, that the rounds of the cords *aa* have sufficient room, when the machine is wound up.

Oblique pressures cannot arise from the principles of construction; but happen from inevitable imperfection of materials and workmanship in a small degree, which is not an object of exact calculation, but should have full allowance for its effects on the machine. The obliquity will be the greater as the folding is shallow, and the fitting is loose. The effect results jointly from the angle of declination, the length of the pier, and its moment of weight. The oblique bearings on the ends of the tongues, when the machine is wound up, will be dangerous, if these have not a competent solidity. All the piers with their moments of weight bear on the pillars; and the pressure on their pulleys is the difference between double the power and the strain of their heads, which balance is very great. This pressure remains there when the machine is wound up, in every stage of the elevation, however great. The common centre of gravity of the pulleys thus pressed, the pillars themselves, and the base, is below the pulleys. Thus the machine has a great stability, and the base is accordingly not extensive.

This machine combines these advantages: ready approach to heights otherwise not accessible without great trouble: speedy ascent and descent: convenient folding for keeping under cover, and for easy conveyance. It can be applied to several useful purposes:—Quick hoisting and lowering of things on many occasions; particularly saving of goods from upper stories in cases of conflagration: high elevation and speedy descent of signals: these being light may be raised three hundred feet, and above interjaect hills: elevation of a person for taking views; and quick descent when required; as on reconnoitring an enemy within shot: a machine calculated for lifting him at least one hundred feet by eight men can be light enough for carrying on a waggon by two horses.

ELEUTHES, a kingdom of Tartary, lying to the N.W. of Chinese Tartary. It was conquered, in 1759, by the Emperor of China. See KALMUCKS.

ELIAS, the prophet, memorable for having escaped the common catastrophe of mankind; being taken up alive into heaven, in a fiery chariot, about 895 B. C. See the Bible.

ELICHMAN (John), a native of Silesia in the 17th century, who practised physic at Leyden, and was remarkable for understanding 16 languages. He supported an opinion, that the German and Persian languages were derived from the same origin. His Latin translation of the *Tablet of Cebes*, with the Arabic version and the Greek, was printed at Leyden in 1640, under the care of Salmassius, who prefixed thereto a very ample preface.

ELISHA, the prophet, famous for the miracles he performed, died about 830 B. C. See the Bible.

ELIZABETH, queen of England, daughter of Henry VIII. and Anna Boleyn, was born at Greenwich, September 7th, 1533. According to the humour of the times, she was early instructed in the learned languages, first by Grindal, who died when she was about 17, and afterwards by the celebrated Roger Ascham. She acquired likewise considerable knowledge of the Italian, Spanish, and French languages. Dr. Grindal was also her preceptor in divinity, which she is said to have studied with uncommon application and industry. That Elizabeth became a protestant, and her sister Mary a papist, was the effect of that cause which determines the religion of all mankind; namely,

the opinion of those by whom they were educated: and this difference of opinion in their tutors, is not at all surprising, when we recollect, that their father Harry was of both religions, or of neither.

But the studies of our illustrious princess were not confined merely to languages and theology: she was also instructed in the political history of the ancients; and was so well skilled in music, as to sing and play "artfully and sweetly."

After the short reign of her brother Edward, our heroine being then about 20 years of age, her sister *firebrand* according to the crown, Elizabeth experienced a considerable degree of perfection, so as to be not a little apprehensive of a violent death. She was accused of nobody knows what; imprisoned; and, we are told, inhumanly treated. At last, by the intercession of King Philip of Spain, she was set at liberty; which she continued to enjoy, till, on the death of her pious sister, she, on the 17th of November, 1558, ascended the throne of England. Her political history, as a queen, is universally known and admired: but her attention to the government of her kingdom did not totally suspend her pursuit of learning. Ascham, in his *School-master*, tells us, that, about the year 1563, five years after her accession, she being then at Windsor, besides her perfect readiness in Latin, Italian, French, and Spanish, she read more Greek in one day, than some prebendaries of that church did read Latin in a whole week (p. 21).—She employed Sir John Fortescue to read to her, Thucydides, Xenophon, Polybius, Euripides, Æschines, and Sophocles. (*Ballard*, p. 219.)—That the Latin language was familiar to her, is evident from her speech to the university of Oxford, when she was near sixty; also from her spirited answer to the Polish ambassador in the year 1598.—And that she was also skilled in the art of poetry appears, not only from the several scraps which have been preserved, but likewise from the testimony of a cotemporary writer, Puteham, in his *Art of Engl. Poetry* (a very scarce book). These are his words:—"But, last in recital, and first in degree, is the queen, whose learned, delicate, noble muse, easily surmounteth all the rest, for sense, sweetness, or subtilty, be it in ode, elegy, epigram, or any other kind of poem," &c. In this author are to be found only a specimen of 16 verses of her English poetry. "But," says Mr. Walpole, "a greater instance of her genius, and that too in Latin, was her extempore reply to an insolent prohibition delivered to her from Philip II. by his ambassador, in this tetraic:

Te veto ne pergas bello defendere Belgas:
Quæ Dracus eripuit, nunc restituantur oportet:
Quas pater everit, jubeo te condere cælas:
Religio papæ fac restituantur ad unguem.

"She instantly answered him, with as much spirit as she used to return his invasions,

Ad Græcos, bone rex, sient mandata calendæ."

Being earnestly pressed by a Romish priest, during his peripetia, to declare her opinion concerning the real presence of Christ's body in the wafer, she answered,

Christ was the word that spake it;
He took the bread, and brake it;
And what that word did make it,
That I believe, and take it.

Fuller's Holy State.

She gave the characters of four knights of Nottinghamshire in the following distich:

Gervase the gentle, Stanhope the stout,
Markham the lion, and Sutton the lout.

Walp. Cat.

Coming into a grammar-school, the characterised three classic authors in this hexameter :

Perfius a crab-staff; bawdy Martial; Ovid a fine wag;
Full, Worth. of Warw. 126.

Sir Walter Raleigh having wrote on a window,

Fain would I climb, yet fear I to fall;

She immediately wrote under it,

If thy heart fail thee, climb not at all.

Worth. of Devonsh. 261.

Doubleless, she was a woman of singular capacity, and extraordinary acquirements; and, if we could forget the story of the Scottish Mary, and of her favourite Essex, together with the burning a few Anabaptists, we might pronounce her the most illustrious of illustrious women. She died in her palace at Richmond, the 24th of March, 1602, aged 70, having reigned 44 years; and was interred in the chapel of Henry VII. in Westminster Abbey. Her successor James erected a magnificent monument to her memory.—She wrote, 1. *The mirror, or glass of the sinful soul*. This was translated out of French verse into English prose, when she was eleven years old. It was dedicated to Queen Catharine Parr. Probably it was never printed; but the dedication and preface are preserved in the *Sylloge epistolarum*, in Hearne's edition of *Livii Fori Julenſis*, p. 161. 2. *Prayers and meditations*, &c. Dedicated to her father, dated at Hatfield, 1545. Manuscript, in the royal library. 3. *A dialogue out of Xenophon, in Greek, between Hiero a king, yet some time a private person, and Simonides a poet, as touching the life of the prince and private man*. First printed, from a manuscript in her Majesty's own handwriting, in the Gentleman's Magazine for 1743. 4. Two orations of Isocrates, translated into Latin. 5. Latin oration at Cambridge. Preserved in the king's library; also in Holinshed's Chron. p. 1206; and in Fuller's Hist. of Cambr. p. 138. 6. Latin oration at Oxford. See Wood's Hist. and Antiq. of Oxf. lib. 1. p. 289, also in Dr. Jebb's Append. to his life of Mary queen of Scots. 7. A comment on Plato. 8. *Boethius de consolatione philosophiæ*, translated into English anno 1593. 9. *Salustii de bello Jugurthino*, translated into English anno 1590. 10. A play of Euripides translated into Latin, *Cut. of Royal Auth.* 11. A prayer for the use of her fleet in the great expedition in 1590. 12. Part of Horace's art of poetry, translated into English, anno 1598. 13. *Plutarch de curiositate*, translated into English. 14. Letters on various occasions to different persons; several speeches to her parliament; and a number of other pieces.

ELIZABETH PETROWNA (daughter of Peter the Great), empress of Russia, distinguished herself by her signal clemency. She made a vow, that no person should be put to death in her reign, and she strictly observed it. The example was followed, and confirmed by law, under the late Sovereign of Russia, Catharine II. Elizabeth died in 1762, in the 21st year of her reign and 52d of her age.

ELIZABETH ISLAND, an island on the coast of Massachusetts Bay, having Cape Cod to the N. and the island of Nantucket to the E. The natives are chiefly employed in the fisheries. Long. 69. 3. W. Lat. 42. 0. N.

ELIZABETH TOWN, one of the oldest towns of the state of New Jersey; purchased of the Indians in 1664, and settled soon after. It has a handsome Presbyterian church, an episcopal church, and an academy. It is 15 miles S.W. of New York.

ELKHOLM, a sea-port of Sweden, in Blekingen, seated on the Baltic, 24 miles W. of Carlscroon. Long. 14. 50. E. Lat. 56. 20. N.

ELLERENA, an episcopal town of Spain, in Estremadura, 54 miles N. of Seville. Long. 5. 20. W. Lat. 38. 26. N.

ELLESMERE, a town in Shropshire, with a market on Tuesday. It is seated on a large mere, in a small but fertile district of the same name, 16 miles N.N.W. of Shrewsbury, and 176 N.W. of London. Long. 2. 53. W. Lat. 53. 53. N.

ELlichPOUR, a town of Hindoostan, in Berar, capital of a Circar of the same name, subject to the nizâm of the Deccan. It was formerly the capital of Berar, and is 744 miles N.E. of Aurangabad. Long. 78. 5. E. Lat. 21. 12. N.

ELLORE, the capital of one of the Northern Circars, in the peninsula of Hindoostan, 32 miles N. of Malaputnam. Long. 81. 15. E. Lat. 16. 43. N.

ELM (*Adia.*). Cit. Boucher, in a memoir read before *la Société d'Emulation at Abbeville*, has given some observations on elm-trees. These trees are frequently attacked by ulcers, from which, at length, a great number of them perish. *Du Hamel* had already endeavoured to find out the cause of this disease, and ascribed it to a plethora of the sap, an opinion which Cit. Boucher has confirmed by numerous experiments. He proposed at the same time a remedy, which he successfully applied to it. He observed that the local ulcer never attacked the trees on their north side, but always on the south side; it acts principally on trees planted in a boggy soil, and along the sides of rivers. Its seat is generally not far from the ground. This ulcer, owing to a superabundant sap, differs from a similar one, described in *Journal d'Agriculture Naturelle*, No. 5, 1789, as in this the liquor exuded to the air; soon takes the consistency of a gum, and has the flavour of sugar.—The remedy consists in boring every tree attacked by the disease, at the ulcer itself; and in applying a tube in the hole, occasioned by the borer, penetrating about nine lines in depth. The sound trees, which are also bored, afford no liquor, whereas those that are ulcerated yield it in great abundance, increasing particularly in fine weather, and when the wound is exposed to the south. Stormy weather and great winds stop the infusion. In this manner, he remarks that the ulcers dry and heal in 48 hours. It is probable, that such a trephination, tried on other vegetables, and particularly on fruit trees, will produce the same effects. Pliny, Columella, and Palladius, have already mentioned this expedient being employed by the ancients, which, however, has not been practised for many years. Cit. Boucher concludes by remarking, that this tree is a native of Europe, and has not been lately introduced into France, as is commonly supposed; but the writings of the ancients prove, that it existed there long ago.—The chemical analysis which he made of the sap, shewed that it contained a considerable quantity of acetite of potash, a little acetite of lime, a certain quantity of vegetable or mucro-faccharine matter, and a considerable proportion of muriate of lime; slight traces of sulphate and muriate of potash were likewise perceived.

ELMADIA, or MAHADIA, a town of the kingdom of Tunis, seated on the gulf of Capes. It is surrounded by the sea, is well fortified, and has a good harbour. It was taken by Emperor Charles V. but retaken soon after. Long. 8. 47. W. Lat. 35. 4. N.

ELME, St. a castle of the isle of Malta, seated on a rock near the city of Waletta, at the mouth of a very fine harbour.

ELMO, FORT, St. a fortress of France, in the department of the Eastern Pyrenees, seated on the river Tet, five miles N. of Collioure. It was taken by the Spaniards, in 1793, but retaken the next year.

ELPHIN, a town of Ireland in the county of Roscommon, and (the see of a bishop), eight miles N. of Boyle, and 16 N. of Roscommon.

ELRICH, a town of Upper Saxony, formerly the capital of the county of Klettenburg. Here are some considerable manufactures. It is 6 miles N.W. of Nordhausen.

ELSFLETH, a town of Westphalia, seated at the conflux of the Hunte and Weser, 17 miles N.E. of Oldenburg.

ELTEMAN, a town of Franconia in the bishopric of Wurtzburg, on the river Maine. Long. 10. 52. E. Lat. 50. 8. N.

ELTENBERG, a lofty and extensive mountain in the duchy of Cleves. On it is an ancient fortress. It stands at the extreme point of a promontory, six miles E. of Cleves; and is the termination of a large chain of hills that runs parallel to the E. shore of the Rhine, at the distance of ten miles from its borders.

ELTHAM, a town in Kent, with a market on Monday, eight miles S. of London. Here are the remains of a palace, in which Edward II. often resided, and his son, John of Eltham, was born. Its stately hall, till entire, is converted into a barn.

ELTZ, a town of Germany, in the bishopric of Hildesheim, seated on the Leina, ten miles S.W. of Hildesheim. Long. 10. 5. E. Lat. 52. 5. N.

ELWANGEN, a town of Suabia, with a chapter, whose provost is a prince of the Empire, and lord of the town. It is seated on the Jaxt, 17 miles S.E. of Halle, and 25 S.W. of Anspach. Long. 10. 28. E. Lat. 49. 2. N.

EMBALMING, (*Enceyl.*). On the subject of embalming, the following directions are given in the **EDINBURGH PRACTICE OF PHYSIC AND SURGERY**, &c. lately published.

"After evisceration, as has been directed in opening a dead body, and continuing the incision further upwards, even into the mouth, and, if possible, without cutting the skin of the neck, all the cavities are to be well cleansed, and the humidity sucked up with sponges, then washed with *tinct. myrrhe*, and filled with spices compounded of fragrant herbs, aromatic drugs, and gums reduced to powder not very fine, first restoring the heart to its former residence, after having opened its ventricles, cleansed and washed them with the tincture, stuffed them with the spices, and sewed them up; and then the cavities are to be stitched very close with the gloves' or spiral future. Large and deep incisions are also to be made in all the most fleshy parts, cleaning and washing them with the tincture in the same manner, filling them with the antiseptic spices, and stitching them up. Then the head, trunk, and limbs, are to be perfectly well covered with cereloth; putting a piece under the chin, to be secured by sewing on the top of the head, after having well adjusted the cap of the skull, sewed the scalp together, and cleaned the mouth, as has been directed for the other parts, and putting in some of the spices. The cereloth is to be prepared, according to art, with a composition made of wax, rosin, storax, and painters' drying oil. After the application of the cereloth, with great care and exactness, cut into suitable pieces according to the respective parts, and closing them well every-where, the face being close shaved, is to be covered with some of the above composition melted, and laid on with a brush of a proper degree of heat, and of a moderate thickness; which may have a faint flesh-colour given it with vermilion; and when it is grown cold and stiff upon this part, it may be lightly covered with hard varnish; or this varnish, applied thick, may here serve the purpose alone. A cap is to be well adapted to the head, falling down upon the neck, and to be sewed under the chin, making a few circular turns about the neck with a roller of a proper breadth. All the rest of the corpse is to be inclosed in a sheet, to be artfully cut, and sewed on very close and smooth, with the finest tape, and the *flat seam* mentioned in the preceding chapter; over which an appropriate dress is to

be put, as the relations or friends think fit to direct and appoint, and then laid into the coffin, which should be in readiness: but when it is some great personage, who is to lie in state for public view before the funeral rites are solemnized, the dress must be appropriated to his dignity and character. The brain and other viscera are to be put with some of the spices into a leaden box. Sometimes the heart, prepared as has been directed, to preserve it from putrefaction, is deposited in an urn by itself.

EMANATION, the act of flowing or proceeding from some source or origin; or the thing that proceeds from that action.

EMBANKMENT, a raised mound or body of earth, thrown up to preserve land from inundation, and thus render it fit for agricultural purposes. This is a very important branch of rural economy, and has been much encouraged in this country.

The following account of an embankment against the sea, by Mr. Anthony Tatlow, is taken from the communications to the Hon. Board of Agriculture.

"The embankment against the sea," says Mr. Tatlow, "that I mentioned when last at the Museum, is upon the estate of the earl of Ashburnham, at Pembrey, in the county of Carmarthen, whither his lordship sent me upon his coal and other business, and with directions to see if I could devise any method of preventing the sea from making further incroachment upon his property, which it had been doing for many years; and particularly in October 1795, had broke in and covered many hundred acres, damaged the houses, buildings, stack-yards, and gardens; and it was the general opinion, that a regular embankment must be formed, which would cost some thousand pounds, he having several miles of coast. The view that I first took was upon a very windy day, and the shore an entire sand, which extended at low water many miles. In riding along, I perceived that any piece of wood, or accidental impediment to the course of the land, raised a hill: it immediately occurred to me, that by making a hedge at the weak and low places, with wings to catch the sand as the wind blew it in different directions, I should obtain the desired effect. I therefore directed stakes nine feet long to be cut, and driven one foot and a half into the sand, at two feet and a half distance from each other; betwixt which I had furze interwove, so as to form a regular furze hedge seven feet and a half high. Of this, since last June, I have done eleven hundred and thirty-seven yards; and in October last when I was there, a great deal of the hedge was covered, and since that time I am informed by letter, that a great deal more of it is so; and that the neighbouring inhabitants draw great comfort to themselves, from the security my furze embankment gives them, as its present appearance plainly evinces, that at a trifling expence I can secure Lord Ashburnham's estate from being inundated; for, whenever the first hedge is not high enough to prevent the sea overflowing, another may be built upon the sand formed by that hedge, and so on in succession, till it is perfectly safe."

EMBO, a village near Brora, on the E. coast of Sutherlandshire. Here a person was burnt, in 1727, for the imaginary crime of witchcraft; the last instance of these fanatic executions in Scotland.

EMBOLY, a town of Macedonia, with a Greek archbishop's see. It is the ancient Amphipolis; and is sometimes called Christopolis. It is seated on the Stromona, 40 miles N.E. of Salonichi. Long. 23. 55. E. Lat. 40. 59. N.

EMBS, a river of Westphalia, which rises in the county of Lippe, and falls, at Embden, into the Dollart, a bay of the German Ocean.

EMBS, or **EMS**, a town of Suabia, capital of a county of the same name. Near it are some baths impregnated with sulphur. It is 10 miles S. of Bregentz.

EMERALD (*Encycl.*). Cit. Vauquelin has lately discovered *chrome and a new earth in the emerald*, and asserts that he formerly found these substances in the beryl. He also states the analysis of the pulverulent chlorite, which contains 26 parts of silex, 18.5 of alumine, 8 of magnesia, 43 of oxyd of iron, 2 of muriate of soda, or potash, and 2 of water; a result which is different from all that have hitherto been given in the analysis of chlorites. He attributes this difference, rather to the nature of this apparently mixed earth than to the inaccuracy of chemical operations.

EMESSA, a town of Syria, in the government of Damascus. There are still noble ruins, that shew it was anciently a magnificent city.

EMPOLI, a town of Tuscany, with a bishop's see, seated on the Arno, 17 miles S.W. of Florence. Long. 11. 6. E. Lat. 43. 42. N.

ENCKHUYSEN, a sea-port of N. Holland, on the Zuider-Zee. It was once a flourishing place; but its harbour being now obstructed by sand, it has lost its former consequence. It is 25 miles N.E. of Amsterdam. Long. 5. 4. E. Lat. 52. 45. N.

ENDEAVOUR STRAIT, a strait of the S. Pacific Ocean, which separates New Guinea from New Holland. It received its name from Captain Cook, who explored it in 1770. Its length is 10 leagues, and its breadth about five, except at the N. E. entrance, where it is contracted to less than two miles, by the islands called Prince of Wales' Islands.

ENDINGEN, a town of Suabia, in Austrian Brigauf, formerly free and imperial. It is seated near the Rhine, 10 miles below Brisaach.

ENFIELD, a town in Middlesex, with a market on Saturday. It was once famous for an extensive royal chase, disforested in 1779. Here was a royal palace, whence Edward VI. went in procession to the Tower, on his accession to the throne. After the death of Queen Elizabeth, it was alienated from the crown; and only a small part of it is left standing, the whole of the front having been taken down, in 1792, and its site occupied by some houses. It is 10 miles N. of London. Long. 0. 2. E. Lat. 51. 41. N.

ENGADINA, a country of the Grisons, in the mountains of the Alps. It is divided into Upper and Lower, extending along the banks of the river Inn, from its source to the Tyrolite. Upper Engadina is a beautiful valley; yet, on account of its elevation, produces nothing but rye and barley. The winter sets in early, and ends late here, during which time sledges are the common vehicles. Even in summer, the air is cold and piercing, and the corn occasionally much damaged by the hoar frost.

ENGELBERG, a valley of Switzerland, 10 miles long, entirely surrounded by very lofty and barren mountains, and bounded by the cantons of Bern, Uri, and Unterwalden. It is subject to the abbot of a Benedictine monastery of the same name, who is under the protection of the cantons of Lucern, Uri, Schwitz, and Unterwalden; but in spiritual concerns he submits to the jurisdiction of the Bishop of Constance. His revenues are very considerable, and arise principally from his commerce in cheeses. The naturalist will find this a very interesting country. Glaciers, of a very great extent, and extremely diversified, are found on the sides of very fertile mountains, and exhibit singular points of view. There is abundance of fine black marble, white veined; a vitriolic earth, slate impregnated with vitriol; small crystals, called Swiss diamonds; silver, and vitriol. The abbey is 12 miles S.W. of Altdorf. See **TITLISBERG**.

ENGERS, a town of Germany in the electorate of Treves, capital of a county of the same name. It is seated on the Rhine, 10 miles N. of Coblenz. Long. 7. 32. E. Lat. 50. 35. N.

ENGHEIN, a town of Austrian Hainault, near which was fought the famous battle of Steenkirk. It is 15 miles S.W. of Brussels. Long. 4. 5. E. Lat. 50. 42. N.

ENGIA, or **ENGINA**, an island of Turkey in Europe, in a gulf of the same name, between Livadia and the Morea. There is a town upon it of the same name, 22 miles S. of Athens. Long. 23. 59. E. Lat. 37. 45. N.

ENGROSSING, the writing a deed over fair, and in proper legible characters. Among lawyers it more particularly means the copying fair upon parchment, or stamped paper, any writing or legal instrument or conveyance. Engrossing is the business of the law-stationer.

ENKIOPING, a town of Sweden, in Uppland, on the N. side of Lake Maelar, 21 miles S.W. of Upsal.

ENNIS, a borough of Ireland, in the county of Clare. It is large and populous, and situate on the Fergus, which is navigable for large boats from the Shannon, and adds greatly to the trade of the town. It is 17 miles N.W. of Limerick. Long. 8. 54. W. Lat. 52. 49. N.

ENNISCORTHY, a borough of Ireland, in the county of Wexford, where is a manufacture of coarse woollen cloth, and some considerable iron works. It is situate on the Slaney, close under Vinegar-hill, where the Irish rebels were entirely defeated on June 21, 1798. It is 10 miles N. of Wexford, and 27 N.E. of Waterford.

ENO, or **ENOS**, a town of Romania, near the gulf of Enos, with a Greek archbishop's see, 125 miles W. of Constantinople. Long. 26. 15. E. Lat. 40. 46. N.

ENOCH (the Prophecy of); an apocryphal book, of which there remains but a few fragments.

Enoch was certainly one of the most illustrious prophets of the first world, since Moses says of him, that *he walked with God*. This prophet is famed in, the church for two things: The first is, his being taken up into heaven, without seeing death (Heb. xi. 5.); the second is, his prophecy; a passage of which St. Jude has cited in his epistle, ver. 14. The ancients greatly esteemed the prophecy of Enoch. Tertullian, on the authority of this book, deduces the original of idolatry, astrology, and unlawful arts, from the revolted angels, who married with the daughters of men. And it is on the testimony of this book, that the fathers of the 2d and 3d centuries, as Irenaeus, Cyprian, and Lactantius, received for true this fable of the marriage of the angels with the daughters of men. St. Augustin, who was less credulous, allows, indeed, that Enoch wrote something divine, because he is cited by St. Jude; but insinuates, that the authority of this book is doubtful, and that it cannot be proved that it was really written by Enoch. Indeed, the account it gives of giants engendered by angels, and not by men, has manifestly the air of a fable; and the most judicious critics believe, it ought not to be ascribed to Enoch.

ENSENE, a town of Egypt, on the E. side of the Nile, 120 miles S. of Cairo. Long. 30. 54. E. Lat. 28. 5. N.

ENSKIRKEN, a town of Germany, in the duchy of Juliers, 15 miles S.W. of Cologne. Long. 6. 19. E. Lat. 51. 0. N.

ENSTORF, a town of the upper palatinate of Bavaria, 22 miles N. of Ratibon.

ENT (Sir George), an eminent English physician, born at Sandwich in Kent in 1604. He was educated at Sidney College, Cambridge; and, afterwards travelling into foreign countries, received the degree of doctor of physic at Padua. After his return he obtained great practice, was made president of the College of Physicians in London, and at length received the honour of knighthood from King Charles II. He was extremely intimate with Doctor Harvey; whom he learnedly defended in a piece entitled, *Apologia pro Circulatione Sanguinis, contra Æmilium Panisæum, Animadversiones in Malacchie*

Thrustoni; and some observations in the Philosophical Transactions. Glanville, speaking of his Plus Ultra of the modern improvements in anatomy, numbers Sir George Ent, Doctor Glisson, and Doctor Wallis, with the most celebrated discoverers in that science. The two former were among the first members of the Royal Society. Sir George Ent died in October 1689.

ENTRE-DOUERO-E-MINHO, a province of Portugal, 45 miles in length, and 35 in breadth. Braga is the capital.

ENTRY of an *Heir*, in Scots law, that form of law by which an heir vests in himself a proper title to his predecessor's estate.

EPERIES, a town of Upper Hungary, capital of the county of Saros, remarkable for its mines of salt. It is seated on the Tuzsa, 20 miles N. of Cassovia. Long. 21. 13. E. Lat. 49. 8. N.

EPERNAY, an ancient town of France, in the department of Marne. It was taken by Henry IV. in 1592, when Marshal Biron was killed, while that monarch had his hand on his shoulder. The wines produced in its neighbourhood are very exquisite. It is 17 miles N.W. of Chalons. Long. 4. o. E. Lat. 49. 6. N.

EPINAL, a town of France, in the department of the Vosges, and famous for its paper mills. It was taken by Marshal Cressy, in 1670, when its fortifications were dismantled. It is seated on the Moselle, near the mountains of the Vosges, 35 miles S.E. of Nancy. Long. 6. o. E. Lat. 48. 4. N.

EPIPHANIUS (St.), an ancient father of the church, born at Befanducan, a village in Palestine, about the year 332. He founded a monastery near the place of his birth, and presided over it. He was afterwards elected bishop of Salamis; when he sided with Paulinus against Meletius, and ordained in Palestine, Paulinian, the brother of St. Jerom; on which a contest arose between him and John bishop of Jerusalem. He afterwards called a council in the island of Cyprus, in which he procured a prohibition of the reading of Origen's writings; and made use of all his endeavours to prevail on Theophilus bishop of Alexandria to engage St. Chrysostom to declare in favour of that decree: but not meeting with success, he went himself to Constantinople, where he would not have any conversation with St. Chrysostom; and formed the design of entering the church of the apostles, to publish his condemnation of Origen: but being informed of the danger to which he would be exposed, he resolved to return to Cyprus; but died at sea, in the year 403. His works were printed in Greek, at Basil, 1544, in folio; and were afterwards translated into Latin, in which language they have been often reprinted. Petavius revised and corrected the Greek text by two manuscripts, and published it together with a new translation at Paris in 1622. This edition was reprinted at Cologne in 1682.

EPIRUS (*Encyel.*). This country, according to Josephus, was first peopled by Donanion, the son of Javan and grandson of Japhet. The people were very warlike: but they continued in their savage state long after their neighbours were civilized; whence the Islanders used to threaten their offenders with transportation to Epirus. Their horses were in great request among the ancients, as well as the dogs produced in one of the divisions called *Molossus*; and hence these dogs were called by the Romans *Molossi*.

The history of Epirus commences with the reign of Pyrrhus, the son of Achilles by Deidamia the daughter of Lycomedes king of Scyros. He is said to have behaved with great bravery at the siege of Troy; but it would appear that he behaved with no less barbarity. After the city was taken, he is said to have killed old King Priam with his own hand; to have thrown Aityanax the son of Hector and Andromache headlong

from an high tower; and sacrificed Polyxena the daughter of Priam on the tomb of her father. He carried Andromache with him into Epirus, where he settled by the advice of the famous soothsayer Helenus, one of Priam's sons, who had served during the Trojan war both under his father and himself. The only remarkable period of the history of Epirus is the reign of Pyrrhus II. who made war upon the Romans. He was invited into Italy by the Tarentines; and embarked about 280 B.C. After having escaped many dangers by sea, he landed in that country, and with great difficulty gained a victory over the Romans; but he was afterwards utterly defeated by them, and obliged to return into his own country. To retrieve his honour, he then undertook an expedition against Macedon; where he overthrew Antigonus, and at last made himself master of the whole kingdom. He then formed a design of subduing all the other Grecian states; but met with such an obstinate resistance at Lacedaemon, that he was obliged to drop the enterprise; and was soon after killed at the siege of Argos, by a woman, who from the wall threw a tile upon his head. Deidamia, the grand-daughter of Pyrrhus, was the last that sat on the throne of Epirus. She is said to have been murdered after a short reign; upon which the Epirotes formed themselves into a republic.

Under the new form of government Epirus never made any considerable figure, but seems rather to have been dependent on the kingdom of Macedon. The Romans having conquered Philip king of that country, restored the Epirotes to their ancient liberty; but they, forgetful of this favour, soon after took up arms in favour of Perseus. As a punishment for this ingratitude, the Romans gave orders to Paulus Emilius, after the reduction of Macedon, to plunder the cities of Epirus, and level them with the ground. This was punctually executed throughout the whole country on the same day, and at the same hour. The booty was sold, and each foot-soldier had 200 denarii, that is, six pounds nine shillings and two pence, and each of the horse the double of this sum. An hundred and fifty thousand men were made slaves, and sold to the best bidder for the benefit of the republic. Nor did the vengeance of Rome stop here; all the cities of Epirus, to the number of 70; were dismantled, and the chief men of the country carried to Rome, where they were tried, and most of them condemned to perpetual imprisonment. After this terrible blow, Epirus never recovered its ancient splendor. Upon the dissolution of the Achaean league, it was made part of the province of Macedon; but when Macedon became a diocese, Epirus was made a province of itself, called the province of *Old Epirus*, to distinguish it from *New Epirus*, another province lying to the east of it. On the division of the empire, it fell to the emperors of the East, and continued under them till the taking of Constantinople by the Latins, when Michael Angelus, a prince nearly related to the Greek emperor, seized on Etolia and Epirus, of which he declared himself despot or prince; and was succeeded by his brother Theodorus, who took several towns from the Latins, and so far enlarged his dominions, that, disdaining the title of *despote*, he assumed that of *emperor*, and was crowned by Demetrius archbishop of Bulgaria. Charles, the last prince of this family, dying without lawful issue, bequeathed Epirus and Acarnania to his natural sons, who were driven out by Amurath the Second. Great part of Epirus was afterwards held by the noble family of the Castriots; who, though they were masters of all Albania, yet styled themselves princes of Epirus. Upon the death of the famous George Castriot, surnamed *Scanderbeg*, Epirus fell to the Venetians, who were soon dispossessed of it by the Turks; in whose hands it still continues, being now known by the name of *Albania*, which comprehends the Albania of the ancients, all Epirus, and that part of Dalmatia which is subject to the Turks.

EPISCOPIUS (Simon), one of the most learned men of the 17th century, and the chief supporter of the Arminian sect, was born at Amsterdam in 1583. In 1612 he was chosen divinity professor at Leyden, in the room of Gomarus, who resigned; and the functions of his office, with his private studies, were light burthens to him, compared with the difficulties he sustained on account of the Arminian controversy: which, though it began in the universities, soon flew to the pulpits, from whence it spread and inflamed the people. The states of Holland having invited Episcopius to take his place at the synod of Dort, he went thither accompanied by some remonstrant ministers; but the synod would not allow them to sit as judges, nor to appear in any other capacity than as persons summoned before them: they submitted, were deposed from their functions, and banished the territories of the commonwealth. Episcopius and his persecuted brethren retired to Antwerp; but the times growing more favourable, he returned to Holland in 1626, and was made minister of the church of the Remonstrants at Rotterdam: in 1634, he was chosen rector of the college founded by his sect at Amsterdam, where he spent the remainder of his days. He died in 1643, of the same disorder which had killed his wife before, a retention of urine; having lost his sight some weeks previous to his end. The learned have bestowed great eulogiums on Episcopius; but he did not always write with that moderation which might have been wished. His works make two volumes in folio, of which the second consists of posthumous publications.

EPPING, a town in Essex, with a market on Friday. The butter made in this neighbourhood, and called Epping butter, is highly esteemed in London. Epping is seated at the N. end of a forest of the same name, 17 miles N.N.E. of London. Long. 0. 9. E. Lat. 51. 46. N.

EPING-FOREST, a fine forest in the S.W. of Essex, formerly a much more extensive district, that contained a great part of the county. It then went by the name of the Forest of Essex; and afterwards, when its boundaries had been considerably contracted, it had the name of Waltham Forest, from its vicinity to Waltham Abbey.

EPPINGEN, a town in Germany, in the palatinate of the Rhine, with a castle, seated on the Elfsat, 20 miles N.E. of Philipburg. Long. 9. 0. E. Lat. 49. 24. N.

EPULONES, in Roman antiquity, ministers who assisted at the sacrifices, and had the care of the sacred banquet committed to them.

EPWORTH, a village of the Isle of Axholm, in Lincolnshire, nine miles N. of Gainsborough. It is the birth place of John Wesley, one of the founders of the sect of the methodists.

ERBACH, a town of Franconia, capital of a county of the same name, 16 miles N.N.E. of Heidelberg, and 20 N.E. of Mannheim.

ERIBOL, Loch, an arm of the sea, on the N. coast of Sutherlandshire, capable of affording a safe retreat to the largest vessels. It receives several streams; particularly that which flows from a lake called Loch Hope.

ERICHT, Loch, a lake in the district of Athol, Perthshire. It extends several miles into Invernesshire. Near this place wandered the fugitive Pretender, in 1746, lurking in caves, and among rocks. The waters of this lake descended into another, called Loch Rannoch.

ERISSO, a town of Macedonia, with a bishop's see, at the bottom of the gulf of Monte Sancto.

ERITH, a village in Huntingdonshire, on the Ouse, five miles E.N.E. of St. Ives. Near this place is a piece of antiquity called Belfar's Hill, an artificial mount, generally supposed to be the place where the people took up arms against

William the Norman, in 1066, after he defeated Harold at the battle of Hastings.

ERIVAN, a city and the capital of Persian Armenia, in a province of the same name, with an Armenian patriarch. It is defended by a fortress, in which is the governor's palace, and by a castle, on the river Zengui, near a lake of its own name, which is very deep, and 60 miles in circumference. The Meidan is an open square, 400 paces over, wherein are very fine trees. The baths and caravansaries have their beauties, but the churches of the Christians are small, and half under ground. It is 105 miles N.W. of Astrabad. Long. 44. 10. E. Lat. 40. 20. N.

ERKELENS, a town of Westphalia, in the duchy of Juliers, with a castle, seated on the Roer, 10 miles N.W. of Juliers. Long. 6. 35. E. Lat. 51. 4. N.

ERLANG, a town of Franconia, in the marquisate of Culmbach, seated on the Regnitz, 12 miles N.W. of Nuremberg. Long. 11. 5. E. Lat. 49. 35. N.

ERMELEND, a country surrounded by Prussia, formerly subject only to the bishop and chapter, and called the bishopric of Ermeland, but now become a province of Prussia.

ERNEE, a town of France, in the department of Mayenne, situate on the Mayenne, 15 miles N.N.W. of Laval. Long. 0. 48. W. Lat. 48. 19. N.

ERPACH, a town of Franconia, capital of a county of the same name, with a castle, 30 miles S.E. of Francfort. Long. 0. 10. E. Lat. 40. 32. N.

ERQUIKO, a sea-port of the Red Sea, on the coast of Abex, subject to Turkey. It is 320 miles S.W. of Mecca. Long. 39. 5. E. Lat. 17. 30. N.

ERROMANGO, one of the New Hebrides, in the South Pacific Ocean. Long. 169. 19. E. Lat. 18. 47. S.

ERZERUM, a city of Turkish Armenia, with Armenian and Greek episcopal sees. It is situate between the two sources of the Euphrates, in a beautiful plain, at the foot of a chain of mountains, fruitful in all sorts of corn. It is surrounded by double walls, defended by square towers. The Turks, who are all janissaries, are about 12,000 in number; but most of them are tradesmen, and receive no pay. The Armenians have two churches, the Greeks but one: the latter are mostly braziers, and live in the suburbs. A great trade is carried on here in furs, Persian silks, cottons, calicoes, and drugs. This town is a thoroughfare, and a resting-place for the caravans to the East Indies. It is 104 miles S. by E. of Trebizond. Long. 40. 35. E. Lat. 39. 56. N.

ESCALONA, a town of Spain, in Old Castile, 14 miles N.N.E. of Sagovia.

ESCALONA, a town of Spain, in New Castile, surrounded with walls. It is situate on an eminence, in a fertile country, near the Albreche, 20 miles N.W. of Toledo, and 32 S.W. of Madrid.

ESCAPE, or **FIRE-ESCAPE**, a contrivance for removing persons and their property safely from the upper windows of a house on fire. Several methods of doing this have been suggested by different persons. The following description of a machine for saving persons from the upper stories of a house on fire, by Dr. Collin, appears in the Transactions of the American Philosophical Society, who rewarded the inventor with their gold medal.

A BCC (Plate 27) is a trunk with a socket from top to bottom, and two pulleys *a, a*, in the sides C, C. In this cylindrical shaft DE moves, supported on the pulleys by two ropes. These are by one end tacked to the foot of the shaft, and by the other to the axes of the windlasses I, I, which stand below. The cranks, winding the ropes round the axes, lift the foot of the shaft to the pulleys, and by unwinding let it down to the bottom.

FE $\bar{G}$ is a lever, turning on its fulcrum, which is fixed on the top of the shaft, by the iron tire d . The long arm is pressed by the frame at its end: the short one is held in balance by the rope GH, which is fastened on the base of the machine. As the lever descends with the shaft, the rope slackens on the short arm; then the other, no longer balanced, descends round the fulcrum, and by this motion turns the short one upwards tight against the rope. Their angular contrary movements continue thus, until the shaft reaches the bottom of the socket; and the basket at the same time comes to the ground.

The base is a rectangular plank floor with a compact frame underneath. The trunk is fixed in it, by several braces c , and other usual fastenings, both above and below, stranding somewhat from the centre towards the rope GH, in order to counteract its raising that end.

The windlasses are firmly set in the floor, near the trunk, directly under the pulleys.

The wheels are low and strong, placed near the corner of the base. They have locks, to be used when the machine is loading.

The basket is breast-high, and wide enough for four persons. The three iron rods keep it more steady than cords would; and their openings admit one person at a time. It hangs free from the end of the lever.

The principles of this construction arise from the requisite properties of this machine: it must be speedily brought; readily fitted; practicable in confined places; want no support from the wall; reach a considerable height, and also project over obstacles on or above the ground; take down several persons at once, and without any exertion of theirs. The two vertical pieces folded, with the lever oblique, can both be hoisted and easily carried: when put in action, they expand gradually; and the lever is high when at full length. The base may be convenient, because its own weight, with the trunk and the four men at the windlasses keep the centre of gravity pretty low; and all the pressures bear perpendicular on the longer face. Besides, people may sit down on the sides, or hold it by handspikes, which may be kept on it, and when wanted, put into holes near the margins, so as to project outwards. A level position being very necessary, a plumb rule should also be hung on the trunk.

The cylindrical form of the shaft and socket procures an easy gliding motion, that lessens the occasional sideway bearings. It is also less alterable by wear, and change of weather; it makes the shaft more solid, and thus requires less bulk in both pieces. The two quarters of the trunk which are fit for a communication of the ropes with the shaft, will yet be strong enough by the solid piers that bear the pulleys. The other two have sufficient firmness against oblique pressures, arising from the action of the machine, or from the casual inclination of the base. The part from the brim to the pulleys inclusively is fortified by the iron-band BB, to secure the shaft when drawn up. The height of that piece, its own weight, the pressure on its head, and the obliquity of the frame at the time, together with probable external accidents, will determine the width; it need perhaps not exceed a fifth of the part below.

The trunk and shaft require stiff and hard materials. The lever being made of tough wood, may be further strengthened by iron plates. The solidity and shape of the fulcrum and arms must be carefully proportioned to their respective weights.

The shaft, when down, reaches beyond the trunk so much as to clear the lever of the piers. This added to the distance of the brim from the pulleys, is the difference between the shaft and their height aa . The altitude aE is therefore aa

doubled and that surplus. If the shaft bore a greater proportion in effecting this altitude, it must be longer; consequently it would, when standing, hold the arm further from the ground, and render that piece, with itself, less portable; and, when up, increase the weight on the fulcrum, and the pressure against the socket.

The arm EF rises from aE on an angle about fifty degrees with the horizon, thus making a good projection, and a considerable increase of altitude. Its proportion to the shaft and angle with it when down, are such as to set the basket on the ground.

These angles, the shaft, and the space aa (its elevation), accord in adjusting the proportion of $E\bar{G}$, and the position of the rope. When the lever descends, the arm EG opens and throws out the rope, keeping it stretched all the while. This makes it describe a circular arch. The lever having come to a horizontal position, the arm by the continued rotation returns towards the line aE , and makes the rope retrace the arch until the shaft is down. If the reversed angle of the arm is then equal to $aE\bar{G}$, the rope comes to the point G , from whence it went, if less it goes beyond. In the first case $E\bar{G}$ is the side of a triangle which has aa for its base and two angles equal to $aE\bar{G}$; in the second it is less than this side. As the elevation of EF is not above 50, its complement $aE\bar{G}$ (40) is greater than the angle of EF with the shaft, which with that span would hold the arm too high from the ground. It consequently exceeds the reversed angle, which (being opposite) is equal with this. Therefore the short arm is less than the said side, but the difference is not great.—The situation of the shaft being most critical in the highest elevation, the rope should then allow the lever very moderate rotation, and thus lessen the kicking of the weight against the fulcrum. Its position will therefore be nearly perpendicular, when the descent begins, that the arch, immediately falling, or rising very little, may keep down the end of $E\bar{G}$. This position requires a moderate elevation of EF, for if the angle $DE\bar{G}$ is too contracted, $E\bar{G}$ will project far beyond the foot of the rope, in and about its horizontal passage; and thus produce a detrimental obliquity. It also limits the fall of EF, by regulating the reversed angle; for the nearer the point G returns to the shaft, the further it goes from the rope, and the more oblique is the outward draught.

The obliquity of draught admitted in this machine, appears easy on the model: trials may prove a greater elevation of the lever practicable. The proportion of the short arm is sufficient while the whole weight to be wound up does not exceed that of twelve persons: for so much, at least, four hands at the windlasses are competent. If the rope is drawn by hands, this arm must still, for the sake of convenient carriage, be much shorter than the other; and accidents of mismanagement might happen, which the fixed rope prevents: it is prudent to adjust the machine with all the powers it can exercise; especially as it must be used on the dismal occasion of nocturnal conflagrations.

In considerable towns the houses differ so much in height, that machines of two sizes are necessary. The larger should be competent for the third or fourth stories in the highest buildings, according to their dimensions, and the practicable size of the three pieces; and the smaller for those in the lowest. As both have several degrees of elevation, they will also suit inferior stories respectively, and thus take in all the different heights. The basket must ascend so near beneath the window, that the persons may, without fear, get in, and descend so low that they may get out. For the last arm cannot be long enough, when great altitudes demand very high shafts; then a rope ladder may be fixed on the basket, and let down when the machine stops; ten feet from the ground,

if necessary. As the dimensions of the lever and shaft of large machines demand great solidity, their weight will bear a considerable proportion of the whole that is wound up. One or two persons more in the basket would proportionably less increase the whole. Their bafes will also be wide enough for two men at each of the four cranks. The smaller machines must support the weight of four full-grown persons, as the fire may prevent a second going up. Their bafes are to be fitted for narrow alleys, and crowded places.

Much property might be saved from the fire by machines of a similar construction with this, having a capacious basket, and capstans instead of windlasses. The combination of perpendicular and lateral movements may also be applied to many other valuable purposes.

Perpendicular lines being dropped from the point G to the bafe, the squares of these, and the squares of the distances of their ends from the foot of the rope, are jointly equal to the square of the rope. The square of EG is likewise equal to those of its lines. When the shaft is drawn up, the perpendicular height of the rope differs from the joint heights of the shaft and pulleys by the cosine of DEG; and when the shaft is down, it is equal to the height of this piece, joined to the cosine of the reversed angle. The sines of these angles are equal to the distances between the ends of the said perpendiculars and the centre of the trunk's bottom. Taking the value of the rope in the two cases, gives this equation:

$$\begin{aligned} a^2 + 2 \text{ shaft} \times a a &= \\ 2 a E \times \cos. DE & \\ + 2 f h \times \cos. \text{rev. ang.} & \\ + 2 a H \times \sin. DEG - \sin. \text{rev. a.} & \end{aligned} \quad \left. \begin{array}{l} \\ \\ \\ \end{array} \right\} EG.$$

This will guide the choice of angles, proportion of EG, and position of the rope.

ESCAPEMENT (*Encycl.*), a part of the machinery of a watch. See WATCH. The following description of a new escapement for watches appears in the Transactions of the Society for the Encouragement of Arts, Manufactures, and Commerce; and thirty guineas were voted to Mr. De LaFont for this invention.

"Having considered the perfection of chronometers," says the author, "to consist more in giving an equal impulse to the balance than to any other general cause, I present to the society the model of a new escapement, which has not only the property of correcting the errors of the main-spring, train of wheels, &c. and giving an equal power to the balance, but likewise the wheels are locked, without spring-work, perfectly safe from getting out of order, and are unlocked with less power than in any escapement I know, as the wheels do not bear against the locking with more than a tenth part of the whole pressure from the main-spring; a circumstance I believe to be perfectly new.

"Although the giving an equal impulse to the balance has been already most ingeniously done by Mr. Mudge and Mr. Haley (from whose great merit I would not wish to detract), yet the extreme difficulty and expence attending the first, and the very compound locking of the second, render them far from completing the desired object.

"The perfections and advantages arising from my improvements on the remontoire detached escapement for chronometers, which gives a perfectly equal impulse to the balance, and not only entirely removes whatever irregularities arise from the different states of fluidity in the oil, from the train of wheels, or from the main-spring, but does it in a simpler way than any with which I am acquainted. I trust it will not be thought improper in me to answer some objections made at the examinations before the committee, as I am fully persuaded the more mathematically and critically the improvements are investigated, the more perfect they will prove to be.

"It was first observed, that my method did not so completely detach the train of wheels from the balance as another escapement then referred to. I beg leave to remark, that the train of wheels in mine is prevented from pressing against the locking, by the whole power of the remontoire-spring; so that the balance has only to remove the small remaining pressure, which does away that objection, and also that of the disadvantage of detents, as this locking may be compared to a light balance turning on five pivots, without a pendulum-spring; and has not only the advantage of banking safe at two turns of the balance, and of being firmer, and less liable to be out of repair than any locking where spring-work is used, but likewise of unlocking with much less power.—It was then observed, it required more power to make it go than usual. Permit me to say, it requires no more power than any other remontoire escapement, as the power is applied in the most mechanical manner possible.—And, lastly, it was said, that it set or required the balance to vibrate an unusually large arch before the piece would go. This depends on the accuracy of the execution, the proportionate diameter and weight of the balance, the strength of the remontoire-spring, and the length of the pallets. If these circumstances are well attended to, it will let but little more than the most generally detached escapements."

In plate 26, A. shews the escape-wheel.

B. the level pallet, on an arbor with fine pivots, having at the lower end.

C. The remontoire or spiral spring fixed with a collar and stud, as pendulum-springs are.

D. The pallet of the verge, having a roller turning in small pivots for the lever pallet to act against.

E. Pallets to discharge the locking; with a roller between, as in fig. 4.

F. The arm of the locking pallet continued at the other end to make it poise, having studs and screws to adjust and bank the quantity of motion.

a and b. The locking pallets, being portions of circles, fastened on an arbor turning on fine pivots.

G. The triple fork, at the end of the arm of the locking pallets.

The centre of the lever-pallet in the draft, is in a right line between the centre of the scape-wheel and the centre of the verge, though in the model it is not: but may be made so or not, as best suits the calliper, &c.

The scape-wheel A, with the tooth 1, is acting on the lever-pallet B, and has wound up the spring C; the verge-pallet D (turning the way represented by the arrow) the moment it comes within the reach of the level pallet, the discharging pallet E, taking hold of one prong of the fork, removes the arm F, and relieves the tooth 3 from the convex part of the lock a. The wheel goes forward a little, just sufficient to permit the lever-pallet to pass, while the other end gives the impulse to the balance: the tooth 4 of the wheel is then locked on the concave side of the lock b, and the lever-pallet is stopped against the tooth 5, as in fig. 3. So far the operation of giving the impulse, in order again to wind the remontoire-spring (the other pallet at E, in the return, removing the arm F the contrary direction), relieves the tooth 3 from the lock b. The wheel again goes forward, almost the whole space, from tooth to tooth, winds the spiral-spring again, and comes into the situation of fig. 1, and thus the whole performance is completed. The end of the lower pallet B resting on the point of the tooth 1, prevents the wheel exerting its full force on the lock a, as in fig. 1. The same effect is produced by the pallet laying on the tooth 5, by preventing the wheel from pressing on b; and thus the locking becomes the tightest possible. This escapement may be much simplified by putting a spring with a pallet made in it, as in fig. 5, instead of the lever-pal-

let, and spiral-spring. The operation will be in other respects exactly the same, avoiding the friction of the pivots of the lever-pallet. This method I prefer for a piece to be in a state of rest, as a clock; but the disadvantage, from the weight of the spring in different positions, is obvious.

The locking may be on any two teeth of the wheel, as may be found most convenient.

ESCHELLES, a town of Savoy, on the frontiers of Dauphiny, 10 miles S.W. of Chambery. Long. 5. 45. E. Lat. 45. 30. N.

ESCHWEGEN, a town of Germany, in the Landgrave of Hesse-Cassel, seated on the Werra, 22 miles S.E. of Hesse-Cassel. Long. 10. 6. E. Lat. 51. 9. N.

ESCHWEILER, a town of Westphalia, in the duchy of Juliers, 6 miles S. of Juliers.

ESENS, a town of Westphalia, in East Friesland, on the German Ocean, 20 miles N. of Embden. Long. 7. 14. E. Lat. 53. 47. N.

ESFARAIN, a town of Persia, in Korasan, famous for the great number of writers it has produced. It is 90 miles E. of Afrabad. Long. 41. 23. E. Lat. 36. 48. N.

ESGUEYRA, or **ESCUERIA**, a town of Portugal, in Beira, eight miles S. of Aveiro.

ESHER, a village in Surrey, on the river Mole, five miles S.W. of Kingston. It is distinguished by a noble Gothic mansion, the two towers of which are as they were originally built by Cardinal Wolsey.

ESKDALE, the most easterly division of Dumfriesshire, so named from the river Esk, which flows through it, in a course of 20 miles, to the town of Langholm.

ESKISHEHR, a town of Natolia, on the river Sakaria, 176 miles S.E. of Constantinople. Long. 30. 58. E. Lat. 39. 48. N.

ESLINGEN, a large Imperial city of Suabia, in the duchy of Wirtemberg. Here are several convents, but the inhabitants are chiefly Protestants. It is seated on the Neckar, eight miles S.E. of Stutgard. Long. 9. 20. E. Lat. 48. 47. N.

ESOPUS, a town of the state of New York, on a river of the same name, 76 miles N. of New York.

ESPALION, a town of France, in the department of Aveiron, 14 miles N.N.E. of Rhodéz. Long. 2. 40. E. Lat. 43. 32. N.

ESPERIE, a town of Hungary, near which are some famous salt mines. It is 22 miles N. of Cschaw. Long. 21. 38. E. Lat. 49. 5. N.

ESPERNON, a town of France in the department of Eure and Loire, seated on the Gueule, 12 miles N.E. of Chartres. Long. 1. 44. E. Lat. 48. 36. N.

ESPIERS, a town of Austrian Flanders, where a river of the same name falls into the Scheld, eight miles N. of Tournay. Long. 3. 25. E. Lat. 50. 53. N.

ESPOSENDA, a sea-port of Portugal, in Entre-Duero-e-Minho, at the mouth of the Cavado, 22 miles N. of Oporto, Long. 8. 21. W. Lat. 41. 32. E.

ESSECK, a trading town of Sclavonia, with a strong castle. It has a bridge over the marshes, 8865 geometrical paces in length and 15 in breadth, with towers at a quarter of a mile distant from each other, and handiomey raised on each side. It is a difficult pass, and there have been several battles fought here between the Turks and Germans. There are trees in all the streets of the town, which was taken from the Turks in 1687, since which time it has continued in the hands of the house of Austria. It is seated on the river Drave, 80 miles W. by N. of Belgrade, and 175 S. by E. of Vienna. Long. 19. 58. E. Lat. 45. 40. N.

ESSEN, a town of Westphalia in the duchy of Cleves, formerly Imperial, but now subject to the abbots of Essen.

It is eight miles E. of Duisburg. Long. 7. 4. E. Lat. 51. 22. N.

ESTAPO, a strong town of New Spain, seated at the mouth of the river Tlaluc, 230 miles S.W. of Mexico. Long. 103. 5. W. Lat. 17. 30. N.

ESTAVAYER, a town and bailiwick of Switzerland, in the canton of Friburg, on the borders of the lake of Neuchatel, with a fine castle. In the 15th century it belonged to the duke of Savoy, who, taking part against the Swiss, they besieged and sacked the town in 1473. It is 13 miles W. of Friburg. Long. 6. 56. E. Lat. 46. 55. N.

ESTE, a town of Italy, in the Paduan, 15 miles S.W. of Padua. Long. 12. 44. E. Lat. 45. 55. N.

ESTELLA, an episcopal town of Spain, in Navarre, capital of the territory of the same name; seated on the Ega, 15 miles W. of Pampeluna. Long. 2. 0. W. Lat. 42. 40. N.

ESTEPA, a town of Spain, in Andalusia, with an ancient castle, on a mountain, 62 miles N. by W. of Malaga. Long. 4. 19. W. Lat. 37. 16. N.

ESTEPONA, a town of Spain, in Granada, near the coast, 20 miles W.S.W. of Marbella.

ESTHWAITE-WATER, a lake in Lancashire, between Hawkhead and Windermere Water. It is two miles and a half long, and half a mile broad, intersected by a peninsula from each side, jutting far into the lake. On the banks are villages and scattered houses, pleasantly situated under woods, and hanging grounds, clothed with verdure; all heightened by the deep shade of the woods, and the strong back-ground of rocky mountains. At the head of a gentle slope, a handsome modern house, called Belmont, commands a delightful view of the lake and its environs. The fish are pike, perch, eel, and trout; but no char is found in this lake, though it is connected with Windermere-water.

ESTREMOS, a town of Portugal, in Alentejo, divided into the upper town and the lower. The upper is commanded by a citadel, on the top of a hill, strongly fortified, and surrounded by a large ditch. The houses are white, and the principal are adorned with fine marble pillars: there is also a tower of marble, finely polished. The lower town is the newest, and has a large square, in the middle of which is a basin. An earthen-ware is made here, greatly esteemed for its beauty and fine smell. The Portuguese gained a complete victory over Don John of Austria near this place, 1763. It is seated on the river Terra, which falls into the Tago, 15 miles W. of Badajoz, and 75 E. of Lisbon. Long. 7. 16. W. Lat. 38. 44. N.

ESWEGEN, a town of Germany, in the landgrave of Hesse Cassel, 25 miles S.E. of Cassel. Long. 10. 9. E. Lat. 51. 11. N.

ETAINE, a town of France, in the department of Meuse, 15 miles N.E. of Verdun. Long. 5. 35. E. Lat. 49. 15. N.

ETAMPES, a town of France, in the department of Seine and Oise, seated on the river Olet or Etampes, which abounds with cray-fish. It is 15 miles E. of Chartres. Long. 2. 10. E. Lat. 48. 30. N.

ETAPLES, a sea-port of France, in the department of the Straits of Calais; situate near the mouth of the Canche, 23 miles S. of Boulogne. Long. 1. 56. E. Lat. 50. 46. N.

ETAYA, a town of Hindoostan Proper, in the province of Agra, situate on a high bank of the Jumna. Many parts of the bank are 60 feet high, the sides of which consist of what in India is called concha, which is originally sand; but the constant action of the sun, in the dry season, forms it almost into a vitrification. On the top, near the river, are the remains of a fort. The town is large, but very wretched, having but two tolerable houses. It is 62 miles S.E. of Agra. Long. 79. 25. E. Lat. 26. 43. N.

ETHIOPIA, a name by which a vast region of Africa has been distinguished by some geographers, who have divided it into Upper and Lower Ethiopia. The first includes Abyssinia and Nubia; the second all the countries of the equinoctial line; as far as Lower Guinea, Monomugi, Monomotapa, &c.

ETIENNE (Str.), a city of France, in the department of Rhone and Loire, remarkable for its manufactures in iron and steel, for the tempering of which the water of the brook Eurens, on which it is seated, is extremely good. Beside the manufacture of arms, hardware, and cutlery (the most considerable in France), the weaving of ribands forms a considerable article of its commerce. Coal is found in its neighbourhood, and also a soft stone fit for grind-stones. Its merchandise is conveyed to Paris, Nantes, and Donkirk, by the Loire, which begins to be navigable for small barges at St. Lambero. St. Etienne is 22 miles S.E. of Fuers, and 260 S. by E. of Paris. Long. 4. 30. E. Lat. 45. 22. N.

ETLINGEN, an ancient town of Suabia, in the margravate of Baden-Dourlach, seated at the confluence of the Wirim and Entz, three miles S. of Dourlach, Long. 9. 30. E. Lat. 48. 59. N.

ETOLIA (*Encycl.*). The Etolians were a restless and turbulent people; seldom at peace among themselves, and ever at war with their neighbours; utter strangers to all sense of friendship, or principles of honour; ready to betray their friends upon the least prospect of reaping any advantage from their treachery; in short, they were looked upon by the other states of Greece no otherwise than as outlaws and public robbers. On the other hand, they were bold and enterprising in war; inured to labour and hardships; undaunted in the greatest dangers; jealous defenders of their liberties, for which they were on all occasions willing to venture their lives, and sacrifice all that was most dear to them. They distinguished themselves above all the other nations of Greece, in opposing the ambitious designs of the Macedonian princes; who, after having reduced most of the other states, were forced to grant them a peace upon very honourable terms. The constitution of the Etolian republic was copied from that of the Achæans, and with a view to form, as it were, a counter alliance; for the Etolians bore an irreconcilable hatred to the Achæans, and had conceived no small jealousy at the growing power of that state. The Cleonic war, and that of the allies, called the *social war*, were kindled by the Etolians in the heart of Peloponnesus, with no other view but to humble their antagonists the Achæans. In the latter, they held out, with the assistance only of the Eleans and Lacedæmonians, for the space of three years, against the united forces of Achæa and Macedon; but were obliged at last to purchase a peace, by yielding up to Philip all Acarnania. As they parted with this province much against their will, they watched all opportunities of wresting it again out of the Macedonian's hands; for which reason they entered into an alliance with Rome against him, and proved of great service to the Romans in their war with him; but growing insolent upon account of their services, they made war upon the Romans themselves. By that warlike nation they were overcome, and granted a peace on the following severe terms: 1. The majesty of the Roman people shall be revered in all Etolia. 2. Etolia shall not suffer the armies of such as are at war with Rome to pass through her territories, and the enemies of Rome shall be likewise the enemies of Etolia. 3. She shall, in the space of 100 days, put into the hands of the magistrates of Corcyra all the prisoners and deserters she has, whether of the Romans or their allies, except such as have been taken twice, or during her alliance with Rome. 4. The Etolians shall pay down in ready money, to the Roman general in Etolia, 200 Euboic talents, of the same value as

the Athenian talents, and engage to pay 50 talents more within the six years following. 5. They shall put into the hands of the consul 40 such hostages as he shall choose; none of whom shall be under 12, or above 40, years of age; the pretor, the general of the horse, and such as have been already hostages at Rome, are excepted out of this number. 6. Etolia shall renounce all pretensions to the cities and territories which the Romans have conquered, though those cities and territories had formerly belonged to the Etolians. 7. The city of Oenis, and its district, shall be subject to the Acarnanians.

After the conquest of Macedon by Paulus Æmilius, they were reduced to a much worse condition; for not only those among them, who had openly declared for Perseus, but such as were only suspected to have favoured him in their hearts, were sent to Rome, in order to clear themselves before the senate. There they were detained, and never afterwards suffered to return to their native country. Five hundred and fifty of the chief men of the nation were barbarously assassinated by the partisans of Rome, for no other crime but that of being suspected to wish well to Perseus. The Etolians appeared before Paulus Æmilius in mourning habits, and made loud complaints of such inhuman treatment; but could obtain no redress: nay, ten commissioners, who had been sent by the senate to settle the affairs of Greece, enacted a decree, declaring, that those who were killed had suffered justly, since it appeared to them that they had favoured the Macedonian party. From this time those only were raised to the chief honours and employments in the Etolian republic, who were known to prefer the interest of Rome to that of their country; and as these alone were countenanced at Rome, all the magistrates of Etolia were the creatures and mere tools of the Roman senate. In this state of servile subjection they continued till the destruction of Corinth, and the dissolution of the Achæan league; when Etolia, with the other free states of Greece, was reduced to a Roman province, commonly called the *province of Achæa*. Nevertheless, each state and city was governed by its own laws, under the superintendency of the pretor, whom Rome sent annually into Achæa. The whole nation paid a certain tribute, and the rich were forbidden to possess lands any-where but in their own country.

In this state, with little alteration, Etolia continued under the emperors, till the reign of Constantine the Great, who, in his new partition of the provinces of the empire, divided the western parts of Greece from the rest, calling them *Nova Epirus*, and subjecting the whole country to the *prefectus prætorii* for Illyricum. Under the successors of Constantine, Greece was parcelled out into several principalities, especially after the taking of Constantinople by the western princes. At that time, Theodorus Angelus, a noble Grecian, of the imperial family, seized on Etolia and Epirus. The former he left to Michael his son; who maintained it against Michael Palæologus, the first emperor of the Greeks, after the expulsion of the Latins. Charles, the last prince of this family, dying in 1430, without lawful issue, bequeathed Etolia to his brother's son, named also Charles; and Acarnania to his natural sons, Memnon, Turnus, and Hercules. But, great disputes arising about this division, Amurath II. after the reduction of Thessalonica, laid hold of so favourable an opportunity, and drove them all out in 1432. The Mahometans were afterwards dispossessed of this country by the famous prince of Epirus, George Castriot, commonly called *Scanderbeg*; who, with a small army, opposed the whole power of the Ottoman empire, and defeated those barbarians in 22 pitched battles. This hero, at his death, left great part of Etolia to the Venetians; but they not being able to make head against such a mighty power, the whole country was

soon reduced by Mohammed II. whose successors hold it to this day.

ETTENHEIM, a town of Germany, in the bishopric of Strasburg, 15 miles N. of Friburg, and 19 S.S.E. of Strasburg. Long. 7. 26. E. Lat. 48. 25. N.

ETTILINGEN, or **ETTINGEN**, a town of Suabia, on the Albe, six miles S.S.W. of Dourlach. Long. 9. 26. E. Lat. 48. 58. N.

ETTRICK, a river in Selkirkshire, which rises from the mountainous region in the S.W. and having formed a junction with the Yarrow, their united streams meet the Tweed, where that river enters Roxburghshire. From the woods, formerly on the banks of this river, the county obtained the name of Ettrick Forest. Ettrick Banks are the subject of a pastoral Scotch ditty.

EU, a sea-port of France, in the department of Lower Seine, with a strong castle, and a handsome square. The principal trade is in ferges and lace. It is seated in a valley, on the river Brele, 15 miles N.E. of Dieppe. Long. 1. 30. E. Lat. 50. 3. N.

EVAPORATION (*Encycl.*). In addition to what has been said on this subject, we purpose to give the experiments on evaporation made by Dr. Wistar, an account of which appears in the Transactions of the American Philosophical Society.

"In an essay published in the last volume of the Transactions of the Society," says the doctor, "I described a species of evaporation which was excited by suspending ice, at the melting point, in air reduced to the temperature of 0° of Fahrenheit's scale; and considered as the effect of a general law of nature, in consequence of which an inelastic vapour (which commonly is visible) arises from water, and from wet substances, whenever they are warmer than the atmosphere which surrounds them.

"From facts stated in the same paper it was inferred, that this inelastic vapour does not depend upon any positive quantity or degree of sensible heat in the evaporating body, but upon a relative degree; exceeding that of the atmosphere to which it is exposed; and that it is produced by the passage of heat from the moist body into the contiguous air.—If this theory be true, it follows that a slow distillation may be performed, with the common apparatus, by applying cold to the receiver or refrigeratory, without increasing the heat of the retort or substance to be distilled, as there will be a continual passage of heat from the body to be evaporated or distilled, into the air of the receiver.

"Although, for the reasons there given, I had no doubt of the truth of the doctrine advanced in my former paper, I was desirous of submitting it to the test of this experiment, because it has been suggested that the vapour which appeared to arise from ice might have risen from the mixture of different proportions of air of different temperatures: whereas by distilling or evaporating in a luted retort and receiver, there can be no mixture of warm and cold air; and by using a substance which is not contained in the atmosphere, we shall avoid all suspicion that the vapour which arises from it may have originated from the air in the vessels.

"With these views I poured an ounce and half of vitriolic ether into a retort, and luted it to a receiver with a long neck, which was placed in a mixture of salt and snow, while the retort was surrounded by air of the temperature of 50° of Fahrenheit. The frigorific mixture, from the impurity of the salt, was seldom below 10°, so that the difference between the ether in the retort and the air in the receiver did not exceed 40°.

"When the apparatus had been thirty hours in this situation the frigorific mixture was removed, and one-third of the ether was found distilled into the receiver.

"I believe no cause can be assigned for this distillation but the passage of heat through the ether into the cold air of the receiver; and to be certain that the application of cold to the receiver really produced it, I prepared a similar distilling apparatus, in the same manner precisely, and placed the retort in contact with that of the other apparatus, while the receiver, instead of being chilled by the cold mixture, stood in air of the same temperature with the retorts, viz. 50°; but no distillation took place during thirty hours.

"To vary the experiment, I placed some camphor in another apparatus prepared as above, and fixed the receiver in the frigorific mixture, while the retort stood in air of the temperature of 50°; at the expiration of thirty hours some of the camphor was found sublimed, and the sublimate had those arborescent appearances which usually attend it when produced by heat."

EVAUX, a town of France, in the department of Creuse, 20 miles from Mount Laçon. Long. 2. 55. E. Lat. 46. 12. N.

EUDIOMETER (*Encycl.*). When it was discovered that common atmospheric air contained about 21 parts of vital air, or oxygen, and 79 of azote, or nitrogen, in 100 by measure; it was hastily concluded by physiologists, that we had acquired a power of ascertaining the comparative salubrity of atmospheric air, during different winds, and in different places. For it was believed that the salubrity was proportional to the quantity of oxygen, and that this quantity admitted of considerable variation in different situations. It was however soon found, by the experiments of Dr. Priestley and Mr. Cavendish, and since confirmed by many others, that the air of open seas, or the tops of high mountains, does not differ considerably, in the proportion of those constituents, from that of the streets of London. But when we say the streets of London, we do not mean to include the rooms, theatres, exhibitions, &c. where either respiration or combustion, or both, are going on. This source of contaminated air is, however, by no means confined to the metropolis; for wherever well-jointed fashies, double doors, double windows, or any other means of excluding fresh supplies of air from inhabited rooms, are employed, there a deterioration of it must take place. The means of analyzing and correcting the water we use, are generally known; but the best means of ascertaining the proportion of oxygen contained in the air we breathe, is known only to a few chemists. We shall, therefore, present our readers with Mr. Davy's new Eudiometer, an account of which appears in the Journals of the Royal Institution:

"The dependence (he says) of the health and existence of animals upon a peculiar state of the atmosphere, and the relations of this state to processes connected with the most essential wants of life, have given interest and importance to enquiries concerning the composition and properties of atmospheric air.

"This elastic fluid has been long known to consist chiefly of oxygen and nitrogen, mingled together, or in a state of loose combination, and holding in solution water.

"A variety of processes have been instituted, with the view of determining the relative proportion of the two gases, but most of them have involved sources of inaccuracy; and lately, all, except two (the slow combustion of phosphorus, and the action of liquid sulphurets), have been generally abandoned.

"Both phosphorus and solution of sulphuret of potash absorb the whole of the oxygen of atmospheric air at common temperatures, and they do not materially alter the volume, or the properties of the residual nitrogen; but their operation is extremely slow; and in many cases it is difficult to ascertain the period at which the experiment is completed.

"I have lately employed as an eudiometrical substance the solution of green muriat, or sulphat, of iron, impregnated with nitrous gas; and I have found that it is in some respects superior to many of the bodies heretofore used, as it rapidly condenses oxygen without acting upon nitrogen, and requires for its application only a very simple and a very portable apparatus.

"This fluid is made by transmitting nitrous gas through green muriat, or sulphat, of iron, dissolved to saturation in water. As the gas is absorbed, the solution becomes of a deep olive brown, and when the impregnation is completed it appears opaque and almost black. The process is apparently owing to a simple elective attraction; in no case is the gas decomposed; and under the exhausted receiver it assumes its elastic form, leaving the fluid with which it was combined unaltered in its properties.

"The instruments necessary for ascertaining the composition of the atmosphere, by means of impregnated solutions, consist simply of a small graduated tube, having its capacity divided into one hundred parts, and greatest at the open end; and of a vessel for containing the fluid.

"The tube, after being filled with the air to be examined, is introduced into the solution; and, that the action may be more rapid, gently moved from a perpendicular towards a horizontal position. Under these circumstances the air is rapidly diminished; and, in consequence of the dark colour of the fluid, it is easy to discover the quantity of absorption. In a few minutes the experiment is completed, and the whole of the oxygen condensed by the nitrous gas in the solution in the form of nitrous acid.

"In all eudiometrical processes with impregnated solutions, the period at which the diminution is at a stand must be accurately observed; for, shortly after this period, the volume of the residual gas begins to be a little increased, and, after some hours, it will often fill a space greater by several of the hundred parts on the scale of the tube, than that which it occupied at the maximum of absorption.

"This circumstance depends upon the slow decomposition of the nitrous acid (formed during the experiment), by the green oxide of iron, and the consequent production of a small quantity of ætiform fluid (chiefly nitrous gas)*; which, having no affinity for the red muriate, or sulphate, of iron produced, is gradually evolved, and mingled with the residual nitrogen.

"The impregnated solution with green muriate is more rapid in its operation than the solution with green sulphate. In cases when these salts cannot be contained in a state of absolute purity, the common or mixed sulphate of iron may be employed. One cubic inch of moderately strong impregnated solution is capable of absorbing five or six cubic inches of oxygen, in common processes: but the same quantity must never be employed for more than one experiment.

"A number of comparative experiments, made on the constitution of the atmosphere at the Hotwells, Bristol, in

July, August, and September, 1800, with phosphorus, sulphurets of alkalies, and impregnated solution, demonstrated the accuracy of the processes in which the last substance was properly employed. The diminutions given by the sulphurets were indeed always greater by a minute quantity than those produced by phosphorus and impregnated solutions: but the reason of this will be obvious to those who have studied the subject of Eudiometry. In no instance was it found that 100 parts in a volume of air contained more than 21 of oxygen: and the variations connected with different winds, and different states of temperature, moisture, &c. were too small, and too often related to accidental circumstances, to be accurately noticed.

In analysing the atmosphere in different places, by means of impregnated solutions, I have never been able to ascertain any notable difference in the proportions of its constituent parts. Air, collected on the sea at the mouth of the Severn, on October the 3d, 1800, which must have passed over much of the Atlantic, as the wind was blowing strong from the west, was found to contain 21 per cent of oxygen in volume; and this was nearly the proportion in air sent from the coast of Guinea to Dr. Beddoes, by two furgeons of Liverpool.

"If we compare these results with the results gained more than twenty years ago by Mr. Cavendish, from experiments on the composition of atmospheric air, made at London and Kensington; considering, at the same time, the researches of Berthollet in Egypt, and at Paris, and those of Marti in Spain; we shall find strong reasons for concluding, that the atmosphere, in all places exposed to the influence of the winds, contains very nearly the same proportions of oxygen and nitrogen: a circumstance of great importance; for, by teaching us that the different degrees of salubrity of air do not depend upon differences in the quantities of its principal constituent parts, it ought to induce us to institute researches concerning the different substances capable of being dissolved or suspended in air, which are noxious to the human constitution; particularly as an accurate knowledge of their nature and properties would probably enable us, in a great measure, to guard against, or destroy, their baneful effects.

"The most obvious impregnation of the atmosphere is that with distilled water; and many people have taken up an opinion, that, independent of *miasmata*, the only noxious qualities of the atmosphere depend on its moisture, or the quantity of water diffused through it, when the thermometer is near 32°, or, as they express it, "when cold and moisture are combined; but we shall endeavour to shew, on some future occasion, that this opinion is not well founded."

Cit. Berthollet has made several observations relating to Eudiometry, in a memoir presented to the National Institute of France. The celebrated Mr. Humboldt having examined and compared the different substances employed for knowing the quantity of oxygen contained in a given quantity of atmospheric air, gave the preference to the nitrous gas, which has been proposed by Fontana, as absorbing the oxygen better than other substances employed for the same purpose. It contains, however, sometimes a greater or less quantity of azote, which renders its effect not so sure; a circumstance which may be remedied, after the repeated experiments of Mr. Humboldt, by washing the gas intended for use with a solu-

* The decomposition of nitrous acid, by solutions containing oxide of iron, at its minimum of oxidation, is a very complex process. The green oxide, during its conversion into red oxide, not only decomposes the acid, but likewise acts upon the water of the solution; and ammoniac is sometimes formed, and small portions of nitrous oxide and nitrogen evolved with the nitrous gas.

tion of sulphat of iron, which absorbs all the nitrous gas, but not the azote that is mixed with it. It is this action of the sulphat of iron that Cit. Berthollet has examined; and he has found, that in this case, the nitrous gas is not only absorbed, but decomposed, and by being deprived of a part of its azote, it is changed into nitrous acid. He thinks, on the whole, that the nitrous gas may differ in the proportions of its two principles, the oxygen and the azote, but that it never contains the azote in simple mixture.

The following experiments with the Eudiometer, made at Martinique, by Dr. Davidson, were communicated to Dr. Mitchell, in a letter dated Fort Royal, April 7th, 1798.

"There is," says he, "a large proportion of oxygen, contained in the atmospheric air within the tropics. With equal measures of nitrous air, obtained from brass wire and atmospheric air, there was an absorption of 67.100; but with two measures of atmospheric air, there was somewhat less, from 52.100, to 58.100, that is to say, from three measures, or three hundred parts, there were left two and 42.100, to 48.100. I have also tried a mixture of sulphur and iron filings, in a cylindrical glass tube, and found above four-tenths of the air diminished. As those experiments were made in the presence of a number of medical gentlemen, who have certified the fact, as they have observed it themselves, I can therefore with confidence speak to the result of our experiments.

"We shall now be more easily able to account for the speedy rusting of metals, without having recourse to the action of supposed muriatic foda dissolved in the air. The rancidity of oils, and the speedy fermentation of vinous liquors, may, perhaps, be also owing to the greater heat of the climate; but metals would be less apt to contract rust from the greater heat, if the air contained only the proportion of oxygen, which it contains in Europe. Consumptions here are also more quickly fatal than they are in Europe. On some of the West-India islands, such as Barbadoes and Antigua, where less rain falls, and where the heat of the air is kept at a steady temperature by their smallness, and the trade-winds blowing over the whole island, without being diverted by high or woody land, consumptions are not less fatal than in the larger and moister islands. This is a fact, of which all writers upon diseases of the West Indies take notice; and which we would principally endeavour to account for, from the air being more highly charged with oxygen, than it is in Europe. If people labouring under pulmonary consumption, are sometimes benefited by sea voyages within the tropics, we are to look for the temporary relief afforded, in the sea-sickness; the irritable state of the stomach, by sympathy preventing the lungs acting in decomposing and absorbing oxygen; and in the determination to the surface carrying off the redundancy by the skin. Their costive habit, whilst at sea, proves that there is more than usual determination to the surface—hence relief to the lungs."

Certificates of these facts are subjoined, with the signatures of Dr. Chisholme, and other respectable persons.

Among the articles contained in the extracts lately published from the Memoirs of the School of Medicine at Paris, we find an ingenious essay by Citizen Jurine, with observations by Citizen Seguin, on the following important question:

"What advantages can medicine derive from the modern discoveries in the art of ascertaining the purity of the air, by the different eudiometers?"

Citizen Jurine's memoir, which gained the prize in 1787, is divided into four parts: 1. The first relates to the modification of atmospheric air by respiration. 2. The second treats of the air which is exhaled by the skin, and of the nature of ambient air in different diseases. 3. The third ex-

plains the difference of atmospherical air, the air of hospitals and sick rooms. We shall examine each of these sections of Cit. Jurine's works successively, taking notice at the same time of the principal observations made by Seguin.

In the first place, Jurine remarks on the opinions, the views, and the several discoveries of Priestley, the Abbé Fontana, Scheele, Bergmann, and Morozzo, and the solid and luminous theory of Lavoisier and Laplace. He next explains the extent and capacity of the lungs, after Hales and Jurine. Afterwards he analyzes the air expired in different circumstances of life and health. The means of analysis were lime water, nitrous gas, and the flame of a wax candle.

Experiments were in the first place made to ascertain the difference relative to age, sex, the state of fasting, and the effect of digestion. The air produced by the most complete expiration was then divided into four parts, and successively submitted to a comparative analysis. The other experiments were intended to ascertain the changes produced in the air expired in fever, the last stage of consumption, blood-letting, respiration in pure oxygen, or in air rendered less respirable from previous respiration. Citizen Halle having already published a part of the results of these experiments, under the article *Air* in the *Dictionnaire de Médecine, de l'Encyclopédie Méth.* it is unnecessary to repeat them. To this first part of Citizen Jurine's memoir, Citizen Seguin directs his principal objections, which directly attack the accuracy of the eudiometers, the lime water, and nitrous gas, employed.

In the second part, Citizen Jurin explains several experiments made upon himself, the results of which were, that he disengaged a certain quantity of carbonic gas by the skin. Citizen Seguin thinks, on the contrary, that the carbonic gas does not issue through the skin, but is only that formed by the act of respiration, which, defending by its specific weight, in the bath where the Geneveve physiologist made his experiments, had displaced the atmospheric air from the vessels he employed.

Citizen Hallé has again offered the principal facts deduced from the experiments contained in the third part. The objection of Citizen Seguin against their result in general, that there is uniformly produced a kind of *mephités* in the intestinal canal, is, that, on the contrary, the predominance of azote in the large intestines, according to the experiments of Jurine, ought not to be attributed to the atmospheric air contained in the stomach and intestines losing a portion of oxygen, and the azotic gas becoming by that means more abundant.

The fourth part of this work exhibits a short view of the improvements medicine has received from pneumatic chemistry, which, in the report, is brought down to the present period.

The memoir of M. Gattoni, like the preceding, is intended to give a solution of the physiological problem proposed by the Medical Society, and contains the particulars of a variety of researches and experiments. The author, after relating the history of the nitro-aërial eudiometer, and shewing the incorrectness of that instrument, and its general insufficiency to ascertain the change of the air by the different kinds of inflammation, adopts the eudiometer of Volta, which he describes. The experiments made with this latter instrument, like those made with all the others, have only elucidated the different proportions of azote, oxygen, and carbonic acid gas variously modified, by different airs, or by the state of the patient on whom the experiments were tried, or by the different causes of disease.

EVE, the mother of all mankind; who, being deluded by the serpent, occasioned the fall, and all its dismal consequences. See ADAM.

EVERDING, a town of Upper Austria, seated on the

Danube, 12 miles W. of Linz. Long. 13. 46. E. Lat. 48. 19. N.

EVERFIELD, a town of Westphalia in the duchy of Berg, seated near the Wipper, 18 miles E. of Dusseldorf.

EVERSHOT, a town in Dorsetshire, with a market on Friday, 12 miles N.W. of Dorchester, and 129 W. by S. of London. Long. 2. 55. W. Lat. 50. 52. N.

EUGUBIO, an episcopal town of Italy, in the duchy of Urbino, 35 miles S. of Urbino, and 87 N. of Rome. Long. 13. 37. E. Lat. 43. 18. N.

EVIAN, a town of Savoy, in Chablais, resorted to in the summer for its mineral waters. It is seated on the S. side of the lake of Geneva, 22 miles N.E. of Geneva. Long. 6. 50. E. Lat. 46. 21. N.

EUMENES, the most worthy of Alexander's successors and generals; was safely delivered up by his own troops to his rival Antigonus, and by him put to death, 315 B. C.

EUMENES II. king of Pergamus, a valiant general, patron of learning, and founder of the famous library at Pergamus, on the model of that at Alexandria. He died 159 B. C. after a reign of 39 years.

EVOLI, an ancient town of Naples, in Principato Citereiore, 12 miles E. of Salerno. Long. 15. 16. E. Lat. 40. 46. N.

EVORA, a fortified city of Portugal, capital of Alentejo, with an archbishop's see, and a university. Some remains of the ancient Roman wall are visible, and the famous aqueduct built by Sertorius still conveys a noble stream of water to the city. Evora is seated in a country which, though a little unequal, is very pleasant, surrounded on all sides by mountains, and planted with large trees of divers sorts. It is 65 miles E. by S. of Lisbon. Long. 7. 30. W. Lat. 38. 28. N.

EVORAMONTE, a town of Portugal in Alentejo, situate on a rock, eight miles S.W. of Estremoz, and 15 N.E. of Evora.

EUPATORGIA, a town of Russia, in the government of Taurida, on the Black Sea, 68 miles S.W. of Precop. Long. 33. 14. E. Lat. 45. 40. N.

EUPHEMIA, a sea-port of Naples in Calabria Ulteriore, seated on a bay, 50 miles N.E. of Reggio. Long. 16. 32. E. Lat. 38. 44. N.

EURVILLE, a town of France, in the department of Upper Marne, five miles S.E. of Dizier.

EUTAM, a small island of the West-Indies, near the E. coast of Porto Rico. Long. 64. 41. W. Lat. 18. 18. N.

EUTIM, a town of Holstein, with a castle, where the bishop of Lubec resides. It is seven miles N. of Lubec.

EWELL, a town in Surrey, with a market on Thursday, seated on a rivulet which empties itself into the Thames, at Kingston. It is 10 miles N.N.E. of Dorking, and 13 S.S.E. of London. Long. 0. 15. W. Lat. 51. 26. N.

EXCHANGE, *BILLS OF* (*Encycl.*). On promissory notes, drafts, or orders, by 31 Geo. III. c. 25; 37 Geo. III. c. 90; and 41 Geo. III. c. 10, the following duties are payable, viz.

On bills and notes payable on demand.] For every piece of vellum, parchment, or paper, upon which any bill of exchange, draft, or order for the payment of money on demand, shall be written, &c. where the sum amounts to 40s. and does not exceed 5l. by 31 Geo. 3. c. 25, three-pence; 37 Geo. 3. one penny; 41 Geo. 3. c. 10, two-pence.—Total 6d.

Above 5l. 5s. and not exceeding 30l. by 31 Geo. 3. c. 25, six-pence; 37 Geo. 3. c. 90, two-pence; 41 Geo. 3. c. 10, four-pence.—Total 1s.

Above 30l. and not exceeding 50l. by 31 Geo. 3. c. 25, nine-pence; 37 Geo. 3. c. 90, three-pence; 41 Geo. 3. c. 10, six-pence.—Total 1s. 6d.

Above 50l. and not exceeding 100l. by 31 Geo. 3. c. 25, one shilling; 37 Geo. 3. c. 90, four-pence; 41 Geo. 3. c. 10, eight-pence.—Total 1s.

Above 100l. and not exceeding 200l. by 31 Geo. 3. c. 25, one shilling and six-pence; 37 Geo. 3. c. 90, six-pence; 41 Geo. 3. c. 10, one shilling.—Total 3s.

For every promissory, or other note, for payment of money to the bearer on demand, which may be re-issuable, after payment, at the place where the same was first issued, where the sum amounts to 40s. and does not exceed 5l. by 31 Geo. 3. c. 25, three-pence; 37 Geo. 3. c. 90, one penny; 41 Geo. 3. c. 10, two-pence.—Total 6d.

Above 5l. 5s. and not exceeding 30l. by 31 Geo. 3. c. 25, six-pence; 37 Geo. 3. c. 90, two-pence; 41 Geo. 3. c. 10, four-pence.—Total 1s.

Above 30l. and not exceeding 50l. by 31 Geo. 3. c. 25, nine-pence; 37 Geo. 3. c. 90, three-pence; 41 Geo. 3. c. 10, six-pence.—Total 1s. 6d.

Above 50l. and not exceeding 100l. 31 Geo. 3. c. 25, one shilling; 37 Geo. 3. c. 90, four-pence; 41 Geo. 3. c. 10, eight-pence.—Total 2s.

Above 100l. and not exceeding 200l. by 31 Geo. 3. c. 25, one shilling and six-pence; 37 Geo. 3. c. 90, six-pence; 41 Geo. 3. c. 10, one shilling.—Total 3s.

When these promissory notes shall be paid by the person by whom the same shall have been made or signed, and first issued, and at the place where the same were first issued, the person so paying the same, notwithstanding such payment may at any time afterwards, and so often as there shall be occasion after every such payment thereof, but not otherwise, again issue and negotiate such notes; and every such note is declared to be after payment, but not otherwise, issuable and negotiable. But if such notes shall be paid by any other than the person making or signing the same, or at any place other than the place of issuing, such note shall be construed to be vacated and satisfied, and shall be no longer negotiable but cancelled; and if any person shall again issue any such note after payment by any person other than the person making the same, or at any place other than the place of issuing, or if any person named in such note for payment thereof, shall after payment neglect or refuse to cancel the same, such person shall forfeit 20l. And if such note shall not be cancelled, then, and as often as it shall be again issued, there shall be due, answered, and paid the like duty as was first charged on such note, to be payable by and charged on the person who shall again issue and negotiate such note, f. 7.

For any promissory or other note, payable to the bearer on demand, which may be re-issued, after payment at the same, or any other place than where first issued, where the sum shall amount to 40s. and not exceed 5l. by 31 Geo. 3. c. 25, six-pence; 37 Geo. 3. c. 90, two-pence; 41 Geo. 3. c. 10, four-pence.—Total 1s.

Above 5l. 5s. and not exceeding 30l. by 31 Geo. 3. c. 25, one shilling; 37 Geo. 3. c. 90, four-pence; 41 Geo. 3. c. 10, eight-pence.—Total 2s.

[It is declared that these notes may, as often as occasion shall require, be again issued by the person making the same, notwithstanding such notes have been paid by the person making the same, or any other person in pursuance of any appointment for the payment thereof.]

Bills and notes payable after date.] For every bill of exchange, draft, or order, payable otherwise than on demand, or any promissory or other note payable otherwise than to the bearer on demand, where the sum shall amount to 40s. and not exceed 30l. by 31 Geo. 3. c. 25, six-pence; 37 Geo. 3. c. 90, two-pence; 41 Geo. 3. c. 10, four-pence.—Total 1s.

Above 30l. and not exceeding 50l. by 31 Geo. 3. c. 25, nine-pence; 37 Geo. 3. c. 90, three-pence; 41 Geo. 3. c. 10, six-pence.—Total 1s. 6d.

Above 50l. and not exceeding 100l. by 31 Geo. 3. c. 25,

one shilling; 37 Geo. 3, c. 90, four-pence; 41 Geo. 3, c. 10, eight-pence.—Total 2s.

Above 100l. and not exceeding 200l. by 31 Geo. 3, c. 25, one shilling and six-pence; 37 Geo. 3, c. 90, six-pence; 41 Geo. 3, c. 10, one shilling.—Total 3s.

Bills and notes exceeding 200l. value. And for every bill of exchange, promissory, or other note, draft, or order, payable on demand or otherwise, where the sum shall exceed 200l. there shall be charged by 31 Geo. 3, c. 25, two shillings; 37 Geo. 3, c. 90, eight-pence; 41 Geo. 3, c. 10, one shilling and four-pence.—Total 4s.

Which duties shall be paid by the person making or signing such bills, &c.

Foreign bills of exchange. Drawn in sets, according to the custom of merchants, where the sum shall not exceed 100l. shall be charged by 31 Geo. 3, c. 25, six-pence; by 37 Geo. 3, c. 90, three-pence; 41 Geo. 3, c. 10, four-pence.—Total 1s. 1d. —Exceeding 100l. and not 200l. 31 Geo. 3, c. 25, nine-pence; 37 Geo. 3, c. 90, three-pence; 41 Geo. 3, c. 10, six-pence.—Total 1s. 6d. —And exceeding 200l. by 31 Geo. 3, c. 25, one shilling; 37 Geo. 3, c. 90, four-pence; 41 Geo. 3, c. 10, eight-pence.—Total 2s. —And every bill of each set so drawn is said to be chargeable with the duty.

N. B. The time limited in the act 41 Geo. 3, for the commencement of the new duties, is from and after April 5, 1801.

The exemptions from the foregoing duties, are these:

1. Drafts or orders, payable to bearer on demand, bearing date on or before the day on which the same shall be issued, and at the place from which the same shall be drawn and issued, and drawn upon any banker, or person acting as a banker and residing and transacting business as a banker, within ten miles of the place where such draft or order shall be actually drawn and issued.

2. All notes and bills whatever issued by the bank of England, upon condition of their paying into the exchequer the annual sum of 12,000l. half yearly, on Oct. 10 and April 5.

New regulations in 31 Geo. 3, c. 25.

If any bill, &c. shall be written on paper not stamped, or stamped with a stamp of lower value than directed; then there shall be due and paid the full duty hereby chargeable; which shall be payable by and charged upon all persons who shall draw or make, and utter and negotiate such bill, &c. f. 6. And all persons who shall write or sign, or cause to be written or signed, or who shall accept or pay, or cause to be accepted or paid, any bill, &c. without being first stamped with a proper stamp, or upon which there shall not be some stamp resembling the same, shall forfeit 20l. f. 10.

Every promissory or other note, payable to the bearer on demand, which shall be issued after payment under this act, shall notwithstanding be payable to the person holding the same; and such person may maintain an action thereupon. f. 9.

The 18th section declares, that no bill, &c. shall be available in law or equity, unless stamped with the lawful stamp; and that it shall not be lawful for the commissioners to stamp any paper, &c. after any bill, &c. shall be written thereon, under any pretence whatever.

But it shall be lawful for any person who shall be the holder of any bill, note, draft, or order, made after July 20, 1797, which shall be stamped with a stamp of a different denomination than required, if the same shall be of equal or superior value to the stamp required, to produce the same within the times herein-after mentioned, to the head office or such officer as the commissioners shall appoint; and the commissioners may direct the proper officer, upon payment of the duty, and such penalty as is after mentioned, over and above the duty, to stamp such bill, note, draft, or order, with the proper stamp, and to

give a receipt for the duty and penalty, so paid, on the back of such bill, note, draft, or order.

If any such bill, note, draft, or order, shall be produced before the same shall be payable, the same shall be stamped on payment of the said duty, and the penalty of 40s.; but if the same shall be payable before the production thereof to the commissioners, then the same shall not be stamped, unless on payment of the duty and 10l. for the penalty.

The method of recovering the penalties is the same as under the receipt tax—which fee under the head RECEIPTS in this SUPPLEMENT.

Note also, that by 41 Geo. 3, c. 10, no note re-issuable on March 24, 1801, shall be so after June 5, 1801, until properly stamped with the new duty.

EXCOECARIA (*Encycl.*). Of the Excoecaria Agallocha, Professor Willdenow, of Berlin, has given the following account in a late publication.

The agallochum, which is known by the name of aloë-wood, or the aromatic aloë, is one of the most valuable spices imported from the East, and has been in high estimation, even in the earliest ages. According to the different species of the plant, it is called *lignum aloës*, *agallochi xeri*, *agallochi*, and *calam bæ*, all of which differ remarkably in their sensible properties. It is, however, very difficult to ascertain the botanical character of these various species.

The aromatic wood of aloë is properly a resin, which has pervaded the pores of the tree. The genuine sort of this resinous wood is as precious as gold, and is used only by the great and affluent in the East Indies, China, and Japan, as an agreeable perfume, with which they fumigate houses: hence it is but rarely imported into Europe. It is black, and variegated with grey veins, swims on water, and if strongly rubbed on glass, leaves behind resinous particles, which neither water, saliva, expressed oils, nor an alkaline lye, but spirit of wine only will dissolve and remove. Its odour is very grateful.

This substance has, in former times, been much used as a medicine, not only in biliary complaints, diseases of the liver and stomach, and dysentery, but likewise as a remedy for the maw-worm; but at present it is entirely neglected—a revolution to which several of the ancient remedies have been subject, and which is likely to take place with many of the modern.

Father DE LOUREIRO assures us, that he discovered, in the province of Cochinchina, the tree which affords the true aloë. This aromatic wood is found in resinous masses, only in old, half-decayed, hollow trees. According to this writer, the tree belongs, in the system of LINNÆUS, to the first division of the tenth class, the Decandria Monogynia: he called it *Aloëxylum Agallochum*. It grows on the highest mountains of Cochinchina, on the banks of the river Lav, which flows through the whole of that province. Loureiro had no opportunity of seeing the blossoms on the tree; he could only once obtain them dried, and transmitted by a friend, so that the parts of fructification were much bruised and lacerated on a long journey, and he could with difficulty give the following description:—

ALOEXYLMUM AGALLOCHUM. Differ. spec. Aloë. *foliis lanceolatis*, *altissimis: pedunculis polyfloris*, *terminalibus*.

Hab. *Arbor magna: truncus et ramis erectis, altissimis: cortice cannabino, fusco, glabro, nec crasso.*

Folia lanceolata, obli polyes longa, integerrima, plana, glabra, subcoriacea, alterna, petiolata. Flores terminalis, pedunculis polyfloris.

Ufus. *Ligni hujus suffumens inter omnia maximè æstimatur apud nationes Orientales. Ex arboris cortice fit vulgaris charta, in quâ Cochinchinenses scribunt, sicut in Japonia fit ex cortice Mori.*

Virtus medica. *Excitans, corroborans, cephalica, cardiaca.*

Suffitus valet contra vertiginem et paralyfism. Pulvis cohibet vomitum et fluxus ventris, præcipue Lientricos, quod non proprie astringendo, fed corroborando agit.

This tree is not of a poisonous nature, and yields no milky sap when perforated. With respect to the *genuine* wood of aloe, Loureiro maintains that the various species differ remarkably, both in colour and flavour. By some botanists, this aromatic wood has been confounded with the *Lignum Aquilæ*, which is likewise esteemed for its agreeable odour, and like the *Agallochum verum*, Calambac, and Garo de Malacca, affords different species of perfume. KÆMPFER and LAMARCK have given a particular description of the genuine aromatic aloe. CAVANILLES, an eminent botanical writer, calls the plant that produces this valuable drug *Aquilaria ovata*.

In Plate 26 we have given a representation of this plant: *a* is a branch of the natural size, with the catkins just opened: *b* a catkin in full blossom.

EXCULPATION LETTERS OF, in Scots law, a writ or summons issued by authority of the court of judicatory, at the instance of a pannel, for citing witnesses to prove his defences, or his objections to any of the jury or witnesses cited against him.

EXECUTOR, in Scots law, signifies either the person entitled to succeed to the moveable estate of one deceased, or who by law or special appointment is entrusted with the administration of it.

EXECUTRY, in Scots law, is the moveable estate falling to the executor. Under executry, or moveables, is comprehended every thing that moves itself, or can be moved; such as corn, cattle, furniture, ready money, &c.

EXERCITOR, in Scots law, he who employs a ship in trade, whether he be owner, or only freights her from the owner.

EXETER, a town of N. Carolina, on the N.E. branch of Cape Fear River, 30 miles N. of Wilmington.

EXETER, a town of New Hampshire, on Exeter River, with a good harbour, 15 miles S.W. of Portsmouth.

EXIDEUIL, a town of France, in the department of Dordogne, 20 miles N.E. of Périgueux, and 32 S. of Limoges. Long. o. 54. E. Lat. 45. 24. N.

EXILLES, a strong fort of France, in the department of the Upper Alps. It was taken by the Duke of Savoy in 1708, but restored by the treaty of Utrecht. It is an important passage, six miles W. of Suza, and 40 N.E. of Embrun.

EXMOOR, a forest in Somersetshire, in the N.W. corner of that county, extending thence into Devonshire.

EXMOUTH, a village in Devonshire, on the E. side of the bay which forms the mouth of the river Ex, 10 miles S. by E. of Exeter. It is much frequented for the benefit of sea-bathing.

EXPANSION (*Encycl.*). The following paper on the expansion of wood by heat, by Dr. Rittenhouse, appears in the Transactions of the American Philosophical Society.

"In the present state of experimental philosophy," says the doctor, "it is well known that bodies in general enlarge their dimensions, or expand, on being heated, and contract in cooling. From some experiments heretofore made, wood has been thought to make an exception to the general rule, and this opinion has so prevailed that many curious persons have applied wooden pendulum rods to their time-pieces, to prevent the variation in their rate of going, arising from the expansion and contracting of a metal rod. From my own observations, however, as well as those of some of my friends, the wooden pendulum rod does not appear to answer the expectations formed on it. I had in my possession for several years an excellent time-piece, made for this society by an ingenious workman and worthy member of the society. The result of my constant attention to this clock was, that though its regular variations with heat and cold were probably much less than

those of metal pendulums, it nevertheless went always faster in winter than in summer, and was liable to very sudden and considerable variations; arising, no doubt, from the combined effects of heat and cold, moisture and dryness. This determined me to make some careful experiments with a pyrometer capable of receiving a piece of wood of the length of a second pendulum. Several years ago, I made some experiments of this kind, perfectly corresponding with those I have lately made, and which I now communicate to the society.

"I took a straight-grained piece of white hickory, green, for I could not procure any seasoned, its length 39 inches, and about $\frac{3}{4}$ of an inch square. This I placed in my pyrometer, and kept it fully extended by a weight fastened to a string, going over a pulley. To the pyrometer I applied the tube and glasses of a good compounded microscope, and a micrometer, the value of the smaller divisions whereof I found to be nearly .00053 parts of an inch, each.

"The rod of wood being placed in the pyrometer, I poured sand all around it, heated to about 250 of Fahrenheit, which degree of heat I found the wood would bear without scorching. On pouring in the hot sand, the rod expanded very much, but soon began to contract, even before the sand was sensibly cooled, which I suppose arose from the hot sand extracting the moisture of the wood. It continued to contract as the whole grew cool, so that when the rod had acquired its first temperature it was near 30. of the above divisions shorter than at first. I repeated the operation a second and third time, and had then reason to conclude, that the wood was nearly as dry as it would become by lying long in a dry air. I now let it cool to the temperature of the atmosphere, which was 75° and heating the sand to 200 only, I poured it around the rod. In a few minutes it expanded 16 divisions. In half an hour the sand had cooled to 125, and the rod had contracted 11 divisions. In an hour more the sand was 80, and the rod shortened full 4 divisions more, being nearly equal to its length when the sand was first applied. On the whole I conclude that very dry wood expands with heat pretty regularly, though certainly in a much less degree than any of the metals or even glass.

"The rod above mentioned having been kept in a dry place for twelve months, I again tried it with the pyrometer, having fixed near one end of it a small graduated scale of ivory, 360 divisions whereof were equal to one inch. This scale was viewed with the microscope, furnished with a cross hair, and I thought this method preferable to the screw micrometer used before.

"The rod was placed in the pyrometer when the temperature of the air was about 60°. On pouring sand around it, heated a little higher than boiling water perhaps, it immediately expanded $\frac{1}{2}$ a division, but in less than a minute it began to contract, and continued to do so for an hour, when I drew off the sand. It was now full 10 divisions shorter than at first, so that it had imbibed a great deal of moisture from the air, which it again parted with to the heated sand. Three hours afterwards, when the rod was cool, I again poured the sand on it, heated as before. It now continued to expand for about three minutes, when its length was increased $3\frac{1}{2}$ divisions, it then began to contract, and became full 3 divisions shorter than when the sand was poured on it. I cauled the sand to run off once more, and let the rod cool. Then heating the sand 250° by a thermometer, I poured it on the rod, and in a few minutes it expanded $3\frac{1}{2}$ divisions, it then began to contract slowly, and in 15 minutes it became $\frac{2}{3}$ of a division shorter than at first. On the whole, I conclude that the expansion of wood, in its length, will be irregular, corresponding partly to the warmth, and partly to the moisture of the atmosphere."

EYE, a river, which rises in the N. W. part of Berwickshire, and falls into the British Ocean, at Eyemouth.

EYESDALE, a small island on the coast of Argyleshire, to the S. E. of Mull. It is noted for its slate quarries.

EYMOUTIERS, a town of France, in the department of Upper Vienne, containing about 2000 inhabitants, with a considerable trade in skins, leather, and rags. It is seated on the

Vienne, 20 miles N. of Limoges. Long. 1. 10. E. Lat. 46. 10. N.

EYMOUTIERS, a town of France, in the department of Dordogne, 15 miles S. of Perigueux.

EYNDHOVEN, a town of Dutch Brabant, in the district of Bois-le-Duc, at the confluence of the Eyns and Dommel, 13 miles S. E. of Bois-le-Duc. Long. 5. 26. E. Lat. 51. 31. N.

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F AABORG, a sea-port of Denmark, on the south coast of the island of Funen, 17 miles S. of Odensee. Long. 10. 16. E. Lat. 55. 12. N.

FABRIANO, a town of Italy, in the marquisate of Ancona, famous for its excellent paper. It is 25 miles N. E. of Foligno. Long. 12. 32. E. Lat. 43. 10. N.

FACE-ACH, a name popularly given to any slight rheumatic affection of the face. The term, however, more properly belongs to a most formidable chronic disorder of that part, which, not being understood by physicians, has hitherto gone by the quaint and untechnical appellation of DOLOR FACIÆ.

This dreadful disease, which is commonly styled the *Dolor Faciæ* of Fothergill*, on account of its being supposed to have been first mentioned by that practitioner, was before known, in the year 1756, to Mr. Andre, surgeon at Paris, who accurately described it under the name of *tic*, and explained it with several observations. Mr. Siebold, however, traced the history of this disorder further back, finding that, in 1724, it had been treated by John Hartmann Degener, practitioner at Nimmegen, whose excellent observation and description of that affection is communicated in the first volume of *Acta Naturæ Curiosæ*, (*de dolore quodam perrara acerbique maxillæ sinistræ partes occupante et per paroxysmos recurrente*, p. 347). This practitioner even supposed, that Lawrence Bauch, physician at Schweinfurth in Franconia, president and founder of the Societas Naturæ Curiosorum, died of this disorder in the year 1665, according to the annals of that society. The patient felt for four years a very excruciating pain in the right maxilla, sometimes growing less, and then ceasing; but, at last, it increased to such a degree, that he became unable to speak or to swallow, and, notwithstanding all possible remedies, died emaciated, and with a palsy on the left side. There existed also, Observations on this disease by Dr. Daniel Ludwig, in the year 1673.—*Misc. Nat. Cur. Dec. I. Ann. III. Observ. 252*, *de dolore superciliaris acerbissimo*.

The Dolor Faciæ may be called analogically (otalgy, odontalgia, &c.) *protopalgy*, as it undoubtedly belongs to the topical pains without fever; and this name seems, besides, to be congruous with respect to the seat as well as to the origin and kind of pain. The seat of the disease has been thought to originate in the teeth, but even drawing of them proved to be of no effect. It is observed by Dr. Fothergill, that the disease generally appears about the fortieth or fiftieth year of age, a period in which people are not much subject to tooth-ach; and though several patients suffered tooth-ach at the

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same time, yet others were quite exempt. The *antrum Highmorianum* is equally assigned as the seat of the disease, but without any probability, as it seems impossible a pain so severe, and lasting for so long a time, should take place there, without producing some change, inflammation, and suppuration, which never was the case in all the instances of that painful affection, according to what we find recorded in the annals of medicine: teeth were drawn out, and an opening made into the *antrum*, without ever perceiving any matter to issue thence. The pain generally extends itself to the jaws, a circumstance which is to be ascribed to the distribution of nerves. The disease, luckily, occurs so seldom, that even physicians of the most extensive practice never had an opportunity of observing it: we find it, however, mentioned by practitioners of all nations, except the Italians. Dr. Fothergill met with sixteen instances of it; Dr. Thilenius, a German physician, saw it but twice during a most extensive practice of twenty years; Dr. Aepi, a Swiss physician, only once in twenty-seven years. The following exhibits the literature of different nations on the above disease.

Fothergill observed, that this disorder mostly attacks women; but Degener and others saw it in men. Mr. Siebold met with three instances in the female sex, and one in a man; it seems, however, to occur more frequently in women than in men, and the proportion is about five to four. It is remarkable, that the subjects of the disease in England were mostly women, in the proportion of 1 to 14; and in Germany mostly men, in the proportion of 21 to 13. On reviewing the cases mentioned by different authors, we observe that they were for the most part confined to the period of age between the thirtieth and eightieth year; and instances of the disorder being met with at an earlier period of life have but rarely occurred. The German translator of Dr. Fothergill's works relates a case of a young lady, nineteen years of age; and also Dr. Leidenroft a similar instance (*Dissert. supra citat.*). Dr. Rahn, Prof. Weidmann of Mentz, and Prof. Siebold of Wurzburg, are the only persons who have observed this disorder in pregnant women. The patient of Prof. Weidmann was attacked by the pain a month before her delivery: evacuations were fruitlessly employed; but she was cured by opium and bark. Dr. Siebold's case is very remarkable, on account of the pain ceasing entirely during pregnancy, a circumstance that seems to prove the great power which the body enjoys in this state, of resisting several diseases, a remark already made by Hippocrates (*de internis affectionibus*, cap. 53, ed. chart. t. viii.

* Doloris Faciæ, morbi rarioris atque atrocis observationibus illustrati, adumbratio Diatribæ I. qua exercitationes clinicas in nosocomio juliano habendas indicit G. Ch. Siebold, Dr. Med. Prof. Wirceburgi, 1795, pp. 22, in 4to.—Diatribæ II. qua pro capessendo in illustri inclyta et ornatissima facultate medica loco et dignitate ad orationem die xxix Jul. 1797, publice celebrandam invit. pp. 23, in 4to. Translated in the Med. and Phys. Journ. No. XXX.

p. 677), who tells us that a dolor ischiadicus disappeared during the period of pregnancy, which, however, recurred twenty days after the delivery. Dr. Sauter saw this painful affection disappear during a putrid fever, and Dr. Selle in an intermittent fever; in both which cases it returned after the fevers were cured. It seems not improbable, but that this disorder may be endemic, and even epidemic; at least the disease has not been more frequently observed than at Clausthal, the capital of the Hercynian mountains; and in the mountainous country of Salzbourg, it is not at all rare. Mr. Andre remarks, that in a very short time he met with eight or ten cases of this disorder, whereas he had not a single one afterwards during a period of twenty-seven years.

This affection seems not to be peculiar to a particular temper and habit of body, but attacks people of very different constitutions suddenly and unexpectedly: its duration is extremely long, as it may last for many years without doing any evident harm to the whole constitution, or without terminating fatally in an immediate manner. A woman suffered this painful affection from her nineteenth year to her eightieth, and got rid of it but shortly before she died. In other cases, however, the disorder emaciates and destroys the body, particularly for want of rest: the diseased side of the face is frequently disfigured, and persons subject to this affection receive, as it were, a double profile, of which Prof. Baldinger relates a curious instance in his Medical Journal, volume ii, No. 7.

Although many symptoms of this disorder are of the spasmodic kind, yet we have more reason to think it to belong to the class of convulsive disorders, and it is therefore erroneously called *trismus dolorificus*, after Sauvages and Puzos, because the vehement contortions do not occur in every patient, and may, moreover, be rather considered as *cyanina nutura medicatrix*, and efforts by which the patients endeavour to relieve themselves from pain, for which purpose they likewise rub the part with much vehemence. A difficulty of speech and of swallowing are observed in some cases, probably from the distortions of the muscular fibres that are subservient to this purpose. A considerable salivation came on in another instance, where the patient became almost hectic; but Mr. Siebold attended a patient whose falival excretion was entirely suppressed; another subject of that disorder had a very much swollen *glandula Warthoni*, from which a fetid and purulent matter issued. The eyes remain sometimes dry, and it is not always that the pain forces out tears; sometimes they become red and humid. In some patients a redness and heat of the affected part precedes the paroxysm of pain, of which phenomenon a curious instance is related by Dr. Rahn, where the heat was so intense that it could be felt at some distance. Other symptoms frequently to be remarked in patients of this kind are, an intumescence of the belly, a torpor of the intestinal canal, and an obstinate costiveness, which are probably owing to a spasm of the *nervus sympatheticus magnus*, that is intimately connected by anastomosis with the fifth pair; an opinion which agrees also somewhat with analogy, as we do not rarely observe, that if the cheeks, or the cheek-bones, are any way affected, the liver is also diseased: those symptoms ought, therefore, to be rather considered as merely secondary, and arising *per consensum*, than as the causa primaria of the disease. It has been observed in one case by Dr. Lentin, that when the belly began to swell, the pain soon after disappeared; and in another case it was greatly diminished by it, which symptom seems to prove that the morbid matter is deposited on the intestines: it deserves, however, to be ascertained by further observations. It is remarkable, that in a case of Dr. Siebold, the patient had a particular relish for sweet things, which that gentleman is inclined to ascribe to a

depravation of taste, occasioned by the affection of the neighbouring nerves, or to an obstruction of the liver, in which this symptom sometimes occurs. The pulse was often full, slow, and soft, during the paroxysm, and at other times it decreased ten beats at every return of the pain.

The seat of the pain has been observed,

1. In some single part of the face, viz. at the inner canthus of the eye, Fothergill; in the orbita, the same; at the supercilia of the right eye, Puzos; in the jaw-bone, Fothergill; in the joint of the jaws, Selle, Puzos; in the maxilla inferior, at the passage of the *nervus infraorbitalis*, Lentin; in the ossa temporaria, Fothergill; in the *nervus infraorbitalis*, Albinus and Van Wy; in the *ala nasi*, Vogler, Thourret, at the margin of the tongue, Lentin.

2. In one half of the face, Fothergill.

3. In both cheeks, Puzos.

4. In both sides of the maxilla inferior, at the exit of the nerve.

5. In the whole head and face, Lentin.

6. In one foot, Lentin. (See Med. and Phys. Journal, vol. iii. 575.)

The head and face are particularly exposed to this painful affection, on account of the quantity of nervous fibres that every-where spread over the surface of the head. The pain essentially differs from any other that occurs in the various parts of the human body, though it may, in some measure, be compared with the *dolor ischiadicus* of Cotunni. Dr. Lentin derives its origin from the *medulla oblongata*; and Prof. Siebold likewise thinks it may originate in a part remote from the affected place, in the *ganglion Gasseri*; others have derived it from the bones; but we still want anatomical observations for ascertaining the proper source of the pain.

Remote causes.] The *causae praedisponeutes* of the disorder appear to be, 1. Violent blows and contusions of the above parts, Andre. 2. Cicatrices, Lentin. 3. Preceding tooth-ach. 4. Too great tenderness of the skin; but the disorder occurred in persons whose skin was by no means to be called tender or soft. 5. Congestions towards the head.

Internal causes.] 1. Cancerous acrimony. Dr. Fothergill first proposed this opinion, whence it has been called by some authors, the *cancerous rheumatism*. The cancerous nature of the disease seems to be confirmed by the following arguments: 1. There is no other cause to be discovered, but that it is owing to a cancerous poison. 2. It most frequently occurs in women, who are particularly disposed to cancers. It generally appeared at the period of the ceasing menstruation, or when they were past the time of menstruation, where a particular tendency to cancer takes place. 4. The kind is exceedingly similar to that occasioned by a cancer. 5. Both disorders have much analogy in their preceding symptoms. 6. Four women suffering this affection, had the *scirrhus mammarii* previously. 7. The effect of hemlock in this disease, which is likewise much praised in cancers.

Adverse arguments.] 1. The disease is not at all uncommon in men, where cancerous acrimony could not be traced, as well as in many women. 2. Menstruation did not always cease in some patients, but they became even pregnant during the disease. 3. The cancerous poison easily attacks glandular parts, but we seldom find them altered, indurated, or painful in the neighbourhood of the pain. 4. There is no instance of the Dolor Faciei having terminated in a cancer of the lips or of the cheek. If it did, however, arise from a cancerous acrimony, it should be more frequently observed in men than women, because the *cancer labiorum* is oftener observed in the male sex. 5. The parts disposed to cancer have been frequently irritated by the persons who had the Dolor Faciei, without ever producing such an affection. 6. It is

not probable that the cancerous acrimony should remain so long at a place so sensible, without manifesting itself in a general way.

These arguments are indeed of some weight, to make us believe that a cancerous poison is by no means the only cause of that affection, nay, that it is not even to be considered as a chief cause of it.

Arthritic matter. Almost all the authors who have treated on this subject, agree in assigning this as the proximate cause of that disorder, but particularly Dr. Leidenfrost. Dr. Dege-ner is likewise of this opinion, having observed at the affected place a tumor similar to that in the joints of gouty people. Dr. Seibold saw, in a patient suffering the most violent pains at the *supercilia*, a node perfectly like that of arthritic limbs; and Dr. Ludwig fairly tells us, that the patients suffering this disorder became gouty soon after. The disease seems to have an arthritic origin in the cases related by Dr. Bochner and Lavagan, who found the pain disappear when the usual arthritic paroxysms returned.

3. *Exanthematic acrimony.* Exanthemata have been observed in this disease, either in the face itself or in some other part of the body. Mr. Andre observed milium eruptions in the face, upon the disappearance of which the pain began to cease; but when they broke out again, the pain recurred with the former violence. Bonnard and Legavan relate instances of herpetic eruptions on the arm having preceded the disorder; and the German translator of Dr. Fothergill's works saw it appear after a retrograde itch: the pain discontinued when the itch broke out again, but as soon as it was removed by proper remedies, the pain immediately returned; and the disease lasted in this way from the nineteenth year of age to the twenty-seventh.

4. *Scrophulous acrimony.* Menouret and Selle (loc. cit.) assign this as a cause of the disease in two instances.

5. *Catarrhus acrimony.* Vogler and Pujol, loc. cit.

6. *Rheumatic matter.* It is not improbable that this is a most frequent cause of that painful affection, which we find likewise confirmed by the authority of experience and obser-vation.

7. *Veneral poison.* M. Seibold is not inclined to admit this as a cause of the above disease, because the venereal pain is always feverish in the night than in the day, without inter-missions, and seems to be more seated in the bones than in the muscular and nervous parts. We have, besides, no obser-vation of the venereal poison being assigned as the cause of that pain, if we except Mr. Watson. (*Journal de Médecine*, 1793, month of March.) It has been, however, observed, that the disease was successfully treated with mercurials; but this can by no means serve as an argument for the venereal nature of the disorder.

8. *Preceding ferrous purities suppressed.* Dr. Lentin relates a case in which a purulent salivation preceded the pain, by the appearance of which, the paroxysm of the pain became less vehement and shorter: in another case the pain succeeded a running of the ears: and Dr. Thilenius saw a patient who had a kind of gonorrhoea previous to the pain, which began to run again as soon as the pain had ceased.

Van Swieten (*Commentar. in Aphorism. Boerhaav. §. 757*) and Davidson (*loc. citat.*) have observed a pain in the face, similar to an ague, which, however, essentially differs, ac-cording to Dr. Fothergill, from the disorder we are speaking of. The patient of Van Swieten had a very severe hemicra-nia, lasting every day for eight hours, which, after this time, abated by degrees. At the first attack the pain appeared in the place where the branch of the fifth pair issues from the foramen supraorbitale: in another case a topical febrile pulse was remarked at the affected place; the disease was cured by

the bark. The typical character of this pain, and the termina-tion of its paroxysm, with a strong perspiration, sufficiently distinguish it from the true Dolor Faciei.

Four cases of this inexplicable malady are related in vol. ii. of the Edinburgh Practice of Physic, Surgery, and Midwifery.

FAHLUN, a town of Sweden, capital of Dalecarlia, situate in the midst of rocks and hills, between the lakes of Run and Warpen. It contains two churches, and (including the miners) 7000 inhabitants. The copper-mine, which gives existence and celebrity to the town, is on its east side. It is 30 miles N.W. of Hedemora. Long. 16. 42. E. Lat. 60. 34. N.

FAIRFIELD, a town of Connecticut, seated near the sea, 100 miles S.W. of Boston. Long. 73. 30. W. Lat. 41. 12. N.

FAIR ISLE, an island of the Northern Ocean, between Shetland and Orkney, from both which its high towering rocks are visible. On the E. side the Duke of Medina Sida-nia, admiral of the Spanish armada, was wrecked in 1588.

FAISANS, an island in the river Bidassoa, which separates France from Spain. It is also called the Island of Confer-ence, because Lewis XIV. and Philip IV. here swore to ob-serve the peace of the Pyrenées, in 1660, after 24 con-ferences between their ministers. Here also the hostages of France and Spain are received and delivered, it being con-sidered as a neutral place. It is situate between Andaye and Fontarabia. Long. 1. 46. W. Lat. 43. 20. N.

FAKENHAM, a town in Norfolk, with a market on Thursday; situate on a hill, 20 miles N.W. of Norwich, and 110 N.E. of London. Long. 0. 58. E. Lat. 52. 53. N.

FALAISE, a town of France, in the department of Cal-vados, with a castle, and one of the finest towers in France. It is remarkable for being the birth-place of William the Con-queror. It has a good trade in serges, linen, and lace; and its fair, which begins on August 16, is the most famous in France, next to that of Beaucourt. It is seated on the river Anté, 20 miles S.E. of Caen, and 115 W. of Paris. Long. 0. 2. W. Lat. 48. 53. N.

FALKENAU, a town of Bohemia, which has manufac-tures of alum, sulphur, and vitriol; seated on the Eger, 12 miles N. of Egra, and 66 W. of Prague. Long. 12. 38. E. Lat. 50. 21. N.

FALKENBERG, a sea-port of Sweden, on the Baltic, 17 miles N.W. of Helmsfadt. Long. 12. 50. E. Lat. 56. 52. N.

FALKENBURG, a strong town of Germany, in the new marche of Brandenburg, seated on the Traje, 60 miles E. of Stetin. Long. 15. 58. E. Lat. 53. 35. N.

FALKINGHAM, a town in Lincolnshire, with a market on Thursday, 18 miles W. by S. of Boston, and 104 N. of London. Long. 0. 20. W. Lat. 52. 48. N.

FALMOUTH, a town of Virginia, on the river Rappahan-noc. Long. 77. 32. W. Lat. 38. 21. N.

FALMOUTH, a sea-port in the state of Massachusetts, 50 miles S.S.E. of Boston. Long. 70. 32. W. Lat. 41. 31. N.

FALMOUTH, a town of the island of Jamaica, on the N. coast. Long. 77. 32. W. Lat. 18. 31. N.

FALSTER, a little island of Denmark, near the entrance of the Baltic, between the islands of Zealand, Laland, and Mona. Nikoping is the capital.

FALSTERBO, a sea-port of Sweden, in Schonen, chiefly known for a lighthouse and its herring fishery, 22 miles S.S.W. of Lund. Long. 12. 48. E. Lat. 55. 22. N.

FAMAGUSTA, a town in the island of Cyprus, with a Greek bishop's see, and a harbour, defended by two forts. It was taken by the Turks, in 1570, after a siege of six months, when they slayed the Venetian governor alive, and murdered the inhabitants, though they surrendered on honourable terms.

It is 62 miles N. of Nicofia. Long. 35. 55. E. Lat. 35. 10. N.

FAMARS, a town of France, in the department of the North, near which the French were defeated by the allies, April 21, 1793. It is three miles S. of Valenciennes.

FAMINE, PORT, a fortress, on the N.E. coast of the straits of Magellan. Here a Spanish garrison perished for want; since which it has been neglected. Long. 70. 20. W. Lat. 55. 44. S.

FANANO, a town of Italy, in the Modenese, 25 miles S. of Modena. Long. 11. 18. E. Lat. 44. 10. N.

FANJEAUX, a town of France, in the department of Aude, 14 miles W. of Carcassonne. Long. 1. 57. E. Lat. 43. 11. N.

FANO, a town of Italy, in the duchy of Urbino, with a bishop's see. Here are an ancient triumphal arch, handsome churches, and fine palaces. It is seated on the gulf of Venice, eight miles S.E. of Pesaro. Long. 13. 5. E. Lat. 43. 46. N.

FANTIN, a kingdom on the Gold Coast of Guinea, where the English and Dutch have forts. Its palm-wine is much better and stronger than that in other parts of the coast. The principal village has the same name.

FAREHAM, a town in Hampshire, with a market on Wednesday, 12 miles E. of Southampton, and 74 W. by S. of London. Long. 1. 6. W. Lat. 50. 53. N.

FAREWELL, CAPE, a promontory of the island of New Zealand. Long. 172. 41. E. Lat. 40. 37. S.

FARGEAU, St. an ancient town of France, in the department of Yonne, with a castle, 10 miles S.E. of Briare, and 82. S. of Paris. Long. 3. 8. E. Lat. 47. 40. N.

FARIM, a country of Africa, to the S. of the river Gambia. It has a town of the same name. Long. 13. 50. W. Lat. 14. 10. N.

FARM (*Encycl.*). At the conclusion of that article we pointed out as an instance of what an *ornamental farm* should be, that belonging to Mrs. Southcote, near Weybridge in Surrey, called Woburn Farm. It may not be amiss to describe this place, which contains 150 acres. Of these near 35 are adorned to the highest degree; of the rest, about two-thirds are in pasture, and the remainder is in tillage. The decorations are, however, communicated to every part: for they are disposed along the sides of a walk, which, with its appendages, forms a broad belt round the grazing-grounds; and is continued, though on a more contracted scale, through the arable. This walk is properly garden; all within it is farm; the whole lies on two sides of a hill, and on a flat at the foot of it: the flat is divided into corn-fields; the pastures occupy the hill; they are surrounded by the walk, and crossed by a communication carried along the brow, which is also richly dressed, and which divides them into two lawns, each completely encompassed with garden.

These are in themselves delightful; the ground in both lies beautifully; they are diversified with clumps and single trees; and the buildings in the walk seem to belong to them. On the top of the hill is a large octagon structure; and, not far from it, the ruin of a chapel. To one of the lawns the ruin appears, on the brow of a gentle ascent, backed and grouped with wood; from the other is seen the octagon, upon the edge of a steep fall, and by the side of a pretty grove, which hangs down the declivity. This lawn is further embellished by a neat Gothic building; the former by the house, and the lodge at the entrance; and in both, other objects of less consequence, little seats, alcoves, and bridges, continually occur.

The buildings are not, however, the only ornaments of the walk; it is shut out from the country, for a considerable length of the way, by a thick and lofty hedge-row, which is enriched with woodbine, jessamine, and every odoriferous plant whose tendrils will entwine with the thicket. A path, gene-

rally of sand or gravel, is conducted in a waving line, sometimes close under the hedge, sometimes at a little distance from it; and the turf on either hand is diversified with little groups of shrubs, of firs, or the smallest trees, and often with beds of flowers: these are rather too profusely sown, and hurt the eye by their littleness; but then they replenish the air with their perfumes, and every gale is full of fragrant. In some parts, however, the decoration is more chaste; and the walk is carried between larger clumps of evergreens, thickets of deciduous shrubs, or fill more considerably open plantations. In one place it is entirely simple, without any appendages, any gravel, or any funk fence to separate it from the lawn; and is distinguished only by the richness of its verdure, and the nicety of its preservation. In the arable part it is also of green sward, following the direction of the hedges about the several inclosures: these hedges are sometimes thickened with flowering shrubs; and in every corner or vacant space, is a rosary, a clove or an open clump, or a bed of flowers: but if the parterre has been rifled for the embellishment of the fields, the country has on the other hand been searched for plants new in a garden; and the shrubs and the flowers which used to be deemed peculiar to the one, have been liberally transferred to the other; while their number seems multiplied by their arrangement in so many and such different dispositions. A more moderate use of them would, however, have been better; and the variety more pleasing, had it been less licentious.

But the excess is only in the borders of the walk; the scenes through which it leads are truly elegant, every-where rich, and always agreeable. A peculiar cheerfulness overspreads both the lawns, arising from the number and the splendor of the objects with which they abound, the lightness of the buildings, the inequalities of the ground, and the varieties of the plantations. The clumps and the groves, though separately small, are often massed by the perspective, and gathered into considerable groups, which are beautiful in their forms, their forms, and their positions. The brow of the hill commands two lovely prospects: the one gay and extensive, over a fertile plain, watered by the Thames, and broken by St. Anne's Hill and Windsor Castle; a large mead, of the most luxuriant verdure, lies just below the eye, spreading to the banks of the river; and beyond it the country is full of farms, villas, and villages, and every mark of opulence and cultivation. The other view is more wooded: the steeple of a church, or the turrets of a seat, sometimes rise above the trees; and the bold arch of Walton Bridge is there a conspicuous object, equally singular and noble. The inclosures on the flat are more retired and quiet; each is confined within itself; and all together they form an agreeable contrast to the open exposure above them.

With the beauties which enliven a garden are every-where intermixed many properties of a farm: both the lawns are pastured; and the lowings of the herds, the bleating of the sheep, and the tinklings of the bell-wether, resound through all the plantations: even the clucking of poultry is not omitted; for a menagerie of a very simple design is placed near the Gothic building: a small serpentine river is provided for the water-fowl; while the others stray among the flowering shrubs on the banks, or frigate about the neighbouring lawn: and the corn-fields are the subjects of every rural employment, which arable land from seed-time to harvest can furnish. But though so many of the circumstances occur, the simplicity of a farm is wanting; that idea is lost in such a profusion of ornament; a rusticity of character cannot be preserved amidst all the elegant decorations which may be lavished on a garden.

Experimental Farm, a new establishment proposed by Sir John Sinclair, bart. on a very extensive plan, for the purpose of improving agriculture by proper experiments.

This new institution is to be called "THE PLOUGH, or JOINT STOCK FARMING SOCIETY, for the Purpose of ascertaining the Principles of Agricultural Improvement." There is every reason to hope, that this project will meet the most ample success; for, independently of the advantage which the public may expect to derive from the employment of a large capital in experimental farms, conducted and supervised by the most eminent and enlightened agriculturists, those who shall be induced to subscribe to the plan have a fair and reasonable prospect of seeing themselves not only reimbursed their original deposit, but of being rewarded by a handsome accumulation. Among the most distinguished promoters of the plan are, the Dukes of Argyll, Bedford, and Somerset; the Earls of Egremont and Wemyss; Lords Macdonald and Ranelagh; the Bishops of Llandaff, the Lord Mayor of London, Sir John Call, Sir James Colquhoun, Sir James Norcliff Innes, Sir John Macpherson, and Sir Charles Middleton; and several gentlemen of large property and great knowledge.

The outlines of this plan, which, by the permission of Sir John Sinclair, were presented to the public in the British Magazine, are as follow:

I. The proposed capital.

1,600 shares at 50*l.* each - - - *£*. 80,000.

It is also intended to admit half shares at 25*l.* each; but the persons holding them, though they will have a right to partake in the pecuniary advantages of the institution, will not be entitled to vote in the choice of directors. The number of shares which each person may hold not to be restricted. The directors to be annually chosen in London, and to meet there. The books of the society to be always open to the inspection of subscribers.

II. Proposed Expenditure.

1. To establishing eight experimental, arable, and grazing farms, in the neighbourhood of London, and in different parts of the kingdom, at 4,000 <i>l.</i> each	<i>£</i> . 32,000
2. To ditto two upland farms, for improving mountain sheep, at 1,500 <i>l.</i> each	3,000
3. To purchasing 5,000 acres, inclosing and planting with, larch, fir, and other trees, and other expenses attending the same	35,000
4. To a contingent fund, for incidental and unforeseen expenses	10,000
	<i>£</i> . 80,000

III. Ultimate Return.

1. Sale of stock, crop, and implements, on the experimental farms, at the conclusion of 21 or 30 years, or any other period fixed by the society	<i>£</i> . 35,000
2. Value of 5,000 acres of land, the buildings erected thereon, and of 1,250,000 larches, fir, and other trees, at the conclusion of 30 years	218,000
3. Principal of a contingent fund, on the supposition that the interest will defray all expenses of management, &c.	10,000

Total - - - *£*. 263,000

Which is above thrice the original capital. In addition to the ultimate return, the subscribers will, in the interim, enjoy the following advantages, namely:

1. An account of the proceedings of the society annually transmitted to them;
2. The privilege of visiting the experimental farms, either

in their own neighbourhood, or wherever established by the society:

3. The right of nominating persons to be instructed at the different agricultural academies proposed to be erected at each experimental farm; and,

4. A division of the annual profit that may arise from the experimental farms.

It is also intended to keep up such a connection with the Board of Agriculture, and the various societies formed for agricultural purposes in the kingdom, as cannot fail to be attended with the most important advantages, both to the society itself, and to the farming interest in general.

Conditions of the Subscription.

1. No subscriber shall be compellable to pay his subscription, or shall incur any expense whatever, unless the purposes of the institution are actually carried into effect:

2. The capital of 80,000*l.* shall not be increased, without the consent of a majority of subscribers:

3. The society shall be established by charter, or by act of parliament, or by deed enrolled, so as to prevent the possibility of any demand beyond the sum subscribed:

4. The shares shall be transferable from the time the society is established, and the sums subscribed payable by instalments, to be determined on at a general special meeting of the subscribers, and issued solely under the authority of directors or trustees, appointed by the society for that special purpose.

In recommendation of his proposal, the worthy baronet has deflected with great force and ingenuity on the advantages of experimental farms. He establishes as a principle, that the art of agriculture can never be brought to any high degree of perfection, unless by experiments, accurately tried, and persevered in for some time. In support of this opinion, he refers to the writings of Arthur Young, Marshall, and Dr. Francis Home. From the increasing population of London, and of other large towns in the kingdom, Sir John observes, it is impossible they can be supplied with provisions at a reasonable rate, unless agriculture is brought to a high degree of perfection. At present the nation depends on foreign industry and cultivation for a part of its subsistence, and we are periodically visited with a scarcity of food, which increases the expense of living to every family in the kingdom, and loads the rich with heavy additional burthens to maintain the poor, and to preserve them from the miseries of famine. A small portion of that sum, the exaction of which thus becomes so frequently necessary, were it properly applied to the improvement of agriculture, would soon enable this country to feed itself, and, indeed, would put it in the power of the farmer to supply the public with provisions at a reasonable rate. Hence it is evident, that every man who pays 1*l.* instead of 9*d.* for a loaf of bread, or 10*s.* in the pound instead of 2*s.* for poor-rates, ought to consider himself essentially interested in promoting agricultural improvements, and ought, for his own interest, to support any measure calculated for that purpose, as far as his circumstances will permit.

There is scarcely any part of the kingdom where greater quantities of waste and unproductive land are to be found than in the neighbourhood of London, or ground, in many instances, more capable of improvement. It is to be hoped that the general bill of inclosure will soon pass, in consequence of which those wastes will be divided. But that will be of little avail, unless the means of improving them are ascertained. When Enfield Chase was divided, many persons, from ignorance, suffered considerable losses in attempting to improve

* The experimental farms might be given up at the end of 21 years, and that part of the property divided. The plantations, probably, had better be retained for nine or ten years longer.

portions of the waste; whereas had the principles of improvement been accurately ascertained by means of experimental farms, the purchasers would have improved the land greatly to their own, and to the public benefit.

Sir John further recommends his plan by stating the numerous advantages, in point of knowledge and rational recreation, which will result from it to men of business who have acquired fortunes by the pursuit of their professions in cities, and to those who make temporary excursions into the country, but return disgusted for want of some interesting avocation or laudable pursuit.

In explanation of the manner in which the plan is to be carried into execution, it is said, that although a capital of 80,000*l.* would be necessary, yet from 10,000*l.* to 20,000*l.* will be sufficient to give it a fair beginning, either with an experimental farm, or an extensive plantation, or with both, in the neighbourhood of the metropolis. With such a sum the project will proceed; for however desirable it might be to carry a great scheme into execution, because it commands the attention of those who take a share in the management of it, yet the important object is, to lay a solid foundation, which may, according to circumstances, be afterwards extended. And it is suggested, that when once a capital is embarked, and a farm established sufficient to secure share-holders from eventual loss, there is abundant room to hope, that the example of the metropolis will be followed, and a correspondence established in all parts of the kingdom.

With the honest zeal resulting from conviction, Sir John proceeds to remove the presumable objections to his plan: first, *that no experimental farm is necessary.* In answer to this he observes, that the value of new inventions cannot be correctly estimated without such establishments, nor will it be possible to ascertain what practices ought to be avoided, and what ought to be pursued. The former is as important to be known as the latter, yet seldom communicated to the public, because the farmer is, in general, ashamed of acknowledging his want of success; and, indeed, where his experiments answer, they are frequently concealed, lest others should avail themselves of such discoveries. The object of an experimental farm, however, is, to ascertain facts, and to publish them; and as much credit would be acquired by an intelligent and public-spirited society for their exertions in detecting errors, as in proving facts likely to be useful.

Second, *that there are many experimental farms now carried on by individuals, which will answer the same purpose.* These are more properly to be accounted *pattern farms*, for the advantage of their own immediate neighbourhood, than experimental ones, in the strict sense of that word. In order to render indeed experimental farms generally useful, the farms must be open to the inspection of the public; the account of each experiment must be regularly published, and every experiment, likely to affect the cultivation of any part of the kingdom, tried with the utmost precision. It cannot be expected that persons whose attention is necessarily directed to other objects can renounce every other pursuit, and devote themselves exclusively to the conducting of experiments; whereas, when an experimental farm is once established, it will soon be proved by the evidence of facts, 1st, What is the best mode of rendering arable land productive, and the proper rotation of

crops in all soils and situations. 2d, What is the best system for the management of grass lands. 3d, What are the most useful implements of husbandry. 4th, What are the most profitable breeds of animals, and the best and cheapest modes of rearing, feeding, and fattening them. 5th, What is the best plan for rendering waste or barren land productive. These are points of infinite consequence, which never have yet, and indeed never can be ascertained, unless by means of farms appropriated for that special purpose: it will require, it is true, the unceasing attention of an intelligent manager; and the experiments, in order to be relied on, must be made with almost mathematical accuracy and strictness. The expense also must be considerable; but the ultimate advantage to the public must be so great, as amply to compensate for any trouble, or cost, which may attend the execution*.

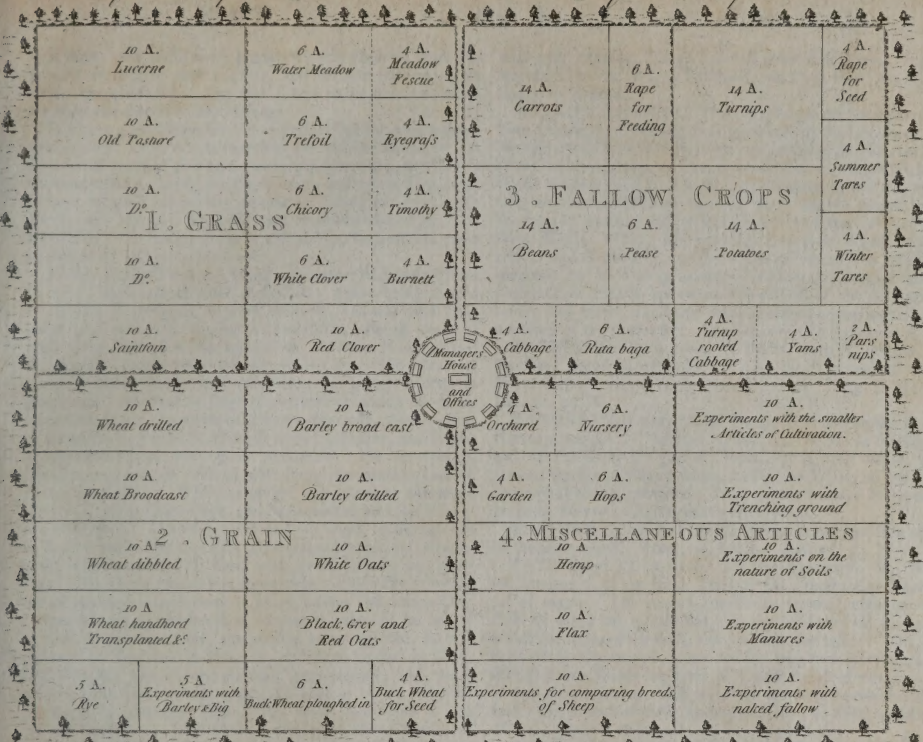
Third, *that it would be difficult to find managers.* This objection, not referring so much to the principle of the undertaking, as to a contingent fact, constituting a difficulty, is answered by the personal assertion of Sir John, that he knows some who would carry on the undertaking with zeal and energy, and take shares as a security for their good behaviour, and a pledge of their being interested in its success. After decanting on the benefits which will accrue, both to the public and the manager, and which will operate as a stimulus on his activity and integrity, while every possibility of fraud is cautiously precluded, the following remark is made:—In regard to the particular plan of experiments to be pursued, the following measures may be adopted: as soon as a farm is taken, an accurate plan of it should be obtained, distinguishing the different soils, and every other circumstance connected with it. Every assistance will then be procured from the best practical farmers in the kingdom, to draw up a regular course of experiments, and a rotation of crops best calculated for the different fields; and such a plan must be rigidly adhered to by the manager, unless the committee of management give directions to the contrary. Thus the manager will only be accountable for the strict execution of the orders he receives; and as those orders will be given in consequence of the most mature consideration, hence the whole system, it is to be hoped, will be carried on with the utmost regularity and correctness: then would there not be a single principle in agriculture that might not be thus ascertained in the space of a few years; and farmers, in future, would have an invariable standard to go by, which they might rely on with certainty.

The fourth and last objection to which an answer is given is, that the profits of the proposed plantation are over-rated. To obviate this supposition, Sir John Sinclair states the great probability that, in thirty years, the value of timber will be greatly enhanced; but, taking it at its present value, there is every reason to consider it greatly under-rated. In proof of this he cites the valuation of the forest of Culores, near Edinburgh, which consists of Scotch firs forty-three years old, and is valued at 93*l.* 15*s.* an acre. Now as larch at thirty years old is as valuable as fir at forty-five, there is every reason to expect that the 5000 acres proposed to be planted will be worth at least 900*l.* an acre, and consequently, instead of 218,000*l.* the sum first stated, will produce 450,000*l.*

This is the substance of a most benevolent, patriotic, and practicable plan, in which individuals, without forgetting for

* For instance, if the question is, What is the best breed of cattle? Their food must be accurately weighed, and a regular account preserved of the whole quantity they eat during the whole course of the experiment. If the question is to ascertain, Whether large or small animals pay best for the food they eat; the experiment must be begun from their birth, and continued till they are slaughtered. In short, almost every experiment of great consequence requires a degree of attention and perseverance, and a duration, in point of time, which can only be expected from a public institution devoted exclusively to that purpose.

One Years Crop on 400 Acres divided into 4 equal Departments.



It is proposed to have the principal Experimental Farm in the immediate vicinage of London, as a model to the rest & for the satisfaction & benefit of the Subscribers in the Metropolis. It is evident that the Crops must vary every Year which cannot be explained by Plate.

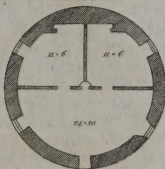
SIR JOHN SINCLAIR'S Plans & Elevations of CIRCULAR COTTAGES.



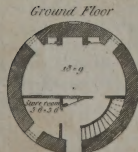
Second Floor



Ground Floor



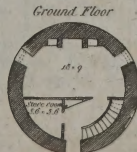
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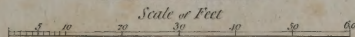
Ground Floor



Ground Floor



Ground Floor



a moment the dictates of prudence, may render a most important service to their country, and become patrons of an institution which future ages (thall revere as the source of innumerable and inexhaustible blessings.

We have copied from Sir John's publication the annexed engravings (Pl. 28.), which represent the distribution of an experimental farm of 400 acres, and a circular cottage, which is recommended as being peculiarly warm and convenient, and, if built of good materials, capable of lasting for ages, with hardly any repair. An additional recommendation of such a building is its cheapness, as it will not, in the northern parts of Scotland, cost more than 30*l*.

FARNABIE (Thomas), son of a carpenter at London, born in 1575, flaid a short while at Oxford; where being enticed to abandon his religion, he went to Spain, and was there educated in a college belonging to the Jesuits. Being weary of their severe discipline, he went with Sir John Hawkins and Sir Francis Drake in their last voyage in 1595. He was afterwards a soldier in the Low-countries; but being reduced to great want, returned to England, where wandering about for some time under the name of *Thomas Bainsafe*, the anagram of his name, he settled at Mattock in Somersetshire, and taught a grammar-school with good reputation. He removed to London, and opened a school with large accommodations for young gentlemen. While he taught this school he was made master of arts at Cambridge, and incorporated into the university of Oxford. Thence he removed, in 1636, to Seven-oaks in Kent; and taught the sons of several noblemen and gentlemen, who boarded with him, with great success, and grew rich. His works gained him reputation. Upon the breaking out of the civil commotions in 1641, he was cast into prison. It was debated in the house of commons, whether he should be sent to America; but this motion being rejected, he was removed to Ely-house in Holborn, and there he died in 1647. Mr. Farnabie was a very eminent grammarian; and many writers have spoken with great approbation of his labours. M. Bayle in particular says, "His notes upon most of the ancient Latin poets have been of very great use to young beginners; being short, learned, and designed chiefly to clear up the text."

FARO, an island of Sweden, near the island of Gothland, about 30 miles in circumference, populous and fertile. The principal town has the same name, and is situate on the S.E. coast. Long. 19. 7. E. Lat. 57. 50. N.

FARO, a sea-port of Portugal, in Algarva, on the gulf of Cadiz, with a bishop's see. It has some trade in almonds, figs, oranges, and wine, and is 20 miles S.W. of Tavira. Long. 7. 48. W. Lat. 36. 54. N.

FARO, FARRO, or FEROS ISLANDS, a cluster of small islands in the Northern Ocean, between 5 and 8° W. long. and 61 and 63° N. lat. They are subject to Denmark. Seventeen are habitable, each of which is a lofty mountain, divided from the others by deep and rapid currents. Some of them are deeply indented with secure harbours, all of them steep, and most of them faced with tremendous precipices. The surface consists of a shallow soil of remarkable fertility; producing plenty of barley, and fine grass for sheep. No trees above the size of a juniper, or stunted willow, will grow here; nor are any quadrupeds to be seen except sheep, and rats and mice, originally escaped from ships. Vast quantities of sea-fowls frequent the rocks, and the taking of them furnishes a perilous employment for the inhabitants. The exports are salt mutton, tallow, goose-fowls, feathers, eider-down, knit wollen waistcoats, caps and stockings. To the S. of these islands is a considerable whirlpool. See *BIRD-Catching*.

FARO OF MESSINA, the strait between Italy and Sicily, remarkable for having the tide ebb and flow every six hours,

with great rapidity, though it is but seven miles over. It is so named, from the faro, or lighthouse, on Cape Faro, and its vicinity to Messina.

FARRIERY (*Encycl.*). This once vulgar art has deservedly been rescued from the hands of ignorance by the labours of the Veterinary College, and its ingenious professor Mr. COLEMAN. (See *COLLEGE, Supp.*) The improved state of Veterinary literature is also a subject of high congratulation to the country; who are now possessed of valuable works on the subject from the pens of the late and present professors of the college; and from Messrs. White, Riding, John Lawrence, Richard Lawrence, and Boardman; to the latter of whom the public is indebted for a VETERINARY DICTIONARY, which comprehends all that is known on the subject of the diseases of horses and cattle, illustrated with excellent engravings of the anatomy of the horse, &c. See *FROG* in this Supplement.

FARRINGTON, a town in Berks, with a market on Tuesday, seated on an eminence, near the Thames, 18 miles W. of Oxford, and 50 W. by N. of London. Long. 1. 27. W. Lat. 51. 44. N.

FARSISTAN; a province of Persia, bounded on the E. by Kerman, on the N. by Irac-Agemi, on the W. by Kufistan, and on the S. by the gulf of Persia. It is very fertile, and famous for its excellent wines, called the Wines of Schiras, the capital of this province. Here are the ruins of Persepolis, perhaps the most magnificent in the world.

FARTACK, a town of Arabia Felix, at the foot of a cape of the same name. Long. 51. 25. E. Lat. 15. 55. N.

FAT (*Encycl.*). A patent has been granted to Mr. Wilson Fitzgerald, of the Inner Temple, for a mode of producing fat or tallow. The process consists in pouring upon animal flesh, of any kind, a sufficient quantity of strong nitrous acid, which decomposes the flesh, and produces the tallow. Or, instead of the nitrous acid, a composition may be employed, consisting of two thirds sulphuric acid, and one third nitrous—or of two thirds nitrous, and one third muriatic or oxy muriatic acid. Or, instead of these, a compound may be used, consisting of lime, sulphate of pot-ash, alum, and pyrites.

FATTIPOUR, a town of Hindoostan Proper, in the province of Agra, where the emperors of Hindoostan, when in the zenith of their power, had a palace. It is 25 miles W. of Agra. Long. 77. 43. E. Lat. 27. 22. N.

FAVIGNANA, a small island, 15 miles in compass, on the W. side of Sicily, with a fort. Long. 12. 25. E. Lat. 38. 16. N.

FAYAL, one of the Azores, or Western Islands, which suffered greatly by an earthquake, in 1764. Its capital is Villa do Horta.

FAYENCE, a town of France in the department of Var, celebrated for its manufacture of earthen ware. It stands near the river Biazon, 10 miles W. of Grasse. Long. 6. 44. E. Lat. 43. 38. N.

FAYETTE, a county of Kentucky, bounded on the N. by the Ohio, on the E. by Bourbon county, and on the S.W. by the river Kentucky. Lexington is the capital.

FAYETTE, a county of Pennsylvania, 37 miles long, and 33 broad. In 1790, it contained 13,325 inhabitants. Union is the capital.

FAYETTEVILLE, a town of N. Carolina, on the N.W. branch of Cape Fear River, 90 miles N.W. of Wilmington, to which that river is navigable for boats.

FAYOUM, a town of Egypt, capital of a province of the same name, 49 miles S.S.W. of Cairo. Long. 30. 39. E. Lat. 29. 27. N.

FE, SANTA, a rich and regularly built city, the capital of New Mexico, and the see of a bishop. It is situate near the source of the Rio del Norte. Long. 108. 48. W. Lat. 36. 50. N.

FE, SANTA, a town of Paraguay, situate at the confluence of the Salade with the Plata, 450 miles S.W. of Assumption. Long. 60. 40. W. Lat. 30. 45. S.

FEAR, CAPE, a cape of N. Carolina, remarkable for a dangerous shoal, called, from its form, the Frying-pan. This shoal lies at the entrance of Cape Fear River, which is formed by two branches, called the N.W. and N.E. branches. These unite above Wilmington, and fall into the Atlantic, below Brunswick. Long. 77. 45. W. Lat. 33. 40. N.

FECAMP, an ancient sea-port of France, in the department of Lower Seine. It had lately a Benedictine abbey, remarkable for its opulence and great privileges. The church is one of the largest in France. *Fecamp* is 24 miles N.E. of Havre-de-Grace. Long. 0. 23. E. Lat. 49. 37. N.

FELDKIRCHE, a trading town of Germany, capital of a county of the same name, in Tirol. It is seated on the river Ill, near its entrance into the Rhine, 15 miles E. of Appenzel. Long. 9. 40. E. Lat. 47. 10. N.

FELICUDA, one of the Lipari Islands, in the Mediterranean, 28 miles W. of Lipari. The inhabitants preserve rain-water in cisterns, there being no spring in the island.

FELIX, Sr., an island in the S. Pacific Ocean, N.N.W. of Juan Fernandez. Long. 86. W. Lat. 26. S.

FELLETTIN, a town of France, in the department of Creuse, noted for its manufacture of tapestry. It is 20 miles S.S.W. of Evaux, and 21 S.S.E. of Gueret. Long. 2. 6. W. Lat. 45. 53. N.

FELLEN, a town in the Russian government of Riga, seated on a river of the same name, 62 miles S.E. of Revel. Long. 24. 5. E. Lat. 58. 22. N.

FELSBERG, a town of Germany, in the principality of Hesse Cassel, with an ancient castle on a rock, 12 miles S. of Cassel.

FELTRI, an episcopal town of Italy, in the Trevisano, capital of a district of the same name. It is seated on the Adona, 40 miles N. of Padua. Long. 11. 55. E. Lat. 46. 3. N.

FELTRIA (anc. *geog.*), a town on the borders of Rhaetia towards Italy. Now *Feltre*, in the territory of Venice, on the Piava. Long. 12. 16. E. Lat. 46. N.

FEMEREN, a fertile island or Denmark, in the Baltic, three miles from the coast of Holstein.

FENESTRELLE, a town and fort of Piedmont, in the valley of the Vaudois. It was taken by the Duke of Savoy, from the French, in 1708, and ceded to him by the treaty of Utrecht. It is 18 miles W. of Turin. Long. 7. 21. E. Lat. 45. 10. N.

FERABAD, a town of Persia, capital of the province of Mazanderan, seated among the mountains which bound the Caspian Sea to the S. and 12 miles from it. Shah-Abbas often spent his winters here. It is 130 miles W. of Astrabad. Long. 53. 21. E. Lat. 37. 14. N.

FERABAD, a town of Persia, two miles from Isfahan, and extending almost three miles along the banks of the Zenderoad. It was built by Shah-Abbas, who brought the Armenians here from the preceding town, after they had revolted from the Turks.

FERCULA, or *FORCULA*, a town of Biledulgerid, and the principal place of a district. It is 50 miles W. of Sugulmeffa. Long. 4. 30. W. Lat. 31. 40. N.

FERDINAND V. king of Spain, called *the Catholic*, which title was continued to his successors. He married Isabella of Castile, by which that kingdom was united to the Spanish crown. This illustrious couple laid the foundation of the future glory and power of Spain. The conquest of Grenada, and the discoveries of Christopher Columbus, make this reign a celebrated æra in the history of Spain. He died in 1516, aged 63.

FERE, a town of France, in the department of Aisne, famous for its powder-mill, and school of artillery. Near this town is the castle of St. Gobin, famous for its manufacture of fine plate-glass. *Fere* is seated at the confluence of the Sere and Oise, 20 miles N. of Soissons, and 75 N.E. of Paris. Long. 3. 25. E. Lat. 49. 29. N.

FERENTINO, or *FIRENTO*, an episcopal town of Italy, in Campagna di Roma, seated on a mountain, 44 miles S.E. of Rome. Long. 13. 27. E. Lat. 41. 46. N.

FERENTINUM (anc. *geog.*), a town of the Hernici in Latium, which the Romans, after subduing that nation, allowed to be governed by its own laws. Now *Ferentino*, an episcopal city in the Campania of Rome. Long. 14. 5. E. Lat. 41. 45. N.

FERENTUM, or *FORENTUM* (anc. *geog.*), a town of Apulia in Italy. Now *Forenza*, in the Basilicata of Naples.

FERMO, an ancient town of Italy in the marquise of Ancona, with an archbishop's see. It is seated near the gulf of Venice, 17 miles S.E. of Macerata. Long. 13. 50. E. Lat. 43. 7. N.

FERNANDO NORONHA, an island near the coast of Brazil, subject to the Portuguese. Long. 32. 33. W. Lat. 3. 56. S.

FERNANDO Po, an island of Africa, 25 miles W. of the coast of Benin. It is 30 miles long, and 20 broad. Long. 3. 3. E. Lat. 3. 6. N.

FERNELIUS (John), physician to Henry II. king of France, was born in Picardy, in the latter end of the 15th or the beginning of the 16th century. Being sent to Paris to study rhetoric and philosophy, he applied himself in a most intense manner. All other pleasure was insipid to him. He cared neither for play nor for walking, nor for entertainments, nor even for conversation. He read Cicero, Plato, and Aristotle. The reading of Cicero procured him this advantage, that the lectures he read on philosophical subjects were as eloquent, as those of the other masters were barbarous at that time. He also applied himself very earnestly to the mathematics.

This continual study drew upon him a long fit of sickness, which obliged him to leave Paris. On his recovery, he returned thither with a design to study physic; but before he applied himself entirely to it, he taught philosophy in the college of St. Barbara. After this he spent four years in the study of physic; and, taking a doctor's degree, confined himself to his closet in order to read the best authors, and to improve himself in the mathematics; that is, as far as the business of his profession would suffer him. Never was a man more diligent than Fernel. He used to rise at four o'clock in the morning, and studied till it was time either to read lectures or to visit patients. He then examined the urine that was brought him; for this was the method of those times, with regard to the poor people, who did not send for the physician. Coming home to dine, he flung himself up among his books, till they called him down to table. Rising from table, he returned to his study, which he did not leave without necessary occasions. Coming home at night, he did just as at noon: he staid among his books, till they called him to supper; returned to them the moment he had supped; and did not leave them till eleven o'clock, when he went to bed.

In the course of these studies, he contrived mathematical instruments, and was at great charges in making them. But his wife murmuring at the expence, he dismissed his instrument-makers, and applied himself in good earnest to practise physic. But as visiting patients did not employ his whole time, he read public lectures upon Hippocrates and Galen. This soon gained him a great reputation through France and in foreign countries. His business increasing, he left off read-

ing lectures; but as nothing could make him cease to study in private, he spent all the hours he could spare in composing a work of physic, *Physiologia*, which was soon after published. He was prevailed with to read lectures upon this new work, which he did for three years: and undertaking another work, which he published, *De venesectione*, he laid himself under a necessity of reading lectures some years longer, in order to explain this new book to pupils.

While he was thus employed, he was sent for to court, in order to try whether he could cure a lady, whose recovery was despaired of. He was so happy as to cure her; which was the first cause of that esteem which Henry II. who was then but dauphin, and was in love with that lady, conceived for him. This prince offered him, even then, the place of first physician to him; but Fernel, who infinitely preferred his studies to the hurry of a court, would not accept the employment. When Henry came to the throne, he renewed his intreaties: but Fernel repented, that the honour which was offered to him was due, for several reasons, and as an hereditary right, to the late king's physician; and that, as for himself, he wanted some time to make experiments concerning several discoveries he had made relating to physic. The king admitted this: but as soon as Francis I.'s physician died, Fernel was obliged to go and fill his place at Henry II.'s court. And here just the contrary to what he dreaded came to pass: for he enjoyed more rest and more leisure at court, than he had done at Paris; and he might have considered the court as an agreeable retirement, had it not been for the journeys which the new civil war obliged the king to take. He died in 1558, leaving behind him a great many works, besides what have been mentioned; as, *De abditis rerum causis*, seven books of Pathology, a book on remedies, &c. They have been printed several times; with his life prefixed, written by William Plantius his disciple.

FEROE ISLANDS. See **FARO**.

FERRENDINA, a town of Naples, in Basilicata, near the river Sifanto, 25 miles S.W. of Matera. Long. 16. 34. E. Lat. 40. 40. N.

FERTE-ALAIS, a town of France, in the department of Seine and Oise, 18 miles S. of Paris. Long. 2. 27. E. Lat. 48. 30. N.

FERTE-BERNARD, a town of France, in the department of Sarthe, seated on the Huise, 20 miles N.E. of Mans. Long. 0. 30. E. Lat. 48. 3. N.

FESTENBERG, a town of Silesia, in the principality of Oels, 14 miles N.W. of Wartenburg.

FETHARD, a borough of Ireland, in the county of Tipperary, eight miles S.E. of Cashel, and 86 S.W. of Dublin.

FETHARD, a town of Ireland, in the county of Wexford, on the coast, 81 miles S. of Dublin. Long. 7. 3. W. Lat. 52. 10. N.

FEVER (*Encycl.*). It is well known not only to medical men but to others who have experienced the direful effects of contagious fevers, that in small, close, and dirty rooms they infect a very great proportion of mankind; not less than 26 out of 27, or a still higher proportion. In a large airy, clean apartment, however, even putrid fevers are seldom or never infectious. When this poisonous vapour is much diluted with fresh air, it is not noxious.—From a large collection, and an attentive consideration, of facts relative to this distemper, have been formed the following rules, which cannot be too generally known.

1. As safety from dangers entirely depends on cleanliness and fresh air, the room door of a patient ill of an infectious fever, especially in the habitations of the poor, should never be shut; a window in it, during the day, ought to be frequently opened. Such regulations would be highly useful, both to the

patient and nurses; but are particularly important previous to the arrival of any visitor.

2. The bed-curtains should never be close drawn round the patient; but only on the side next the light, so as to shade the face.

3. Dirty clothes, utensils, &c. should be frequently changed, immediately immersed in cold water, and washed clean when taken out of it.

4. All discharges from the patient should be instantly removed. The floor near the patient's bed should be rubbed clean every day with a wet mop, or cloth.

5. The air in a sick-room has, at the same time, a more infectious quality in some parts of it than in others. Visitors and attendants should avoid the current of the patient's breath,—the air which ascends from his body, especially if the bed-curtains be closed,—and the vapour arising from all evacuations. When medical or other duties require a visitor to be placed in these situations of danger, infection may be frequently prevented by a temporary suspension of respiration.

6. Visitors should not go into an infectious chamber with an empty stomach; and in doubtful circumstances, on coming out, they should blow from the nose, and spit from the mouth, any infectious poison, which may have been drawn in by the breath, and may adhere to those passages.

The Society for bettering the Condition of the Poor have published the preceding rules, which were extracted from a manuscript of Dr. Haygarth's, with his permission. They are intended to enable medical and clerical visitors of the sick to perform their important duties with safety to themselves, and are printed upon a separate sheet, by the Society, with a view to their being distributed, so that a printed copy may be put up in every house where there is an infectious fever.

Houses of recovery for the reception of poor persons affected with typhus fever were first opened in Manchester; and the example has lately been followed in London and many other places. See **HOUSE OF RECOVERY**, in this Supplement.

FEURS, an ancient town of France, in the department of Rhone and Loire, seated on the Loire, 23 miles S.W. of Lyons.

FEZ, a kingdom of Barbary, 125 miles in length and breadth; bounded on the W. by the Atlantic Ocean, on the N. by the Mediterranean Sea, on the E. by Algiers, and on the S. by Morocco and Taflet. The air is temperate and wholesome, and the country full of mountains, particularly to the W. and S. where Mount Atlas lies; but it is populous and fertile, producing citrons, lemons, oranges, dates, almonds, olives, figs, raisins, sugar, honey, flax, cotton, pitch, and corn in abundance. The inhabitants breed camels, bees, sheep, and the finest horses in Barbary.

FIANO, a town of Italy, in the patrimony of St. Peter, seated on the Tiber, 15 miles N. of Rome.

FIANONA, a town of Venetian Istria, seated on the gulf of Camero, 17 miles N. of Pola.

FICHERULOLO, a fortified town of Italy, in the Ferrarese, seated on the Po, 12 miles W. of Ferrara. Long. 11. 31. E. Lat. 45. 6. N.

FICHTELBERG, a mountain in Bohemia, which extends from near Barchuth to Eger, about 16 miles. It is one of the highest mountains in Germany.

FICTION (*Encycl.*). An ingenious writer in the British Magazine for 1800 makes the following curious remarks on the sources of poetic and romantic fiction.

"I accord," says he, "with Mr. Franklin's observation, that the tale of Camarupa and Camatata bears internal evidence of an Indian origin, yet two or three passages would induce one to suppose that it is not of very great antiquity, or rather, that it has received some alteration from its Persian translator. The race of men with leathern feet, the persecu-

tors of Camarupa and others, Mr. Franklin says, are even now supposed to inhabit the northern parts of Indofan : nor am I disposed to question their existence. The story in which they appear (p. 74) is evidently founded upon, or borrowed from, that in the Arabian Nights, where, like Camarupa, Sindbad with a stone dashes out the brains of his unmerciful rider, 'the old man of the sea.' The *ouran-outangs*, as Mr. Hole conjectures in his Remarks on the Arabian Nights, are undoubtedly the species alluded to; their feeding on fruit only in either tale is a striking characteristic. The *ouran-outangs* (or *γάρδαί*) in Hanno's remarkable voyage, words of the same import as *ouran-outang*, *homines sylvestres*, are evidently of the same species. Our early voyagers to the same coast which Hanno visited, called this animal *pongo*, or the *giant-ape*; and it was sometimes literally represented as of gigantic stature. Purchas, in his Pilgrimages, mentions his having been informed that their height was like a man's, but their bignesse twice as great. We have been in some old romance, but forget where, the *Pongo* introduced as a savage giant, overthrowing the ranks of battle with his knotty club. The account given of it by Battell, who visited the coast of Africa in 1603, is curious and just, though somewhat exaggerated. (See Purchas' *Pilgrimages*, vol. ii. 982.) They are described in Hanno's voyage as covered with hair, flying to precipices, and defending themselves with stones. A circumstance recorded of their lesser brethren, by Strabo (Geog. xv. p. 710, Paris ed.) And which is noticed likewise in Churchill's Voyages (vol. iii. 143).

"Sir John Mandeville's 'flynnyd folk with rougher heir as a rougher best, faw only the face and the pawme of the hond,' which he meets with in one of the isles of Ynde, are of the same family. And those with short dog-tails, mentioned by Marco Paulo as inhabiting a district called *Lambri*, belong to the same race. Invenitur etiam in hoc regno qui caudas habent ut canes, longitudo inius, palmi, et hi in civitatibus non habitant, fed in montibus. (L. iii. c. 18.) By *Lambri*, Sumatra is probably intended, often called Java Minor by early European travellers. *Lambri* is one of its Indian appellations, and Mandeville seems to allude to it by the name of *Lamaray*. His account indeed often wonderfully coincides with that of the Venetian traveller, and perhaps he borrowed from him. However that may be, this *pustoral race*, which very wisely shunned 'towering cities and the busy hum of men,' were, we may safely conclude, the ancestors of the *orang coboo* and *orang googoo* mentioned by Mr. Mariden as inhabiting the interior parts of Sumatra. The natives of the island, he tells us, suppose the latter to be endued with the gift of speech. After having allowed them to belong to the human species, 'their having a language peculiar to themselves (I think these are Mr. Mariden's words) appears a natural consequence.' Whoever wishes to see their claims to humanity stated and enforced, is referred to their learned advocate, Lord Kaimes' Origin of Languages, vol. i. b. 2.

"Camarupa's aerial excursion to the mountain of *Caf* (Caucasus), and the incidents there, resemble the marvellous narrative of Aboulfauaris : and so do Mitra Chandra's adventures among the Genii, 'who delight in blood.' A country inhabited by women, called *Threa Rai*, occurs likewise in the Persian tales; and it is observable, that Marco Paulo testifies to the existence of two islands in the Indian ocean, one inhabited by men, the other by *women only** (l. iii. c. 37). Again, the enormous whale in Camarupa is not unlike that in Sindbad; and the daughter of the Fairy Queen, who, in 'taking her accustomed tour through the air to view the different parts of the earth,' beholds the prince whilst asleep, and

is struck with admiration at his beauty (p. 61), extremely resembles a fiter fairy, who makes her aerial tour at the opening of Camaralzaman's story in the Arabian Nights. In either tale, a child is granted to the ardent desires of the royal parent, through the intercession and prayers of religious persons. This circumstance is to be found in more than one story of the latter collection; and I believe in various oriental tales. But does it not rather militate against the predestinarian system, so universally adopted in the East? For had not those religious persons been prevailed upon to offer up their prayers in behalf of their then childless sovereigns, we are to conclude that no child in future would have been born to them : therefore they counteracted destiny! Probably, however, a genuine predestinarian will hold in contempt such sceptical objections, and insist that the monarch's requests, the dervise's intercessions, and birth of the children, were links of the same chain, all equally pre-ordained, and resulting from inevitable necessity.

"The mode by which Camaralzaman and the Princess Badoura become mutually enamoured of each other, has not only a counterpart in the Indian tale, but also in the *Oberon* of Wieland. The interview in the Arabian Nights, by means of which the hero and heroine contract a mutual affection, is indeed real, but that of Camarupa and Camalata, and that of Sir Huon and Rezia, is visionary. (See *OBERON*, cant. iii. ft. 6. cant. iv. ft. 49.) In each instance, however, it is effected by supernatural means : *fairies* intervene, and the result is the same. Whether this incident in Wieland is taken from the old romance of Sir Huon of Bourdeaux, we know not, but think it highly probable. From Spenser's mentioning the night and fairy in conjunction, we may reasonably infer, that they are introduced together in that or some other ancient tale of chivalry. Guyon, he tells us,

—Knight-hood took of good Sir Huon's hand,
When with King Oberon he came to fairy land.

B. II. c. 1. ft. 6.

"The story of January and May is narrated by Wieland in the 6th canto, in exactly the same manner as by Chaucer and Pope; yet we cannot help suspecting that it is to be found likewise in the old romance, and from thence copied by Chaucer. The idea is strengthened by the following note of Mr. Stevens, towards the conclusion of *The Midsummer Night's Dream*. 'I have been informed that the originals of Shakspeare's *OBERON* and *TITANIA* are to be sought (we trust he means found) in the ancient French romance of *Huon de Bourdeaux*.'

"Pluto and Proserpine are in Chaucer 'the king and queene of faerie' : and the former, like Oberon in Wieland (canto vi. ft. 87), appears well acquainted with the Bible, and quotes Solomon's sarcastic observations on the fair sex in a familiar manner. (See Tyrwhitt's ed. of Chaucer, vol. ii. l. 10163.) Proserpine (not yet converted from paganism it may be presumed) 'tweres by her modre Ceres' sowl,' and egregiously abuses the sapient king as a 'lechour and an idolastre;' and declares, that

She sete nat of all the wilunie
That he of women wrote, a *boterflye*!

"But let us return from the strange mixture of absurdity, keen wit, and strong sense, which so frequently chequers the pages of our primitive bard. If the preceding conjecture be right, that we are to look for the origin of Chaucer's January and May, of his Pluto and Proserpine, of Shakspeare's Oberon and Titania, in the old French romance of Sir Huon of Bourdeaux, a pertinent quotation from it would be extremely grate-

* See also the Two Mahomedans' Account of India in the 9th Century, published by Renaudot, p. 1.

ful, not only to your correspondent Cassius, but to many an antiquary who does not look with contempt on romantic lore. In that case, however, though I apprehend the French legend is supposed to have been written in the 13th or 14th century, I should not readily allow that part of the story to be of European manufactory. It may, as Mr. Hole in his Remarks on the Arabian Nights supposes of some similar eccentric fictions, have been imported by our adventurous crusaders; or, perhaps at a much earlier era, may have been introduced by some colony from the eastern world into European districts. Sir William Jones says, 'I confidently affirm, that the *Goths* and *Hindus* had originally the same language, gave the same appellations to the stars and planets, adored the same false deities, performed the same bloody sacrifices, and professed the same notions of rewards and punishments after death.' *Asi. Diss.* vol. iii. 15. Among the Gothic nations, long before the commencement of the crusades, beings of a similar nature to fairies in our popular mythology had an existence. In the northern Sagas they are styled *dvergur*, or *dwarfs*, and perform actions surpassing human nature. They were, probably, of eastern origin, and brought to England by our Saxon ancestors.

"Mr. Hole observes, that Chaucer's January and May (and he might have added the ninth novel in Boccaccio's seventh Decameron) is to be traced in the tales of *Inatulla*; and he is supposed to have derived it from the *Bramins*. The tales to which he refers were merely paraphrased by Dow; but since that time have been translated by Mr. Scott, and entitled the *Bahar-Danush* of *Binnat-Oollah* (*Inatulla*). In them, however, the similitude will be found equally obvious, if you consult lesson 4. vol. ii. p. 64: and in the subsequent lesson another tale occurs concerning the supposed miraculous restoration of a nose, resembling an incident in *Massenger's Guardian*, and traced by Mr. Hole to the *Hecetopades*, styled by Sir William Jones 'the most beautiful if not most ancient collection of apologues in the world.'

"That Sir Huon of Bourdeaux and other ancient legendary tales were commonly derived, through some medium or other, from an Asiatic, perhaps an Indian, origin, I have little doubt. The primary notice of Oberon in our language (and seemingly from Sir Huon of Bourdeaux) we find in Spenser: and among the first who mention Titania as co-partner in his royalty, is Shakespeare in the *Midsummer Night's Dream*. He invests Mab, however, with regal honours in his *Romeo* and *Juliet*; and Mab in Drayton's *Nymphidia*, a performance which exhibits much sprightly humour and original fancy (and in other poems of that age), shares imperial dignity with Oberon. Where we are to look for their first introduction into ideal existence, or the derivation of either name, is, I believe, not easily to be ascertained. The existence, however, of a fairy queen in the days of Elizabeth was the popular creed, and had continued to probably from an age long preceding that of Chaucer; who, in order to ridicule such idle fancies, represents Sir Thopas as fully determined that

'An elf queen should his Lemman be.'

"And we find that not only Prince Arthur in Spenser's beautiful legend, but the aspiring Abel Druggier in Jonson's *Alchemist*, had some pretensions to her majesty.

"It is rather strange, however, that during this period the elf queen should not have acquired a decided appellation. Oberon, after Spenser's time, possessed, we apprehend, his regal prerogative without a competitor. But Richard Johnson, the contemporary of Shakespeare, and Drayton in his *Honourable History of the Seven Champions of Christendom*, divests Titania of her sovereignty, converts the Fancy's midwife into a fairy midwife (a circumstance however not dissimilar to

ancient superstition), whom he denominates *Proserpine*, and reinfates in her shadowy domains.

"Though the existence of such imaginary beings, as the elfine queen and her tiny subjects,

'These antique fables and those fairy toys,'

no longer obtains credence among the least enlightened minds, yet the extensive influence of that idea in former ages affords a subject not uninteresting to speculative minds, who wish to investigate the progress of traditional fiction and human credulity. Johnson evidently compiled from old metrical romances; and the passage to which we allude in respect to *Proserpine* is, her attendance on *Sabra* in the hour of her delivery; which remarkably coincides with the *accouchement* of *Rezia* in *Oberon*, where *Titania* is present on the same occasion. We can with as little reason suppose that Wieland ever consulted the *Seven Champions of Christendom*, as that Johnson in a decided compilation, invented one of the most singular incidents recorded in it. The corresponding passage is managed with much delicacy by Wieland in his *Oberon*, and we are convinced our readers would not be displeased at our making some extracts from it, did not the peculiarity of the circumstance warrant the transcription. We should be pleased indeed to see another *Epic Romance*, of a similar complexion and superior order, undertaken by its translator. The eccentric spirit of the *Orlando Furioso*, its wild transitions from humour to sublimity, and their not unrequited mixture in the same passage, would, we trust, receive ample justice from the lively pen of

Mr. Sotheby. Huggins's faithful but tame translation, would prove of service to any one not familiar with the Italian language. According to Cervantes's happy image, it exhibits indeed the wrong side of the tapestry, but not a thread is misplaced or lost. To proceed to the comparison, we were going to say contrast, but notwithstanding the wildness of Johnson's tale, and bombast of his language, some rude graces, a luxuriance and vigour of fancy, gratify the imagination at the expence of judgment.—St. George and *Sabra* are represented as wandering in a mighty wilderness, overgrown with lofty pines and cedar-trees, and many huge and mighty oaks, the spreading branches whereof seemed to withhold the light of heaven from their untrodden passages, and tops, for exceeding height, to reach into the element. The inhabitants were sylfians, satyrs, fairies, and other wood nymphs, which by day sported up and down the forest, and by night tended the pleasure of *Proserpine*, the fairy queen. The music of silver-sounding birds so cheerfully resounded through the woods, and the whistling wind made such melody amongst the leaves of trees, that it ravished their senses like harmony of angels, and made them think they had entered the shades of gladiome *Elysium*: one while they wondered at the beauty of the woods, which nature adorned with a summer's livery; another while at the green and fragrant grass drawn out in round circles by fairies' dances. Here, 'till thrice three times the silver moon had renewed her borrowed light,' wandered the disconsolate *Sabra* and afflicted champion. 'Before the painful hour of her delivery approached, he had provided her a bower of vine branches, which he erected between two pleasant hills: where, instead of a princely cabinet, behung with arras and rich tapestry, she was constrained to suffice herself with a simple lodging covered with roses and other fragrant flowers. Her bed was made of green moss and thistle-down, beset curiously round about with olive branches and the sprigs of an orange-tree, which made it seem more beautiful than *Flora's* pavilion or *Diana's* mansion.' *Sabra*, however delighted the might be with the elegant bower constructed by the knight, requests his absence; for the time approached when, as no other *accouchement* was to be expected, the imagined that some

Friendly fairy might witness her distress, and lend her assistance. According to her wish, Proserpine attends in *propria persona*, and three lovely boys are introduced into the world: but let Sabra tell her own story: 'The winds carried my groans to every corner of this wilderness, whereby both trees and herbs assisted my complaints; beasts, birds, and feathered fowls, seemed to pity my moans: but in the midst of my torments, when my soul was ready to forsake this worldly habitation, there appeared to me a queen crowned with a golden diadem, in state and gesture like imperious Juno, and in beauty to divine Diana: her garments for bravery seemed to stain the rainbow in her brightest hue, and for diversity of colours, to surpass the flowers in the fields: on her attended many beautiful nymphs, some clad in garments in colour like the crystal ocean, some in attire as gallant as the pleasant rose, and some more glorious than the azure firmament. Her wisdom might compare with Apollo's, her judgment with Pallas', and her skill with Lucina's.—In short, at the appearance of the benevolent elixir queen, and her beautiful attendants, the pains of Sabra vanish, her children are born, and the fairy vision disappears. (See the first Part, l. 14.)

"Though the imagery and classical references in Johnson seem to shew that he copied them from some poetical composition; yet the latter could scarcely occur in a *very old* metrical romance. Perhaps he introduced them to shew his own classical learning, a fashionable accomplishment in his age.—Be that as it may, the following imagery in Wieland, who, we believe, never refers to the Roman poets, resembles the first quotation, though we do not venture to assert that it proceeds from a common origin.

No more the forest bows before the blast,
A naked wreck—but where the pillars stand
Of arch'd embow'ring roofs that shade the land,
Where nature's temple towers sublime in air,
The pomp of foliage thickens full and fair,
And clustering leaves on leaves religious gloom expand.

The earth is deck'd anew with flow'ry bloom,
Fair budding smile the garden, grove, and plain,
Charm'd echo thrills the birds' melodious strain,
And rocks are wreath'd with plants that breathe perfume.
From bubbling rills the purling currents stray
Down the green moss, and wind their silver way:
And through the night, from time to time renew'd,
The lonely bird amid the thick'ning wood
Trills to the silent moon her melancholy lay.

Canto viii. li. 50. 51.

"However accidental the preceding resemblance might be, we can scarcely entertain a doubt but that the subsequent passages in Wieland were derived from the same source as those in Johnson. The figures belong to the same piece of tapestry, but those of the German poet are unquestionably on the right side. Sir Huon and Rezia (or Amanda) are wrecked on a lonely island inhabited only by an aged hermit. After some time she finds herself in the same situation as Sabra, and experiences the same distress.

The hour was come: oppress'd with silent woe,
Amanda, lingering, near the cottage strays
'Mid fragrant shrubs that shade her secret ways,
Where op'ning flowers around profusely blow,

And breathe fresh incense on the gale of morn;
Down a small path the wanders on forlorn;
Then stops before a grot, where ivy weaves
The rich luxuriance of her clustering leaves,
While day's resplendent beams their glossy tint adorn.

Canto viii. li. 63.

"This grotto, like the wilderness in *The Seven Champions*, is a favourite haunt of the Fairy Queen, till now impervious to mankind; but Amanda

——— with gentle hand

Removes the ivy web, and enters in alone.

At once, a secret shudder gently steals
Along her frame, upon a yielding feat
She sinks, where moss and blooming roses meet.
Now only feels, through bone and marrow feels,
Thrill upon thrill swift-piercing anguish dart—
'Tis pass—sweet languor steals upon the smart.
It seems that o'er her eyes pale moon-beams glide,
Gradual in deep and deeper shadow dy'd,
Till, softly hush'd to sleep, oblivion fills her heart.

And from within her confusion gleams
Of lovely shapes; some o'er her sweep, some roll'd,
Each in the other floating, fold on fold;
Mixture of wondrous mood!—And now it seems
Before her knees three lovely angels stand:
Clear to her gaze their mystic rites expand:
And lo! a woman veil'd in rofete ray,
Holds to her lips, as dies her breath away,
A wreath of roses fresh that bud beneath her hand.

For the last time her higher-beating heart
Thrills with a short and softly-silenc'd pain.
The forms are fled away—the swoons again:
And now, without remembrance of a smart,
Wakes to soft notes, and seems afar to hear
Their low-lull'd echoes dying from the ear.
The fitter forms are vanish'd from her view;
Alone before her, robed in rofete hue,
The gracious *elixir queen* soft-smiling deigns appear.

Within her arms repos'd a new-born child:
She gives it to Amanda—then, as blown
At distance, in a *wink* away is flown;
Sweet odours breathe where late the fairy smil'd—
The dreamer opens her disenchant'd eyes.

Canto viii. li. 61.

"It is sufficient, without proceeding further, to have pointed out the most striking instance in which authors of so heterogeneous a nature, at least in respect to talents, as Johnson and Wieland, coincide. The reader, whose curiosity may lead him to compare the opening of the 14th chapter of the *Seven Champions*, with the latter part of the eighth canto in Oberon, will find some other resemblances, though of a less obvious nature.

"Poetical alchemy converts the basest ore into the richest metal; and had the fantastic creed of their superstitious ancestors been unknown to Shakspeare and Milton, we should have lost many of their most pleasing images. To discover the original mine, as in the case of Dubautas and Milton, which led us into this subject, gratifies our curiosity: and even to trace literary petty larceny in writers of an inferior class is not destitute of amusement. The few instances we have adduced,

* This word is often introduced and not happily. Almanzor *winks* his slaves to approach; and Almanzar *winks* Sir Huon away, &c. &c.

and innumerable ones might be given; are perhaps sufficient to shew, that those of the East were as little scrupulous in availing themselves of their predecessors' labours as our own countrymen.—'The Loves of Camarupa and Camalata,' though we suspect some passages interpolated by the Persian translator, is in all probability the foundation of the fictions we have already noticed in the Arabian Nights and Persian Tales. The rude and inartificial manner in which it is constructed, induces us to suppose it no modern fabrication.

"Those incidents also in Oberon, which coincide with Chaucer's January and May, seem to have come originally from the banks of the Ganges: and Einaut Oollah is much rather to be suspected of having borrowed from his countrymen than from the old bards of Europe.—We forgot to mention that Sir Floon, like Mitra Chandra, is suspected of being pursued by divine vengeance, and thrown-overboard to appease the fury of the tempest. His undertaking, however, to deprive Haroun Alrashid, the hero of the Arabian Nights, of his silver beard and four grinders, is most decidedly an accidental fiction; invented, we may conceive, by a fanciful crazy minstrel, or merry *Jongleur*, to divert some *Mahound-hating* chieftain and his martial followers when the crusade mania infected Europe.—But we are losing ourselves in the labyrinth of conjecture, without any friendly clue, any worm-eaten publication, or black-letter manuscript, to guide and direct us. We here think it advisable, therefore, to relinquish the subject."

FIELD-GARDENING, a kind of *gardening-husbandry*: the advantages of which are set forth in the following extract of a letter from Sir Henry Vavasour, bart. to Lord Carrington. This communication, published by the Board of Agriculture as an appendix to Sir John Sinclair's Observations, strongly confirms the practicability of a cottager being enabled to keep a cow by the produce of arable land only. (See COTTAGER, *Supp.*)

"The advantages that appeared to me (says Sir Henry), in cultivating land in the *Flemish* manner, or what is now called, about Fulham and that neighbourhood, the *field-gardening* husbandry, are considerable. I have for some years encouraged my cottagers in Yorkshire in this mode of managing their small garths or gardens, which are in general from one to three acres; and I have now an opportunity of stating the husbandry of a poor industrious cottager's garth. As the man can neither read nor write, these particulars have been transmitted to me from his own mouth; and, as I saw his land almost every day during the last harvest, I can vouch that this account is not far from the truth.

	Produce.	Value.	A.	R.	P.
240	Bushels of potatoes	£. 24 0 0	0	2	0
60	Ditto of carrots	6 0 0	0	1	0
5	Quarters of oats, at 44 s. per quarter	11 0 0	0	3	20
4	Loads of clover, part in hay, part cut green	12 0 0	1	0	NO
Turnips		1 0 0	0	0	20
In garden-huff for the family, viz. beans, peas, cabbages, &c.		0 0 0	0	0	30
		£. 54 0 0*	3	0	0

Deduct rent	£. 9 0 0	including the house,
Seeds, &c.	3 0 0	
Value of labour	10 10 0	
		Produce before stated.
£. 23 2 0	£. 54 0 0	
	23 2 0	

Profit £. 30 18 0 if sold at market, exclusive of butter.

"His flock was two cows and two pigs: one of his cows had a fummer's gait for twenty weeks with his landlord. The land was partly ploughed and partly dug with the spade, cultivated (the ploughing excepted) by the man, his wife, and a girl about twelve years of age, in their *spare* hours from their daily *hired* work, feldom a whole day off, except in harvest; made the rent in butter, besides a little used in the family. The man relates that he thinks he clears, one year with another, from the three acres, about £. 30. The daily wages his family earns, about keep them. It is very evident that this man clears from his three acres more than a farmer can possibly lay by from more than eighty acres of land in the common husbandry of the country, paying for horses, servants, &c.; and it must be obvious to every one how great the advantages must be to society by cultivating land in this manner. It would have taken more than half the quantity of his three acres in pasture for one cow at grass during half the year; whereas (excepting the fummer's gait for one of his cows, as mentioned before) his flock of two cows and two pigs is kept and carried on the whole year. The family lives well, and a handsome sum has been yearly saved to place out two sons, and supply them with clothes, washing, &c."

FIELEWIER, an island near the W. coast of Norway, 22 miles long and four broad, with a town of the same name, 43 miles W.N.W. of Drontheim. Long. 10: 40. E. Lat. 63: 44. N.

FIERANZUOLO, a town of Italy, in the Parmesan, 10 miles S.E. of Placentia. Long. 9. 44. E. Lat. 44. 59. N.

FIEZOLI, an ancient town of Italy, in the Florentino, with a bishop's see, five miles N. E. of Florence. Long. 11. 11. E. Lat. 43. 49. N.

FIGARI, a sea-port of Corsica, at the mouth of the river of the same name, 22 miles W.N.W. of Bonifacio.

FIGARUOLO, an island near the coast of Venetian Istria, in the gulf of Venice. Long. 13. 47. E. Lat. 45. 18. N.

FIGEAC, a town of France, in the department of Lot. It had recently a rich Benedictine abbey, founded in 755, and secularized in 1556. It is seated on the Selve, 22 miles E. of Cahors, and 270 S. of Paris. Long. 1. 58. E. Lat. 44. 32. N.

FIGHIG, a town of Barbary, in Biledulgerid. The inhabitants carry on a great trade with the merchants of Morocco and Fez, and with the Negroes. It is 240 miles E.S.E. of Mequinez. Long. 1. 5. W. Lat. 32. 20. N.

FIGUEIRO-DOS-VINHOS, a town of Portugal, in Estremadura, famous for excellent wine. It is seated among mountains, near the river Zizere, 22 miles N. of Tomar. Long. 7. 45. W. Lat. 39. 49. N.

FIGUERAS, otherwise called ST. FERNANDO DE-FIGUERAS, a strong and important fortress of Spain, in Catalonia, 10 miles N.W. of Roses. It surrendered to the French in

* These sums are conformable to the prices of this year, 1801, but it is evident that in other seasons they must in general be lower.

1794, without firing a shot. Long. 2. 45. E. Lat. 42. 18. N.

FILLECK, a town of Hungary, in the county of Novigrad, seated on the Ipöl, 20 miles from Agria, Long. 19. 8. E. Lat. 48. 24. N.

FILTRATION, a method of clarifying turbid liquors by mechanical straining. The term is generally applied to the passing of such liquors through filtering paper, flannel, &c. by which the feculent matter they contain is left behind. It is one of the modes of **CLARIFICATION** or **DEFECATION**. See the latter article in this Supplement.

Among the various contrivances, few appear to possess the advantage of simplicity, combined with that of affording an ample supply of a fluid so essentially necessary to the preservation of health, as pure water.—A patent has lately been granted to Mr. JAMES PEACOCK, of Finsbury-square, for a filtering machine, which is stated to be superior to any hitherto invented. It completely accomplishes the purpose of filtration, by causing the turbid fluid to ascend through a medium of fine gravel, of progressive degrees of fineness, by which means the foulest water or other fluid becomes perfectly freed from all (mixed) impurities, without any noxious mineral quality, which purine or other common filtering stones are suspected to communicate. Should, from continual use, its operation become in any degree impeded, it may be completely cleansed with the greatest facility in the short space of one minute; an advantage possessed by none of the common machines that operate by *descent*. Beside these useful properties, Mr. PEACOCK'S filtering machine does not occupy more room than a large drip-stone with its apparatus, and yields a constant and pure stream of more than 300 gallons in 24 hours.—A specimen of this machine is deposited for inspection at Guildhall, London.

The editor of the Domestic Encyclopedia, recommends a very simple and effectual apparatus, by which the purest water may be easily procured. This contrivance is calculated on the plan of the celebrated filtering machine erected at Paris, in the vicinity of the *Samaritaine*, and by means of which the foul water of the river Seine is so completely purified, as to be divested of its laxative properties. Besides, this machinery, if constructed on a large scale, is well adapted to supply the largest breweries, or dyeing works, with any quantity of pure water at a trifling expence, and is attended with very little additional trouble.

When we reflect on the method which Nature pursues in the filtration of water, we find that such waters as descend from hills, though passing through sand and rocks, are seldom perfectly pure; but that those are the most limpid, which, by ascending, ooze out near the foot of a mountain. The cause of this difference appears to be owing to the circumstance, that if the water only *descends* through sand, the finest and most weighty foreign particles gradually penetrate through the sandy strata; on the contrary, when it is forced to *rise* through sand, all such ponderous ingredients settle at the bottom; because, from their greater specific gravity, they cannot ascend to the top. The lighter particles of fluids, consequently, in both cases remain in the upper strata of the earth or sand.

From these considerations, Professor Parrot, jun. of Paris, was induced to give his filtering machine the form represented in pl. 29. fig. 1.

The principal part of the machinery consists of a square vessel, bent in the form of an inverted syphon. The curve may be circular, elliptic, or in any other direction. This vessel is filled with fine, pure sand, till nearly the height of the dotted line *x, y*, which denotes the ascent of the water to D, whence it flows into the receiver. The part marked A, B,

should always project above this line, according to the size of the filtering machine. To A, B, there is attached a woollen bag, which is open at the top, and the lower part of which touches the sand. It serves the purpose of collecting the coarsest impurities, and thus preserves the sand for a longer time from becoming foul. The bag, therefore, may occasionally be removed, and rinsed in clean water.—It is evident, that the water flows at A, through the bag into the filtre, and rises at the place marked D, which is considerably lower than the former. It affords a very agreeable sight to observe the most limpid fluid penetrating the uppermost stratum of sand, perfectly similar to that oozing from the purest natural spring.

Prof. Parrot remarks, that he procured a filtering machine made of block-tin, for ascertaining, by experiments, the purity and quality of water that may thus be obtained in a given time. It consisted of the following dimensions: the small diameter B, E, was eight Paris inches; the large of the whole machine, eleven inches; consequently the thickness of the vessel A, B, was one inch and a half;—the breadth of it, two inches and seven-eighths. The perpendicular height of the lower side, from C, to its basis, to the rim D, whence the water issues, was four inches and one-twelfth; the opposite height of the mouth A, B, eight inches and three-fourths; and the height of the sand on the side marked D, was three inches and one-sixth.

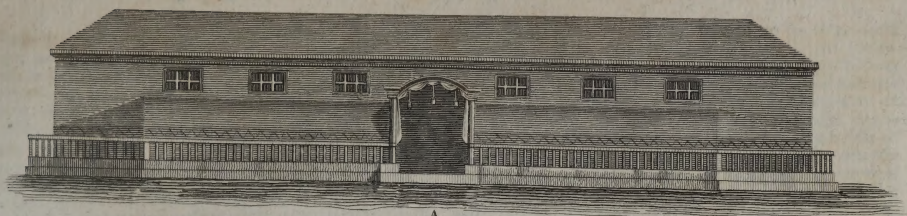
Although, in experiments of this nature, much depends on the relative size and purity of the sand, which necessarily afford different results, yet Prof. Parrot has, after repeated trials, deduced the following conclusions, which appear to be well founded.

1. That the difference of the *niveau*, or water-level, has an essential influence on the quantity of the purified water thus obtained;
2. That a prolongation of the stratum of sand does not considerably diminish the product of the filtre, but remarkably contributes to the purity of the fluid;
3. That if the water be forced to pass through the sand with increased velocity, it will be less pure than by allowing it a proper time for its passage; and,
4. That a machine of the dimensions above described, will furnish about three quarts of water in an hour, or eighteen gallons in twenty-four hours. This quantity, however, being too large in proportion to the size of the machine, it is advisable, either to lessen the difference of the water-fall; or, which is still better, to prolong the stratum of sand, in order to reduce the filtration of the water to half the quantity above stated, and to obtain it in greater purity. Thus, a filtering apparatus eighteen inches long from A to D, two inches thick, and four broad, would afford every hour six pints of very pure water. If, therefore, so small a machine, containing a very moderate stratum of sand, and requiring only a difference of two or three inches in the height of the water, furnishes a clear and pure fluid, it follows that an apparatus on a larger scale, provided with a bed of sand from five to six feet long, and admitting of a difference from twelve to eighteen inches in the fall of the water, might be usefully employed in public wells, hydraulic machines, and even in camps, for the supply of an army.

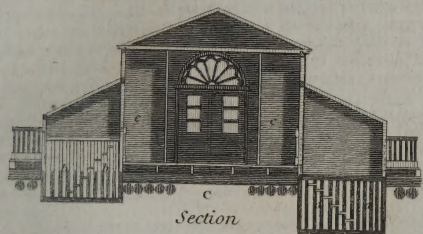
In the construction of large filtering machines, Prof. Parrot justly observes, that they should not be extended in the direction A, C, D, to a greater length than is absolutely necessary; as, in this case, they will not require any considerable difference in the fall and rise of the water: on the other hand, their breadth and thickness may be accordingly increased.—Thus, the diameter of such a machine would still more resemble that of a syphon, as is represented in the plate, at fig. 2.

This form might also be adopted for smaller machines,

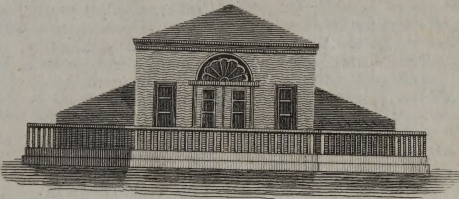
Floating Baths at Hamburg.



A
Elevation of the longitudinal Front

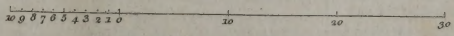
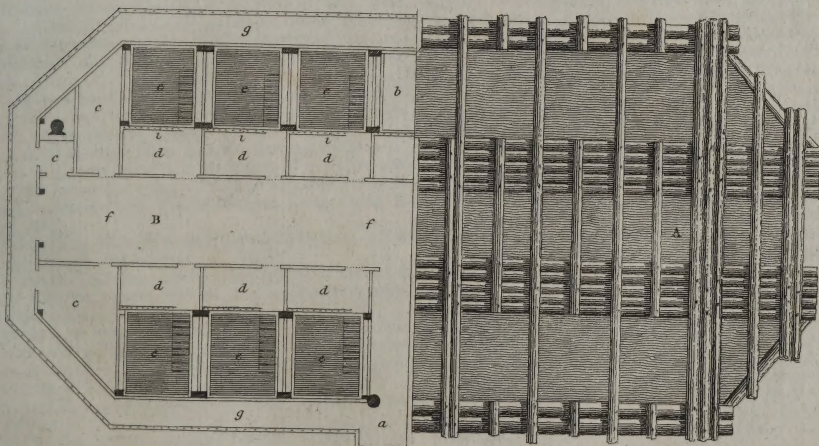


Section



B
Elevation of the transverse Side

Plan



Filtering-Machine

Fig. 1.

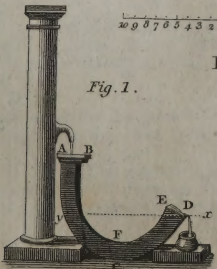


Fig. 2.



especially such as are designed for *travellers*, two of whom might be amply provided with pure water, and in a very short time, by a vessel of the following dimensions: from P, to Q, eight inches long; from P, to R, twelve inches high; and the whole four inches in breadth.

If the form last delineated be employed on an extensive scale, there should be a trap-door in the lowermost part marked R, so contructed that it may fit exactly, and admit no passage to the water: this aperture would serve only for the removal of the sand, when it is rendered foul by long use. In the smaller machines, intended for travelling, such a door is unnecessary, as they may be easily emptied of their contents through either of the orifices P, or Q. Instead of this addition to the latter, the upper room (which in the first of the figures is circumscribed with the letters B, F, E) might serve as a reservoir of pure water, that could either be decanted, or drawn off by means of a cock applied to the centre of the machine, marked F. We think, however, this latter arrangement, which is proposed by M. Parrot, in many respects objectionable, and therefore advise the reader to make use of the more simplified construction. Hence we shall only add, that every filtering machine ought to be provided with a cloth cover, to prevent the dust from rising with the water, without impeding its filtration.

It is needless to expatiate on the great advantages of filtering machines in the different processes of dyeing, baking, brewing, distilling, and all the domestic arts. As no particle of real nutriment can be assimilated to the human fluids, without being previously macerated and reduced by water (whether this fluid be introduced into the stomach, in the form of beer, wine, spirits, tea, &c.), it will be easily understood that *impure* water cannot fail to produce, however slowly, many dangerous, and often incurable, diseases—the source of which is seldom suspected.

FINALE, a town of Italy, on the coast of Genoa, with a strong citadel, two forts, and a castle. It was sold to the Genoese, by the emperor Charles VI. in 1713; and is 30 miles S.W. of Genoa. Long. 8. o. E. Lat. 44. 14. N.

FINALE, a town of Italy, in the Modenese. It has been often taken and retaken; and is seated on an island formed by the river Panaro, 22 miles N.E. of Modena. Long. 11. 25. E. Lat. 44. 46. N.

FINCASTLE, the chief town of Botetourt County, in Virginia, 36 miles E. of Lexington.

FINDHORN, a fishing-town in Murrayshire, at the mouth of a bay of the same name, with a tolerable harbour, 17 miles W. by N. of Elgin. Long. 3. 40. W. Lat. 57. 45. N.

FINDHORN, a river of Scotland, which rises in Invernesshire, and crossing Nairnshire and the N.W. corner of Murrayshire, forms a bay, to which it gives name, and which opens into the frith of Murray, at the town of Findhorn.

FINMARK, a part of Danish Lapland, in the government of Wardhus.

FIONDA, an ancient town of Natolia, on the gulf of Satalia, with a bishop's see, 25 miles S.W. of Satalia. Long. 31. 57. E. Lat. 36. 45. N.

FIORENZO, St. a sea-port of Corfica, on a gulf of the same name, seven miles W. of Bastia. It was taken by the English and Corsicans, from the French, in 1794. Long. 9. 20. E. Lat. 42. 35. N.

FIRE. See COMBUSTION.

FIRE-ESCAPE; a contrivance for the purpose of rescuing persons in imminent danger from fire. See *ESCAPE* in this Supplement.

In the Annual Register for 1775, an account is given of a machine for saving persons and effects from the flames. It consists, 1. Of a pole of fir, which may be of any convenient

length, being about five inches in diameter at the bottom, and at the top or smallest end, about three inches. At the distance of three feet from the top, is a mortice through the pole, to which a pulley is fixed, that is nearly of the same diameter as that part of the pole. A rope about three-fourths of an inch in diameter, and twice the length of the pole, at one end of which is a spring-hook, to pass through the handle of the basket, when used; it is put through the mortice over the pulley, and drawn tight on each side, nearly to the bottom of the pole, where it is secured till wanted. 3. A basket, which ought to be of strong wicker-work, three and a half feet long, two and a half feet wide, rounded off at the corners; and four feet deep, rounding every way at the bottom. To the top of the basket is fixed a strong iron curve, or handle, with an eye or ring in the middle: a small cord about the length of the pole, is likewise fastened to one side of the basket, near the top.—These being the principal parts, there are also several straps, &c. for securing the poles from sliding; of which the reader will find a minute account in the volume before quoted. This contrivance can be raised, and two or more persons may be taken out of the upper windows of a house, and let down safely in the street, within the space of thirty-five seconds, or little more than half a minute.

FIRE-ENGINE (*Encycl.*). Under the articles *FIRE* and *HYDROSTATICS*, various useful inventions are described for the purpose of extinguishing accidental conflagrations. In the year 1785, the silver medal and twenty guineas were conferred by the Society for the Encouragement of Arts, &c. on Mr. Furst, as a reward for his contrivance to increase the effect of engines in extinguishing fires; of which the following is a short description: From a platform rises an upright pole or mast, of such height as may be judged necessary; a gaff slides upon it in an ascending direction, and along both is conveyed the leather hose from the engine. The branch, or nose-pipe of the engine projects at the extremity of the gaff; towards which an iron frame is fixed, whence two chains are suspended: and from these hang ropes, which serve to give an horizontal direction to the branch; while other ropes that run through proper pulleys, and are thus conveyed down the mast, serve likewise to communicate a vertical motion to it. By these means, the branch or nose-pipe of the engine is conducted into the window of any room where the fire more immediately rages; and the effect of the water discharged is applied in the most efficacious manner to the extinguishing of the flames.

A patent was granted in January 1790, to Mr. Joseph Bramah, of Piccadilly, and to Mr. Thomas Dickenson, of Bedworth Clofe, in the county of Warwick, for a new improved engine on a rotative principle. The merits of this machine depend on its having two wheels or cylinders of brass, or any other metal; one of which is of a greater, and the other of a smaller diameter, in any proportion required; both are nearly of equal length, but may be increased or decreased, according to the purpose to which the machine is applied: As soon as the larger wheel is fixed, the smaller one is placed within it, and is fastened on an axis, so as to turn in a rotative direction round its centre; the smaller wheel being thus stationed, may be occasionally fixed, and the larger one moved in the same direction round the smaller one: the former of these, however, is preferable in all cases. At each end of the larger wheel there is a *flanch*, to which are screwed two plates, or caps inclosing its ends, and into which the extremities of the smaller wheel are inserted, so as to render the junction *water-tight*: through these caps passes the axis of the inner cylinder, in order to communicate motion from without.—Or the inner wheel may be applied so as to give motion, by its external end or ends, to any other engine or machine connected with it,—

These are the component parts of Messrs. Bramah's and Dickenson's patent engines; for a more particular account of which, we refer the reader to the 2d vol. of the Repertory of Arts and Manufactures, where he will find a minute account of the machinery, and the effects it is calculated to produce.

A patent was likewise granted in December 1792, to Mr. Charles Simpkin, of Oxford-street, engine-maker; for his improvements in all kinds of machines for extinguishing fire.—This invention consists in exploding or removing the valves both from that part of the cylinder where the vacuum is made by the piston or fly, and from beneath the air-vessel; and in making use of valves, by the application of certain filtering chambers, with partitions or divisions, to preserve the effect of the valves, during the use of any improper fluid. These filtering chambers are to be placed between the drawing valves, and the drain in common use, on the suction-pipe. The partitions in the chambers may be of fine wire-work, or of any other substitute, that will act as a first and second filtration in the chamber.

The design of this invention is, to render the valves more free of access, and to prevent the necessity of opening any other parts of the engine, except the chambers containing the valves; by which means the effect of the machine is increased, and consequently the fire may be more easily extinguished.

To these different contrivances we shall add the American fire-engine, of which we have given an accurate engraving. It was invented by Mr. Benjamin Dearborn, who communicated to the American Academy of Arts and Sciences, from whose Memoirs for 1794 we extract the following particulars:

Fig. 1. Plate 30, A, B, and C, D, are the edges of two planks, confined together by four bolts.—*a b*, and *c d*, are two cylindrical barrels, in each of which a piston, with a valve, is fastened to the spear *e*, and is moved up and down alternately by the motion of the arms E E. Beneath each barrel a hole is made through the plank A B, which is covered with a valve. The arms E E, are suspended on the common centre *f*: there are also arms parallel to these on the opposite side: *g g* are the ends of handles which are fastened across the ends of the arms. At *h*, a bolt goes across, from arm to arm, to which the piece *i, k*, is affixed, and on which it plays; the lower end of this piece is fastened to the top of the spear *e*.—*G, h, f*, is a standard for the purpose of supporting the arms, to which there is a correspondent one on the opposite side; both are notched into the edges of the planks, where they are secured by a bolt, which passes through them at *l*, and has a nut or fore-lock on the opposite side. H I, H I, are square braces, answering the purpose of ducts, through which the water ascends from the barrels, passing through the plank at *m*.—K L, K L, are irons in the form of a staple, in order to confine the braces: the lower ends of these irons meet, and are secured by a bolt, passing through them, and M N, *n o*, which is a piece that goes up through a mortice in the centre of the planks. This piece is square from the lower end, till it reaches the top of the braces; whence they become cylindrical to the top, the upper end being perforated sufficiently low down, in order to communicate with the braces. O, P, is an iron ring, that surrounds the tube, and has two flanks which ascend through the head, which secures on the top at *q, q*.—*r, s*, is a ferule nailed round the tube.

Fig. 2. is the same engine; the arms and standards being taken off, in order to delineate more clearly the mode of securing the braces; an object which is completely effected by a wedge driven into the mortice *a*: beneath the upper plank *l*, is a hole for admitting a passage to the bolt, which secures the standards. In this figure, a side view of the head is given, with the pipe in a perpendicular direction.

The machine is confined within a box, set on wheels, as in the common fire-engines. The whole is made of wood, excepting the spears of the pumps, and a few bolts, &c. The advantages of this machine are, that it can be made in any place where common pumps are manufactured; the interior work will not exceed one-fourth of the price of those which are constructed on the usual plan; and that they are incomparably more easy to work than the common ones; circumstances which strongly recommend the American fire-engine to the attention of the public.

On the breaking out of a fire, all constables are enjoined, by several acts of parliament, to repair to the place; to use every exertion for extinguishing the flames; and to cause people to work, &c.—By the 10 Ann, c. 14, no action shall be commenced against any person in whose house or chamber a fire shall break out accidentally: but, if such fire happen through the negligence of any servant, the latter incurs a penalty of 100*l*. to be distributed among the sufferers; and, in default of payment, he is to be imprisoned for 18 months, during which time he is to be kept to hard labour.

FIRMIN (Thomas), an eminent citizen of London, born in 1632, who distinguished himself by his public benefactions and extensive charities, as also by some opinions contrary to the received doctrine of the Trinity. The plague in 1665, the great conflagration in 1666, with the arrival of the French Protestants in 1680 and 1681, all furnished him with great opportunities of exerting his benevolent disposition. He died in 1697; and was buried in the cloisters of Christ's hospital, where his virtues are recorded in a monumental inscription.

FISH (Encycl.). For a patent method of curing fish, see the article CURING in this Supplement.

FISH RIVER, GREAT, a considerable river of Africa, which rises in the unknown interior regions, divides Caffraria from the country of the Hottentots, and falls into the Indian Ocean, in lat. 30. 30. S. The deepest parts of this river are inhabited by the Hippopotamus, and the adjacent woods by elephants, rhinoceroses, and buffaloes.

FISHER-ROW, a town near Edinburgh, on the W. side of the mouth of the Elk, which contains many handsome houses, and has some excellent villas in its vicinity.

FISHKILL, a town of the state of New York, 66 miles N. of New York. Long. 73. 48. W. Lat. 41. 31. N.

FISSATO, a sea-port of Barbary, in the province of Tripoli, 90 miles N.W. of Tripoli. Long. 12. 10. E. Lat. 33. 50. N.

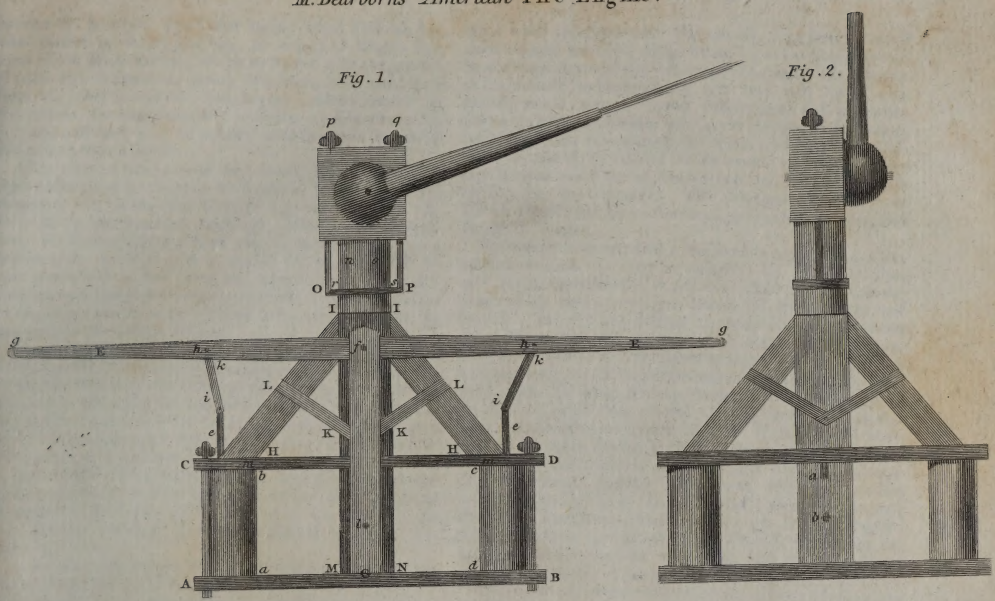
FISTELLA, a fortified town of Morocco. The inhabitants carry on a great trade in fine garments. It is 125 miles N.E. of Morocco. Long. 5. 25. W. Lat. 32. 27. N.

FIVE CHURCHES, an episcopal town of Hungary, 85 miles S. of Buda. Long. 18. 13. E. Lat. 46. 5. N.

FIUME, or ST. VIT, a sea-port of Austrian Istria, with a castle. It is very populous; noted for wine, good figs, and other fruits; and the cathedral is worth observation. The harbour is formed by the river Finmara, which enters the bay of Carnero, in the gulf of Venice. It is 37 miles E. of Capo d'Istria. Long. 14. 46. E. Lat. 45. 40. N.

FIXLMILLNER (Placidus), a celebrated German astronomer, was born on the 28th of May, 1721, at Achleiten, a village in hither Austria, not far from Kremsmünster. He received the rudiments of his education in the convent of Kremsmünster, which was indebted to his uncle the abbot, Alexander Fixlmiller, for an excellent school and an observatory. Placidus conceived an early attachment to the mathematics, and took so much pleasure in delineating mathematical figures, that his mother, out of derision, called him the almanack-maker. After some stay at the above seminary, he removed to Salzburg, where he completed his course of philosophy, and obtained that faculty the degree of doctor. His taste for the mathematics, however,

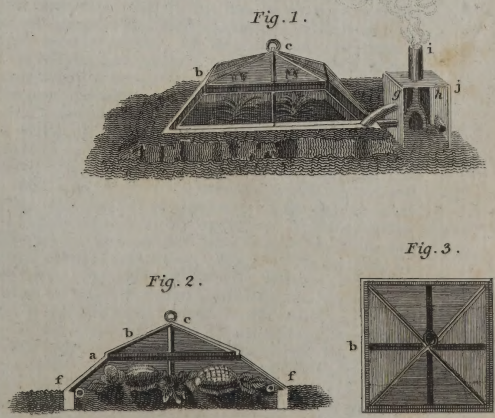
M^r. Dearborn's American Fire Engine.



Flag of the British Empire.



Improved Forcing Frames.



became still stronger. His father having asked him one day, what present he should give him, he requested Wolf's Epitome of the Mathematics; which he studied with the greatest pleasure and satisfaction, during such hours as he could spare from his other avocations: but, having destined himself for the convent, he was admitted a novice at Kremsmünster, in 1737; and next year he publicly took the vows before his uncle, the abbot Alexander.

After a stay of two years in the convent, his *oheim* sent him again to Salzburg to complete his studies in jurisprudence and theology; but, at the same time, he applied with great assiduity to the mathematics, languages, history, and antiquities. He learned also to play on the harpsichord and organ; and made so much progress in music, that he composed several pieces both in the sacred and theatrical style. He disputed in some theological theses, obtained the degree of doctor in theology; and in 1745 returned to his convent, where he was consecrated to the priesthood.

About this time the *Ritter-schule* having been established at Kremsmünster, Placidus was appointed professor of canon law; a department in which he had acquired great reputation at the university. This office he held for forty years, and resigned it only a short time before his death. Almost about the same period he was appointed dean of the higher school, and soon after principal regent over the young nobility; which places he retained also till his death. He possessed great knowledge of the canon laws, and on that account was often employed in processes and other affairs relating to the convent: he was likewise inscribed *Notarius apostolicus in curia Romana*.

In the year 1760 he published a theological work, under the title of *Reipublice Sacre Origines Divine*; but he acquired far more celebrity by his astronomical labours, both as an observer and a writer. The abbot Alexander Fixlmillner, a great friend of the sciences, and particularly of the mathematics, having resolved, in the year 1747, to form an establishment in his convent for promoting the latter, first set apart a spacious apartment for the purpose of containing mathematical and philosophical instruments. This paved the way for something further; and he determined, for the improvement of his conventuals in astronomy, to erect an observatory. Among those convents which for a long time have devoted their leisure and riches to the advancement of science and the good of mankind, none has distinguished itself more than that of Kremsmünster. This very old abbey is not the seat of infidelity and indolence, but a patron of the noblest branches of science. The observatory, founded in 1748, was completed in 1758, and the superintendence of it was intrusted to Eugenius Döbler, a brother of the order.

Alexander's successor, the abbot Berthold Vogel, who long resided at Salzburg, as professor of canon law and rector of the university, being well acquainted with Fixlmillner's great knowledge, particularly in the mathematics, appointed him, in 1762, to be astronomer at Kremsmünster, with leave to retain his office as professor of canon law. He now applied with great zeal to render himself more fit for his new occupation, as he had not yet attended much to practical astronomy, and was even but little acquainted with those books from which he could obtain information on the subject. His great attachment, however, to this science, fine genius, and a desire of being useful to the institution in which he resided, and to the world, made him overcome every difficulty. The first book that fell into his hands was Lalande's *Exposition du Calcul Astronomique*, with which alone, without any oral instruction, he began to study and to make observations. This work, together with Vlacq's logarithmic tables, were for a long time his only sources and guides, till he at length obtained Lalande's

large work on astronomy. Fortunately, a carpenter, named John Illinger, born in a village belonging to the abbey, though he could neither read nor write, was able, under the direction of Fixlmillner, to construct for him very neat mural quadrants, zenith sectors, transit instruments, and pendulum clocks. Other instruments were made for him by Brander of Augsburg, and he procured achromatic telescopes from Dollond; so that by his activity the observatory at Kremsmünster soon became one of the most celebrated, and best supplied with apparatuses, in Germany. His principal assistants were Theod. Derflinger, who afterwards became his successor, and Father B. Waller.

Fixlmillner now acquired a considerable rank among astronomical writers. In 1765 he published his *Meridianus Speculae Astron. Cremsfaniensis*, in which he established the first elements of his observatory, and determined its longitude and latitude. In 1776 he published his second astronomical work, called *Decennium Astronomicum*, which contained the observations made by him at Kremsmünster from 1765 to 1775; and which is replete with important and useful information. His third work, on which he was employed towards the close of his life, and which was printed after his death, appeared in 1791. It contains a valuable collection of observations made between the years 1776 and 1791, together with a great many calculations and treatises, which still add to his celebrity in this department. Besides these, many important articles written by him are to be found in the *Journal des Savans*; Bernoulli's Epistolary Correspondence; the French *Ephemerides des Mers*; the Astronomical Almanac of Berlin; the Astronomical Ephemerides of Vienna; and the Memoirs of the Royal Academy of Sciences at Paris.

The important service rendered to the science of astronomy by Fixlmillner is well known to all astronomers. The great number of his observations of Mercury, at a time when they were rare, and difficult to be made, enabled Lalande to complete his accurate tables of that planet, for which the French astronomer publicly returned him thanks. Fixlmillner was one of the first astronomers who observed the orbit of the newly-discovered planet Uranus. He was also the first who supported Bode's conjecture, that the star 34 in the Bull, observed by Flamsteed in the year 1690, and which afterwards disappeared, was the new planet. Fixlmillner was a man of so great application and activity, that he not only made observations, but calculated them all himself, and deduced from them the necessary results. All his observations, of whatever kind, he calculated on the spot; and to avoid errors he always calculated them a second time. To uncommon industry he united great penetration and deep reflection, as is proved by the great many excellent remarks and discoveries to be found in his works. It must here be added, that this able astronomer lived in a remote part of the country, at a distance from all literary helps, and from others who pursued the same studies; that is to say, from all those things which could animate his zeal; and yet he continued, till the last day of his life, a singular instance of perseverance and attachment to his favourite study. But few men were so little subject to the imperious power of the passions. Simple in his manners, he possessed great equanimity and firmness, like the immutable laws of nature which he studied. His wide-extended celebrity did not render him proud: whatever was written or said in his praise, he endeavoured rather to conceal than to publish. His close application at length impaired his health, and brought on obstinate obstructions, which ended in a diarrhoea. He died on the 27th of August, 1791, in the 71st year of his age, the 53d of his residence in the convent, and the 46th after his entering into the priesthood.

FLADSTRAND, a sea-port of Denmark, in N. Jutland,

with a harbour defended by three forts. It is 30 miles N.N.E. of Alburg. Long. 10. 19. E. Lat. 57. 33. N.

FLADUNGEN, a town of Franconia, 40 miles N. of Wurtzburg, and 44 N.W. of Bamberg. Long. 9. 57. E. Lat. 50. 22. N.

FLAG (*Encycl.*). The happy event of the union of Great Britain and Ireland has necessarily occasioned an alteration in the national flag. See the representation of the present FLAG in plate 30. In it are combined the saltires of St. Andrew and St. Patrick, surmounted by the Cross of St. George. For the armorial ensigns displayed in the Royal Standard, see UNION in this Supplement.

FLATTERY, CAPE, on the W. coast of N. America, discovered by Captain Cook in 1778; and so named because he was disappointed at not finding a harbour. Long. 124. 57. W. Lat. 48. 25. N.

FLAVIGINI, a town of France, in the department of Côte d'Or, with a late celebrated Benedictine abbey. It is seated on a mountain, 12 miles E. of Semur, and 140 E. of Paris. Long. 4. 37. E. Lat. 47. 26. N.

FLECHE, a town of France, in the department of Sarthe. Here is the noblest college in France, built in 1603, by Henry IV., and in the chapel are deposited his heart and that of his queen in gold boxes. It is seated on the river Loire, 22 miles N. of Angers. Long. 0. 3. W. Lat. 47. 39. N.

FLEECE-HOSIERY, a very useful kind of manufacture, in which fine fleeces of wool are interwoven into a cotton piece of the common stocking texture. The following is the specification of the Patent granted to Mr. Holland, of Broad-street, Bloomsbury, in the county of Middlesex, for a method of making stockings, socks, waistcoats, and other clothing, for persons afflicted with complaints requiring warmth, and for common use in cold climates, and for making false or downy calves in stockings. It is dated September 22, 1788.

He describes the nature of his invention in these words: "Having in the common stocking-frame, twisted silk, cotton yarn, flaxen or hempen thread, worsted or woollen yarn, or any such-like twisted or spun materials, begin the work in the common manner of manufacturing hosiery, and having worked one or more course or courses in the common way, begin to add a coating, thus: draw the frame over the arch, and then hang wool or Jersey, raw or unspun, upon the beards of the needles, and slide the same off their beards upon their stems, till it comes exactly under the ribs of the sinkers; then sink the jacks and sinkers, and bring forward the frame, till the wool or Jersey is drawn under the beards of the needles, and, having done this, draw the frame over the arch, and place a thread of spun materials upon the needles (under the ribs of the sinkers), and proceed in finishing the course in the usual way of manufacturing hosiery with spun materials. Any thing manufactured in this way has, on the one side, the appearance of common hosiery, and on the other side the appearance of raw wool. The raw or unspun materials may be worked in with every course, or with every second, third, or other course or courses, in quantity proportioned to the warmth and thickness required. The above-mentioned raw or unspun materials may be fixed also thus: having drawn the frame over the arch, hang them upon the beards of the needles, slide them off the beards upon their stems, and without sinking the jacks and sinkers, draw the frame off the arch, and bring the raw or unspun materials forward under the beards of the needles; then draw the frame over the arch, and proceed in finishing the course, as before directed. The said raw or unspun materials may be fixed likewise thus: hang them upon the beards of the needles, without having the frame over the arch, and slide them off their beards upon their stems; then bring forward the frame till the raw or unspun materials

are drawn under the beards of the needles, and, having done this, draw the frame over the arch, and proceed in finishing the course as before directed. Hosiery may be coated by any of these methods, not only with wool and Jersey, but also with silk, cotton, flax, hemp, hair, or other things of the like nature, raw or unspun, but the method first described fixes them most firmly. The common stocking-frame is mentioned above, but any other frame, upon a similar principle, may answer the purpose. The method of making the false or downy calves in stockings, is by working raw or unspun wool, or Jersey, or any other raw or unspun materials, into the calves of stockings, in the different methods before described, and to any required form or thickness." The latter use to which this invention is applied, we may be allowed to say, is somewhat ludicrous.

FLEET, a river in Kircudbrightshire, which winds through a beautiful valley, and enters Wigton Bay, at Gatehouse. On the W. side of the river are the vestiges of a camp, a druidical circle, and a vitrified fort.

FLENDENBURG, a town of Denmark, capital of Sleswick, with a strong citadel. It has a harbour in the Baltic Sea, and is a place of considerable commerce, 15 miles N.W. of Sleswick. Long. 9. 47. E. Lat. 54. 50. N.

FLEURANCE, a town of France, in the department of Gers, 13 miles N. of Auch. Long. 0. 36. E. Lat. 43. 51. N.

FLEURUS, a village of the Netherlands, in the province of Namur, remarkable for a victory gained by the French, over the allies, in 1690; and here, in June 1794, the Austrians were defeated in a general attack of the French posts. It is six miles N.E. of Charleroy.

FLEURY, a town of France, in the department of Saône and Loire, 30 miles N. of Chalons. Long. 4. 50. E. Lat. 47. 13. N.

FLEXIBLE STONES. In the Philosophical Magazine we find a communication from Professor M. A. Pictet, of Geneva, on Flexible Stones, addressed to the editor, Mr. Tulloch. Alluding to another writer's description of the *elastic quartz*, or *flexible sand-stone*, from Brazil, he wonders that the author did not mention a similar phenomenon which has been observed in another stony substance, commonly as inflexible as any siliceous aggregate, but thoroughly different in point of chemical composition—"I mean," says he, "the table of *elastic marble*, which is shewn at Rome as a great curiosity. A friend of mine, M. Fleuriat de Bellevue, from La Rochelle, who had seen it, guessed at the cause of its flexibility, and went so far as to render, by a particular process, any given specimen of Carrara marble as evidently flexible as the table in question. He pursued at Geneva the series of experiments which led him to that discovery, and read to our Society of Physics and Natural History an account of the whole, which has been since published in *La Metherie's Journal de Physique*. The following are the leading facts:

"That species of marble consists, as you well know, in a confused aggregation of small irregular crystals interwoven in all possible directions, and adhering to one another by a certain degree of cohesive force. He thought that if he could, by any process, destroy that adherence, without altering much the solidity of the crystals themselves, he might thus obtain a loose, but entire, stony aggregate, which would become flexible on account of the relative mobility of the integrant crystals, but keep its solidity and preserve its form in consequence of their being deeply implicated and interwoven among themselves.

"According to that theory, he undertook a series of experiments by exposing slips of marble to the action of fire in sand-baths of regularly graduated and well ascertained temperatures: he thus found a point where the adhesion of the crystals was loosened, without any material alteration in their hard-

ness. He gave to his friends some specimens of *Cariara* marble thus rendered flexible. I have one of them in my possession here in London, which may be seen by any person who should yet entertain any doubts as to the possibility of the fact.

"Now, a volcanic fire may have acted on a large mass of marble nearly as my friend's furnace has done on his small specimens; and this explanation of the natural phenomenon I consider as being as near to truth as most of our conjectures on similar subjects can be."

FLIE, or VLIeland, an island on the coast of Holland, at the middle of the entrance of the *Zuyder-Zee*.

FLIX, a town of Spain, in Catalonia, strong both by art and nature. It is built on a peninsula, in the river *Ebro*, where it makes an elbow, which serves the town instead of a ditch, and may be conducted quite round it. The side where the river does not pass, is covered by mountains, and defended by a castle on an eminence; and near it is a waterfall. It is 20 miles S. of *Lerida*. Long. o. 26. E. Lat. 41. 15. N.

FLOATING BATHS. As the erection of public baths has, from the remotest ages, been considered an object worthy of national attention, and private solicitude, we have selected the following article from the *Domestic Encyclopedia*: The floating baths at *Hamburg* are an establishment which owes its origin to the enlightened members of the "Society for the encouragement of Arts and Useful Trades," founded in that city, in the year 1765. These baths were projected by *Dr. Moldenhawer*, physician at *Hamburg*, and erected by public subscription, on a small lake of fresh water, called the *Alster*. *M. Arens*, an eminent architect of the same city, delineated the plan of the building, which, we are informed, is an improvement on similar baths established in the principal towns of the French republic.

Although we have not had an opportunity of comparing the internal construction of the *Hamburg* baths, with those floating on the river *Thames*, near *Westminster-bridge*, yet we have reason to believe that they are essentially different from any other existing in this country. Induced by this consideration, and convinced of the intrinsic advantages which the former possess, independent of their beautiful external appearance, we have caused accurate representations to be given in Plate 29, of which the following is an explanation:

Fig. 1, *A*, The elevation of the longitudinal front of the Floating Bath, with its ornamental entrance; of the surrounding gallery, and the tents expanded over the bathing machines, and covered with fail-cloth, which had been four times varnished. The wooden roof is also covered with strong fail-cloth, which had been repeatedly coated with tar. The whole vessel is 80 feet in length, and 40 in breadth.

B, Elevation of the transverse side of the Floating Bath, with its glass doors and windows, through the former of which the corridor, and through the latter the cabins on each side receive their light.

C, Section of the Building: namely, *a, b*, of the Bathing Machines, and *c, c*, of the chambers for undressing and dressing. On each longitudinal side of the vessel, there are (as appears on inspecting Plate 29) six of these chambers, which may be easily opened from within; and on each transverse side are two lateral cabins, partly furnished, and partly designed for store-rooms, to hold various implements.

The corridor, extending from one side-door to the other, within the centre of the building (see fig. 2, *B, f*), is seven feet and a half wide; and on each side are the bathing machines and chambers.

These chambers for undressing and dressing, which are provided with sky-lights, and marked *C*, are seven feet and a half in length, and four feet wide. They are anti-chambers to the

bathing machines *a, b*, and each of the former contains the most necessary articles of furniture, such as a table, chair, looking-glass, cork-couch (for supporting the feet till they are dried, after coming from the bath), pegs for suspending clothes, a boot-jack, &c.

The bathing machines *a, b*, below the surface of the water, consist of four sides, made of laths two inches thick, through which it flows, and they are provided with a solid wooden floor, secured by iron staples. These machines are six feet broad and seven long, so that the whole body may move in them without constraint.

Their construction renders them moveable, so that they may be raised or lowered at pleasure and with little trouble, as appears from the machine *b*; while the impurities settled at the bottom may be easily removed. At the side of the steps (see fig. 2, *h*), which extend to the bottom of the bathing machine, the latter is provided with a balluster (fig. 2, *i*), adjacent to which is placed a table and chair. The bathing machines are adapted to different depths of water, so that every individual may regulate them at 2½, 3, 3½, or 4 feet in depth, and these proportions are marked within the chamber. Above each machine are suspended two strings, one of which is connected with a bell fixed in the corridor, for calling the waiter: by means of the other, the bathing person may exclude the current of air circulating between the bottom of the floating vessel and the surface of the water, as there is a wooden board which slides down for that purpose.

Fig. 2, *A*, Represents the construction of the floating vessel, which serves for the foundation of the building. It consists of strong double fir-beams, connected with each other by iron bolts and staples.

B, Represents the ground-plan of one half of the floating vessel; *a*, the entrance; *b*, a room on the opposite side for the waiter, who is appointed to receive and deliver the admission tickets, &c.; *c*, the lateral cabins; *d*, the undressing chambers; *e*, the bathing machines; *f*, the corridor; *g*, the surrounding gallery; *h*, the staircases leading into the water; *i*, the ballusters at the bathing machines: all these parts have already been described.

In his *View of the Russian Empire*, the *Rev. W. Tooke*, who resided many years in that country, says, "It is not to be doubted that the Russians owe their longevity, their robust state of health, their little disposition to certain mortal diseases, and their happy and cheerful temper, mostly to these baths; though climate, aliment, and habits of living, likewise contribute their share.—The great Lord-chancellor *Bacon*, and other sagacious observers of nature and of mankind, have lamented, and certainly not without cause, that this bathing has fallen into disuse among the modern nations of Europe, and justly with the practice back again in all our towns and villages. In fact, when we consider that the old physicians so early introduced into their practice this remedy of Nature's own invention, and employed it with such great success; when we recollect that *Rome*, for five hundred years together, had no physicians, but only baths, and that to this day a multitude of nations cure almost all their maladies merely by baths; we cannot avoid regarding the dismission of them as the epocha of a grand revolution which has been wrought in the physical state of the human race, in our quarter of the world.

"The natural perspiration, the most important of all excretions, must naturally go on better in a body constantly kept soft by bathing. A great number of impurities which privily lay in us, the train to tedious and dangerous distempers, are timely removed, ere they poison the blood and the juices.—All exanthematic diseases are abated by bathing, consequently

then the small-pox; and if this dreadful disorder be actually less fatal in Russia than in other countries, this phenomenon need not be attributed to any other cause than the vapour-baths."

FLODDON, a village in Northumberland, five miles N. of Wooler. Near this place a bloody battle was fought between the English and Scots in 1513, in which James IV of Scotland was killed, with the principal of his nobility, and 10,000 men.

FLORAC, a town of France, in the department of Lozere, 13 miles S. of Mende, and 23 N.W. of Alais. Long. 3. 30. E. Lat. 44. 18. N.

FLORENT (Sr.), a town of France, in the department of Maine and Loire, with a late rich Benedictine abbey; seated on the Loire, 20 miles W.S.W. of Angers. Long. 0. 56. W. Lat. 47. 24. N.

FLORENTIN (Sr.), a town of France, in the department of Yonne, at the confluence of the Armanche and Armançon, 15 miles N.E. of Auxerre, and 80 S.E. of Paris. Long. 3. 55. E. Lat. 48. 1. N.

FLORENTINO, one of the three provinces of Tuscany; bounded on the W. by the republic of Lucca and the Modenese, on the N. by the Apennines, on the E. by the duchy of Urbino, and on the S. by the Siennese. It is well watered, and very fertile. Florence is the capital.

FLORES, a fertile island, one of the Azores, so called from the abundance of flowers found upon it. Long. 31. 0. W. Lat. 39. 34. N.

FLOTZ, a town of Upper Saxony, in the principality of Anhalt Zerbst, six miles N.W. of Zerbst.

FLOTZ, a town of Walachia, seated on the Geniſſa, near its influx into the Danube.

FLOUR (Sr.), an episcopal town of France, in the department of Cantal. Good knives are made here, and its fairs are famous for the sales of mules and rye. It is seated on a mountain, 45 miles S. of Clermont and 250 of Paris. Long. 3. 11. E. Lat. 45. 2. N.

Flour (Encycl.). In 1795, when the extreme dearth of bread made all persons anxiously attend to every circumstance which contributed to enhance its price, a *Friendly Society* at Rothley, in Leicestershire, determined to employ 50*l*. of their capital in purchasing corn, and to dispose of the flour obtained from it at a low price. Their chief object was to supply the members of the society with flour at prime cost. They purposed also to sell it to their neighbours at a price, which, though considerably lower than that at which the article was retailed by the neighbouring millers and hucksters, might give them legal interest for their 50*l*. and indemnify them for contingent expences and losses. In a short time, however, this distinction between members and other persons was thought invidious; and flour was sold by the stone to all who applied, on such terms as would barely reimburse the price of the corn and the expences, and afford interest for the 50*l*.

It was their resolution to sell for ready money only; and they fixed on a part of every Monday, when two of their members were to attend at their club-room, and supply such purchasers as should apply there. They bought a quantity of corn with the assistance of a respectable farmer; and found that they could sell the flour for at least sixpence a stone (of 14*lb*). less than was charged for flour, apparently of the same quality, by the neighbouring dealers. The saving to the purchasers was about 20*l*. per cent. Flour continued to be sold to the amount of 10*l*. or 12*l*. every week, until after some months had elapsed, when the millers lowered the prices, and the sales decreased. From that time to the present, from 4*l*. to 7*l*. has been the amount of the weekly sum received at the sales.

When the plan of the society was first set on foot, they sold much more barley flour than wheat flour; but, as corn became cheaper, the poor returned by degrees to the use of wheat, to which most of them had been accustomed; and now the quantity of wheat flour disposed of is three-fourths or four-fifths of the whole quantity sold. The wheat is ground into a sort of flour called "thirds," without any of the finer part of the flour being taken from it; and thus all the nutritious qualities of the grain are preserved. The bread made of this flour is very wholesome and palatable, and not so brown as that which is frequently eaten in farmers' houses. There is a very ready sale for the bran, which, in order to make the flour of the requisite quality, is separated at the mill from the gross produce of the wheat. The miller is not paid for grinding by an allowance of toll, but in money; which is found to be by far the most eligible method of satisfying his demands. For some time flour has been sold on two days of the week, for the better accommodation of the poor.

The foregoing plan has effectually answered the purpose of keeping the price of flour as low as that of corn would admit; and, in some degree, of improving the quality of the flour sold in the neighbourhood, by affording the poor a certainty of buying it, in its purest state, of the friendly society.

Every thing that contributes to supply the poor with genuine flour, at a fair price, is of very great importance; otherwise the greater part of the poor will be compelled to apply to the mealman, the huckster, or the baker, for the chief article of their food; and, in general, to pay from 15*l*. to 25*l*. per cent., probably upon an average 20*l*. per cent. more than the original cost of the flour. The mode adopted at Rothley, is such as would be imitable in almost every part of the kingdom; and it has the merit of putting into the hands of the suffering individuals, their own remedy against the monopoly of the millers.—It is to be observed, that the power of purchasing corn is by no means so clear and decisive a benefit to the poor, as that of purchasing flour at prime cost.

The benefit of the plan adopted at Rothley is so evident, the mode of process so simple, and the amount of expence so easily ascertained, that arguments in its favour are unnecessary. It may however be of use to suggest some cautions, grounded on circumstances which have happened at Rothley, as to the mode of executing such a plan.—1*st*. It is material that the price should be such as will allow at least in some degree for the risk of the speculation. An unexpected loss has happened at Rothley by a sudden fall in the price of wheat, and by the destruction of some corn in a windmill.—2*dy*. The society should be prepared for the effects of a competition, on the part of the neighbouring millers. A reduction in their price of flour, bringing it nearly if not quite to a level with the price of the society, will assuredly take place. This, though in fact one of the very beneficial consequences of such a measure, will lessen the custom of the society for a time, while it affords incontrovertible evidence of the utility of the plan, and of the service which it has done the neighbourhood.—3*dy*. The accounts, in this and in all other matters of buying and selling, should be very correctly kept. If this is not done, every such undertaking will in the end be a losing trade.—4*thly*. It is essential, that the resolution of selling for ready money only, should be punctiliously adhered to: otherwise the society will hold out a most pernicious temptation to the poor to run in debt, and will involve itself in the risk of being induced to give them still more credit, in order to obtain payment of their exiling debts. Besides, where a society is numerous, and consists of manufacturers, artisans, and day-labourers, there is no possibility of ascertaining the line to be

adhered to, when the rule has been once broken. Each individual will vote that his neighbour should have the same, or a greater indulgence than the person who preceded him. Thus all the distinctions, usually made by private shopkeepers in giving credit, will be disregarded, and ruin must ensue. In cases of private trade, credit is given for the purpose of obtaining custom: but when public benefit is the sole object of a society, they may disregard the little arts of the shopkeeper; and proceed inflexibly upon that plan, which is most beneficial to the individual; and to the public.

Similar modes of procuring a regular supply of flour, at a moderate price, have been adopted at Quorndon, Sibley, Mountferrill, and some other places in Leicestershire; recommended by the same benefits, as those attending the execution of the plan at Rothley.

An account of a mode adopted in the parish of Hadham, in the county of Hertford, for supplying the poor with flour of the best quality, and at a reasonable rate, is given by the Rev. Dr. Hamilton, in the Reports of the Society for bettering the Condition of the Poor.

"During the whole of the autumn of 1797," says Dr. Hamilton, "complaints were made, throughout the parish and neighbourhood of Hadham, of the great difference in the proportional price of wheat at the markets, and of flour as sold at the mill, or in the shops. I was very sensible of the grounds for discontent; both in the sellers of wheat, and the purchasers of flour; and, as a remedy for the grievance, I determined to procure, from time to time, a sufficient quantity of good wheat from the market (having prevailed on a very respectable miller in the neighbourhood, to undertake to grind for me as much as I should require), by which means I might be able to supply the poor of the whole parish with good flour, and at a reasonable price. This has been done for these last three months, and is still in practice, giving very great satisfaction to the poor, who are the purchasers.—My first purchase was as follows:

	£.	s.	d.
110 bushels of wheat	30	4	0
Grinding, dressing, and bringing home	1	12	3
Total	31	16	3

PRODUCE.

340 pecks and 3 lb. of flour, at 1s. 9d. per peck	30	2	5
18 strikes of pollard, at 1s. 6d. per strike	1	7	0
2 quarters and 4 bushels of bran, at 8s. per quarter	1	0	0
	32	9	5
Prime cost	31	16	3
Profit	0	13	2

"This accommodation to the poor has been effected without any expense, except the advance of 40l. and with very little

trouble. At the parish work-house there is a large vacant room, where the sacks of flour are deposited, as they come from the mill; and, twice in the week, a servant attends two hours, with the master of the work-house, in the flour chamber; and the poor are, with great convenience, thus served with the best wheat flour, and with full measure."

Dr. Hamilton's agent sold, during the fortnight, about 40 sacks, at 1s. a bushel under the shop price; the saving upon which, to the poor who are purchasers, amounts to 5l. per week: he is not at present able to tell exactly what the profit or loss is; but he believes it is not much either way. Wheat too has been rising almost every week for some time; and probably he must raise his price one penny in the peck. His calculation, as to the load of wheat which he has just bought, is as follows:

	£.	s.	d.
Price of the load	12	0	0
Grinding, ditto	0	8	0
Carriage from the mill	0	3	9
	12	11	9

PRODUCE.

124 pecks of flour, at 1s. 10d.	11	7	4
8 strikes of pollard, at 1s. 6d.	0	12	0
1 quarter of bran, at 8s.	0	8	0
	12	7	4
Loss	0	4	5
	12	11	9

OBSERVATIONS.

By these means the poor are enabled to purchase their flour, with a saving of at least 4d. in every peck, exclusive of the benefit of having it of the best sort, and full measure; which, at 5l. per week (the gain on twenty sacks), amounts to 260l. per ann.; being two-thirds of the whole poor's rate of the parish of Hadham. This plan gives such general satisfaction, that it will probably be soon adopted in the adjoining parishes; the poor of which have been, in some instances, supplied from the flock. It is also beneficial to the other classes of life, as well as to the poor: the miller, upon this flour being sold, at first reduced his price from 8s. 8d. to 8s. 4d.; and he has not raised it for the last two months, though the price of wheat considerably advanced during that period.

Every thing that can be done, to enable the poor to procure the necessities of life, at a moderate rate, of full measure, and of good quality, is of the utmost importance. It has been the misfortune of this country, that, in every article of food, the profits of the speculator interfere between the growth and the consumption; and, in some instances, increase the price to nearly double. If the farmer would supply his labourer with flour, potatoes, bacon, and cheese, at prime cost, he would enable him to maintain his family much better, and at less ex-

* It is said in confirmation of Dr. Hamilton's observation, that in the fourth division of Easington ward, in the county of Durham, on a strict inspection of weights and scales by order of the magistrates, the deficiency discovered in the smaller shops was such (as appears by the statement of the chief constable who made the examination) as had occasioned a loss to the poor of that district, though small and by no means populous, amounting to not less than 500l. a-year.

+ It would be a very desirable thing that the poor should be able to supply themselves with beer of their own brewing, without being obliged always to recur to the alehouse. We are aware of the disadvantage in brewing small quantities; but that might be compensated for by great advantages, and by the superior flavour of beer *brewed and drank at home*.—The following receipt is according to the proportions used in the House of Industry, at Shrewsbury. Take half a bushel of malt, and four pounds of treacle, and three quarters of a pound of hops; this will make twenty-five gallons of beer; the cost of which (supposing the

pence, and thereby prevent the increase of the poor's-rate: he would attach him to his service, and put an end to the old complaint of the "*rambling and unsettled disposition of the poor*:" he would also keep down the price of labour; which is necessarily increased on account of the disadvantageous situation in which the labourer is placed as to the purchase of every necessary of life. In short, the farmer would do his labourer much good, and himself more.

FLOWERS (*Encycl.*). Though no parts of plants are more generally known than their flowers, yet the definitions given by different authors of this word are very various, and necessary to be explained in order to the understanding of their works. Jungius defines it to be the most tender part of a plant, remarkable for its colour or form, or for both, and cohering with the fruit. But this author himself acknowledges his definition to be too limited, as there are several plants whose flowers are produced remote from their fruit. Mr. Ray says, the flowers cohere for the most part with the rudiments of the fruit: which is likewise a phraseology too inaccurate to be admitted in definitions. Tournefort defines the flower to be a part of a plant very often remarkable for its peculiar colours, for the most part adhering to the young fruit, to which it seems to afford the first nourishment, in order to explicate its most tender parts: but this is still a more indeterminate definition than the former. Pontederá defines a flower to be a part of a plant, unlike the rest in form and nature. If the flower has a tube, it adheres to, or is fixed very near, the embryo, to the use of which it is subservient; but if the flower has no tube, then its base does not adhere to the embryo. This definition is scarce intelligible, except to expert botanists. Jussieu defines a flower to be composed of chives and a pistillum, and to be of use in the generation of the plant: but this definition is too imperfect, as there are many plants in which the pistillum is found at a great distance from the chives, many flowers which have no pistillum, and many which have no chives. Vaillant has been happier in his definition. He says, that flowers are the organs which constitute the sexes of plants, which are sometimes found naked, and without any covering; and that the petals which most of them have are no way essential to their use, but serve, and are intended, merely as covers for them: but yet, as these coats or coverings are the most conspicuous and most beautiful parts of the flowers, these are to be called *flowers*, be they of whatever form or structure or colour; and whether they contain the organs of both sexes in each individual, or only of one, or even but of some part of one, provided they are not of the same figure and colour with the leaves of the plant. The shortest and most express definition, however, seems to be that of Martin; which is, that flowers are the organs of generation of both sexes, adhering to a common placenta, together with their common covering; or of either sex separately, with its proper coverings if it have any.

The parts of flowers have been already described under **BOTANY**, p. 33, yet we apprehend the following general remarks made by eminent botanists, on *growth, enlargement, colours, and duplication of flowers*, particularly those of Dr. Darwin, will be very acceptable.

1. It is an established fact, that flowers as well as fruits grow larger in the shade, and ripen and decay soonest when exposed to the sun. Hence, likewise, the foliage or buds of plants requires more moisture for its vigorous growth than their flowers, or organs of fructification. Further, observes

Dr. DARWIN, the frequent rains of our climate, are apt not only to wash off the farina from the bursting anthers, and thus to prevent the impregnation of the pistil, but also to delay the ripening of the fruit or seeds, from the want of a due evaporation of their perishable matter, as well as from the deficiency of solar light in the cloudy seasons. In another place of his admirable *Phytologia*, this philosopher remarks that, as a superfluous supply of water is more friendly to the growth of leaf-buds, than to the generation of flower-buds, the production of seeds may be forwarded by supplying their roots with less water than usual. But when the blossoms appear, an addition of water promotes their growth, by affording nourishment, which should again be lessened, when the fruit has acquired its full size, both to promote its maturity and improve its flavour; as the saccharine matter and essential oil will thus be in a less diluted state.—Although the fruit may become sweeter and larger, when the green as well as the floral leaves continue on the tree, yet the corols, with the stamens, stigmas, and nectaries (the succeeding fruit not considered), suffer, in the opinion of Dr. DARWIN, no injury when both kinds of leaves are removed, as by the depredations of insects. Nay, some florists assert, that the flowers thus become stronger, producing no bulbs, as is the case with tulips and hyacinths.

2. The variegated colours of the petals of flowers are so beautiful, and afford such delight to the eye of the contemplative naturalist, as to deserve some investigation. It is probable that *varieties* in the colours of single flowers raised from seeds, may be generally obtained by sowing those which already possess different shades, contiguous to others of the same species; or, by bending the flowers of one colour, and shaking the anther-dust over those of another. Thus Dr. DARWIN supposes the beds of the corn blue-bottle, *centaurea cyonis*, acquire those beautiful shades of blue, purple, and white. As some animals change their natural colours; when transplanted in different situations of soil, a similar effect may be produced by sowing flowers in fastidious composts, which considerably differ from each other with respect to vegetable nutriment, and perhaps also in their colour. Experiments on this subject, as well as on the variegation of the leaves of shrubs and trees, are however wanting to confirm this conjecture; though the latter probably originates from soil or situation, and may be communicated by grafting.—The origin of *new* colours in flowers, and of variegated foliage, is imagined to arise from the want of nourishment of the soil on which they grow, compared to that assigned to them by Nature; or from a defect of moisture and of heat; a supposition countenanced by the dwarfish size of such plants, in general, and especially by the reduced stature of tulips, when their petals acquire various colours.

The immediate cause of the various colours presented by some flowers, such as poppies, has not hitherto been distinctly ascertained; but Dr. DARWIN conjectures that, as they are not variable by the obliquity with which they are seen, like those of mother-pearl, card-fish, &c. they do not depend on the thinness of their pellicle, and may, therefore, arise from the greater facility which some parts of vegetables, more than others, possess in parting with their oxygen (which see) when exposed to the sun's light; for all flowers are more or less blanched before they first open.

3. The origin of *double flowers* is believed to result from the luxuriant growth of the plant, in consequence of excessive nou-

value of the grains to be only equal to the expence of fuel) would be 2d. a gallon, where the materials were purchased to the best advantage; and, when bought at the retail shop, about 3d. The receipt was tried and found to answer; the beer being very good. It was fit for use in a fortnight; but it is not calculated for keeping, particularly in warm weather.

rifulness, moisture, and warmth: they arise from the increase of some parts of the flower, and the consequent exclusion of others. As they produce a greater blaze of colour in a small space, and continue in bloom for some weeks longer than single flowers, the method of producing them from seeds is a matter of importance. Botanists very properly term such multiplied flowers *vegetable monsters*, because they possess no stamens or pistils, and therefore can produce no seeds.—Nevertheless, they are frequently raised immediately from seeds; because flowers cultivated with more manure, moisture, and warmth than is congenial to them, not only grow larger and more vigorously, but likewise shew a tendency to become double, by having one or two supernumerary pistils in each flower, such as the stock July flower, cheiranthus, and anemone. It is still more remarkable that this duplicature is communicated to those individual blossoms: hence florists tie a thread round such flowers, to mark them, and to collect their seeds separately, from which double or full flowers are said to be uniformly produced, if they be cultivated with additional manure, moisture, and warmth, as has been already observed.—There subsists a curious analogy, concludes Dr. DARWIN, between these vegetable monsters and those of the animal world; for a duplicature of limbs frequently attends the latter, as chickens and turkeys with four legs and four wings, and calves with two heads. In mules, also, the most important organs become deficient, so that they cannot propagate their species; exactly analogous to these full flowers which, from the same cause, produce no seed. With respect to botanic systems, it may be observed from these vegetables of exuberant growth, that the stamens and pistils are less liable to change than the corols and nectaries; consequently, that they are more proper parts for arranging plants into classes; and that on this idea LAMÆUS constructed his unrivalled system. Lastly, the calyx, or perianth, being seldom found in a double or multiplied state, is the next part of a flower that is liable to the least changes; and may, therefore, on accurate inspection, serve to detect the genera of double flowers.

FOCHABERS, a town in Banffshire, seated in a plain, near the river Spey. Here is Gordon castle, the princely mansion of the Duke of Gordon; and in the town, many girls are employed in spinning, and the manufacture of sewing thread, under the patronage of the duchess. It is 48 miles N.W. of Aberdeen.

FO-CHAN, a village of China, in the province of Quang-tong. It is called a village, because it has no walls nor a preceding governor, although it has a great trade, and contains more houses and inhabitants than Canton. It is reckoned to be nine miles in circumference, and to contain 1,000,000 inhabitants. It is 12 miles from Canton.

FOCHIA NOVA, a sea-port of Natolia, with a good harbour, and a castle. The Venetians beat the Turkish fleet, near this place, in 1650. It is seated on the gulf of Sanderley, at the mouth of the Hermus, 28 miles N.W. of Smyrna. Long. 26. 39. E. Lat. 38. 44. N.

FODWAR, a town of Hungary, seated on the Danube, opposite Colocz: Long. 19. 16. E. Lat. 46. 39. N.

FOGARAS, a town and castle of Transylvania, on the river Alauta, 30 miles N.E. of Hermanstadt. Long. 25. 25. E. Lat. 46. 30. N.

FOGGIA, a town of Naples in Capitanata, seated near the Cerbero, 20 miles S.W. of Manfredonia.

FOGLIA, a river of Italy, which rises on the confines of Tuscany, crosses the duchy of Urbino, and falls into the gulf of Venice, and Pesaro.

FOGLISSO, a town of Piedmont, five miles N.W. of Chivas, and 13 W. of Cressentino.

FOHR, or **FORA**, an island of Denmark, about 12 miles in

circumference, near the coast of Sleswick. Long. 3. 31. E. Lat. 54. 44. N.

FOIA, an ancient town of Natolia, on the gulf of Smyrna, with a good harbour and a strong castle, 30 miles N. of Smyrna.

FOIX, a town of France, in the department of Arrarie. Here is a manufacture of coarse woollen cloths, and some copper-mills, which metal is a considerable object of commerce. It is seated on the Arriege, at the foot of the Pyrennees, eight miles S. of Paniers. Long. 1. 32. E. Lat. 43. 0. N.

FOLIGNI, an episcopal and trading town of Italy, in the duchy of Umbria; remarkable for its sweetmeats, paper-mills, silk manufactures, and fairs. It is seated on the declivity of a mountain, near a fertile plain, 69 miles N. of Rome. Long. 12. 24. E. Lat. 42. 48. N.

FONDI, an episcopal town of Naples, in Terra di Lavoro, seated on a fertile plain, but in a bad air, near a lake of its own name, 42 miles N.W. of Capua, and 50 S.E. of Rome. Long. 13. 24. E. Lat. 41. 22. N.

FONG-TSIANG-FOU, a city of China, in the province of Chen-fi. Its district contains eight cities of the second and third class. It is 495 miles S.W. of Peking.

FONS, a town of France, in the department of Lot, five miles N.W. of Figeac. Long. 1. 55. E. Lat. 44. 37. N.

FONTAINE L'ÉVEQUE, a town of France, in the department of the North, near the river Sambre, three miles W. of Charleroy. Long. 4. 18. E. Lat. 50. 23. N.

FONTANETTO, a town of Piedmont, seven miles E. of Cressentino.

FONTELLO, a town of Portugal, in Beira, six miles N.E. of Lamego. Long. 7. 27. W. Lat. 51. 36. N.

FONTENAI-LE-COMTE, a town of France, in the department of Vendee. It has a woollen manufacture, and its fair is famous for cattle, particularly for mules, on which last account it is resorted to by the Spaniards. It is seated on the Vendee, near the bay of Biscay, 25 miles N.E. of Rochelle. Long. 0. 55. W. Lat. 46. 30. N.

FONTEVRAULT, a town of France, in the department of Maine and Loire. Here was a famous abbey, founded by Robert d'Arbriflé, in 1100. It was the chief of a religious order, which, by a singular whim of the founder, consisted of both sexes, and the general of which was a woman. Queen Bertrade, so famous in history, was among the first nuns that entered this abbey. It is nine miles S.E. of Saumur, and 160 S.W. of Paris. Long. 0. 0. Lat. 47. 9. N.

FONTICULUS, or **FONTANELLA**, in surgery, an issue, seton, or small ulcer, made in various parts of the body, in order to cause a discharge.

FORCALQUIER, an ancient town of France, in the department of the Lower Alps, seated on a hill, by the river Lave, 20 miles N.E. of Aix. Long. 5. 48. E. Lat. 43. 58. N.

FORCHEIM, a strong town of Franconia, in the bishopric of Bamberg, with a fine arsenal. It surrendered to the French in 1796, but the Austrians compelled them to abandon it soon afterward. It is seated at the confluence of the Wifent and Rednitz, 16 miles S.E. of Bamberg. Long. 11. 2. E. Lat. 49. 44. N.

FORCING (*Encycl.*). The following description of newly-invented moveable forcing-frames for plants, &c. by Bénard, a member of the Agricultural Society of Seine and Oise, was read at a public sitting of that Society.

"It is uncertain," says the author, "whether the ancients were acquainted with any artificial means of accelerating vegetation; countries inhabited by the Greeks and Romans not compelling them to seek the assistance of art to supply any deficiency in the liberality of nature.

"With regard to our own ancestors, it appears that the objects of industry being then equally rude with the hands em-

ployed in its labours, and governed by many ridiculous practices converted by superstition into irrefragable laws, agriculture was wholly destitute of that estimation which is to requisite to animate every species of human industry.

"On this subject mention has been made of the kitchen-gardens established by order of Francis I. at Anet, near the forest of Yvry, under the inspection of a skilful gardener named Martin; but it appears that it was for Henry IV. at St. Germain-en-Laye, that arcades open to the south were first erected for accelerating the growth of peas.

"La Quintinie, who formed the superb kitchen-garden at Versailles, scarcely made any further advances; it is well known that fruits and flowers were at that time brought by post from Provence to Lewis XIV. for the gratification of his court.

"Fagon, at the Jardin-des-plantes, at Paris, caused some glazed sashes to be constructed for foreign plants, which, for want of sufficient light, could not flourish in the green-houses built for orange-trees, such as the superb *orangerie* at Versailles. To those sashes were added stoves and furnaces. But these methods were scarcely applied to forcing fruit till the reign of Louis XV.

"We are assured that an Englishman named Gordon was the first who made experiments of this kind, in consequence of observing that a vine-branch, which accidentally entered between two sashes of a window, put out leaves long before the rest of the stem, and that the forced grapes it produced ripened better.

"Hence arose all the hot-house sashes, the frame-lights, head-glasses, or covers, formed of small panes of glass, joined together in leaden frames, and those formed of large plate-glass. At length Richard Senior built, both for himself at St. Germain, and afterwards for the King at Trianon, hot-houses, in which were seen, for the first time in France, peaches, cherries, plums, strawberries, apricots, and vines, bearing fruit in the depth of winter, and lilacs, roses, honeysuckles, feringas, hyacinths, narcissuses, and other flowers, in full bloom.

"In the *Ecole du Potager*, written by Combes, about 1750, are the details relative to the management of the glass covers and sashes; but a great improvement still remained, which has been accomplished in the invention of the forcing-frames (*Pavillons de primeurs*), to which M. Bérard has been led by various and successive attempts now submitted by him to the public. As it has fallen to our lot to give an account of these attempts, and of the management of them, we ought in the first place to state the dimensions of the frame-lights composed of only two parts.

"The lower part, *a* (see Plate 30, figs. 1, 2, 3), is formed by the union of two square sashes, the lower about 13 decimetres (4 feet French; see MEASURE, *Supp.*), the upper only 9.

"The latter is raised above the former about 5 decimetres (13 inches French); and the two are joined by small iron rods fit for the reception of the panes of glass.

"The upper part *b*, consists of a wooden sash, bearing also four iron rods at the corners, and four in the middle, joined together at a single point *c*, where a heavy ring is affixed; the inclination of this upper part being less rapid, as in the broken roofs (*toits brochés*) of the common green-houses: it is only 3 decimetres by 8 for the half breadth.

"During the time when the vegetation, having grown up, requires more height in the building, a height of wood may be placed between the two portions to as to raise the upper part one decimetre, at least; another placed below would raise the whole, when needful, more than two.

"From this arrangement of the glass arises a mass of light extremely valuable to vegetation. The proximity of the glass is another advantage, which is the more important, as it is well

known that plants kept under glass become *étioil*, that is, grow weak by lengthening themselves to excess in order to reach and touch the glass, near which the influence of the sun is always greatest. And, lastly, the inclination of the glass, and its being placed in three different planes, increases more and more the effect of the solar heat.

"Shutters applied in succession, whether toward the north or toward the sun, protect the plants from the cold, or shield them from an excess of heat, and may be used throughout the whole during the winter nights.

"Thus, with mere glazed frame-lights, a great number of young and delicate plants may be reared, especially the finest melons and cantaloups; or more common productions may be accelerated, as strawberries, French-beans, and the early cabbages, as well as a variety of flowers: or smaller erections may be made for these various uses: but the extent of the ground thus preserved from the chilling moisture of cold rains is an advantage not to be neglected or forgotten; and frame-lights, of 13 decimetres square, being easily removed by one man, or cultivated to the midst of them, that size appears most convenient.

"All this, however, constitutes but half the merit of these hot-houses. It is evident they may be placed over a hot-bed, accompanied with chafing-dishes, and their shutters covered and surrounded with horse-dung when needful; though, as is well known, the heat of that substance, which is often difficult to be obtained, is still more difficult to be kept up.

"The heat of furnaces is liable to the same objections, on account of their extent, even in the smallest hot-houses. Another defect in these buildings is the distance of the plants from the glass. A third arises from the great mass of air heated to a loss; not to mention the no less important mass of the materials, naturally cold in themselves, of which the walls are built. Lastly, their being stationary is one of the greatest obstacles to their being employed in horticulture. They are an expence only to be incurred by land-owners, and by land-owners who live in affluence, or by an extremely small number of gardeners, industrious enough to derive from their hot-houses a quantity of fruit, which, if it does not enrich, indemnifies them at least for the expences attending this method, which has hitherto been the only one known.

"All these inconveniences seem to be avoided by the frame-lights, to which M. Bérard has adapted an apparatus for procuring heat from a kind of fuel equally convenient and economical, namely, two small furnaces, in one of which, *h*, is placed a strong earthen pan filled with the dregs of oil, or two, in case of extreme need; a second furnace, *g*, above, with another pan placed there at the time when the fire is lighted; an iron pipe, *f*, placed at the bottom of the frame, to warm the wood and earth by means of the smoke passing through it; the circulation of which smoke is furthered by the second furnace, where the end of the pipe passing through it receives a local heat, which rarefies the air throughout the whole pipe; a wooden box, *j*, to inclose these parts, which are constructed of thin materials; an iron pipe, *i*, terminating, if needful, in a T, to carry off the smoke when it has become useless. This is the whole apparatus, and about a kilogram of oil per night, value 12 and 15 cents the whole expence. 5 or 600 francs at most laid out in constructing two of these forcing-frames, with fire-apparatus, and four without, which are necessary for placing more at large the plants reared in the former, ought, according to M. Bérard's estimate, whose experience on this subject renders his opinion decisive, to produce as much effect as a hot-house that has cost 3 or 4000 francs, and which would require a consumption of several fathoms of wood.

"The economical gardener also finds an advantage in having it in his power to keep the parts not actually in use

under cover, by which they last longer, and their expence is consequently diminished.

"Lastly, by substituting a number of these forcing-frames for one hot-house, an advantage which must be considered as almost invaluable is obtained; that of varying the temperature, and accommodating it to the different plants they contain, as well as to their various periods of vegetation."

FORDINGBRIDGE, a town in Hampshire, with a market on Saturday; seated on the Avon, 20 miles W.S.W. of Winchester, and 87 W. by S. of London. Long 1. 49. W. Lat. 50. 56. N.

FOREZ, a late province of France, bounded on the W. by Auvergne, on the S. by Velay, and the Vivarais, on the E. by the Lyonnais, and on the N. by Burgundy and the Bourbonnois. It is watered by the Loire, and several other streams, and has several mines of coal and iron. It now forms, with the Lyonnais, the department of Rhone and Loire.

FORICULA (*Encycl.*). In that article, we omitted to refer the reader to (Plate 25, in vol. III.). To what has there been said we wish again to enter our protest against the truly vulgar opinion that this harmless insect (the *Earwig*) has the least disposition to enter the human ear by choice. Nothing, in fact, is so repugnant to its habits as moisture, and particularly of that clammy kind which the ear supplies, and which must be a great impediment to the freedom of its motions. In the first summer of the militia encampments in the former war with France, a whole regiment were assigned some ground on the downs near Winchester, which literally *swarmed* with these insects. During the whole season not a single instance occurred of an earwig's taking up its abode in the human ear. One soldier only, out of nine hundred, met with the accident of an earwig's falling into his ear from the top of the tent in which he lay asleep; but even this occasioned him no great inconvenience; the insect was at once killed by pouring a little oil into the ear, and extracted by syringing with warm water.

FORGES, a town of France, in the department of Lower Seine, remarkable for its mineral waters. It is 60 miles N.W. of Paris. Long 0. 40. E. Lat. 49. 38. N.

FORNELLO, a town of Naples, in the Molise, 17 miles W. of Molise.

FORNOVO, a town of Italy in the duchy of Parma; near which, in 1495, Charles VIII. of France obtained a victory over the princes of Italy. It is eight miles W.S.W. of Parma.

FORTALICE, in Scots law, signified anciently a small place of strength, originally built for the defence of the country; and which on that account was formerly reckoned *inter regalia*, and did not go along with the lands upon which it was situated without a special grant from the crown. Now, fortalices are carried by a general grant of the lands; and the word is become synonymous with manor-place, messuage, &c.

FORTIEVENTURA, one of the Canary Islands, 65 miles in length, and of a very irregular breadth, consisting of two peninsulas, joined by an isthmus 12 miles in breadth. It produces plenty of wheat, barley, beeves, and goats. Long. 14. 26. W. Lat. 28. 4. N.

FORTROSE, a borough in Roxburghshire, situate on the Frith of Murray, nearly opposite Fort George, and nine miles W. of Inverness.

FOSSANO, a strong town of Piedmont, with a bishop's see, situated on the Sture, 10 miles N.E. of Coni, and 27 S.E. of Pignerol. Long. 7. 56. E. Lat. 44. 45. N.

FOSSÉ, a town of Westphalia, in the bishopric of Liege,

situate between the Sambre and Meuse, seven miles W. of Namur. Long. 4. 40. E. Lat. 50. 26. N.

FOSSIL ALKALI (*Encycl.*). The nature and chemical properties of this substance have been fully set forth; but it may not be improper to describe some of the means by which it may be separated from sea-salt, of which it is the basis.

In August, 1781, a patent was granted to Mr. ALEX. FORDYCE, for his new processes, by which the alkali contained in sea-salt, rock-salt, salt-springs, salt-cake, Glauber's salt, and vitriolated tartar, may be separated from the marine or vitriolic acids.—He first converts salt-water, &c. into Glauber's salt, by the application of vitriolic acid, or of any substance containing the latter. This salt is then to be mixed with a double quantity of lime, chalk, or any other calcareous earth, or iron, or with any substance containing that metal. The whole is to be placed together in a vault, or other reservoir, secured from the rain, till it is completely decomposed, when the alkali is to be extracted by dissolving it in water and evaporating it to dryness. Or, the patentee employs 60lbs. of Glauber's salt, or vitriolated tartar; 10lbs. of charcoal, or any other substance capable of bearing heat, and containing the inflammable principle; and 10lbs. of iron; these ingredients are pounded together, and thrown into forty gallons of water; where they are suffered to digest for twenty-four hours. The clear solution is then to be separated; and, by evaporating, filtering, and crystallizing, it is rendered fit for use.

Another patent was granted in March 1789, to Mr. ANTHONY BOURBOULON DE BOURNEUF, of Liverpool, for his invention of an apparatus on a new construction, and certain new processes for the making of fossil alkali, which is said to be equal to that extracted from the best barilla. As, however, this specification is so complex, that it could not be understood without the aid of an engraving; and, as the patent is not expired, we refer the reader to the 4th volume of the *Repository of Arts and Manufactures*.

The last process which merits our attention, is that of the Earl of DUNDONALD, for obtaining mineral, or fossil, and vegetable alkali, from neutral salts composed of those alkalies and an acid; or from the solutions of those salts, whence several articles are disengaged or formed, that may be collected and applied to various useful purposes. For these different inventions, his lordship obtained a patent in 1795*. 1. The most important of the new processes, is that of making Glauber's salt, or sulphat of soda, which is one of those neutral salts, consisting of an alkali and an acid, from which an alkaline salt is to be procured. Thus, several other articles, such as spirit of salt, sal ammoniac, and an iron earth mixed with clay, as a pigment, are formed, or disengaged, and may be collected: 2. Glauber's salt is decomposed, forming mineral alkali, or soda, either in a mild or caustic state: 3. Vitriolated tartar is prepared by decomposing the muriat of pot-ash; and 4. This preparation is converted into either a vegetable alkaline leepar, or mild or caustic vegetable alkali. The salts and other substances resulting from these chemical operations, may be applied to various purposes, particularly for decomposing soda, from Glauber's salt.

As the principal article for which Lord DUNDONALD has established manufactories, appears to be the SODA now generally sold in the shops, we shall, in the alphabetical series in this Supplement, describe its manifold uses, and content ourselves at present with giving a summary of the inventions claimed by the noble patentee: namely, that sea-salt is decom-

* We have authority to say, that some part of Lord Dundonald's claim has no just foundation, the discovery of the manufacture of Glauber's salt from the refuse of the alum works having been many years ago made, and extensively practised by Mr. Houlston, an ingenious medical practitioner and chemist, now living in Liverpool.

posed by alum, by vitriol of iron, and Epsom-salt, with the aid of heat, when a due proportion of clay, or a clayey iron earth, is mixed with the salts submitted to the operation;—that sea-salt is also decomposed by Epsom-salt with the aid of heat, and without the intervention of clay;—lastly, that it may likewise be reduced by sulphat of lime, or gypsum, with the aid of heat, when a due proportion of clay, containing much iron, is mixed with the sea-salt and gypsum.

FOSFIL-COAL (*Encycl.*). In December 1792, a patent was granted to Mr. JOHN BARBER, of Attleborough, Warwickshire, for a method of smelting and purifying fossil-coal, ironstone, iron-ore, &c. By steam, air, and fire, and for impregnating the same with inflammable air, by which he produces a tough metal.

The patentee directs any portion of iron-stone, or ore, together with a quantity of fossil-coal, to be put into a furnace, into which fire is to be admitted, and steam conveyed from a boiler, by means of pipes, through an aperture made in the hearth. These pipes are not to project into the furnace, but only to extend so far as to permit the steam to convey along with it a quantity of atmospheric air; and thus a calc sufficiently pure will be produced. The process of purification may be facilitated, by placing a vessel of water at the bottom of the furnace, or building, for the reception of the hot calc while it falls, or is disengaged. And if sometimes a proper proportion of sal-ammoniac, or other menstruum, be thrown in among the coals, &c. while purifying, that operation will be, in a considerable degree, facilitated.

When the calces are thus prepared, a portion of them, and also a portion of fossil-coal, or purifying coals, are to be put into a smelting furnace, beneath which a fire is to be kindled. Apertures are also to be made for the introduction of inflammable air, from one or more retorts, by means of pipes, either singly or conjointly with *air-blas*. Lime-stone, charcoal, and other substances abounding with inflammable air, may be added in due proportions, and will have an effect similar to that produced by the inflammable air alone, for which it may be occasionally substituted. The patentee observes, that the proportionate quantities of the various materials employed, can only be ascertained by experience; and the result of this process will be the production of a tough metal, capable of being applied to several useful purposes.

FOSFIL-WOOD (*Encycl.*). At one of their meetings, Citizen Villars announced to the National Institute the discovery of fossil woods buried on the summits of the highest mountains of the Alps, almost 2500 feet above the highest of the nearest forests now in existence. He has noticed larch, birch, alder, and aspen, the trunks of which, as well as the roots, are in a state of perfect preservation. From this appearance, Villars concludes, they must have vegetated in the very spot where he found them, but is at a loss to conceive how the cold could become so violent as to render it impossible for the same trees to live except at a great distance. He attempts to account for it by the melting away of the tops of the mountains, the attenuation of their chalk by rain, and the imprudent destruction of their forests by the hand of man. Poirer mentioned that he had found shells of fresh-water fish buried under beds of turf, over which again were other beds, containing sea-shells. It should thus appear, that the earth which exhibits these appearances had been first watered by streams, then inundated by the sea, and now was placed in the centre of a continent. Beauvois produced from North America proofs no less astonishing of changes in the state of the earth, in which at different epochs had been found remains of monstrous quadrupeds, at this day unknown; and he produced specimens of skeletons which had been dug up, differing from those observed at preceding times. Every day, every climate

furnishes documents of the revolutions which our globe has undergone, and which are indelibly impressed on its surface, and in its entrails. Thus does man, unable to develop the mysteries of his own existence, attempt to explore the arcana of the created globe, which seem to deride the efforts of knowledge, and mock the exertions of science! philosophy furnishes no means for penetrating into the causes of those events which are buried from the search in an inscrutable antiquity.

FOSSOMBRONE, a town of Italy, in the duchy of Urbino, with a bishop's see; seated near the river Metro, 16 miles S.W. of Pesaro, and 12 S.E. of Urbino. Long. 12. 48. E. Lat. 43. 40. N.

FOUE, an ancient town of Lower Egypt, seated on the Nile, 25 miles S. of Rosetta, and 40. E. of Alexandria. Long. 31. 15. E. Lat. 31. 12. N.

FOUGERES, a town of France, in the department of Maine and Loire, with an ancient castle. It is seated on the Cosson; 25 miles N.E. of Rennes, and 150 W. of Paris. Long. 1. 13. W. Lat. 48. 22. N.

FOULI, or **PHOLEY**, a country of Africa, situate on the sides of the river Senegal, and extending about 500 miles from E. to W: the boundaries from N. to S. are unknown. It is populous and fertile. The inhabitants are, in general, of a tawny complexion, though many of them are entirely black. They lead a wandering life, and roam about the country with large droves of cows, sheep, goats, and horses. The king of this country is called the Siratick; and though he seldom appears with the badges of majesty, he has great authority, and is as much respected as any one on the coast. Though none but princes of the blood can be called to the throne, yet the crown descends not from father to son, but from brother to brother, or nephew to nephew. The people of Foui are greatly praised by travellers for their hospitality: nor is their humanity, in other respects, less commendable; for, if one of their countrymen have the misfortune to fall into slavery, the rest join stock to redeem him. Elephants are so numerous in this country, that they are frequently seen in droves of 200 together. The natives are very dexterous at hunting them, and other wild beasts; as elephants' teeth and the skins of lions, leopards, and tigers, are their principal articles of trade; and their flesh they dry for use and winter-store.

FOULNESS, an island separated by a narrow channel from the S.E. part of the county of Essex, six miles E. of Rochford.

FOULSHAM, a town in Norfolk, with a market on Tuesday, 16 miles N.W. of Norwich, and 111 N.E. of London. Long. 1. 7. E. Lat. 52. 51. N.

FOURNEAUX ISLAND, a small island in the S. Pacific Ocean. Long. 143. 2. W. Lat. 17. 11. S.

FOXFORD, a town of Ireland, in the county of Mayo, situate on the river May, eight miles N. of Castlebar.

FOX-GLOVE. See **DIGITALIS** in this Supplement, where an account is given of its medical properties.

FOYLE, **LOUGH**, a lake or bay of Ireland, in Londonderry. It is of an oval form, 14 miles long and eight broad, and communicates with the ocean by a short and narrow strait.

FOZ, a town of Portugal, in Alentejo, situate at the conflux of the Zaras and Tagus, 24 miles N.E. of Lisbon. Long. 8. 56. W. Lat. 38. 58. N.

Foz, a town of France, in the department of Var, four miles N.E. of Barjols.

FRAGNINO, a town of Naples, in Principato Ulteriore, eight miles N. of Benevento.

FRAGOAS, a town of Portugal, in Estremadura, seven miles N.W. of Santoren.

FRAMPTON, a town in Dorsetshire, with a market on Thursday, seated on the Frome, 12 miles N.W. of Weymouth, and 126. W. by S. of London. Long. 2. 50. W. Lat. 50. 45. N.

FRANCE (*Encycl.*). The following account of the Calendar of the French Republic, since the abolition of Royalty, we extract from the British Magazine.

The republican era began,

Year	1	-	-	22	September 1792
	2	-	-	22	1793
	3	-	-	22	1794
	4	-	-	23	1795
	5	-	-	23	1796
	6	-	-	22	1797
	7	-	-	22	1798
	8	-	-	23	1799
	9	-	-	23	1800
	10	-	-	23	1801

Each year consists of 12 months.

1	Vendemiaire, year 8, was	-	-	23	September.
1	Brumaire,	-	-	23	October.
1	Frimaire,	-	-	22	November.
1	Nivose,	-	-	22	December.
1	Pluviose,	-	-	21	January.
1	Ventose,	-	-	20	February.
1	Germinal will be	-	-	22	March.
1	Floral,	-	-	21	April.
1	Prairial,	-	-	21	May.
1	Messidor,	-	-	20	June.
1	Thermidor,	-	-	20	July.
1	Fructidor,	-	-	19	August.
5	Complementary days, 18	-	-	22	September.

Each month has 3 decades of 10 days.

1.	Primidi.	6.	Sextidi.
2.	Duodi.	7.	Septidi.
3.	Tridi.	8.	Octidi.
4.	Quartidi.	9.	Nonidi.
5.	Quintidi	10.	Decadi.

Once in four years there are six instead of five complementary days. These days are named like the five or six first of the decade.

The republican year begins at the midnight preceding the autumnal equinox. Alm. nat. an. 9. The metre has been ultimately determined to be equal to 3 feet, 11.296 lines French, the gramme to be 18.827 grains, Journ. de Physique, an. 7. Prair. et Fruct. The metre is the ten millionth part of the distance from the pole to the equator: the gramme the weight of a cubic centimetre of water. The toise was 76.734 inches English, and 576 French grains were equal to 472.5 English. Phil. Trans. v. 58, p. 326, and v. 42, p. 187.

FRANCHEMONT, a town of Germany, in the bishopric of Liege, 12 miles S.E. of Liege.

FRANCIS of Assisi (St.), founder of the Franciscan friars, was born at Assisi in Italy in 1181. One of the most extraordinary things told of St. Francis of Assisi, that Jesus Christ imprinted on him the marks of his five wounds; and there is a festival in memory of those holy prints, and an office for it. His preaching to the fishes to make them Christians, and his conversion of millions of them, is famous; as is his mercy to worms and lice. The order he founded, and which bears his name, was approved by Innocent III. in 1215, and confirmed by Honorius III. in 1223. It has since branched into several others, as Minims, Ricolets, Capuchins, &c. called in Roman Catholic countries, *Frates Minores*.

FRANCOIS, CAPE, a town in the N. part of the island of St. Domingo. It suffered much by dreadful commotions
VOL. X.

that ensued after the French revolution. Long. 72. 18. W. Lat. 19. 46. N.

FRANEKER, or **FRANKER**, a town of the United Provinces, in Friesland, with a castle and university. The public buildings and palaces are magnificent. It is seven miles W. of Lewarden. Long. 5. 33. E. Lat. 53. 11. N.

FRANKENAU, a town of Germany, in the principality of Hesse, 24 miles S.W. of Cassel.

FRANKENBERG, a town of Upper Saxony, seven miles N.N.E. of Chemnitz, and nine W. of Freyberg.

FRANKENHAUSEN, a town of Upper Saxony, with some extensive salt-works. It is situate on a branch of the Wipper, 26 miles N. of Erfurt. Long. 11. 5. E. Lat. 50. 42. N.

FRANKENSTEIN, a town of Germany, in the palatinate of the Rhine, 12 miles N.W. of Landau. Long. 7. 55. E. Lat. 49. 18. N.

FRANKENSTEIN, a town of Silesia, on the Bautze, 12 miles S.S.W. of Glatz.

FRANKLAND'S ISLANDS, a cluster of islands in the South Pacific Ocean, on the N.E. coast of New Holland. Long. 146. 0. E. Lat. 17. 10. S.

FRANKLIN, a county of Pennsylvania, 30 miles long and 24 broad. In 1790, it contained 15,655 inhabitants. Chamberberg is the capital.

FRANQUEMONT, a town of Switzerland, in the bishopric of Basle, often besieged and taken in the Swiss wars. It is seated on the Doubs, 16 miles N. of Neuchatel, and 23 W. of Soleure.

FAUENFELD, a town of Switzerland, capital of the Thurgau. It is seated on an eminence, and is the place where, since 1712, the deputies of the Swiss cantons hold their general diet. Long. 8. 56. W. Lat. 51. 48. N.

FREDEBERG, a town of Westphalia, 50 miles W. of Cassel. Long. 8. 16. E. Lat. 51. 10. N.

FREDERICSHAM, a town of Russia, in Carelia. It is neatly built, the streets going off like radii from a centre; and is seated near the gulf of Finland, 68 miles W.S.W. of Wiburgh.

FREDERICSTOWN, a flourishing town of the United States, in Maryland, seated on the Potomac, 60 miles W. by N. of Annapolis. Long. 77. 30. W. Lat. 39. 20. N.

FREE-CHURCH, a name given to certain places of Protestant worship, established of late years with a view to encourage among the poor a regular observation of the sabbath. In London and Bath these establishments have been found to answer an excellent purpose. The following extract from an account of the free-church at Bath, by Mr. Bernard, appears in the Reports of the Society for bettering the condition of the poor, &c.

The free-church, in the parish of Walcot, at Bath, was opened in November, 1798, for the general and indiscriminate accommodation of the poor. The idea was originally suggested by the Rev. Mr. Daubeny, in a sermon delivered at St. Margaret's chapel, at Bath, in April 1792; and afterwards, with the concurrence and approbation of the Rev. Mr. Sibley, the rector of the parish, published with an address to the inhabitants.

In this discourse, Mr. Daubeny, after enlarging upon the great characteristic of the Christian religion, that, "The poor have the gospel preached to them," and upon the expected benefits of the Sunday schools then established at Bath, proceeded to ask "where are the children of that place when discharged from the Sunday schools, at a time of life the most dangerous—where are they to gain that instruction, which is calculated to bring to perfection the education which they

have received? If, in conformity to the ideas with which they have been brought up, they come to places of worship belonging to the establishment, they find, alas! the doors, for the most part, shut against them."—He then goes on to observe, that this is, in some degree, to exclude them from the established church, instead of inviting them, and providing places of worship for them; without which (he adds) "we cannot be surprised that they should no longer continue members of a church which, in a manner, *excommunicates* them. In which case their infidelity, and consequent immorality, will not so much lay at their own doors, as at the doors of those who ought, in charity, to have taken their case into consideration, and to have provided means for their instruction."

This discourse had its due effect on the audience, and several hundred pounds were immediately subscribed among them, before they quitted the church. With the example of some principal subscribers; both among the clergy and laity, the subscriptions, in a short time, amounted to £2700. Any objections which might have occurred to doubting minds, were obviated by the publication of the plan; which was, that though the church was to be free from all parochial duty and control, yet it was to be consecrated by the bishop of the diocese, and the officiating ministers licensed by the bishop, in confirmation of their appointment by the rector of the parish: that the whole area of the building should be appropriated to the free accommodation of the common people; and the seats in the galleries should be let out to tradesmen, and persons in a superior rank of life, at such prices as might furnish a sum sufficient for the service and repairs: that there should be a full service both morning and afternoon every Sunday, and a sacrament once a month; and lastly, that the building itself should be vested in trustees, with powers and provisions adequate to the purpose of securing it to the public for ever, in conformity to the design with which it was originally constructed.

The conductors of this exemplary undertaking having purchased for £300, a leasehold piece of ground, in an airy situation, in the centre of the parish, as a site for the new church, Lord Rivers, in whom the fee-simple of the ground was vested, made them a handsome offer of his remaining interest in it; so that it was made *free ground* in perpetuity. This offer having been carried into effect, a plain but handsome gothic edifice was then erected; Mr. Daubeny taking upon himself the risk of any expense beyond the amount of the subscriptions. It is calculated to accommodate 1000 persons in the area, which is the free part of the church; and between three and four hundred persons in the galleries, the produce of which is appropriated to defray the annual outgoings. The church was consecrated on the 7th of November, and opened for divine service on Sunday, November 18, 1798. The cost of the church rather exceeded £3500; not including those ornamental articles, which have been contributed as the donations of several persons, in addition to their original subscriptions; and an organ, which has been deemed necessary to lead to large a congregation to join in the singing part of the service, and to operate as some additional inducement to their attendance.

Mr. Bernard attended the evening service there, on the 24th March, 1799. The gallery, indeed, was not above half filled, the seats being reserved for the renters of them; but the area below contained above a thousand persons, decently and cleanly dressed, and receiving the benefit of divine worship, with a degree of propriety and attention, that made the service extremely awful and impressive. It was a sight that must have given the greatest satisfaction to every zealous Christian, who had an opportunity of participating in this act of devotion;

whilst the gratitude that is expressed by the lower orders of people for the accommodation so liberally provided for them; and the eagerness with which they attend the service of the church, furnish the most favourable omens of the good effects that may be derived from an establishment of this truly pious and charitable nature. The propriety and expediency of the provision made, in this instance, for the religious duties and instruction of the poor at Bath, are so obvious and unquestionable, that it is difficult to state any reasons in their favour, which will not have already occurred to the reader's mind, on the perusal of the preceding account. It is very apparent that the free church at Bath must greatly contribute, in that place, to the improvement of moral and religious habits among the lower classes of society, to the prevalence of the established church, and to the permanence and stability of internal peace and civil order. It must be equally apparent to every one, who has turned his attention to the situation of the poor in London, and to their means and opportunities of exercising their religious duties, that several such chapels, as the free church at Bath, are now wanted in our metropolis; and that, without such chapels, the poor, though living in a Christian country, do not possess the common benefits of that religion, which its divine Author addressed principally to them. If even with those who have had the blessing of a religious education, and have had the books of revelation opened and explained to them,—if even in their instance "religion, the rewards of which are distant, and which is animated only by faith and hope, will glide by degrees out of the mind, unless it be invigorated and re-impressed by external ordinances, by stated calls to worship, and by the salutary influence of example," what must we expect of the ignorant and uneducated? of those who are pressed down by necessity, and have no support derived from the truths of revelation, or from the principles of morality?

It is mere mockery to give the name of *accommodation*, to the space that is left for the poor, in the aisles of our churches, in London and Westminster. They are neither adapted to the performance of the duties of religious worship, nor would they contain a *fiftieth* part of those, *who ought to be accommodated there*. While the rich are conveniently seated for their money, the poor should not be neglected. They should, as far as kindness and attention will go, be *compelled to come in*. They should have the advantage of their residence in a Christian and Protestant country; and inducement should be held out to them, such at least as decent and comfortable seats would afford, to attend regularly at the established church, and to unite with the rest of their fellow-subjects, in the constant observance of the sabbath, and in religious worship.

In the following year, namely, on Sunday, the 25th of May, 1800, a free chapel was opened in West-street, near the Seven Dials, in London, for the benefit of the poor. Those who have witnessed the pathos and energy with which the truly pious and learned Dr. Porteus, bishop of London, delivers and enforces the divine truths and ordinances of the gospel, may conceive how powerful and impressive his discourse must have been, on this occasion; addressed as it was to the feelings and understandings of his audience, and received by them with silent and unfeigned satisfaction.

The necessary arrangements were immediately made for the care of the chapel; which was placed under the direction of the bishop of the diocese, the rector of the parish, and eight of the principal subscribers. The duty has been since regularly attended, and the psalms and hymns printed, and placed for the poor in their pews; and there has been gradually forming a pious and decent, though not, as yet, a numerous congregation.

It had been conceived that it would be better, and more conducive to the permanency of the institution, that the poor should *gradually* find their way into the chapel; rather than by any special means to prefs their premature attendance. No hope was entertained that their habits would be suddenly and entirely changed; and that those who from infancy had passed the Lord's day in sloth and brutal indulgence, should be *at once* amended; and be prepared regularly to attend with cleanliness and decency, in a place of divine worship. A complete and permanent reform was not to be immediately expected; and a temporary conformity, a mere yielding for the time to pressing instances, compelling them to come in, did not promise any final improvement.

An organ has been lately provided for the chapel, and an organist engaged; and a respectable clergyman officiates as the minister of the chapel. Whoever takes a view of the parochial districts, at the western end of London, will find that, in the four parishes of Marylebone, St. James's, St. Giles's, and St. George's, Hanover-square, with a population of some hundred thousand inhabitants, there are only *four churches* for the reception of those who are desirous of attending divine worship, according to the rites of the church of England.

Three of these are of a moderate size; but the other, that of Marylebone *, only fit for the chapel of some petty, insulated hamlet. In these four parishes, the *utmost* exertions of the parochial clergy, combined with the greatest talents, must be utterly inadequate to the religious duties of their respective districts †. Besides which, in these, and in almost every other church in the metropolis, the pews are let; and the only places left for those parishioners who wish to continue members of the established church, and yet cannot afford to pay a very heavy rent for their seats, is the *standing room* in the aisles, and sometimes an occasional neglected bench; an accommodation, improper, indecent, and unfit for the sacred and solemn service then attended; and such as, even if decent in itself, would not be adequate to the admission of *one-hundredth part* of those who ought to have seats in their own parish church.

It is of very little or no consequence, that, in these four parishes, there are many private chapels. Those chapels are let at *rack-rent*, to some speculating undertaker: the pews, and every part of them, being laid out and disposed (as other private property generally is) *so as to produce the greatest possible income with the least outgoings*; and the free admission of the poor being directly opposite to the principle on which they are built and opened, and perfectly incompatible with the *great object*, of making a very large revenue, by the admission of very genteel company.

The consequence of this is, that many of the better and more serious of the labouring poor are driven and compelled, to take refuge in the different places of worship, which the more accommodating spirit of other Christian sects provides for their religious duties. But this is not all: the greater number of these neglected Christians *prefer* their *orthodoxy*, by *never attending any church at all*; and, in a country, justly boasting of the purity of its religious doctrines,—extremely fortunate in the possession of a pious and learned clergy,—and

consecrating very ample funds to the support of a most respectable church establishment,—two thirds of the lower order of people in the metropolis, live as utterly ignorant of the doctrines and duties of Christianity, and are as errant and unconverted pagans, as if they had exited in the wildest part of Africa.

To those who view, with a fixed and attentive eye, the awful series of events which is now desolating, and we may hope at the same time reforming, the Christian world, much important observation will occur on the present subject. It is written in the recent History of Europe, it is inscribed in the summary of the ten preceding years, that there is no protection against the calamities which are now laying waste our quarter of the globe, except that purity of faith and integrity of life which are to be derived from the vivifying influence of religion; extending, like the solar ray, to *every clays* of our fellow subjects, and operating in the moral amendment of the great mass of the people.

It has been the object of some individuals, and certainly a very desirable object, that Sunday should be observed among us with more decency and devotion than are at present apparent in the metropolis: and it has been frequently observed, that, in the gradual progress from petty offences to those atrocious crimes which strike at the very root of society, the habitual neglect of the sabbath, and of its sacred ordinances, is always a prominent and peculiar feature. It is by the gradual effects of that neglect, that the reverence of the Divine Being, implanted as it is in our frame, and nourished and confirmed by every object of creation, is at length eradicated from the human breast; and the hardened sinner is ultimately left a prey to his own evil and corrupt imaginations.

But, surely, it must appear to be an obvious truth, that, if we would promote the religious observance of the Lord's day among the poor, we must not merely set them the example, but must ourselves make the provision for their religious duties. Without this, there is no use in the increase of vain statutes, which can never be executed to any good purpose; statutes, which can, in no event, produce more than the *semblance* and *shadow* of religion in the country. It may, however, be confidently asserted, that with the benefit of such a provision, effectually and properly made, and eventually accepted and enjoyed, we should have little or no call for any new law or ordinance on the subject; but we should find, among the great mass of the people, the same attention to the religious duties of the Lord's day, as is now shewn by the individuals of those Christian sects among us, who make a decent and proper provision for the religious duties of their necessitous brethren.

The periodical return of the seventh day, for the instruction of the minds of the poor in divine knowledge, and for the rest and relaxation of their bodies from the cares and labours of life, is, in the Christian world, a most important advantage; whether we regard the situation of the labouring class in this fleeting period of existence, or whether we turn our views to the awful and interesting concerns of futurity. But it is vain to expect, that the poor should regard that day

* The population of Marylebone is now returned, and the size of that parish church may easily be known. It will therefore not be difficult to ascertain whether the population of that parish requires 150 such parish-churches as its present; or whether 120 such churches would be sufficient for the inhabitants.—June 27, 1801.

† Those who attend the poor of the metropolis in their own habitations, have frequent and painful occasion to lament their want of that instruction and consolation in their dying moments, which Christian charity would desire them to receive. In other sects, and in country parishes, where all the members of a congregation are personally known to the ministers, these duties may be completely fulfilled; but in the populous and extended parishes of the metropolis, no zeal, however indefatigable, can enable the present number of clergymen to do *all that ought* to be done.—June 30, 1801.

as any thing but a privileged time for idleness and intemperance, except from the call to toil and labour, unless we supply them with other occupation, and furnish their minds with that religious instruction *, and with those precepts and motives, which may have an operative effect upon their lives and conduct: and, when so long and so general a neglect has taken place, it is vain and idle to expect that, without much time, much attention, and much anxiety on our part, the poor should immediately and spontaneously flow into the chapels that may be opened for them. The evil (it must be allowed) is too deep, and the habit too inveterate, to admit any expectation of that kind. But the benefit of *such a reform, in London*, is so great, and so important in its consequences; it is so essential to the political existence of this country, and to the security and happiness of its inhabitants; that I know no object, the advantages of which I can name in preference to, or even in competition with it.

With these sentiments, and with this conviction on his mind, Mr. Bernard submits to those, from whom only such a measure can properly originate, the expediency of providing some remedy for this national evil.

His proposal is, that a society be formed for *promoting the foundation and establishment of free chapels for the poor, and the increase and improvement of their religious habits, within the realm of England*—that every subscriber of fifty guineas in one sum, or of five guineas a-year, shall be a governor of the society; and that in case of a donation of 100 guineas or more, the donor shall, for every 50 guineas beyond what would constitute his own subscription, have the power of naming one life governor: the specific appropriation of the funds being for the establishment and support of free chapels for the poor, in the metropolis, and in any of the populous towns of England; subject, as all other chapels and churches of the established church must be, to episcopal control and government.

Whenever such a society shall be formed, and the directing power placed in unexceptionable hands, we may venture to hope that some addition to its funds may be afforded by government. It may also be expected, that, with a proper and economical application of those funds, every thousand pounds entrusted to the direction of it, may afford the means of forming and establishing a new free chapel for the poor, either in London, or in Manchester, Bristol, Norwich, or in some other of our most populous towns.—What the effects may eventually and ultimately be, and what strength and stability it may give to the civil and ecclesiastical establishment of the country, and what renovation of vigour and force to the moral and religious habits of the poor, we leave to the reflection and appreciation of the reader. Our earnest wishes are in unison with those of the benevolent writer of these remarks, and we think ourselves fortunate in contributing to so laudable a work, by giving circulation to the excellent arguments used to enforce its necessity.

FREHEL, a cape of France, in the department of the North-Coast, 13 miles W. of St. Malo. Long. 2. 20. W. Lat. 48. 41. N.

FREJUS, a town of France, in the department of Var.

By the Romans, it was called *Forum Julii*; and had then a port on the Mediterranean, which is now above a mile from it. It is the birth-place of that great Roman general and philosopher Agricola; and near it some fine remains of antiquity are still visible. It is seated near the river Argens, in a morass, 40 miles N.E. of Toulon. Long. 6. 50. E. Lat. 43. 26. N.

FRENAY-LE-VICOMTE, a town of France, in the department of Sarthe, nine miles S.S.W. of Alençon. Long. 0. 5. W. Long. 48. 15. N.

FREUDENSTADT, a strong town of Suabia, in the Black Forest, built to defend the passage into this forest. It is 12 miles S.E. of Straßburg. Long. 8. 21. E. Lat. 48. 28. N.

FREUDENTHAL, a town of Silesia, celebrated for its breed of horses, and manufacture of fine linen. It was taken by the Prussians in 1741 and 1744, but afterwards restored. It is 11 miles S.W. of Jagendorf, and 17 W. of Troppau. Long. 17. 21. E. Lat. 50. 3. N.

FREYBERG, or **FRIEDBERG**, a town of Upper Saxony, containing above 60,000 inhabitants. In the environs are mines of copper, tin, lead, and silver, which employ a great number of workmen, and produce above 10,000rix-dollars a-year. Here is the usual burying-place of the princes of the electoral house of Saxony. It is situate on a branch of the Muldan, 15 miles S.W. of Dresden. Long. 11. 10. W. Lat. 51. 0. N.

FREYSINGEN, a town of Germany, capital of a bishopric of the same name, in the circle of Bavaria. It was taken by the French in 1796. It is seated on a mountain, near the Her, 20 miles N. by E. of Munich. Long. 11. 50. E. Lat. 48. 26. N.

FREYSTADT, a town of Hungary, in the county of Neitra, with a strong castle, seated on the Waag, opposite Leopoldstadt. Long. 18. 10. E. Lat. 48. 32. N.

FREYSTADT, a town of Silesia, in the duchy of Teschen; 20 miles E. of Troppau. Long. 18. 15. E. Lat. 50. 0. N.

FRIAS, a considerable town of Spain, in Old Castile, seated on a mountain, near the river Ebro, 35 miles N. of Burgos. Long. 3. 46. W. Lat. 42. 52. N.

FRIDAW, a town of Germany, in the duchy of Stiria, 104 miles S. of Vienna. Long. 16. 12. E. Lat. 48. 20. N.

FRIDING, a town of Suabia, on the Danube, 30 miles N.E. of Constance. Long. 9. 31. E. Lat. 48. 11. N.

FRIIDLAND, a town of Bohemia, on the confines of Silesia, 55 miles E. of Dresden. Long. 15. 15. E. Lat. 52. 4. N.

FRIELENGEN, a town of Suabia, three miles east of the Rhine, and four N. of Balle. Long. 7. 36. E. Lat. 47. 40. N.

FRIENDLY SOCIETIES, certain associations of mechanics and labouring persons, for the purpose of subsisting themselves and their families, when rendered incapable of labour by sickness, &c. They have been otherwise called **BENEFIT CLUBS**, and the good effects of the few private ones that have existed, have induced government to countenance them, and benevolent individuals to increase their number in the united kingdom. The following extract from an account of a friendly society at Castle-Eden, in the county of Durham, by Rowland Burdon, esq. will afford an excellent example.

* "I submit (says Mr. Bernard) to the reader's consideration two leading questions, respecting what, in my view of this interesting subject, is due to the poor.—The first, whether the poor have not a claim on the rich and independent, for a certain portion of that time which is not occupied by a proper attention to their domestic or public occupations, or by a reasonable relaxation of leisure and amusement? (*care and wretched anxiety* being the consequence of *excess of application* in respect of the first;—and of the latter, *weariness and listlessness of spirit*). The second question is, whether the ministers of the gospel can quite satisfy themselves, that the general duties of the clerical order are completely fulfilled, until the gospel has been really and effectually preached (as far as may be done) to every class of men in the kingdom? And in the mean time, whether any thing which they can do in the performance of works of supererogation, or even in attempts to convert distant nations, can be admitted as a commutation of their own peculiar and indispensable service?"

The trustees of the society are, the lord of the manor, the clergy and justices of that and the two adjacent parishes, within which its members for the most part reside. All donors or subscribers of one guinea and upwards, annually, are honorary members. Twelve principal inhabitants, with the churchwardens of the three parishes, and all honorary members, are directors for the time being. For the immediate management of the business of the society, an annual committee, with a steward, clerk, and treasurer, are elected, and two visitors are appointed from each parish.

The number of members has never reached two hundred; consisting for the most part of farmers, artificers, labourers, and their families. The following are the accounts from August 10th, 1793, to December 31st, 1796.

Dr.		Cr.	
£.	s. d.	£.	s. d.
To donations and subscriptions from honorary members since the commencement - - -	43 — —	By lent on interest - - -	440 — —
Interest from sundry members - - - - -	29 19 6	By ditto to members for purchase of cows - - -	22 — —
Monthly contributions, deducting sums paid during sickness - - - - -	386 7 10	Balance in treasurer's hands - - -	— 16 —
Surplus from funerals, entrances, &c. - - - - -	3 — 8 8		
	462 16 —		462 16 0

CONTRIBUTIONS.

Ages of admission.	Per month during life, for one share, and so in proportion where no fee is paid on admission.		Or 1s. per month during life for one share, and so in proportion where no fee is paid on admission.	
	s.	d.	£.	s. d.
under 22	1	—	—	—
22 and — 23	1	— ½	—	5 —
23 — 24	1	1	—	10 —
24 — 25	1	1 ½	—	5 —
25 — 26	1	2	1	—
26 — 27	1	2 ½	1	5 —
27 — 28	1	3	1	10 —
28 — 29	1	3 ½	1	15 —
29 — 30	1	4	2	—
30 — 31	1	4 ½	2	6 —
31 — 32	1	5	2	12 —
32 — 33	1	5 ½	2	18 —
33 — 34	1	6	3	4 —
34 — 35	1	6 ½	3	10 —
35 — 36	1	7	3	18 —
36 — 37	1	7 ½	4	6 —
37 — 38	1	8	4	14 —
38 — 39	1	8 ½	5	2 —
39 — 40	1	9	5	10 —
40 — 41	1	9 ½	6	—
41 — 42	1	10	6	10 —
42 — 43	1	10 ½	7	—
43 — 44	1	11	7	10 —
44 — 45	1	11 ½	8	—
45 — 46	2	—	8	10 —

Vol. X.

Sixpence is paid for each share on the decease of every member, for whose funeral the society has any disbursement to make; and each member above twenty-one years of age (excepting women) pays, at each yearly meeting, one shilling for dinner and liquor: but no member is obliged to be at any expense at monthly or other meetings. A deposit of two shillings and sixpence is made on proposing any person to become a member, which, if the person be not admitted, is returned. Any member, under forty-five years of age, may increase his or her original share, on contributing according to his or her age, at the time of making such increase.

The following are the benefits to men in sickness, lameness, or infirmity; but women are not entitled to benefit in sickness.

For one share, and so in proportion for half a share:

Six shillings a-week, when confined in bed, or unable to go out of the house, or to perform any kind of work; and

Three shillings a-week, when able to walk out, or to labour to a final degree: but both these allowances cease when the member is able to follow his usual occupation, or even to earn three shillings a-week regularly.

A surgeon and apothecary are appointed to attend the sick members.

In old age.—For each share, and so in proportion for a half share, each member is entitled to the following annuity:

from 50 to 60 years of age, a yearly annuity (by quarterly payments) of	to men		to women	
	£.	s. d.	£.	s. d.
from 50 to 60 years of age	—	—	4	—
from 60 to 70 years of age	6	—	6	—
from 70 to 80	—	—	8	—
from 80 to 90	—	—	10	—
from 90 until death	12	—	12	—

Such annuities to commence from the first of January next, after the member's attaining the age of fifty, sixty, seventy, eighty, and ninety years respectively; but no annuity is payable to any member, until he shall have contributed for fifteen years, nor for any share on which he may have received relief in sickness, &c. but a man may take relief in sickness for one share, and receive annuities for other shares, which occasion many of the members to subscribe for more than one share.

At death.—Five pounds for each share, and fifty shillings for each half share, is paid to the representative of each member, who has contributed to the fund for twelve months, whether man or woman: and if the member die before contributing twelve months, the full amount of what he or she may have paid, is returned. This is repaid to the fund, by contributions from the surviving members.

To the widow of each member, who shall die after contributing fifteen years, an annuity of four pounds, by quarterly payments, from the member's death, during widowhood, for each share; and so in proportion for half a share, for which no other benefit had been received during the member's lifetime; and, if he leave no widow, the same annuity to be applied for the benefit of orphan children (if any) under twelve years of age, until the youngest of them attain that age.

To young children.—Any member, who wishes to make provision for a child or children, is allowed to enter any of them on the following terms:

If under four years of age when entered, the member pays four-pence monthly for each child, till it attains twelve years of age, if the member should live so long.

If four years, and under seven years, when entered, he pays three-pence monthly for each child.

If seven years, and under ten years, when entered, he pays two-pence monthly for each child.

If a member die and leave any child or children so contributed for, under twelve years of age, one shilling per week is applied out of the fund of the society, towards the maintenance

tenance of each such child, till it attains the age of twelve years; and, if the member choose to contribute double the above-mentioned sums for each child, the child or children will be entitled to double benefit: but no child is entitled to any benefit (excepting the annuity to be paid in case of the member's dying after contributing for fifteen years, *without leaving a widow*) unless entered and paid for twelve calendar months before the death of its father.

By purchasing cows.—A sum of money, not exceeding ten nor less than five pounds, is lent to any one member for this purpose; on his giving a promissory note, signed by himself and two householders (to be approved of by the steward, directors, and committee), for the repayment with interest by instalments, after the rate of two shillings a-week, or such other rate as may be agreed on.

By certificates.—Each member may obtain a certificate, as soon as admitted, which, by the act of parliament, will prevent him or her from being removed until actually chargeable; and, in cases of unmarried women having children in a parish to which they do not belong, the society's certificates will be a better security than many bonds of indemnity. Questions also of settlement may be decided without the removal of the certificated person, under the said act, 33d of Geo. III. ch. 54, sec. 21, 22.

The calculations for the contributions, &c. were formed upon Dr. Price's tables, making them, however, more in favour of old than young members; by which the funds are not injured, but rather the reverse, because young men are more inclined to subscribe than old; and, if the latter were to contribute according to the proportions of Dr. Price's tables, very few would become members. The composition table is lower also than Dr. Price's, notwithstanding which very few are found to avail themselves of the advantage.

The allowance in sickness is one-third higher than Dr. Price's; but members, who receive in sickness, are debarred from annuities for the same shares; and consequently this allowance in sickness may well be afforded.

In drawing the Castle-Eden tables, the object was to make the monthly contributions fully equal to the disbursements, and to induce persons of *all* ages under 46 to become members, without calculating exactly what each age ought to pay.

The preceding statement shews the accounts of the society, the gradation of its contributions, and the benefits derived by its members, in which the principal rules of the society may be traced. Little has been the amount of donations or subscriptions, and yet, during the severe trial of the late scarcity of bread-corn, few or none of the members omitted to keep up their subscriptions; testifying thereby an anxious and steady wish to provide permanently for themselves and families.

On the beneficial effects of an establishment so much in its infancy, we should be careful not to expatiate too much; but we may already ascertain some unquestionable advantages. The families of the poor have a more ready supply of medical assistance at their own houses; and, since they have been associated for each other's support, in more instances than one, they have collected little sums among themselves to present to their sick and necessitous neighbours, over and above the allowance from the funds of the society; which is probably an effect of philanthropy derived from the institution. All the members are uniformly anxious to avoid taking relief for sickness, during fifteen years, on their respective shares; a circumstance which, whilst it protects the fund, adds force to the habitual lesson of thrift; and, as there is a regular ledger kept in which each member's separate account is entered, no mistake can arise on that subject. The encouragement given to buying and keeping cows (see the article *COTTAGER*, *Supp.*) promises considerable improvement to the estate; as Mr. Burdon finds it very well worth his while, to accommodate the members with pasture for a cow, and two tons of hay each, for six pounds per annum. This, to a poor family, is a great advantage, and will tend much to diminish the weight of poor upon the parishes to which they belong. The locomotive faculty also derived from the certificates of friendly societies is a very obvious advantage.

The great desideratum, with respect to the maintenance of the poor, has always appeared to be the encouragement of habits of economy, and of a system of periodical subscription towards their own subsistence. Where men derive support in sickness and old age* from their individual efforts, in conjunction with those of their neighbours, they pass through the various periods of trial without that degradation, which attends parochial relief; being necessarily amenable to each other for a certain degree of forethought, and good conduct, they learn, insensibly, to be regular in their attention to the earnings of their business, and by acquiring a permanent connection with their neighbours, they become incapable of those acts of vagrancy, which are so wasteful of that main source of national wealth, the labour of the lower orders of the people.

Upon the whole, it is highly probable, that if the 33 Geo. III. chap. 54, for the encouragement of friendly societies, be allowed sufficient time to operate, the poor will, by degrees, be induced to take care of themselves, assisted by the contributions, and encouraged by the countenance, of their superiors.

In May, 1798, there was established at Winifon, in the county of Durham, in consequence of a suggestion of the Bishop of Durham, a friendly society for the aged poor; the object of which is to promote among them the due observance

* In a late instance, in the neighbourhood of Ealing, a majority, composed of the *young* men of a friendly society, agreed to dissolve the society, and divide the stock; and thereby at once defrauded all the *old* members of that provision for age and infirmity, which had been the object of many years' contribution. A new society was immediately formed of the young persons, and all the old members were left to the parish. This could not have happened, if *their rules had been regularly confirmed at the quarter sessions*.—The advantages of the rules being confirmed and registered (which by the act is to be without any fee or expence) are many and important;—their *bonds* are not chargeable with any *stamp duty*;—they have a copy of their rules on record, which they may always recur to;—if their steward or other person embezzles their money, they may apply to the court of chancery, and obtain a decree and *relief without any expence* whatever;—and in case any person, who has money or effects of the society in his hands, dies, or becomes a bankrupt, the debt of the society is to be discharged, *in preference to any other demand whatsoever*.—If all members of friendly societies had been aware, how much their security and benefit are increased by the confirmation of their rules, there would have been none but would have taken advantage of the act.—There is an unnecessary restriction in the statute law, as to the time for the confirmation of the rules of any friendly societies, established *before* the passing of that act. The benefits, however, of the act may be obtained (and there is an example in the publication mentioned in a preceding note) by the members *forming their society, and signing the rules anew*, with such amendments as occur; carrying their fund to the account of the new society, and giving to every member (instead of his divided share of the money) the same benefit in the fund of the new society, as he would have had in the old one.

of the sabbath, the study of the Scriptures, and of other good books, and also frugality and good neighbourhood.

For this purpose, they make a point of attending church on Sundays, not prevented by sickness, infirmity, or some unavoidable impediment; and also on other days, whenever they have opportunity: they likewise agree not to countenance any games or improper pastimes on a Sunday, by looking on, or sitting near them; and to use all the influence which they possess, to dissuade others from profaning the Lord's day:—they meet every Sunday evening at each other's houses, for religious improvement: and make it a general rule, to lay by every week something of their earnings, to accumulate till the end of the year; allotting however a tenth part thereof, and of the benefit they derive from the society, towards the relief of any of their necessitous neighbours, who (though not belonging to the society) should appear to merit their charitable assistance. They likewise agree to make it their business to do every thing that in them lies, to promote good-will, good-neighbourhood, and Christian charity, one amongst another.

The following are the rules of the society:

1. Any person may be a member of the society, who is sixty years of age or upwards.

2. Every subscriber of one penny per week, who is sixty years of age, or upwards, and under seventy, to be entitled to receive *double* his subscription, at the end of the year; that is, his own subscription, and as much more.

3. Every subscriber of one penny per week, who is forty years of age, or upwards, and under fourcore, to be entitled to receive *treble* his subscription at the end of the year; that is, his own subscription, and twice as much more.

4. Every subscriber of one penny per week, who is fourcore years of age, or upwards, and under ninety, to receive *four times* his subscription at the end of the year; that is, his own subscription, and three times as much more.

5. And to in proportion for every increase of ten years.

6. Any blind person, of any age, may be a member of the society, and, if under sixty years of age, will be entitled to the same benefit as subscribers who are sixty years of age, and under seventy.

7. Every member who absents himself from church on Sundays, except in case of sickness, or some unavoidable impediment, to forfeit his benefit upon the subscription of that week.

8. If any member of this society should die in the course of the year, his friends will be entitled to receive his subscription, and so much benefit as is proportioned to the time of subscribing.

9. Any person desirous of promoting the purposes of the society, without partaking of the benefit, may be an *honorary member*, by subscribing annually a guinea, or half a guinea, or not less than two pence per week; for which they will be entitled to receive weekly one copy of such publications as may be purchased for the use of the society.

10. The subscription to be paid at the time of the weekly meeting, to the member, at whose house the reading is held; to be delivered by him to the secretary, on the Monday following.

11. The annual subscription to be paid at the time of commencing member.

12. No members to receive any publication, whose subscription is in arrears.

13. No benefit member, who is in arrears, to receive any benefit till his arrears are paid.

This society consists of four honorary members (who subscribe an annual guinea each for the benefit of the fund), and nine old men and women, one of the age of 101 years, one a poor blind woman, and the other seven of ages between 60 and 80. The honorary member have it in their power, by

their weekly or annual subscription, not only to enlarge and improve the means of assisting the poorer members of the society, but at the same time to contribute to the amusement and instruction of their children and servants, and neighbours, by distributing among them the tracts of the Cheap Repository, and those of the Society for promoting Christian Knowledge, which are purchased for the use of the society.

The books which are selected for reading to them are, Orton's Discourses to the Aged,—Bishop Willon's Sermons,—Bishop Willon on the Sacrament,—Bishop Beveridge's Private Thoughts,—Flavell's Husbandry spiritualized, adapted to present use,—Christian Husbandry,—Fawcett's Religious Weaver,—Burder's Village Sermons,—and Peers's Companion for the Aged.

Of the origin of this society, the author lays, "I spoke to one of the old men, who had some turn for reading, and offered to come and read to him on the Sunday evening. The old man thanked me for the offer, and afterwards appeared much gratified with what I had done. I then told him that I would visit him the next Sunday evening; and that any other old persons among his neighbours, who wished it, might be present. A neighbour and his wife attended; and, on the Sunday after, other old persons came, in consequence of leave given them upon their application. Finding the Sunday readings gave pleasure to them, I made an offer of forming a regular society, on the terms before mentioned." This they gladly accepted, and have since expressed great satisfaction in this new employment of their Sunday evening.

There is a cheap but comfortable Sunday dinner provided, gratis, for all who attend church. It is prepared from one of the receipts in the first volume of the Society's Reports, the expence of it not exceeding three halfpence a-head. They dine at the house of one of the members, which from its situation is most convenient for the infirm members. The dinner is dressed at the rectory, and sent on the Saturday evening to the house where they dine.

The oldest and most infirm members are now become very punctual in their attendance on church; and by their example and influence, have contributed very much to the better observance of the sabbath at Winifon.

The Sunday readings were proposed, and the society which grew out of them, was established, in consequence of a suggestion in the Bishop of Durham's charge to the clergy of the diocese of Durham, in 1797, where the reader will find a strong recommendation of the establishment of societies of the poor for their religious improvement.

The institution of such societies appears to be susceptible of very extensive advantages. It supplies, by very practicable means, what was before wanting in the religious instruction of the poor. Sunday schools provide for the instruction of the young;—these societies will promote the edification and comfort of the old. The Sunday Friendly Society is founded on principles very favourable to religious and moral improvement, and to the cultivation of benevolence and philanthropy among the poor. It connects the aged poor in a friendly and Christian-like manner with their minister, and with one another. It brings into exercise a virtue, which is too often considered as out of the poor man's sphere; and as by it they not only receive charity, but become also the dispensers of it to others.

The allotment of their charitable tithe to the benefit of neighbours, who are *not* of their society, and the obliging of themselves by their *rules* to the observance of the duties of religion and benevolence, may be the means of gaining two great points in the cultivation of the heart;—one, a correction of the selfish principle; the other, a deliberate resolution of living and acting by rule and method. To the poor who cannot read at all,—to those who cannot afford to buy books,—

to those who are desirous of spiritual improvement, and of employing their latter days in a way the most conducive to the comfort of their last hours,—to the frugal, the neighbourly, and the benevolent, such an institution cannot fail to be very acceptable.

The value of religious societies, as helps to religious instruction and edification, has been long known to several sects of Christians. With them they have been the source of much useful instruction, and the means of keeping up a spirit of social and vital religion; and they contribute to aid the force of example, and therefore operate very beneficially on individual conduct. It would be happy for the cause of Christianity, if the friends of the established church would unite in following their example. Happy indeed would it be, if, at length, all contention between the denominations of Christians were reduced to an amicable rivalry, in the great work of saving souls;—in provoking one another to good works. In a word, if all our efforts, from however distant points they may originate, were to centre in a friendly competition in doing good.

To those who look with an anxious eye on the progress of the poor's rate, every institution that tends to encourage good conduct among the poor, must be the object of approbation; but those must be peculiarly so, which are calculated to afford relief to the elder and more infirm poor, by an annual charity, as a benefit upon *frugality* and good behaviour.

In forming a Sunday friendly society it is immaterial with how small a number the commencement is made; except, indeed, that there may be rather more advantages in beginning only with a few, and letting others find out the benefits of being members from conversation with those who are. The utmost that seems necessary (after two or three have agreed to meet together for reading the scriptures and other good books on Sunday evenings, and to bind themselves to a punctual observance of religious duties) is to distribute the rules of such society at some, or all, of the cottages in the parish.

It is a very desirable circumstance, that the meetings should be at the houses of the members by rotation; as it will not only be more satisfactory to them, but will conduce much to friendly intercourse and charitable communion. If the elderly poor in any town or village, should be too numerous to meet in one house, they may be divided into classes, and one or more of the members be employed as readers to the class, where the minister cannot attend regularly to more than one class.

The weekly penny should not be considered as a subscription, or condition of being admitted a member, but as a voluntary act of frugality. If they lay by their penny, and are not so regular as their rules require, they will still receive their own again; but it will be their own single talent unimproved. They may be members, if they please, without laying by their penny: as with to partake of the Sunday readings, and to join in a religious observance of the sabbath, is a sufficient qualification.

They may, possibly, be devout without being frugal; and yet frugality is so great a virtue in the poor, that it might be worth while to encourage and recommend to them the weekly deposit, as a means of benefiting themselves by the charitable disposition of their richer neighbours: a circumstance that will render the charity not only more useful than if it was merely gratuitous, but generally (it may be supposed) on that account more acceptable to them.

In large families and populous towns, the benefit upon the weekly savings might be in a great degree, if not wholly, raised from the contributions of the honorary members. In small parishes, the expence of the benefit will be inconsiderable: but even there, will be generally found some hono-

rary members, to share the expence with the landholder, and with the clergyman of the parish.

A society of a similar nature has been lately instituted at Bishops Auckland by the Bishop of Durham, who has the dinner provided for them, and supplies the extra fund, without the contribution of any honorary members. It confists at present, October, 1798, of 20 members; all (as there is reason to believe) gradually advancing to a more comfortable state of mind, and happy in their preparation for eternity. —In the formation of different societies, some difference in the detail may be occasioned by the circumstances of the place or the parties, but the general idea and the object will probably be the same.

FRIENDLY FEMALE-SOCIETIES, associations of the same nature as the foregoing, for the exclusive advantage of females. We select the following examples from the Reports of the London Society for bettering the Condition and increasing the Comforts of the Poor.

Among the many friendly societies which have been instituted by day-labourers in different parts of the country, an idea was adopted at Lymington, that something of this kind might be of great benefit to *distressed females*; and especially in that place, which being a little sea-port, and frequented by the flamen of small coasting vessels, and boatmen, their wives are often put to inconveniences by the misfortunes, and even by the absence of their husbands.

Mrs. Pierce, a lady of Lymington, took an active part in the business. Her first step was to consult among her friends, what support an institution of this kind was likely to receive; and soon found there was sufficient for the execution of her plan. Between thirty and forty inhabitants of Lymington, and its neighbourhood, were ready to subscribe each 14s. a-year, or 3d. a-week, which was all the assistance desired. A committee of ladies was then appointed to arrange the business; but Mrs. Pierce continued to be the most active member, by taking on herself the most troublesome office—that of treasurer.

On the 5th of April, 1790, the society was established. The regulations of it were chiefly these.—It was particularly intended for *lying-in* women, but was soon extended to the *sick of every denomination*. No one could enter as an object of this charity under the age of 15, nor above 50. It was required that she should be a parishioner, of good character, and in good health at the time of her entrance. On putting down her name she pays 6d. and three halfpence every week. Before she receives relief, her name must have been a year on the books; she is then entitled to 3s. a-week during any illness with which she may be visited: but she receives it only during the term of 13 weeks; if she is not then recovered, she receives 1s. a-week only, while it is thought necessary. Once a-year a charity sermon is preached, at which between 10l. and 16l. are generally collected. By this aid, and by great economy in the management of the fund, it has increased so much, that, instead of 3s. a-week, it already affords 4s. After the sermon, which is generally preached on the second Sunday in August, all the poor members who are able to go to church, walk in procession to the town-hall, with their patronesses at their head, who treat them with cake and wine. This is a pleasant day to them, and makes some return to the healthy, for not having had occasion to draw upon the fund for sickness. The grand murmur indeed against all these modes of relief, is, that they, who have had little occasion for them, think their money has been ill spent, though at the same time it is a fact, that most of the members of this society have at one time or other, received relief from it; not fewer in the whole than 65; of these 35 were women in child-bed. Two women have been

on the books, with lame hands, at s. s. a-week, for some years; and a third has been long relieved in a deep decline.

Indulgences are sometimes added, when personal misfortune is not to be pleaded. In the late scarcity of bread-corn, each poor member received a half-gallon loaf every Wednesday, for six weeks; and during the last two winters, each had three bushels of coals.—The society, at this time (June, 1798), consists of 55 poor members.

At TOTTENHAM High-Croft, a friendly society for the benefit of women and children was established on the 22d of October, 1798, under the respectable patronage of a number of ladies, who promised to support it with personal attendance, as well as pecuniary assistance.

Combined with the main design of this institution are two other objects; viz. a fund for loans, to prevent the sale of pawnbrokers' shops, and a bank for the earnings of poor children.

The principal rules are as follow:—the honorary members pay five shillings on entrance, and twelve shillings annually. The benefited members pay two shillings on entrance: they are divided into three classes, according to their age. The first class, which consists of those between twenty and thirty, pay six pence monthly. Those of the second class are between thirty and forty, and pay nine pence monthly. Those of the third class are between forty and fifty, and pay one shilling monthly.

No one is to contribute after sixty. From sixty-five to seventy, each member is to receive a pension of one shilling weekly; and from seventy to the end of their lives, two shillings weekly, even should they be obliged to retire into a workhouse. In case of sickness, four shillings weekly are allowed for four months in one year, and two shillings afterwards. And if a member dies, after having subscribed six years, thirty shillings are allowed for the funeral.

The honorary members, thinking themselves entitled to risk part of their own contributions, have authorised the stewardests, at their discretion, to lend small sums, from five shillings to thirty, to the benefited members on such occasions as they may approve. These loans are directed particularly to the enabling of them to purchase necessities at the wholesale price: or to supply themselves with articles for sale, materials for work, a pig, or any other thing, likely to produce a profit. These loans are repaid in small monthly payments.

Children of both sexes, of whatever age, whether belonging to a member or not, are permitted to bring any sum above one penny, to the monthly meeting of the stewardests, to be laid up in the fund of the society; where their small earnings may accumulate in security, till wanted for an apprentice fee, clothing on going to service, or some such important purpose; and in case of death, the sum laid up is returned to the parents of the child.

The business of the society is managed by six stewardests and a treasurer, who meet monthly. Four of the stewardests are chosen from the honorary members, and two from the benefited members. These offices are filled in alphabetical order at an annual meeting of the whole society. It should be added, that great attention is paid to the moral character, of those who are admitted members; and a notorious irregularity of conduct incurs expulsion.

In the formation of all charitable institutions, the increase

of virtue and happiness to society at large, should be considered as the great object of attainment; and the fundamental principle of action: an end which, it is presumed, the establishment in question is particularly adapted to promote, by the reciprocal advantages of rendering the affluent acquainted with the character and the moral conduct, the wants and the resources, of the indigent; whence they become better qualified to afford them judicious relief, and to distinguish between the deserving and the worthless.

The economy and the industry of the poor are encouraged by judicious loans, which enables them to buy articles of domestic consumption, and coals especially, on the most advantageous terms; or to provide materials for increasing their means of subsistence; as it is well known to those who are conversant with the affairs of the labouring classes, that it is much easier for them to spare a small sum at stated periods, than to lay down what is sufficient for either purpose at once.

Though the children receive no addition to the pittance they deposit in the fund, yet it answers several purposes.—It stimulates them to earn and save that which would probably be idly spent, as of too small importance for care; it often encourages their parents to lay by a little store for them, which they would not have thought of doing, had they not been invited by this opportunity of placing it in safety. It habituates the children to industry, frugality, and foresight; and, by introducing them to notice, it teaches the value of character, and of the esteem of those who, by the dispensations of Providence, are placed above them; and, in many instances, it may supply a resource, when it is essentially requisite.

The success has already succeeded expectation. Above sixty children bring their little treasure monthly; the benefited members repay their loans with great regularity; and there is a visible emulation to establish a good character by respectable conduct, and by a regard to propriety on the part of the poor; whilst kind attention, and active sympathy, are exerted on the part of the opulent.

At EMPINGHAM, near Stamford, in Rutlandshire, the following *female friendly society for girls* was established on the 1st of January, 1798; and sixteen girls were immediately admitted at the desire of their parents.

Female children, capable of spinning, knitting, or of any other profitable employ, which in that neighbourhood has been considerably increased by the Society of Industry there, subscribe to the general fund one halfpenny a-day out of their earnings. This is to be accumulated by compound interest, and to form a fund, out of which each subscriber, upon her marriage, is, after a contribution of fourteen years, entitled to receive two guineas; and, upon the birth of each child born in wedlock eight months or more after the expiration of the fourteen years' contribution, the like sum of two guineas.

Girls are not permitted to subscribe until seven years of age; and, if any girl dies under twenty-one, or before the expiration of the fourteen years of her subscription, the amount of her contribution, but without interest, is paid to her representatives at the expiration of the current half-year*; and if any subscriber, for fourteen years or upwards, continues unmarried till the age of fifty years, she is then entitled to two guineas a-year for life.

* It is submitted to consideration, whether it might not be better that there should be no repayment of the contribution in case of death: but that, instead of it, the period of contribution should be proportionately shortened; so as to entitle the subscriber to the donation, upon her marriage, after a contribution of ten or twelve (instead of fourteen) years.

An establishment of this nature is only adapted to those parts of England, in which the industry of the children of the poor has been, of late, so successfully and beneficially excited: it is more peculiarly applicable to places where schools of industry, with a cheap dinner for the children (see SCHOOL, Supp.), are established, as by Lord Winchelsea at Oakham, and by Mr. Conyers at Epping; for the mistresses may there, regularly and without any trouble, deduct the subscriptions from their weekly pay. The probable consequences of such female friendly societies are, that girls, so contributing out of their own earnings to a provision for their future life, will learn to set a higher value on their own characters, and will become examples of virtue and good conduct; and that, possessing the double advantage of a certain provisional assistance at periods when it is peculiarly wanted by the poor, and of habits of exertion and economy infensibly acquired during their youth, they will become objects of attention to all the well-disposed young men in the neighbourhood, and will be more likely to marry early, and to continue in a course of virtue and industry.

FRIESACH, a town of Germany, in the archbishopric of Saltzburg, with a strong castle, on a mountain, 56 miles S.E. of Saltzburg. Long. 14. 12. E. Lat. 47. 12. N.

FRINWALT, a town of Germany in the margravate of Brandenburg, seated on the Oder, 30 miles N.E. of Berlin. Long. 14. 10. E. Lat. 52. 50. N.

FRIO, CAPE, a promontory of Brasil, in the province of Rio Janeiro. Long. 41. 31. W. Lat. 92. 54. S.

FRISCH HAF, a long and narrow bay of the Baltic Sea, at the mouth of the Vistula.

FRISCHEN HAF, a bay of the Baltic Sea, at the mouth of the Oder. It lies between Stetin and the Baltic, with which it communicates by three mouths. See ODER.

FRITHELSTOKE, a village in Devonshire, two miles W. of Torrington, noted for the remains of its priory.

FRITZLAR, a town of Germany, in the landgravate of Hesse Cassel, 20 miles S.W. of Cassel.

FRULI, or CITTA DI FRULI, a town of Italy, in the province of Friuli, with a bishop's see, 32 miles N.N.W. of Trieste. Long. 13. 50. E. Lat. 46. 15. N.

FRODLINGHAM, a town in the E. riding of Yorkshire, with a market on Thursday, 36 miles E. of York, and 194 N. of London. Long. 0. 12. W. Lat. 53. 56. N.

FROG, in farriery, a part of a horse's foot, the form and purposes of which Mr. Coleman, Professor at the Veterinary College, describes in the following terms:

"The natural frog of the horse," says he, "is placed in the centre of the sole, externally convex, and of a wedge-like form, pointed towards the toe, but expanded as it advances to the heels. In the centre of the broad part there is a fissure, or separation. The frog is connected internally, with another frog, of a similar figure, but different in structure. The external frog is composed of soft elastic horn, and is totally insensible. The internal frog has sensation, and is much more elastic than the horny frog; and at the extremity of the heels is connected with two elastic substances called cartilages. The toe of the sensible frog is united to the coffin bone; but more than nine-tenths of both frogs are behind the coffin bone. The toe of the sensible and horny frogs, from their connection with the coffin bone, are fixed points, and have no motion; but the heels of the frogs being placed posterior to the coffin bone, and in contact with moveable, elastic (and not fixed or resisting) substances, a very considerable lever is formed, and whenever the horny frog comes in contact with the ground, it first ascends, and then descends. The pressure of the ground also expands the horny frog, and the sensible frog expands the cartilages, and at the heels

and quarters immediately below the hair, totally governs the direction of the future growth of the crust.

"This ascent of the frog, not only by its wedge-like form preserves the heels and quarters from contraction, but affords to the horse an elastic spring, and prevents the animal from slipping whenever it embraces the ground. Without any anatomical enquiry into its internal structure and union with other parts, the shape and convexity of the horny frog clearly demonstrates that it was formed to come into contact with the ground; and the more I investigate this subject, the more I am convinced that the use of the frog is to prevent the horse from slipping, to preserve the cartilages and hoof expanded, and, by its motion, to act as an elastic spring to the animal."

Mr. Coleman contends that Mr. St. Bel, and many others, who suppose that the use of the frog is merely to serve as a cushion, or guard, to the tendon of the flexor muscle of the foot, and who, on that account, were disposed rather to raise the frog from the ground, by a thick-heel'd shoe, have been in an error. On the contrary, he maintains it to be a law of nature, that unless the frog perform its functions, by being allowed to press the ground, it must become diseased. Accordingly the practice of shoeing very much depends on the functions of the frog being understood. "If the opinions here advanced respecting its uses, be well founded, then it must follow, that paring the frog and raising it from the ground annihilates its functions, and ultimately, if not immediately, produces disease; and that exposing the frog to pressure, is the only proper method to keep it in health. Moreover, it has from experience been ascertained, that unless the frog sustain a uniform pressure when at rest, the heels as well as the frog contract; but if that organ be in close contact with the ground, then it spreads and is free from thrushes and canker, and operates as a wedge to keep open the heels of the hoof."

"Granite and other hard substances, give no pain to a frog exposed to constant pressure in the stable; but when above the pavement, it generally becomes contracted, and the sensible frog inflamed, and then one stroke from a projecting stone, will produce pain, perhaps lameness, while perpetual perpendicular pressure is attended with salutary effects."

"When the hoof contracts, the frog must also become contracted, and inflammation and a suppurative follow, called a thrush. No contraction, however, takes place, where the frog is made to receive constant pressure, as the standing perpetually on that wedge increases its growth, presses upward the sensible frog, and expands the cartilages of the hoof. And as the first shoot of the crust at the coronet is very thin, the direction of its fibres will be altogether regulated by the width of the cartilages immediately below the hair at the quarters and heels, and the cartilages will be always more or less expanded, and the hoof more or less circular, as the frog has more or less pressure."

"On that principle," continues Mr. Coleman, "I long since recommended a shoe with thin heels, as the best formed shoe to bring the frog on the same level; and with great truth I can assert, that, although in some instances, from a sudden misapplication of the thin-heel'd shoe to improper feet, I have seen the tendons affected, yet from all the experience I have since had, and from all that I have seen or heard of the practice of others, I know of no instance where the frog, from constant pressure, did not expand and receive great benefit."

"Where the frog is in a morbid state, and unnaturally deprived of perpendicular pressure, it is seldom safe to lower the heels at once, so as to make the frog on a level with the shoe; and, in many cases, it is not possible, with any shoes, or even without shoes, to give the frog pressure on smooth surfaces;

much less is it practicable for the frog to rest on the ground when shod with common thick-heel'd shoes. In the stable, therefore, while at rest, the frog is generally raised above the shoe, and as pressure is essential to its health, particularly when the hoof is exposed to heat, it appeared to me of great importance, in all cases where the heels of the shoe and the frog cannot with safety be made on the same level, to apply an *artificial frog* (see Pl. 31.), to fit and give any degree of pressure, in the stable, to the natural frog, with any shoes. While the horse is in motion, and the hoof exposed to unequal surfaces, the artificial frog should be removed, as the natural frog, out of the stable, will receive frequent pressure with any shoes; but that period is of short duration, when compared to the length of time the horse remains at rest, and the frog raised from the ground.

"Artificial pressure is most particularly wanted when the heat of the stable operates powerfully to contract the hoof. In all cases, therefore, where the pavement of the stable does not touch the natural frog, an artificial frog is necessary to resist contraction of the hoof, thrushes, and canker. Sand-cracks, also, very generally arise from a contracted hoof, and may be prevented by the artificial frog.

"If the frog does not absolutely rest on the pavement, whatever shoes are employed, the hoof in the stable will be as much disposed to contract, as if the frog was raised any greater distance. I wish this fact to be well considered; for it has been supposed that shoes with a flat seat, without pressure to the frog, will prevent contraction. But I am fully convinced that neither thick nor thin heeled shoes, where the frog is raised above pressure, and exposed to the heat of the stable, can prevent contraction, or its effects; and where the frog receives that pressure, the heels cannot contract even with the most common shoes. For very obvious mechanical reasons, a wedge in the centre of the heels, aided by the pressure from below, must be best calculated to preserve them expanded, or when the heels are contracted, to force them open. The heat of the stable in all cases tends to contraction of the hoof; but with common shoes, there is no pressure on the wedge, or other cause to counteract that tendency. The artificial frog, which is intended to cover and give any degree of pressure to the natural frog only, is made of iron. In order to fit the natural frog, it is requisite to ascertain its width, the length of the foot, and the distance between the lower surface of the shoe and the frog. But if the artificial frog be too long, the toe, which is flat and thin, may be shortened; and if the heels of the shoe are higher than the artificial frog, nothing more is requisite than to introduce a quantity of tow between the natural and artificial frog, so as to raise it equal or above the level of the shoe. I have ascertained by experiment, that no inconvenience takes place by raising the artificial frog even one quarter of an inch above the shoe; but in ordinary cases, it should not project more than one-sixth of an inch above the surface of the shoe. It may, however, be imagined, that so much perpendicular pressure to the frog would retard rather than increase its growth. But the very reverse is the fact: for as the frog, when long elevated above the ground, is very generally contracted, this unnatural lateral pressure excites inflammation of the sensible frog, and deprives in a great degree the blood vessels of the power of secreting horn. When the horny frog is exposed to a perpendicular pressure, it gives health, and not disease, to the sensible frog. The blood vessels secrete their due proportion of elastic horn, and then the cavity of the frog is preserved, expanded, and fully equal to contain the sensible frog, without the smallest degree of lateral pressure.

"It therefore follows, that perpendicular pressure increases

the bulk of the frog; while its absence from the ground produces contraction, and lessens its growth."

The following is an explanation of the plate in which Mr. Coleman's PATENT ARTIFICIAL FROG is represented, with other figures that illustrate the subject.

Fig. 1, exhibits a view of the natural hoof of the horse, which is of a circular shape.

aaa The external surface of the sole of a concave form.

bbb The inferior edge of the crust.

cc The junction of the bars with the crust.

dd The points of the bars.

ee The sole between the heels of the crust and bars, the seat of corns.

ff Two cavities between the sides of the bars and the sides of the crust.

g The toe of the frog.

hh The heels of the frog.

ii The cleft between the heels of the frog, the seat of thrushes.

Fig. 2. A view of the hoof with contracted heels, occasioned by raising the frog above the pressure of the pavement in the stable.

aaa The sole.

bb The original seat of the bars, but improperly removed by the farrier.

cc The original seat of the cavities between the bars and crust, but now from contraction a solid horn.

dd The heels of the frog very much compressed, by the contraction of the hoof.

ee The width of the hoof at the heel, not being more than one half of the length from *f* to *g*.

f The extremity of the heels of the frog.

g The toe of the crust.

Fig. 3. The patent-frog, made of cast and wrought iron.

aa The lower surface opposite the ground, formed of cast-iron.

b An irregular cavity for the reception of the elastic spring, fig. 4.

c The toe of the patent frog, formed of wrought iron, to be occasionally shortened and adapted to the length of the foot, and placed under the toe of the shoe to confine the artificial frog from moving forwards.

dd A hole in the heels of the iron frog, for the passage of a strap, to buckle at the outside quarter or coronet.

Fig. 4. A flat steel spring, to fix the artificial frog in its place.

a An irregular projection, to be received into a corresponding concavity in the patent frog.

bb The ends of the spring, to be placed under the heels of the shoe opposite *cc* in fig. 1.

"The toe of the artificial frog is intended to be inserted under the toe of the shoe. This effectually fixes the frog forwards; and to prevent backward or lateral motion, an irregular groove is made in the iron frog, to receive a corresponding piece of steel, placed under the heels of the shoe. In general it is necessary to fix the frog more firmly, and, for that purpose, a hole is necessary, made in the heel of the artificial frog, to receive a strap, and to buckle at the outside quarter below the coronet. And that the artificial frog may give pressure in all cases with shoes thickened, or turned up for hunting or frost, a variety of frogs are made, to be adapted to particular feet and particular shoes. In cases of thrushes and canker of the frog, where no remedies without pressure are likely to be serviceable, an astringent thrush powder may be applied between the natural and artificial frog. And in contracted hoofs (or what has improperly been termed chest

foundered), where it may not be advisable to lower the heels equal with the horny frog, the artificial frog is essentially necessary. But indeed in every horse where the shoe and frog on a smooth surface are not on the same level, whatever shoes may be used, the iron frog in the stable should be applied; and in order to fix it with facility, the spring should first be laced under the shoe and brought backward to the heels of the hoof.

"The toe of the iron frog should then be inserted under the centre of the spring, and pushed as far as the toe of the shoe, while the other hand confines the spring until the centre of the spring meets the centre of the groove. The strap may then be buckled. And to dislodge the spring and iron frog, after the strap is unbuckled, nothing more is requisite than a small horse picker, introduced into a hole at the bottom of the groove of the iron frog; and the spring being raised above the groove and carried gently forward, the frog may be withdrawn from under the shoe without the smallest difficulty."

Mr. Coleman, in conclusion, wishes it to be clearly understood, "that in all cases where the frog and the heels of the shoe are placed on the same level, the patent frog is unnecessary. But where the frog is small, or the pattern joint long, or the action of the animal high, or the heels low, so as to render the application of thin-heeled shoes improper, or when the frog from any cause is raised above the ground in the stable, an artificial frog is useful in all such cases, and necessary to resist contraction of the hoof." To this equally ingenious and candid statement of Mr. Coleman, we are enabled to add our individual testimony as to the soundness of his reasoning, and the great practical utility of his *artificial frog*, which is now very generally adopted in the stables of persons of fashion in the united kingdom.

FRONSAC, a town of France, in the department of Gironde, seated on the Dordogne, 22 miles N.E. of Bourdeaux. Long. $0^{\circ} 16' W$. Lat. $45^{\circ} 5' N$.

FRONTEIRA, a town of Portugal, in Alentejo, 17 miles N.E. of Estremoz.

FROYEN, an island in the North Sea, near the coast of Norway, about 35 miles in circumference. Long. $9^{\circ} 0' E$. Lat. $63^{\circ} 45' N$.

FRUTINGEN, a town of Switzerland, in the canton of Bern, which gives name to a bailiwick, and is esteemed one of the most beautiful places in Switzerland. It is 30 miles S.E. of Friburg.

FUEL (*Encycl.*). The economy of fuel is an object of so much importance to the community at large, and more especially to the indigent members of it, that we are truly glad of this opportunity of laying before our readers the following observations relative to the Means of increasing the Quantities of Heat obtained in the Combustion of Fuel, by Count RUMFORD, from the Journals of the Royal Institution of Great Britain.

"It is a fact which has been long known," says the Count, "that clays, and several other incombustible substances, when mixed with sea coal, in certain proportions, cause the coal to give out more heat in its combustion than it can be made to produce when it is burnt pure or unmixed; but the cause of this increase of heat does not appear to have been yet investigated with that attention which so extraordinary and important a circumstance seems to demand.

"Daily experience teaches us that all bodies—those which are incombustible, as well as those which are combustible, and actually burning—throw off, in all directions, heat, or rather caloric (heat-making) rays, which generate heat wherever they are stopped, or absorbed; but common observa-

tion was hardly sufficient to shew any perceptible difference between the quantities of caloric rays thrown off by different bodies, when heated to the same temperature, or exposed in the same fire; although the quantities so thrown off might be, and probably are, very different.

"It has lately been ascertained, that when the sides and back of an open chimney fire-place, in which coals are burned, are composed of fire-bricks, and heated red-hot, they throw off into the room incomparably more heat than all the coals that could possibly be put into the grate, even supposing them to burn with the greatest possible degree of brightness. Hence it appears that a red-hot burning coal does not send off near so many caloric rays as a piece of red-hot brick or stone, of the same form and dimensions; and this interesting discovery will enable us to make very important improvements in the construction of our fire-places, and also in the management of our fires.

"The fuel, instead of being employed to heat the room directly, or by the direct rays from the fire, should be so disposed, or placed, as to heat the back and sides of the grate; which must always be constructed of fire-brick or fire-stone, and never of iron, or of any other metal. Few coals, therefore, when properly placed, make a much better fire than a large quantity; and shallow grates, when they are constructed of proper materials, throw more heat into a room, and with a much less consumption of fuel, than deep grates; for a large mass of coals in the grate arrests the rays which proceed from the back and sides of the grate, and prevents their coming into the room; or, as fires are generally managed, it prevents the back and sides of the grate from ever being sufficiently heated to assist much in heating the room, even though they be constructed of good materials, and large quantities of coals consumed in them.

"It is possible, however, by a simple contrivance, to make a good and an economical fire in almost any grate, though it would always be advisable to construct fire-places on good principles, or to improve them by judicious alterations, rather than to depend on the use of additional inventions for correcting their defects.

"To make a good fire in a bad grate, the bottom of the grate must be first covered with a single layer of balls, made of good fire-bricks, or artificial fire-stone, well burnt, each ball being perfectly globular, and about $2\frac{1}{2}$ or $2\frac{3}{4}$ inches in diameter. On this layer of balls the fire is to be kindled, and, in filling the grate, more balls are to be added with the coals that are laid on; care must, however, be taken in this operation to mix the coals and the balls well together, otherwise, if a number of the balls should get together in a heap, they will cool, not being kept red-hot by the combustion of the surrounding fuel, and the fire will appear dull in that part; but if no more than a due proportion of the balls are used, and if they are properly mixed with the coals, they will all, except it be those perhaps at the bottom of the grate, become red-hot, and the fire will not only be very beautiful, but it will send off a vast quantity of radiant heat into the room; and will continue to give out heat for a great length of time. It is the opinion of several persons who have for a considerable time practised this method of making their fires, that more than one-third of the fuel usually consumed may be saved by this simple contrivance. It is very probable that, with careful and judicious management, the saving would amount to one-half, or fifty per cent.

"As these balls, made in moulds, and burnt in a kiln, would cost very little, and as a set of them would last a long time—probably several years—the saving of expence in heating rooms by chimney fires, with bad grates in this way, is

Fig. 1.



A Constructed Foot.

Fig. 2.



A Perfect Foot.

Fig. 1.

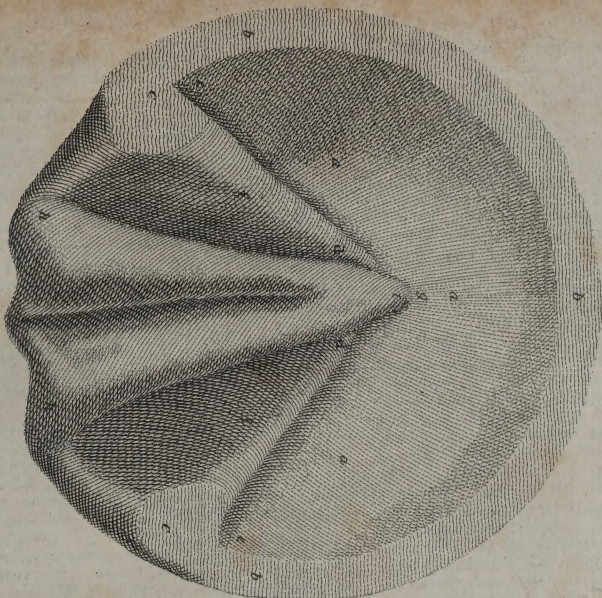
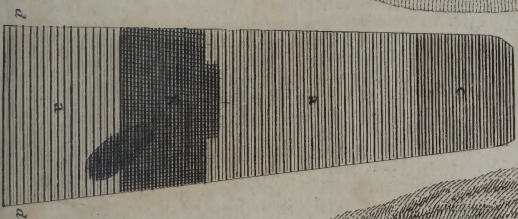


Fig. 3.



obvious; but still it should be remembered, that a saving quite as great may be made by altering the grate, and making it a good fire-place.

"In using these balls, care must be taken to prevent their accumulating at the bottom of the grate: as the coals go on to consume, the balls mixed with them will naturally settle down towards the bottom of the grate, and the tongs must be used occasionally to lift them up; and, as the fire grows low, it will be proper to remove a part of them, and not to replace them in the grate till more coals are introduced—a little experience will then how a fire made in this manner can be managed to the greatest advantage, and with the least trouble.

"Balls, made of pieces of any kind of well-burnt hard brick, though not equally durable with fire-brick, will answer very well, provided they be made perfectly round; but if they are not quite globular their flat sides will get together, and, by obstructing the free passage of the air amongst the coals, will prevent the fire from burning clear and bright.

"The best composition for making these balls, when they are formed in moulds, and afterwards dried and burnt in a kiln, is pounded crucibles mixed up with moistened Sturbridge clay; but good balls may be made with any very hard burnt common bricks, reduced to a coarse powder, and mixed with Sturbridge clay, or even with common clay. The balls should always be made to large as not to pass through between the front bars of a grate.

"These balls have one advantage, which is peculiar to them, and which might perhaps recommend the use of them to the curious, even in fire-places constructed on the best principles; they cause the cinders to be almost consumed entirely; and even the very ashes may be burnt, or made to disappear, if care be taken to throw them repeatedly upon the fire when it burns with an intense heat. It is not difficult to account for this effect in a satisfactory manner; and in accounting for it we shall explain a circumstance on which it is probable that the great increase of the heat of an open fire, where these balls are used, may, in some measure, depend. The small particles of coal, and of cinder, which, in a common fire, fall through the bottom of the grate, and escape combustion, when these balls are used can hardly fail to fall and lodge on some of them; and, as they are intensely hot, these small bodies, which alight upon them in their fall, are soon heated red-hot, and disposed to take fire and burn; and as fresh air from below the grate is continually making its way upwards amongst the balls, every circumstance is highly favourable to the rapid and complete combustion of these small inflammable bodies. But if these small pieces of coal and cinder should, in their fall, happen to light upon the metallic bars which form the bottom of the grate—as these bars are conductors of heat, and, on account of that circumstance, as well as of their situation—below the fire—never can be made very hot—any small particle of fuel that happens to come into contact with them, not only cannot take fire, but would cease to burn should it arrive in a state of actual combustion.

"These facts are very important, and well deserving of the attention of those who may derive advantage from the improvement of fire-places, and the economy of fuel.

"There are some circumstances which strongly indicate that an admixture of incombustible bodies with fuel, and especially with coal, cause an increase of the heat, even when the fuel is burnt in a closed fire-place. No fire-place can well be contrived more completely closed than those of the iron stoves in common use in the Netherlands; but, in these stoves—which are heated by coal fires—a large proportion of wet clay is always coarsely mixed with the coal before they are introduced into the fire-place. If this practice had not been

found to be useful, it would certainly never have been obtained generally; nor would it have been continued, as it has been, for more than two hundred years.

"The combination of different substances, combustible and incombustible, to form, artificially, various kinds of cheap and pleasant fuel, particularly adapted for the different processes in which the fuel is employed, is a subject well worthy the attention of enterprising and ingenious men. How much excellent fuel, for instance, might be made with proper additions, and proper management, of the mountains of refuse coal-dust that lie useless at the mouths of coal-pits; and how much would it contribute to cleanliness and elegance, if the use of improved coke, or of hard and light fire-balls, could be generally introduced in our houses and kitchens, instead of crude, black, powdery, dirty sea-coal? Of the great economy that would result from such a change there cannot be the smallest doubt.

"It is a melancholy truth, but, at the same time, a most undisputable fact, that, while the industry and ingenuity of millions are employed, with unceasing activity, in inventing, improving, and varying those superfluities which wealth and luxury introduce into society, no attention whatever is paid to the improvement of those common necessities of life on which the subsistence of all, and the comforts and enjoyments of the great majority of mankind, absolutely depend.

"Much will be done for the benefit of society," adds this truly patriotic philosopher, "if means can be devised to call the attention of the active and benevolent to this long-neglected, but most interesting subject." Till this, however, is effectually done, we think it of consequence to shew what has been attempted in certain parts of the kingdom by way of supplying the poor with fuel, and instructing them in the economical and beneficial use of it. The following is an extract from an account of a provision made upon an inclosure, for supplying the poor with fuel, by Edward Parry, Esq.

"Upon the inclosure of the parish of Little Dunham in the county of Norfolk, in the year 1794," says Mr. Parry, "being lord of the manor, I got a clause inserted, directing the commissioners to set out a parcel of land, to be called 'the poor's estate,' and to be vested in the lord of the manor, rector, churchwardens, and overseers of the poor for the time being, and to be let by them for 21 years on lease; the rents and profits to be laid out by them on fuel, to be delivered at the cottages of the poor, in such proportions as the trustees should think proper.

"Although the prejudices of the poor, against the inclosure, were very great before it took place, the moment they saw the land inclosed, and let as the poor's estate for 21 years by auction, at the rate of 50s. a-year (although only estimated by the commissioners at 20l. a-year), they were highly gratified; and they have indeed great reason to rejoice, being now most amply supplied with that great comfort of life. This has been to apparent, that some neighbouring inclosures have followed the example, and it appears to me advisable, that such a plan should be generally made known.

"The first idea was to sell the land, and place the money in the public funds, in order to produce a larger income; but I found that was not understood by the poor: they said, they might at any time be deprived of the money, and they had no interest in the land inclosed; whereas, in the mode pursued, they considered themselves as having a permanent and improveable estate, which their children would inherit. These prejudices are valuable; as in their consequences they produce, if attended to, industry and content.

"I have had occasion to observe as to fuel, which is certainly an important article to the poor, that, where there are commons, the ideal advantage of cutting flags, peat, or

whins, often causes a poor man to spend more time in procuring such fuel, than, if he reckoned his labour, would purchase for him double that quantity of good firing."

An account of a provision of fuel for the poor at Lower Winchendon, by Scrope Bernard, esq. appears, with the foregoing, in the Reports of the Society for bettering the Condition of the Poor, &c.

"There having been," says Mr. Bernard, "several prosecutions at the Aylesbury quarter sessions, for stealing fuel last winter, I was led to make some particular enquiries, respecting the means which the poor at Lower Winchendon had of providing fuel. I found that there was no fuel then to be sold within several miles of the place; and that, amid the distress occasioned by the long frost, a party of cottagers had joined in hiring a person, to fetch a load of pit-coal from Oxford, for their supply. In order to encourage this disposition to acquire fuel in an honest manner, and to induce the poor to burn coal instead of wood, in a country very bare of the latter article, a present was made to all this party (eight families in number) of as much more coal as they had purchased, and the carriage of the like quantity was further allowed them free of expence.—Having no grates, they had employed the village blacksmith to tack together a few iron bars by an iron rim at each end, which when raised above the hearth by loose bricks, enabled them to keep up a good fire. I went to see one of those grates: it was a foot square, quite flat, and had been made out of an old scythe by the blacksmith, at the expence of one shilling.—In this manner some of the poorest families in the village got through the last hard winter. But they complained of the want of faggots to light their fires, which were not to be obtained by honest means. To remedy this, against the next winter, I had three waggon loads of the small faggots called kindlers, made up from a fall of beechwood, in the Chiltern country, ten miles off, and brought to Winchendon in the summer season. And as, in September, from the state of the harvest, it was foreseen that it would be a trying winter for the poor, a vestry was called, and it was proposed to them, as one mode of relief, that they should allow the poor the carriage of a limited portion of coal; which was then sold at 1s. 4d. the hundred, at the Oxford wharf. At the same time they were informed that eleven hundred faggots were provided out of the Chiltern woods, as kindlers, to assist such a plan; which it was intended to sell, much under the real value, at a penny a piece. This plan was agreed to, and the necessary quantity ordered to be fetched at the charge of the parish. A few tons were fetched before the frost set in, and were distributed at 1s. 4d. per hundred weight, with three kindlers to every hundred weight of coals, by a person residing in the centre of the parish; each family applying took a moderate quantity, such as might be supposed to contribute to their comfort, without trenching on their means of subsistence. The price of coals at Oxford had in the interim risen beyond what is here stated; but no alteration was made in the retail price on that account; the increase being defrayed out of a donation, which had been made at Christmas, applicable to this charity. The expence of distribution, at 10d. per ton, was also paid

out of the same fund. It had been said that the poor would not find money to purchase them, when they were brought: instead of which, out of 35 poor families belonging to the parish, 29 came with ready money, hufbanded out of their scanty means, to profit with eagerness of this attention to their wants; and among them a person who had been lately imprisoned by his master for stealing wood from his hedges. The six, who did not purchase, were, as I learnt upon inquiry, prevented by some particular circumstances, which rendered the supply unnecessary.

"In this manner 29 poor families, consisting of 110 poor persons, are supplied during the present season with fuel, at an expence to the parish, aided by voluntary charity, of about three guineas per month; being the charge for carriage, distribution, and occasional excess of price: the average wharf price of the article, which for the same period was less than five guineas, being paid by the poor themselves, with thankfulness for the advantage which they derived from this mode of purchase.

"I have been the more particular in this detail, because it exhibits, though on a small scale, an instance of uniting parish relief with private subscription, so as to lighten the weight of both; and I think it may sometimes be convenient that they should go hand in hand. At Whitechurch, in this county, the same kind of charity was established last winter. It now continues by a private subscription of between 17l. and 20l. for that object, during the season: but one or two of the most opulent declined contributing; and though disburthened of a part of the expence of the poor, shrunk from the duty of aiding such a plan, because it was voluntary.—In order therefore to prevent the covetous from entirely eluding, it seems to be better, where it can be adopted as the unanimous act of the parish, or where the manner of doing it can be made consistent with the poor laws, that the foundation should be laid by the parish in an allowance, as far as they think proper to go; and that the voluntary charity of individuals should be grafted on that stock, for the purpose of effecting a further reduction of the price.

"I have often wished to bring coal into general use at Winchendon; the poor however being jealous of any schemes, under the impression that they are more calculated for the benefit of others, than of themselves, and the farmer not being very fond of new expences, I had judged the attempt to be vain. But the circumstances above recited having led both parties to make a trial, I believe that the one finds a great addition of comfort, and the other no great increase of expence.

"The attempt to introduce proper chimneys into cottages in this neighbourhood, instead of the present spacious and airy ones with seats in the corner, has met with constant resistance; nor is it to be expected that any impression will be made on the poor inhabitants, till they have had full opportunity of ascertaining, by observation and experience, the comforts and advantages of chimneys on a different construction. In the hope of effecting this change in their opinions, two cottage chimneys, on Count Rumford's * principles, are now building in this village.

* It is rather unfortunate for the public that the *pretended improvements of Count Rumford's grates*, so pompously announced by different ironmongers, are chiefly calculated to increase the expence, and to diminish the effect, of his useful invention. When the reader visits the Royal Institution, he will see that the new grates put up there are very cheap, and have as little iron as possible about them, and that *the fire always burns against fire bricks*: the back and sides of the grate being composed of brick, which throws out heat in greater quantity, and is not subject to the disagreeable smell and bad effects of heated iron. In those shops where *these improvements are carried on to the greatest perfection*, they will find nothing left of the benefit of Count Rumford's original invention, except the narrow throat to the chimney; and even that is not always preserved. The distinguishing features are—an abundance of polished steel,—as much iron as can be used on every side of the fire,—and a very liberal accumulation of expence.

"If we wish effectually to prevent the poor from stealing wood, and from similar acts of theft, it should be our first aim to put it perfectly in their power to obtain on fair terms the articles necessary to their existence. When the means of life and the acquisition of food and fuel are beyond the attainment of the industrious labourer, the inducement to guilt, and to invading the store of his neighbour, become so powerful, as to put the virtue and integrity of the poor man to a very severe trial.—Persons enjoying the superior advantages of education, with minds formed to habits of honour and virtue, may feel confident in their own powers of forbearance, even under such circumstances: but it will not follow that it is either wise, or just, to expose the cottager to so great a temptation. Where the option is not given them of acquiring in an honest manner, and in exchange for the produce of their labour, the indispensable necessities of existence (and such is fuel in this northern climate), however we may condemn any crime which may follow, we have no great reason to be surprised at such a result; nor perhaps ought we to consider ourselves as entirely exempt from a share in the guilt."

FUEN-TCHEOU-FOU, a commercial city of China, in the province of Chang-fi. Its baths and springs, almost as hot as boiling water, attract a great number of strangers. Its district contains one city of the second, and seven of the third class. It is seated on the Fuen-ho, 250 miles S.W. of Peking.

FUENTE DUEGNA, a town of Spain, in New Castile, seated on the Tajo, 35 miles S.E. of Madrid. Long. 3.0. W. Lat. 40. 14. N.

FUENTE GINALDO, a town of Spain, in Estremadura. In 1734 it was taken and plundered by the Portuguese, under the marquis das Minhas. It is 16 miles N.W. of Coria.

FUESEN, a town of Suabia, belonging to the bishop of Augsburg, with an ancient castle. It is seated on the Leech, 50 miles S. by E. of Augsburg. Long. 11. 25. E. Lat. 47. 40. N.

FULIDENTALL, a town of Silesia, in the duchy of Troppaw, taken by the king of Prussia in 1741 and 1744. It is seated near the Mohra, 16 miles W. by S. of Troppaw.

FULA, or THULE, one of the Shetland Islands, W. of Mainland. It is thought by some to be the same which the ancients reckoned the ultimate limit of the habitable globe, and to which, therefore, they gave the appellation of ultima Thule. It is doubtful, however, whether this be really the island so called; because, had the ancients reached it, they must have seen land still further to the N.E.; Mainland, Yell, and Unst, being all further N.

FULMINATION (*Encycl.*). Under the head of DETONATION, &c. we have given an account of the substances heretofore known to produce this extraordinary effect. We shall here add the highly curious Observations on a new fulminating Mercury, by EDWARD HOWARD, Esq. F.R.S. published in the Transactions of the Royal Society of London.

I. The mercurial preparations which fulminate, when mixed with sulphur, and gradually exposed to a gentle heat, are well known to chemists: they were discovered, and have been fully described, by Mr. Bayen*.

"MM. Brugnatelli and Van Mons have likewise produced fulminations by concussion, as well by nitrate of mercury and phosphorus as with phosphorus and most other nitrates†.

Cinnabar likewise is amongst the substances which, according to MM. Fourcroy and Vauquelin, detonate by concussion with oxymuriate of potash‡.

"Mr. Ameillon had, according to Mr. Berthollet, observed, that the precipitate obtained from nitrate of mercury, by oxalic acid, fuses with a hissing noise§.

II. "But mercury, and most if not all its oxides, may, by treatment with nitric acid and alcohol, be converted into a whitish crystallized powder, possessing all the inflammable properties of gun-powder, as well as many peculiar to itself.

"I was led to this discovery by a late assertion, that hydrogen is the basis of the muriatic acid; it induced me to attempt to combine different substances with hydrogen and oxygen. With this view I mixed such substances with alcohol and nitric acid as might (by predispounding affinity) favour as well as attract an acid combination of the hydrogen of the one, and the oxygen of the other. The pure red oxide of mercury appeared not unfit for this purpose; it was therefore intermixed with alcohol, and upon both, nitric acid was affused. The acid did not act upon the alcohol so immediately as when these fluids are alone mixed together, but first gradually dissolved the oxide; however, after some minutes had elapsed, a smell of ether was perceptible, and a white dense smoke, much resembling that from the *liquor fumans* of LIBAVIUS, was emitted with ebullition. The mixture then threw down a dark coloured precipitate, which by degrees became nearly white. This precipitate I separated by filtration; and, observing it to be crystallized in smaller acicular crystals, of a saline taste, and also finding a part of the mercury volatilized in the white fumes, I must acknowledge I was not altogether without hopes that muriatic acid had been formed, and united to the mercurial oxide; I therefore, for obvious reasons, poured sulphuric acid upon the dried crystalline mass, when a violent effervescence ensued, and, to my great astonishment, an explosion took place. The singularity of this explosion induced me to repeat the process several times; and finding that I always obtained the same kind of powder, I prepared a quantity of it, and was led to make the series of experiments which I shall have the honour to relate in this paper.

III. "I first attempted to make the mercurial powder fulminate by concussion; and for that purpose laid about a grain of it upon a cold anvil, and struck it with a hammer, likewise cold: it detonated slightly, not being, as I suppose, struck with a flat blow; for, upon using three or four grains, a very stunning disagreeable noise was produced, and the faces both of the hammer and the anvil were much indented.

"Half a grain, or a grain, if quite dry, is as much as ought to be used on such an occasion.

"The shock of an electrical battery, sent through five or six grains of the powder, produces a very similar effect: it seems, indeed, that a strong electrical shock generally acts on fulminating substances like the blow of a hammer. Messrs. Fourcroy and Vauquelin found this to be the case with all their mixtures of oxymuriate of potash.

"To ascertain at what temperature the mercurial powder explodes, two or three grains of it were floated on oil, in a capsule of leaf tin; the bulb of a Fahrenheit's thermometer was made just to touch the surface of the oil, which was then gradually heated till the powder exploded, as the mercury of the thermometer reached the 368th degree.

* Opuscules Chimique de Bayen, Tom. I. p. 346, and note in p. 344.

† Annales de Chimie, Tom. XXVII. p. 74 and 79.

‡ Ibid. Tom. XXI. p. 238.

§ This fact has been misrepresented in the introduction to a work entitled, The chemical Principles of the metallic Arts, by W. Richardson, Surgeon, F.A.S. page 57.

IV. "Desirous of comparing the strength of the mercurial compound with that of gunpowder, I made the following experiment in the presence of my friend Mr. Abernethy.

"Finding that the powder could be fired by flint and steel, without a disagreeable noise, a common gunpowder proof, capable of containing eleven grains of fine gunpowder, was filled with it, and fired in the usual way: the report was sharp, but not loud. The person who held the instrument in his hand felt no recoil; but the explosion laid open the upper part of the barrel, nearly from the touch-hole to the muzzle, and struck off the hand of the register, the surface of which was evenly indented, to the depth of $\frac{1}{8}$ of an inch, as if it had received the impression of a punch.

"The instrument used in this experiment being familiarly known, it is therefore scarcely necessary to describe it: suffice it to say, that it was of brass, mounted with a spring-register, the moveable hand of which closed up the muzzle, to receive and graduate the violence of the explosion. The barrel was half an inch in caliber, and nearly half an inch thick, except where a spring of the lock impaired half its thickness.

V. "A gun, belonging to Mr. Keir, an ingenious artist of Camden-Town, was next charged with 17 grains of the mercurial powder, and a leaden bullet. A block of wood was placed at about eight yards from the muzzle, to receive the ball, and the gun was fired by a fuse. No recoil seemed to have taken place, as the barrel was not moved from its position, although it was in no ways confined. The report was feeble: the bullet, Mr. Keir conceived, from the impression made upon the wood, had been projected with about half the force it would have been by an ordinary charge, or 68 grains, of the best gunpowder. We therefore re-charged the gun with 34 grains of the mercurial powder; and, as the great strength of the piece removed any apprehension of danger, Mr. Keir fired it from his shoulder, aiming at the same block of wood. The report was like the first in section four, sharp, but not louder than might have been expected from a charge of gunpowder. Fortunately Mr. Keir was not hurt, but the gun was burst in an extraordinary manner. The breech was what is called a patent one, of the best forged iron, consisting of a chamber, $\frac{1}{4}$ of an inch thick all round, and $\frac{1}{4}$ of an inch in caliber; it was torn open and flamed in many directions, and the gold touch-hole driven out. The barrel, into which the breech was screwed, was $\frac{1}{2}$ of an inch thick; it was split by a single crack three inches long, but this did not appear to me to be the immediate effect of the explosion. I think the screw of the breech, being suddenly enlarged, acted as a wedge upon the barrel. The ball missed the block of wood, and struck against a wall, which had already been the receptacle of so many bullets, that we could not satisfy ourselves about the impression made by this last.

VI. "As it was pretty plain that no gun could confine a quantity of the mercurial powder sufficient to project a bullet, with a greater force than an ordinary charge of gunpowder, I determined to try its comparative strength in another way.—I procured two blocks of wood, very nearly of the same size and strength, and bored them with the same instrument to the same depth. The one was charged with half an ounce of the best Dartford gunpowder, and the other with half an ounce of the mercurial powder; both were alike buried in sand, and fired by a train communicating with the powders by a small touch-hole. The block containing the gunpowder was simply split into three pieces: that charged with the mercurial powder was burst in every direction, and the parts immediately contiguous to the powder were absolutely pounded, yet the whole hung together, whereas the block split by the gunpowder had its parts fairly separated. The sand surrounding the gunpowder was undoubtedly most disturbed; in short, the mer-

curial powder appeared to have acted with the greatest energy, but only within certain limits.

VII. "The effects of the mercurial powder, in the last experiments, made me believe that it might be confined, during its explosion, in the centre of a hollow glass globe. Having therefore provided such a vessel, seven inches in diameter, and nearly half an inch thick, mounted with brass caps, and a stop-cock (see plate 32.); I placed ten grains of the mercurial powder on very thin paper, laid on iron wire, 149th of an inch thick, across the paper, through the midst of the powder, and, closing the paper, tied it fast at both extremities, with silk, to the wire. As the inclosed powder was now attached to the middle of the wire, each end of which was connected with the brass caps, the packet of powder became, by this disposition, fixed in the centre of the globe. Such a charge of an electrical battery was then sent along the wire, as a preliminary experiment (with Mr. Cuthbertson's electrometer) had shewn me would, by making the wire red hot, inflame the powder. The glass globe withstood the explosion, and of course retained whatever gases were generated; its interior was thinly coated with quicksilver, in a very divided state. A bent glass tube was now screwed to the stop-cock of the brass cap, which being introduced under a glass jar standing in the mercurial bath, the stop-cock was opened. Three cubical inches of air rushed out, and a fourth was set at liberty when the apparatus was removed to the water tub. The explosion being repeated, and the air all received over water, the quantity did not vary. To avoid an error from change of temperature, the glass globe was, both before and after the explosion, immersed in water of the same temperature. It appears therefore, that the ten grains of powder produced four cubical inches only of air.

"To continue the comparison between the mercurial powder and gunpowder, 10 grains of the best Dartford gunpowder were in a similar manner set fire to in the glass globe: it remained entire. The whole of the powder did not explode, for some complete grains were to be observed adhering to the interior surface of the glass. Little need be said of the nature of the gases generated during the combustion of the gunpowder: they must have been, carbonic acid gas, sulphureous acid gas, nitrogen gas, and (according to Lavoisier) perhaps hydrogen gas. As to the quantity of these, it is obvious that it could not be ascertained; because the two first were, at least in part, speedily absorbed by the alkali of the nitre, left pure after the decomposition of its nitric acid."

The following are the references to the figures of the glass globe, &c. in pl. 32.

A, is a ball or globe of glass, nearly half an inch thick, and seven inches in diameter. It has two necks, on which are cemented the brass caps B, C, each being perforated with a female screw, to receive the male ones D, E; through the former a small hole is drilled; the latter is furnished with a perforated stud or shank G. By means of a leather collar H, the neck C can be air-tightly closed. When a portion of the powder is to be exploded, it must be placed on a piece of paper, and a small wire laid across the paper, through the midst of the powder; the paper being then closed, is to be tied at each end to the wire, with a silken thread, as shewn at I. One end of this wire is to be fastened to the end of the shank G, and the screw D inserted to half its length into the brass cap B; the other end of the wire a, by means of the needle K, is to be drawn through the hole F. The screw E being now fixed in its place, and the wire drawn tight, is to be secured by pushing the irregular wooden plug L into the aperture of the screw D, taking care to leave a passage for the air. The stop-cock M, the section of which is at N, is now to be screwed on the part D, which is made air-tight by the leather collar b. The glass tube O is

bent, that it may more conveniently be introduced under the receiver of a pneumatic apparatus. P. shews the manner of connecting the glass tube with the stop-cock.

VIII. "From the experiments related in the fourth and fifth sections, in which the gunpowder proof and the gun were burst, it might be inferred, that the astonishing force of the mercurial powder is to be attributed to the rapidity of its combustion; and a train of several inches in length being consumed in a single flash, it is evident that its combustion must be rapid. From the experiments of the sixth and seventh sections, it is sufficiently plain that this force is restrained to a narrow limit, both because the block of wood charged with the mercurial powder was more shattered than that charged with the gunpowder, whilst the sand surrounding it was least disturbed, and likewise because the glass globe withstood the explosion of 10 grains of the powder fixed in its centre; a charge I have twice found sufficient to destroy old pistol barrels, which were not injured by being fired when full of the best gunpowder. It also appears from the last experiment, that 10 grains of the powder produced by ignition four cubical inches only of air; and it is not to be supposed that the generation, however rapid, of four cubical inches of air, will alone account for the described force; neither can it be accounted for by the formation of a little water, which, as will hereafter be shewn, happens at the same moment; the quantity formed from 10 grains must be so trifling, that I cannot ascribe much force to the expansion of its vapour. The sudden vaporization of a part of the mercury seems to me a principal cause of this immense yet limited force; because its limitation may then be explained, as it is well known that mercury easily parts with caloric, and requires a temperature of 600 degrees of Fahrenheit, to be maintained in the vaporous state. That the mercury is really converted into vapour, by ignition of the powder, may be inferred from the thin coat of divided quicksilver, which, after the explosion in the glass globe, covered its interior surface; and likewise from the quicksilver with which a tallow candle, or a piece of gold, may be evenly coated, by being held at a small distance from the inflamed powder. These facts certainly render it more than probable, although they do not demonstrate, that the mercury is volatilized; because it is not unlikely that many mercurial particles are mechanically impelled against the surface of the glass, the gold, and the tallow.

"As to the force of the dilated mercury, Mr. Baumé relates a remarkable instance of it, as follows:

"Un alchimiste se présenta à Mr. Geoffroy, et l'assura qu'il avoit trouvé le moyen de fixer le mercure par une opération fort simple. Il fit construire six boîtes rondes en fer fort épaies, qui entroient les unes dans les autres; la dernière étoit assujettie par deux cercles de fer qui se croisoient en angles droits. On avoit mis quelques livres de mercure dans la capacité de la première: on mit cet appareil dans un fourneau assez rempli de charbon pour faire rougir à blanc les boîtes de fer; mais, lorsque la chaleur eut pénétré suffisamment le mercure, les boîtes crèvent, avec une telle explosion qu'il se fit un bruit épouvantable: des morceaux de boîtes furent lancés avec tant de rapidité qu'il y en eut qui passèrent au travers de deux planchers; d'autres firent sur la muraille des effets semblables à ceux des éclats de bombes."

"Had the alchemist proposed to fix water by the same apparatus, the nest of boxes must, I suppose, have likewise been ruptured; yet it does not follow that the explosion would have been so tremendous: indeed, it is probable that it would not, for if (as Mr. Kirwan remarked to me) substances which have

the greatest specific gravity have likewise the greatest attraction of cohesion, the supposition that the vapour of mercury exceeds in expansive force the vapour of water, would agree with a position of Sir Isaac Newton, that those particles recede from one another with the greatest force, and are most difficultly brought together, which upon contact cohere most strongly.

IX. "Before I attempt to investigate the constituent principles of this powder, it will be proper to describe the process and manipulations which, from frequent trials, seem to be best calculated to produce it. 100 grains, or a greater proportional quantity, of quicksilver (not exceeding 500 grains), are to be dissolved, with heat, in a measured ounce and a half of nitric acid. This solution being poured cold upon two measured ounces of alcohol, previously introduced into any convenient glass vessel, a moderate heat is to be applied until an effervescence is excited. A white fume then begins to undulate on the surface of the liquor; and the powder will be gradually precipitated, upon the cessation of action and re-action. The precipitate is to be immediately collected on a filter, well washed with distilled water, and carefully dried in a heat not much exceeding that of a water-bath. The immediate edulcoration of the powder is material, because it is liable to the re-action of nitric acid; and, whilst any of that acid adheres to it, it is very subject to the influence of light. Let it also be cautiously remembered, that the mercurial solution is to be poured upon the alcohol.

"I have recommended quicksilver to be used in preference to an oxyd, because it seems to answer equally, and is less expensive; otherwise, not only the pure red oxyd, but the red nitrous oxyd, and turpeth, may be substituted; neither does it seem essential to attend to the precise specific gravity of the acid, or the alcohol. The rectified spirit of wine, and the nitrous acid of commerce, never failed, with me, to produce a fulminating mercury. It is indeed true, that the powder prepared without attention is produced in different quantities, varies in colour, and probably in strength. From analogy, I am disposed to think the whitest is the strongest; for it is well known, that black precipitates of mercury approach the nearest to the metallic state. The variation in quantity is remarkable; the smallest quantity I ever obtained from 100 grains of quicksilver being 120 grains, and the largest 132 grains. Much depends on very minute circumstances. The greatest product seems to be obtained when a vessel is used which condenses and causes most ether to return into the mother liquor; besides which, care is to be had in applying the requisite heat, that a speedy, and not a violent action, be effected. 100 grains of an oxyd are not so productive as 100 grains of quicksilver.

"As to the colour, it seems to incline to black when the action of the acid on the alcohol is most violent, and *vice versa*.

X. "I need not observe, that the gases which were generated during the combustion of the powder in the glass globe, were necessarily mixed with atmospheric air; the facility with which the electric fluid passes through a vacuum, made such a mixture unavoidable.

"The cubical inch of gas received over water was not readily absorbed by it; and, as it soon extinguished a taper without becoming red, or being itself inflamed, barytes water was let up to the three cubical inches received over mercury, when a carbonate of barytes was immediately precipitated.

"The residue of several explosions, after the carbonic acid had been separated, was found, by the test of nitrous gas, to contain nitrogen or azotic gas; which does not proceed from any decomposition of atmospheric air, because the powder may

be made to explode under the exhausted receiver of an air-pump. It is therefore manifest that the gases generated during the combustion of the fulminating mercury, consist of carbonic acid and nitrogen gases.

XI. "The principal re-agents which decompose the mercurial powder are the nitric, the sulphuric, and the muriatic acids. The nitric changes the whole into nitrous gas, carbonic acid gas, acetic acid, and nitrate of mercury. I resolved it into these different principles, by distilling it pneumatically with nitric acid: this acid, upon the application of heat, soon dissolved the powder, and extricated a quantity of gas, which was found, by well-known tests, to be nitrous gas mixed with carbonic acid gas. The distillation was carried on until gas no longer came over. The liquor of the retort was then mixed with the liquor collected in the receiver, and the whole saturated with potash; which precipitated the mercury in a yellowish brown powder, nearly as it would have done from a solution of nitrate of mercury. This precipitate was separated by a filter, and the filtrated liquor evaporated to a dry salt, which was washed with alcohol. A portion of the salt being refused by this menstruum, it was separated by filtration, and recognized, by all its properties, to be nitrate of potash. The alcoholic liquor was likewise evaporated to a dry salt, which, upon the effusion of a little concentrate sulphuric acid, emitted acetic acid, contaminated with a feeble smell of nitrous acid, owing to the solubility of a small portion of the nitre in the alcohol.

XII. "The sulphuric acid acts upon the powder in a remarkable manner, as already has been noticed. A very concentrate acid produces an explosion nearly at the instant of contact, on account, I presume, of the sudden and copious disengagement of caloric from a portion of powder which is decomposed by the acid. An acid somewhat less concentrate likewise extricates a considerable quantity of caloric, with a good deal of gas; but, as it effects a complete decomposition, it causes no explosion. An acid, diluted with an equal quantity of water, by the aid of a little heat, separates the gas so much less rapidly, that it may with safety be collected in a pneumatic apparatus. But, whatever be the density of the acid (provided no explosion be produced), there remains in sulphuric liquor, after the separation of the gas, a white inflammable and uncrystallized powder mixed with some minute globules of quicksilver.

"To estimate the quantity, and observe the nature, of this inflammable substance, I treated 100 grains of the fulminating mercury with sulphuric acid a little diluted. The gas being separated, I decanted off the liquor as it became clear, and freed the insoluble powder from acid by elucoration with distilled water; after which, I dried it, and found it weighed only 84 grains; consequently had lost 16 grains of its original weight. Suspecting, from the operation of the nitric acid in the former experiment, that these 84 grains (with the exception of the quicksilver globules) were oxalate of mercury, I digested them in nitrate of lime, and found my suspicion just. The mercury of the oxalate united to the nitric acid, and the oxalic acid to the lime. A new insoluble compound was formed; it weighed, when washed and dry, 48.5 grains. Carbonate of potash separated the lime, and formed oxalate of potash, capable of precipitating lime-water, and muriate of lime: although it had been depurated from excess of alkali, and from carbonate acid, by a previous addition of acetic acid. That the mercury of the oxalate in the 84 grains had united to the nitric acid of the nitrate of lime was proved, by dropping muriatic acid into liquor from which the substance demonstrated to be oxalate of lime had been separated; for a copious precipitation of calomel instantly ensued.

"The fulphuric liquor, decanted from the oxalate of mercury, was now added to that with which it was elucorated, and the whole saturated with carbonate of potash. As effervescence ceased, a cloudiness and precipitation followed; and the precipitate, being collected, washed, and dried, weighed 3.4 grains: it appeared to be a carbonate of mercury. Upon evaporating a portion of the saturated fulphuric liquor, I found nothing but sulphate of potash; nor had it any metallic taste. There then remains, without allowing for the weight of the carbonic acid united to the 3.4 grains, a deficit from the 100 grains of mercurial powder of 12.6 grains, which I ascribe to the gas separated by the action of the sulphuric acid. To ascertain the quantity, and examine the nature, of the gas so separated, I introduced into a very small tubulated retort 50 grains of the mercurial powder, and poured upon it 3 drachms, by measure, of sulphuric acid, with the assistance of a gentle heat. I first received it over quicksilver; the surface of which, during the operation, partially covered itself with a little black powder.

"The gas, by different trials, amounted from 28 to 31 cubical inches: it at first appeared to be nothing but carbonic acid, as it precipitated barytes water, and extinguished a taper, without being itself inflamed, or becoming red. But, upon letting up to it liquid caustic ammoniac, there was a residue from 5 to 7 inches of a peculiar inflammable gas, which burnt with a greenish blue flame. When I made use of the water-tub, I obtained, from the same materials, from 25 to 27 inches only of gas, although the average quantity of the peculiar inflammable gas was likewise from 5 to 7 inches; therefore, the difference of the aggregate product, over the two fluids, must have arisen from the absorption, by the water, of a part of the carbonic acid in its nascent state. The variation of the quantity of the inflammable gas, when powder from the same parcel is used, seems to depend upon the acid being a little more or less dilute.

"With respect to the nature of the peculiar inflammable gas, it is plain to me, from the reasons I shall immediately adduce, that it is no other than the gas (in a pure state) into which the nitrous etherized gas can be resolved, by treatment with dilute sulphuric acid.

"The Dutch chemists have shewn, that the nitrous etherized gas can be resolved into nitrous gas, by exposure to concentrate sulphuric acid, and that, by using a dilute instead of a concentrate acid, a gas is obtained which enlarges the flame of a burning taper, so much like the gaseous oxyd of azote, that they mistook it for that substance, until they discovered that it was permanent over water, refused to detonate with hydrogen, and that the fallacious appearance was owing to a mixture of nitrous gas with inflammable gas.

"The inflammable gas separated from the powder answers to the description of the gas which at first deceived the Dutch chemists; 1st, in being permanent over water; 2dly, refusing to detonate with hydrogen; and, 3dly, having the appearance of the gaseous oxyd of azote, when mixed with nitrous gas.

"The gas separable by the same acid, from nitrous etherized gas, and from the mercurial powder, have therefore the same properties. Every chemist would thence conclude, that the nitrous etherized gas is a constituent part of the powder, and the inflammable and nitrous gas, instead of the inflammable and carbonic acid gas, been the mixed product extricated from it by dilute sulphuric acid.

"It however appears to me, that nitrous gas was really produced by the action of the dilute sulphuric acid; and that, when produced, it united to an excess of oxygen present in the oxalate of mercury.

"To explain how this change might happen, I must premise, that my experiments have shewn me that oxalate of mer-

cury can exist in two, if not in three states. 1st. By the discovery of Mr. Amélon, already quoted, the precipitate obtained by oxalic acid, from nitrate of mercury, fuses with a hissing noise. This precipitate is an oxalate of mercury, seemingly with excess of oxygen. Mercury dissolved in sulphuric acid and precipitated by oxalic acid, and also the pure oxyd of mercury digested with oxalic acid, give oxalates in the same state. 2dly. Acetate of mercury, precipitated by oxalic acid, although a true oxalate is formed, has no kind of inflammability. I consider it as an oxalate with less oxygen than those above mentioned. 3dly. A solution of nitrate of mercury, boiled with dulcified spirit of nitre, gives an oxalate more inflammable than any other; perhaps it contains moist oxygen.

"The oxalate of mercury remaining from the powder in the sulphuric liquor is not only always in the same state as that precipitated from acetate of mercury, entirely devoid of inflammability, but contains globules of quicksilver, consequently it must have parted with even more than its excess of oxygen; and, if nitrous gas was present, it would of course seize at least a portion of that oxygen. It is true, that globules of quicksilver may seem incompatible with nitrous acid; but the quantity of the one may not correspond with that of the other, or the dilution of the acid may destroy its action.

"As to the presence of the carbonic acid, it must have arisen either from a complete* decomposition of a part of the oxalate; or, admitting the nitrous etherized gas to be a constituent principle of the powder, from a portion of the oxygen, not taken up by the nitrous gas, being united with the carbon of the etherized gas.

XIII. "The muriatic acid, digested with the mercurial powder, dissolves a portion of it, without extricating any notable quantity of gas. The dissolution evaporated to a dry salt tastes like the corrosive sublimate; and the portion, which the acid does not take up, is left in a state of an uninflamable oxalate.

XIV. "These effects all tend to establish the existence of the nitrous etherized gas, as a constituent part of the powder; and likewise corroborate the explanation I have ventured to give of the action of the sulphuric acid. Moreover, a measured ounce and a half of nitrous acid, holding 100 grains of mercury in solution and 2 measured ounces of alcohol, yield 90 cubical inches only of gas: whereas, without the intervention of mercury, they yield 210 inches. Upon the whole, I trust it will be thought reasonable to conclude, that the mercurial powder is composed of the nitrous etherized gas, and of oxalate of mercury with excess of oxygen. 1st. Because the nitric acid converts the mercurial powder entirely into nitrous gas, carbonic acid gas, acetic acid, and nitrate of mercury. 2dly. Because the dilute sulphuric acid resolves it into an uninflamable oxalate of mercury, and separates from it a gas resembling that into which the same acid resolves the nitrous etherized gas. 3dly. Because an uninflamable oxalate is likewise left, after the muriatic acid has converted a part of it into sublimate. 4thly. Because it cannot be formed by boiling nitrate of mercury in dulcified spirit of nitre; although a very inflammable oxalate is by this means produced. 5thly. Because the difference of the product of gas, from the same measures of alcohol and nitrous acid, with and without

mercury in solution, is not trifling; and, 6thly. Because nitrogen gas was generated during its combustion in the glass globe.

"Should my conclusions be thought warranted by the reasons I have adduced, the theory of the combustion of the mercurial powder will be obvious to every chemist. The hydrogen of the oxalic acid, and of the etherized gas, is first united to the oxygen of the oxalate, forming water†; the carbon is saturated with oxygen, forming carbonic acid gas; and a part, if not the whole of the nitrogen of the etherized gas, is separated in the state of nitrogen gas; both which last gases, it may be recollected, were after the explosion present in the glass globe. The mercury is revived, and, I presume, thrown into vapour; as may well be imagined, from the immense quantity of caloric extricated, by adding concentrate sulphuric acid to the mercurial powder.

"I will not venture to state, with accuracy, in what proportions its constituent principles are combined. The affinities I have brought into play are complicated, and the constitution of the substances I have to deal with not fully known. But, to make round numbers, I will resume the statement, that 100 grains of the mercurial powder lost 16 grains of its original weight, by treatment with dilute sulphuric acid: 84 grains of the mercurial oxalate, mixed with a few minute globules of quicksilver, remained undissolved in the acid. The sulphuric liquor was saturated with carbonic of potash, and yielded 3.4 grains of carbonate of mercury. If 1.4 grain should be thought a proper allowance for the weight of carbonic acid in the 3.4 grains, I will make that deduction, and add the remaining 2 grains to the 84 grains of mercurial oxalate and quicksilver; I shall then have,

Of oxalate and mercury,	86 grains
And a deficit, to be ascribed to the nitrous etherized gas and excess of oxygen,	1.4
	100

"It may perhaps be proper to proceed still further, and recur to the 48.5 grains, separated by nitrate of lime from the 84 grains of mercurial oxalate and globules of quicksilver, in the 11th section. These 48.5 grains were proved to be chiefly oxalate of lime; but they likewise contained a minute inseparable quantity of mercury, almost in the state of quicksilver, formerly part of the 84 grains from which they were separated. Had the 48.5 grains been pure calcareous oxalate, the quantity of pure oxalic acid in them would, according to Bergmann, be 23.28 grains. Hence, by omitting the 2 grains of mercury, in the 3.4 grains of carbonate, 100 grains of the mercurial powder might have been said to contain of pure oxalic acid 23.28 grains; of mercury 62.72 grains; and of nitrous etherized gas and excess of oxygen 1.4 grains. But, as the 48.5 grains were not pure oxalate, inasmuch as they contained the mercury they received from the 84 grains, from which they were generated by the nitrate of lime, some allowance must be made for the mercury successively intermixed with the 84 grains and the 48.5 grains. In order to make corresponding numbers, and allow for unavoidable errors, I shall estimate the quantity of that mercury to have amounted to 2 grains, which I must of course deduct from the 33.28

* Inflammable oxalate of mercury, made to fuse in a retort connected with the quicksilver tube, gives out carbonic acid gas.

† Drops of water were observed on the internal surface of the globe, the day after several explosions had been produced in its centre.

grains of oxalic acid. I shall then have the following statement:

That 100 grains of fulminating mercury ought to contain of pure, oxalic acid,	21,28 grains.
Of mercury formerly united to the oxalic acid,	60,72
Of mercury dissolved in the sulphuric liquor,	2
And of mercury left in the sulphuric liquor after the separation of the gases,	2
Total of mercury,	64,72
Of nitrous etherized gas, and excess of oxygen,	14
	100

"Since 100 grains of the powder seem to contain 64,72 grains of mercury, it will be immediately enquired, what becomes of 100 grains of quicksilver, when treated as directed, in the description of the process for preparing the fulminating mercury.

"It has been stated (in section IX.) that 100 grains of quicksilver produce, under different circumstances, from 120 to 132 grains of mercurial powder; and, if 100 grains of this powder contain 64,72 grains, 120 grains, or 132 grains, must, by parity of reasoning, contain 78,06 grains, or 85,47 grains; therefore 13,34 grains, or 20,75 grains, more of the 100 grains are immediately accounted for; because 64,72 grains + 13,34 grains = 78,06, and 64,72 grains + 20,75 grains = 85,47 grains. The remaining deficiency of 21,94 grains, or 14,53 grains, which, with the 78,06 grains, or 85,47 grains, would complete the original 100 of quicksilver, remains partly in the liquor from which the powder is separated, and is partly volatilized in the white dense fumes, which in the beginning of this paper I compared to the liquor fumans of Libavius. The mercury cannot, in either instance, be obtained in a form immediately indicative of its quantity; and a series of experiments, to ascertain the quantities in which many different substances can combine with mercury, is not my present object. After observing, that the mercury left in the residuary liquor can be precipitated in a very subtle dark powder, by carbonate of pot-ash, I shall content myself with examining the nature of the white fumes.

XV. "It is clear, that these white fumes contain mercury: they may be wholly condensed in a range of Woulfe's apparatus, charged with a solution of muriate of ammoniac. When the operation is over, a white powder is seen floating with ether on the saline liquor, which, if the bottles are agitated, is entirely dissolved. After the mixture has been boiled, or for some time exposed to the atmosphere, it yields to caustic ammoniac a precipitate, in all respects similar to that which is separated by caustic ammoniac from corrosive sublimate.

"I would infer from these facts, that the white dense fumes consist of mercury, or perhaps oxyd of mercury, united to the nitrous etherized gas; and that, when the muriate of ammoniac containing them is exposed to the atmosphere, or is boiled, the gas separates from the mercury; and the excess of nitrous acid, which always comes over with nitrous ether, decomposes the ammoniacal muriate of sublimate, and forms corrosive mercurial muriate or sublimate. This theory is corroborated by comparing the quantity of gas estimated to

be contained in the fulminating mercury with the quantities of gas yielded from alcohol and nitrous acid, with and without mercury in solution; not to mention that more ether, as well as more gas, is produced without the intervention of mercury; and that, according to the Dutch chemists, the product of ether is always in the inverse ratio to the product of nitrous etherized gas. Should a further proof be thought necessary of the existence of the nitrous etherized gas in the fulminating mercury, as well as in the white dense fumes, it may be added, that, if a mixture of alcohol and nitrous acid holding mercury in solution be so dilute, and exposed to a temperature so low, that neither ether nor nitrous etherized gas are produced, the fulminating mercury, or the white fumes, will never be generated; for, under such circumstances, the mercury is precipitated chiefly in the state of an inflammable oxalate. Further, when we consider the different substances formed by an union of nitrous acid and alcohol, we are so far acquainted with all, except the ether and the nitrous etherized gas, as to create a presumption, that no others are capable of volatilizing mercury, at the very low temperature in which the white fumes exist, since, during some minutes, they are permanent over water of 40° Fahrenheit.

XVI. "Hitherto, as much only has been said of the gas which is separated from the mercurial powder by dilute sulphuric acid, as was necessary to identify it with that into which the same acid can resolve the nitrous etherized gas: I have further to speak of its peculiarity*.

"The characteristic properties of the inflammable gas seem to me to be the following: 1st. It does not diminish in volume, either with oxygen or nitrous gas. 2dly. It will not explode with oxygen by the electric shock, in a close vessel, 3dly. It burns like hydrocarbonate, but with a blueish-green flame; and, 4thly. It is permanent over water (section xii).

"It is of course either not formed, or is convertible into nitrous gas by the concentrate nitric and muriatic acids; because by those acids, no inflammable gas was extricated from the powder.

"Should this inflammable gas prove not to be hydrocarbonate, I shall be disposed to conclude, that it has nitrogen for its basis; indeed, I am at this moment inclined to that opinion, because I find that Dr. Priestley, during his experiments on his dephlogistated nitrous air, once produced a gas which seems to have resembled this inflammable gas, both in the mode of burning and in the colour of the flame.

"After the termination of the common solution of iron in spirit of nitre, he used heat, and got, says he, 'such a kind of air as I had brought nitrous air to be, by exposing it to iron, or liver of sulphur; for, on the first trial, a candle burned in it with a much enlarged flame. At another time, the application of a candle to air produced in this manner was attended with a real, though not a loud explosion; and, immediately after this, a greenish-coloured flame descended from the top to the bottom of the vessel in which the air was contained. In the next produce of air, from the same process, the flame descended blue, and very rapid, from the top to the bottom of the vessel.'

"These greenish and blue coloured flames, descending from the top to the bottom of the vessel, are precisely descriptive of the inflammable gas separated from the powder. If it can be produced with certainty by the repetition of Dr. Priestley's experiments, or should it by any means be got pure from the

* It must be first noticed, that it is never pure when obtained from the nitrous etherized gas; nor am I aware how it is to be purified, unless the nitrous gas could be taken from it, without being converted into nitrous acid; for, by that acid, it would probably be itself converted into nitrous gas.

nitrous etherized gas, my curiosity will excite me to make it the object of future research; otherwise, I must confess, I shall feel more disposed to prosecute other chemical subjects: for having reason to think that the density of the acid made a variation in the product of this gas, and having never found that any acid, however dense, produced an immediate explosion, I once poured 6 drachms of concentrate acid upon 50 grains of the powder. An explosion, nearly at the instant of contact, was effected: I was wounded severely, and most of my apparatus destroyed. A quantity moreover of the gas I had previously prepared, was lost by the inadvertency of a person who went into my laboratory, whilst I was confined by the consequences of this discouraging accident. But, should any one be desirous of giving the gas a further examination, I again repeat, that, as far as I am enabled to judge, it may with safety be prepared by pouring 3 drachms of sulphuric acid, diluted with the same quantity of water, upon 50 grains of the powder, and then applying the flame of a candle until gas begins to be extricated. The only attempt I have made to decompose it, was by exposing it to copper and ammoniac; which during several weeks did not effect the least alteration.

"I will now conclude (says Mr. Howard), by observing, that the fulminating mercury seems to be characterized by the following properties:

"It takes fire at the temperature of 368 Fahrenheit; explodes by friction*, by flint and steel, and by being thrown into concentrate sulphuric acid. It is equally inflammable under the exhausted receiver of an air-pump, as surrounded by atmospheric air; and it detonates loudly, both by the blow of a hammer, and by a strong electrical shock.

"Notwithstanding the composition of fulminating silver and of fulminating gold, differ essentially from that of fulminating mercury, all three have similar qualities. In tremendous effects, silver undoubtedly stands first, and gold perhaps the last. The effects of the mercurial powder and of gunpowder admit of little comparison. The one exerts, within certain limits, an almost inconceivable force: its agents seem to be gas and caloric, very suddenly set at liberty, and both mercury and water thrown into vapour. The other displays a more extended but inferior power: gas and caloric are, comparatively speaking, liberated by degrees; and water, according to Count Rumford, is thrown into vapour†.

"Hence it seems that the fulminating mercury, from the limitation of its sphere of action, can seldom, if ever, be applied to mining; and, from the immensity of its initial force, cannot be used in fire-arms, unless in cases where it becomes an object to destroy them; perhaps, where it is the practice to spike cannon, it may be of service, because I apprehend it may be used in such a manner as to burst cannon, without dispersing any splinters.

"The inflammation of fulminating mercury by concussion offers nothing more novel or remarkable, than the inflammation, by concussion, of many other substances. The theory of such inflammations has been long since exposed by the celebrated Mr. Berthollet, and confirmed by Messieurs Fourcroy, and Vauquelin: yet, I must confess, I am at a loss to understand why a small quantity of mercurial powder made to detonate by the hammer, or the electric shock, should produce a report so much louder than when it is inflamed by a

match, or by flint and steel. It might at first be imagined, that the loudness of the report could be accounted for, by supposing the instant of the inflammation, and that of the powder's confinement between the hammer and anvil, to be precisely the same; but, when the electrical shock is sent through or over a few grains of the powder, merely laid on ivory, and a loud report is the consequence, I can form no idea of what causes such a report.

"The operation by which the powder is prepared, is perhaps one of the most beautiful and surprising in chemistry; and it is not a little interesting to consider the affinities which are brought into play. The superabundant nitrous acid of the mercurial solution must first act on the alcohol, and generate ether, nitrous etherized gas, and oxalic acid. The mercury unites to the two last in their nascent state, and relinquishes fresh nitrous acid, to act upon any unaltered alcohol. The oxalic acid, although a predisposing affinity seems exerted in favour of its quantity, is evidently not formed fast enough to retain all the mercury; otherwise, no white fumes, during a considerable period of the operation, but fulminating mercury alone, would be produced.

"Should any doubt still be entertained of the existence of the affinities which have been called predisposing or conspiring, a proof that such affinities really exist, will, I think, be afforded, by comparing the quantity of oxalic acid which can be generated from given measures of nitrous acid and alcohol, with the intervention of mercury, and the intervention of other metals. For instance, when two measured ounces of alcohol are treated with a solution of 100 grains of nickel in a measured ounce and a half of nitrous acid, little or no precipitate is produced; yet, by the addition of oxalic acid to the residuary liquor, a quantity of oxalate of nickel, after some repose, is deposited. Copper affords another illustration; 100 grains of copper dissolved in a measured ounce and a half of nitrous acid, and treated with alcohol, yielded me about 18 grains only of oxalate; although cupreous oxalate was plentifully generated, by dropping oxalic acid into the residuary liquor. About 21 grains of pure oxalic acid seem to be produced, from the same materials, when 100 grains of mercury are interposed. (See section XIV.) Besides, according to the Dutch paper, more than once referred to, acetic acid is the principal residue after the preparation of nitrous ether. How can we explain the formation of a greater quantity of oxalic acid, from the same materials, with the intervention of 100 grains of mercury, than with the intervention of 100 grains of copper, otherwise than by the notion of conspiring affinities, so analogous to what we see in other phenomena of nature?

"I have attempted, without success, to communicate fulminating properties, by means of alcohol, to gold, platinum, antimony, tin, copper, iron, lead, zinc, nickel, bismuth, cobalt, arsenic, and manganese; but I have not yet sufficiently varied my experiments, to enable me to speak with absolute certainty. Silver, when 20 grains of it were treated with nearly the same proportions of nitrous acid and alcohol as 100 grains of mercury, yielded, at the end of the operation, about 3 grains of a grey precipitate, which fulminated with extreme violence. Mr. Cruickshank had the goodness to repeat the experiment: he dissolved 40 grains of silver in 2 ounces of the strongest nitrous acid diluted with an equal

* Consequently it should not be inclosed in a bottle with a glass stopper.

† See Philosophical Transactions for the year 1797, p. 222. The hard black substance mentioned by the Count, as remaining after the combustion of gunpowder, must, I believe, have carbonate of pot-ash. The conjecture, that it is white when globe evinced.

quantity of water, and obtained (by means of 2 ounces of alcohol) 60 grains of a very white powder, which fulminated like the grey precipitate above described. It probably combines with the same principles as the mercury, and of course differs from Mr. Berthollet's fulminating silver, before alluded to. I observe, that a white precipitate is always produced in the first instance; and that it may be preserved by adding water, as soon as it is formed; otherwise, when the mother liquor is abundant, it often becomes grey, and is redissolved."

Several trials of the mercurial powder were afterwards made at Woolwich, in conjunction with Colonel Blomfield and Mr. Cruickshank, upon heavy guns, carronades, &c. from which Mr. Howard generally infers, that any piece of ordnance might be destroyed, by employing a quantity of the mercurial powder equal in weight to one half of the service-charge of gunpowder; and, from the seventh and last experiment, we may also conclude, that it would be possible for to proportion the charge of mercurial powder to the size of different cannons, as to burst them without dispersing any splinters. But the great danger attending the use of fulminating mercury, on account of the facility with which it explodes, will probably prevent its being employed for that purpose.

"In addition to the other singular properties of the fulminating mercury (says Mr. Howard), it may be observed, that two ounces inflamed in the open air, seem to produce a report much louder than when the same quantity is exploded in a gun capable of resisting its action. Mr. Cruickshank, who made some of the powder, by my process, remarked that it would not inflame gunpowder. In consequence of which, we spread a mixture of coarse and fine-grained gunpowder upon a parcel of the mercurial powder; and, after the inflammation of the latter, we collected most, if not all, of the grains of gunpowder. Can this extraordinary fact be explained by the rapidity of the combustion of fulminating mercury? or is it to be supposed (as gunpowder will not explode at the temperature at which mercury is thrown into vapour) that sufficient caloric is not extricated during this combustion? From the late opportunity I have had of conversing with Mr. Cruickshank, I find that he has made many accurate experiments on gunpowder; and he has permitted me to state, that the matter which remains after the explosion of gunpowder consists of pot-ash united with a small proportion of carbonic acid, sulphate of pot-ash, a very small quantity of sulphuret of pot-ash, and unconsumed charcoal. That 100 grains of good gunpowder yielded about 53 grains of this residuum, of which three are charcoal. That it is extremely deliquescent, and, when exposed to the air, soon absorbs moisture sufficient to dissolve a part of the alkali; in consequence of which, the charcoal becomes exposed, and the whole assumes a black or very dark colour. Mr. Cruickshank likewise informs me, that after the combustion of good gunpowder under mercury, no water is ever perceptible."

FUMIGATION (*Encycl.*) This mode of affecting the human constitution with mercury, was much practised by the celebrated Astruc, and has since been revived in France, by Lalouette. Mr. Abernethy, who, in his *Surgical Cases*, p. 194, gives the following account of the use of mercurial fumigations, professes his approbation of that practice. He presents his readers with some cases which clearly shew the advantages that attend this method of treating lues venerea. The grounds of preference in favour of fumigation, are: *First*, from its affecting the constitution when other means have failed; and, *secondly*, from its producing its effects in a much shorter time than any other mode requires.

"I beg leave, however, previously to observe (says Mr.

Abernethy), that the term, mercurial fumigations, is apt to excite wrong ideas of this method in the minds of surgeons. Fumigations have been, of late, generally employed to correct local diseases; and they have often, by design, been made of an acrid quality. And even when they were formerly employed with a view of affecting the constitution, it was at a time when the chemical compounds of quicksilver were not understood, and sufficient attention was not paid to those circumstances on which the success of their application depends.

"But, in the year 1776, the Chevalier Lalouette, a physician at Paris, laid before the public an account of a new mode of mercurial fumigation, free from the inconveniences of former ones, and which, in the space of thirty-five years, he had successfully employed in more than four hundred cases, that had resisted all the ordinary methods of cure. His method consisted in enclosing the patient, previously undressed, in a kind of box resembling a sedan chair, with an opening at the top to let out the head, and another at the bottom, to which was fitted a small grate or furnace, having in it a heated iron for converting the mercurial retort into fume. The preparation he made use of was a kind of calomel, which, by repeated sublimation from iron-sfilings, was so far deprived of its muriatic acid, as to be in part reduced into running quicksilver; and, while it possessed considerable volatility, was perfectly irritating. Some of this powder being strewn upon the hot iron placed below, was immediately converted into smoke, which surrounded the patient's body, and after some time settled on his skin in the form of a white and very fine calx of quicksilver: a complete dress, having its inner surface fumigated with the same powder, was then put on.—The remedy being thus generally applied to the mouths of the cutaneous absorbents, soon got admission into the circulating fluids; and the constitution became thereby more speedily affected than by any other process known before."

For a more particular account of the chemical preparations used by M. Lalouette, and his manner of employing them, Mr. Abernethy refers to his treatise, which was published in 1776. He adds, "With regard to the process, I would only further observe, that the feelings of the patient during it, are not at all unpleasant, provided the heat be properly regulated; that there is nothing uncleanly or disagreeable in the powder applied to the skin; and that all who have had an opportunity of comparing it with the common method by innunction, have been highly pleased with the superior advantages attending it."

The fumigating powder of M. Lalouette being a very operose and expensive preparation, and having no advantage over one made by abstracting the muriatic acid from calomel, Mr. Abernethy employed the following in lieu of it: Two drachms of aqua ammoniac were added to six ounces of distilled water, and four ounces of calomel thrown into this liquor, and shaken up with it; the powder was afterwards separated by a filter, and dried.

"The powder thus obtained (says the author), is of a grey colour, and contains a good deal of quicksilver in its metallic state, which of course is extremely volatile, but becomes oxydated when raised into fume, and afterwards condenses into a white and very fine dust.

"This mode of using mercury is not, however, so well adapted to hospital practice; for sometimes the iron was too much heated, and the patients were made by this means to perspire profusely, so that the powder was formed into a paste, which was irregularly incrustated on the skin; besides, the patients either could not or would not wear a complete under-dress; and in that case the powder was wiped away, and the plan of treatment frustrated: for the design is to allow of a

constant absorption of this subtle preparation of quicksilver from the whole surface of the body."

Mr. Abernethy gives some cases in which this remedy was very speedy in its effects; and could relate (he asserts) many others in which fumigation accomplished with *facility* the cure of complaints which had resisted long-continued mercurial courses both by friction and internal exhibition. "It is reasonable to think (continues he), that this object will be more certainly obtained by the absorption thus taking place from almost the whole surface of the body, than by any other method hitherto devised. Yet it is but right to say, that my hopes of success from it have not always been fulfilled; and that, in some few cases where mercury shewed a particular tendency to act on the bowels without affecting the mouth, the mercurial fumes seemed to produce this effect even sooner than the ointment had done: and in one young man, whose mouth neither frictions nor the internal use of mercury could be made to affect, but in whom they occasioned constant tremors of the muscles, and spasms of the bowels, the fumigations were not attended with any better success. Happily, however, such cases are rare; and in general the fumigations affect the constitution speedily, and in the usual manner."

To the objections which have been brought against the cure by fumigations, Mr. Abernethy makes this reply. He says, "I have heard it objected, that fumigation cannot be depended on for the cure of lues. But I never knew it fail, nor do I see why mercury, used thus, should, when absorbed, prove less effectual than when this mineral is combined with lard in the common ointment. If fumigations in this mode have failed, it was more probably owing to their being improperly managed, than to any insufficiency peculiar to them. Thus, if administered frequently and largely at first, they may have considerably affected the mouth without proportionally affecting the constitution in general; or, from the quickness with which they heal venereal ulceration, the cure may have been too soon supposed complete, and their use discontinued before they had entirely eradicated the disease. Under proper management, I have no doubt but mercury, employed in this manner, will be found adequate to the cure of every variety of the disease."

"Besides their general application, there is another way in which mercurial fumigations may be occasionally employed with advantage, though the benefit is less important; and perhaps this method may be regarded merely as a refinement in the practice of surgery. In local disease of the joints, such, for instance, as frequently takes place in the knee, and in farcomatous enlargements of the breast in women, Mr. Sharp and Mr. Blinck have long accustomed to direct fumigated stockings, or under-waistcoats, to be worn; when the complaints have been relieved, and the constitutions of the patients affected, without the trouble and unpleasantness arising from the use of the common mercurial ointment."

FUNGIBLES, in Scots law, are such things as are estimated by their number, weight, or measure; as coin, butter, ale, &c.

FUORLI, a town of Naples, in Abruzzo Citeriore, 21 miles S.E. of Solmona.

FURNES, a town of Flanders, seated near the German Ocean, on the canal from Bruges to Dunkirk. It was one of the barrier towns; but, in 1781, the emperor Joseph II. expelled the Dutch garrison. It was taken by the French in 1793, and is 12 miles E. of Dunkirk. Long. 2. 45. E. Lat. 51. 4. N.

FURRUCKABAD, a district of Hindoostan Proper, contiguous to the W. bank of the Ganges, and surrounded by

Oude. It is little more than 30 miles in extent, and belongs to a chief of the Patan Rohilla tribe. The principal town is of the same name, 70 miles E. of Agra, and 76 N. W. of Lucknow. Long. 79. 30. W. Lat. 27. 28. N.

FURSTENBURG, a principality of Suabia, bounded by the duchy of Wirtemberg, the county of Hohenburg and other territories of the house of Austria, by the Brisgaw, the Black Forest, and the lake and bishopric of Constance. In this state the river Danube takes its rise.

FURSTENFELD, a town of Lower Stiria, with a castle, on the river Aufnitz, 50 miles S. of Vienna. Long. 16. 5. E. Lat. 47. 23. N.

FURSTENWALD, a town of Germany, in the Middle-Marche of Brandenburg, seated on the Spree, 20 miles W. of Francfort on the Oder. It was taken by the Swedes in 1631. Long. 14. 8. E. Lat. 52. 23. N.

FURSTENWERDER, a town of Upper Saxony, in the Ucker Marche of Brandenburg, 10 miles W.N.W. of Prenzlau.

FURT, a town of Lower Bavaria, situate on the Champe, 56 miles N.N.W. of Passau, and 86 N.N.E. of Munich. Long. 12. 46. E. Lat. 49. 13. N.

FURTH, a town of Franconia, in the principality of Anspach, on the Rednitz, four miles W. of Nuremberg.

FUTTYPOUR, SICRI, a considerable town of Hindoostan Proper, in the province of Agra. It is seated under a range of hills, the southern boundary of an immense plain, in which, for the greatest part, not a shrub is to be seen, and the soil is almost as fine as hair powder; a circumstance productive of the most disagreeable effects, when this fine dust is taken up by the hot winds from the westward. Its situation, too, is unhealthy, from the indifferent water with which the whole country abounds; but the country immediately near the town, is in tolerable cultivation. On the summit of the highest hill is a large mosque, built by the emperor Acbar, in the first style of Moorish architecture; and at the foot of this hill are the ruins of an imperial palace, which occupy a great extent of ground. It is 42 miles W. of Agra. Long. 77. 45. E. Lat. 27. 0. N.

FYAL, one of the Azores, or Western Islands. It is well cultivated; and has abundance of chestnuts, beeches, myrtles, and aspen-trees. The cottages of the common people are built of clay, thatched with straw; and are small, but cleanly and cool. The most considerable place is called Villa de Horta. Long. 28. 36. W. Lat. 38. 32. N.

FYERS, a river in Invernesshire, which, descending from the S. flows toward Loch Ness. Over this river is built a stupendous bridge, on two opposite rocks; the top of the arch being above 100 feet from the level of the water. A little below the bridge is the celebrated Fall of Fyers, where a great body of water darts through a narrow gap between two rocks, then falls over a vast precipice into the bottom of a chafin.

FYNE, Loch, an inlet of the Atlantic, in Argyleshire, nearly 40 miles in length. It receives and returns a tide on each side of the Isle of Arran, which is directly opposite its entrance. It is indented with bays; and at certain seasons, its waters are filled with herrings, when it becomes the resort of numerous fishing vessels.

FYZABAD, a city of Hindoostan Proper, in the territory of Oude, of which it was once the capital. Here are the remains of a vast building, the palace of the late nabob Sujah-ul Dowlah. The city is very populous; but since the removal of the court of Oude to Lucknow, the people are of the lowest class. It is seated on the Gogra, 80 miles E. of Lucknow, and 500 N.W. of Calcutta. Long. 82. 30. E. Lat. 26. 34. N.

G.

GABARET, a town of France, in the department of Gers, seated on the Gers, 20 miles W. of Condom. Lon. o. 6. E. Lat. 44. 59. N.

GABEI, a town of Bohemia, where Prince Henry of Prussia entered that country, after having gained an advantage over the Austrians, in 1778. It is 45 miles N. of Prague.

GABIAN, a village of France, in the department of Herault, famous for its mineral waters, nine miles N.W. of Beziers.

GABIN, a town of Poland, in the palatinate of Rava, 50 miles N.W. of Warfaw. Long. 19. 45. E. Lat. 52. 26. N.

GADEBUSCH, a town of Lower Saxony, in the duchy of Mecklenburg, near which the Swedes defeated the Danes in 1712. It is 16 miles N.N.W. of Schwerin.

GAETA, an ancient town of Naples, in Terra di Lavoro, with a fort, a citadel, a harbour, and a bishop's see. It was taken by the Austrians in 1707, and by the Spaniards in 1714. It is seated at the foot of a mountain, near the sea, 30 miles N.W. of Capua. Long. 13. 47. E. Lat. 51. 30. N.

GAIRLOCH, a large bay of Scotland, on the W. coast of Ross-shire, which gives name to a tract of land near it. The fishing of cod, and other white fish, is here very considerable.

GALACZ, or **GALASI**, a town of Bulgaria, seated near the Danube, between the mouths of the Pruth and Seret, 55 miles W. of Imael, and 120 S.S.W. of Bender. Long. 28. 24. E. Lat. 45. 24. N.

GALASHIELS, a village in Selkirkshire, near the confluence of the Gala and Tweed. Here is a flourishing manufacture of woollen cloth, called Galashielsgray, being of a dark colour and coarse texture; flannels and superior cloths are also made here. It is 25 miles S. by E. of Edinburgh.

GALASO, a river of Naples, in Oranto, which rises in the opening near Oria, and falls into the gulf of Taranto.

GALFALLY, a town of Ireland, in the county of Tipperary, 23 miles S.E. of Limerick. Long. 8. 20. W. Lat. 52. 15. N.

GALISTIO, a town of Spain, in Estremadura, 10 miles N.W. of Placentia. Long. 5. 8. E. Lat. 40. 2. N.

GALITSCH, a town of Russia, in the government of Koftroma, on the S. side of a lake to which it gives name, 56 miles E.N.E. of Koftroma. Long. 22. 54. E. Lat. 57. 56. N.

GALLAM, the capital of a kingdom of the same name, in Africa, on the river Senegal. Long. 9. 55. W. Lat. 14. 25. N.

GALLARDON, a town of France, in the department of Eure and Loire, 12 miles N.E. of Chartres.

GALIPOLI, a strait between European and Asiatic Turkey. It forms the communication between the Archipelago and the sea of Marmora, and is defended at the S.W. entrance by the Dardanelles. It is here two miles over, and is thirty-three miles long. It was anciently called the Hellespont. See DARDANELLES.

GALVANISM, an appellation given to the influence of metals, by mere external contact with the human body, discovered by Prof. GALVANI, at Bologna, about ten years since, and which he called *Animal Electricity*. The following account of this interesting discovery is given by Dr. Willich in THE DOMESTIC ENCYCLOPEDIA.

"Certain convulsive motions on the nerves of living and dead animals," says the doctor, "may be excited by the ap-

plication of metallic or other conductors of electricity; but these motions may also be induced, by simply touching the animal fibre with two different metals, that are brought in contact with each other at the same moment. This surprising phenomenon has lately been resorted to, in order to ascertain whether a drowned, suffocated, or otherwise suddenly deceased person, was really or apparently dead. For this purpose, Dr. CREVE, Prof. of Medicine in the University of Mayence, has contrived an instrument formed like a bow, both ends of which are furnished with two small round plates. The whole is composed of two parts made of different metals; one-half of solid zinc, the other of fine silver; or gold and zinc, or lead, tin, and gold. The proportion of the first metal should be less than the other combined with it; namely, the weight and size of the zinc-plate should be less than the opposite one of gold. Both plates are only screwed on the bow, which chiefly consists of silver. But, where this instrument cannot be procured on the spur of the occasion, a small piece of tin or lead, and a silver coin of a moderate size (for instance a shilling, or half-a-crown piece) may be substituted. Although any part of the body may be fixed upon for making the experiment with persons apparently dead, yet the upper arm will be the most proper. The skin, however, in that part where the incision is made, ought to be found, and not of a gangrenous appearance. The muscles must be cleared of all fat and cellular texture, as far as this be practicable; and the blood is to be taken up by a sponge dipped in water. Next, the muscle should be slightly extended, by stretching the arm; and, in order to keep the lips of the wound separate, the skin ought to be expanded, and the muscular fibres clearly exposed. After these preparatory steps, either the instrument above described, or two loose metallic plates, are to be applied towards the centre of the hollow place or wound made by the incision, and both flat plates brought into perfect contact with the bare muscular fibres. If any irritability exist, or remain, in the system of the subject, the muscular fibres will be contracted and twisted in a manner similar to spasms; or convulsive motions will be evident: every symptom, however, disappears on withdrawing the instrument, and again becomes manifest on re-applying it as before. But no motion whatever will be perceptible, if all irritability be lost or destroyed, in which case the body may be considered as *irrecoverably dead*.—In those instances, where persons have been deprived of life by intense cold, a moderate degree of warmth should be previously applied, with a view to render the limbs flexible. Hence, this experiment cannot with propriety be undertaken, till all other means of restoring animation have been *unsuccessfully* employed.

"Whatever two metals be chosen, they will, with few exceptions, produce those remarkable contractions, when applied in the manner before described; but the most powerful are, zinc and silver, or zinc and gold; or in general, zinc, tin, or lead, when used in combination with gold, silver, molybdena, steel, or copper.

"These singular phenomena take place in consequence of a mutual communication between any two points of contact, whether more or less distant, in a system of muscular and nervous organs. The extent of this communication may be considered as a complete circle divided into two parts, one of which comprising the organs of the animal under the experiment, is called the *animal arc*; the other, which is formed by

the metals or *galvanic* exciters, is denominated the *excitatory arc*; and consists of more than one piece, of various kinds.

Besides the effects thus produced on the muscles, the impressions made on the organs of the sense are equally remarkable. And as the experiments illustrating them may be easily repeated, we shall specify some of the most interesting. For instance, if a thin plate of zinc be placed on the upper surface of the tongue, and a half-crown, shilling, or silver tea-spoon, be laid on the lower surface of the tongue, and both metals after a short space of time be brought into contact, a peculiar sensation similar to taste, will be perceived at the moment when the mutual touch happens. If the silver be put beneath, and the zinc upon the tongue, the same sensation will arise, but in a weaker degree, resembling diluted ammoniac, from which it in all probability derives its origin.

If a silver probe be introduced as far as convenient into one of the nostrils, and then be brought into contact with a piece of zinc placed on the tongue, a sensation not unlike a strong flash of light will be produced in the corresponding eye, at the instant of contact. A similar perception will result, both at the moment of contact and at that of separation, if one of the metals be applied as high as possible between the gums and upper lip, and the other in a similar situation with the under lip, or even under the tongue.—Lastly, when a probe or rod of zinc, and another of silver, are introduced as far back as possible into the roof of the mouth, the irritations produced by bringing the external ends into contact, are very powerful; and that caused by the zinc is similar in taste to the sensation arising from its application to the tongue.

No method has hitherto been discovered, of applying the Galvanic influence in such a manner as to affect the senses of smell, hearing, and touch; though several eminent philosophers have carefully investigated the subject. Nor are the causes of these phenomena clearly ascertained; Galvani and some of his followers, supposing them to depend on the electric fluid, while others attribute them to the influence of various physical agency.

In this state was Galvanism, when in the year 1800, Signor Volta, professor of natural philosophy, at Como, in the Milanese, communicated to Sir Joseph Banks, a discovery of the vast accumulation of this power: it was accordingly presented to the Royal Society, from the 2d part of *whole Transactions*, for 1800, we have selected the following account:

Signor Volta's apparatus consists of a number of copper or silver plates (which last are preferable), together with an equal number of plates composed of tin, or still better of zinc, and a similar number of pieces of card, leather, or woollen cloth, the last of which substances appears to be the most suitable. These last should be well soaked in water saturated with common salt, muriat of ammonia, or, more effectually, with nitre.—The silver or copper may be pieces of money, and the plates of zinc may be cast of the same size. A pile is then to be formed, by placing a piece of silver on a corresponding one of zinc, and on them a piece of wet cloth or card: which is to be repeated alternately, till the number required be arranged in regular succession. But, as the pieces are apt to tumble down, if their numbers be considerable, unless properly secured, it will be advisable to support them by means of three rods of glass, or baked wood, fixed into a flat wooden pedestal, and touching the pieces of metal at three equidistant points. Upon these rods may be made to slide a small circular piece of wood, perforated with three holes, which will serve to keep the top of the pile firm, and the different layers in close contact. The moistened pieces should likewise be somewhat smaller than those of metal, and gently squeezed before they are applied, to prevent the superfluous moisture from insinuating itself between the pieces of metal.

Thus constructed, the apparatus will afford a perpetual current of the animal-electric fluid, or Galvanic influence, through any conductor that communicates between the uppermost and lowest plate; and, if one hand be applied to the latter, and the other to the highest metal, a shock will be perceived, which may be repeated as often as the contact is renewed. This shock greatly resembles that given by the torpedo, or *gymnotus electricus*: and, according to the larger size of the metallic plates, the shock will be proportionally stronger. The intensity of the charge, however, is so low, that it cannot penetrate the dry skin; it will therefore be necessary to wet both hands, and to grasp a piece of metal in each, in order to produce the desired effect: its power may be considerably increased, both by an elevation of temperature, and by augmenting the number of pieces that compose the pile. Thus 20 pieces of each will emit a shock, that is very perceptible in the arms; if 100 be employed, a very severe but tremulous and continued sensation will extend even to the shoulders; and, if the surface of the skin be broken, the action of the Galvanic influence will be uncommonly painful.

The sensation of a flash, or shock with this apparatus, does not materially differ from that produced by two simple plates; but it may be effected in various ways, especially if one or both hands be applied in a wet state to the lowest plate of the pile; or any part of the face be brought in contact with a wire communicating with the top piece. Further, if a wire be held between the teeth, so as to rest upon the tongue, that organ, as well as the lips, will become convulsed, the flash will appear before the eye, and a very pungent taste will be perceived in the mouth.

In an account of some experiments on Galvanic electricity, Mr. W. Cruickshank, of the Royal Artillery, Woolwich, communicates the following particulars:

"In subjecting a number of fluids to the action of Galvanism," says he, "several facts have been discovered, which to me, at least, are perfectly new, and which appear to throw some light on the nature and powers of this new influence.

"I shall, therefore, without any further apology, give a brief detail of some of the most important, hoping that they may prove acceptable to those who are employed in the same pursuits.

"I shall not give any particular account of the apparatus employed, being a pile, and not differing materially from that in use. I shall only just observe, that it consisted of plates of zinc and silver, of about 1.6 inches square, and that the number of each employed in the following experiments varied from 40 to 100, according to the power required.

"I found that a solution of the muriate of ammonia answered better for moistening the interposed papers than common water.

"When the machine was in full action, sparks, which were perfectly visible in the day-time, could be taken at pleasure, by making a communication in the usual way between the extremities of the pile, and a small report or snap could be heard; the shock given at that time was very strong, and a gold leaf electrometer, placed in the circle of communication was very sensibly affected: these circumstances, some of which I believe have been already ascertained by Messrs. Nicholson and Carlisle, shew the strong resemblance of this influence to electricity. These gentlemen have likewise discovered that Galvanism decomposes water with much greater facility than electricity, but with phenomena somewhat different."

The following is an account of some Galvanic combinations formed by the arrangement of single metallic plates and fluids, analogous to the new Galvanic apparatus of Mr. Volta, by Mr. Humphry Davy, lecturer on chemistry in the Royal In-

situation.—Mr. Davy remarks that, “All the Galvanic combinations analogous to the new apparatus of Mr. Volta, which have been heretofore described by experimentalists, consist (as far as my knowledge extends) of series containing at least two metallic substances, or one metal and charcoal, and a stratum of fluid.” And it has been generally supposed, that their agencies are, in some measure, connected with the different powers of the metals to conduct electricity. But I have found that an accumulation of Galvanic influence, exactly similar to the accumulation in the common pile, may be produced by the arrangement of single metallic plates, or arcs, with different strata of fluids.*

Some facts, which the author then relates, induced him to suppose “that the alternation of two metallic bodies with fluids, was essential to the production of accumulated Galvanic influence, only so far as it furnished two conducting surfaces of different degrees of oxidability; and that this production would take place, if single metallic plates could be connected together by different fluids, in such a manner that one of their surfaces only should undergo oxidation, the arrangement being regular.—On this supposition I made a number of experiments on different arrangements of single metals and fluids; and after many various processes, I was enabled to ascertain, that many of these arrangements could be made active, not only when oxidations, but likewise when other chemical changes were going on in some of their parts.”

Having made observations on the different combinations formed by single metallic plates and fluids, which he divides into three classes, the ingenious author then proceeds to state that “In all the single metallic piles constructed with cloths, the action is very transient: the decomposition of the acids, and of the sulphurets, is generally completed in a few minutes; and, in consequence, the Galvanic influence ceases to be evolved.” The arrangement of all the different series may, however (by means of an apparatus constructed after the ideas of Count Rumford), be made in such a manner as to give considerable permanency to their effects. This apparatus is a box, covered with cement incapable of conducting electricity, and composed of three pieces of mahogany, each containing grooves capable of receiving the edges of the different plates proper for composing the series. One half of these plates must be composed of horn, or glass, and the other half of metallic substances; and the conductors of electricity, and the non-conductors, must be alternately cemented into the grooves, so as to form water-tight cells.

“When the apparatus is used, these cells are filled, in the Galvanic order, with different solutions, according to the class of the combination; and connected in pairs with each other, by slips of moistened cloth, carried over the non-conducting plates.

“A combination of fifty copper-plates, arranged in this manner, with weak solutions of nitrous acid, or nitrate of ammoniac, and sulphuret of potash, gives pretty strong shocks, rapidly evolves gas from water, and affects the condensing electrometer.

“It does not lose its power of action for many hours; and, when this power is lost, it may be restored by the addition of small quantities of concentrated solutions of the proper chemical agents to the fluids in the different cells.

“From two experiments made on copper and silver, it would appear, that the single metallic batteries act equally well, when the metals made use of are slightly alloyed, and when they are in a state of purity.”

Many other curious facts have transpired on this interesting discovery; but, as they have not been hitherto applied to medical purposes (though we believe that *Galvanism* may be safely, and perhaps successfully, resorted to, in *paralytic* and other cases, where the muscles require excitement), we shall content ourselves with referring the curious reader to Dr. Fowler's *Essay on Animal Electricity*, 8vo.;—for a further account of Signor Volta's discovery, to the volume of the *Philosophical Transactions* above cited; and to the 4th volume of Mr. Nicholson's *Journal of Natural Philosophy*; and, for later discoveries, to the *Journals of the Royal Institution of Great Britain*, where the subject is perspicuously treated.

GAME-LAWS (*Encycl.*). The following is a short sketch of the laws, as they now stand (1802), relating to hares, partridges, pheasants, and other game.

The penalty for killing in the night a hare, partridge, or pheasant,—qualified or unqualified, is *§l.*

Any unqualified person exposing to sale a hare, partridge, pheasant, or other game, is liable to a penalty of *§l.*

If any hare, pheasant, partridge, or other game, be found in the shop, house, or possession of any poulterer, saleman, fishmonger, cook, or pastry-cook, or of any person not qualified in his own right to kill game, or entitled thereunto under some person so qualified, it shall be deemed an exposing thereof to sale.

For selling a hare, partridge, pheasant, or other game,—qualified or unqualified, *§l.*

Any unqualified person using tunnels or other engines, to kill or destroy a hare, partridge, pheasant, or other game, forfeits *§l.*

Any unqualified person keeping and using greyhounds, setting-dogs, lurchers, tunnels or other engines, to kill or destroy hares, partridges, pheasants, or other game, is liable to *§l. penalty*—the *§l. penalty* is either for keeping or using.

[Persons taking, killing, destroying, carrying, selling, buying, or having in their possession, any partridge, between the 1st of February and the 1st of September,—qualified or unqualified, *§l. 39 Geo. 3. c. 34.*]

For using greyhounds, lurchers, or setting-dogs*, to kill a hare, partridge, or pheasant,—unqualified, *§l.*

For killing a pheasant, between the 1st of February and 1st of October,—qualified or unqualified, *§l.*

[The information in the above cases must be laid within fix calendar months, before a justice of the peace, or by action of debt, bill, plaint, or information. The whole penalty to be given to the informer, with double costs, if brought on in the courts of Westminster.] Half to the informer and half to the poor.

For tracing in the snow, or shooting with a gun or long bow, a hare,—qualified or unqualified, imprisonment for 3 months, or fine 1*l.*

For using snares to take or kill a hare,—qualified or unqualified, imprisonment one month, or fine 10*s.*

[The information in the above cases must be laid before a justice of the peace within one year.]

The informer to be entitled to all costs and charges, and to half the penalty, the other half to be given to the poor of the parish.

Any game-keeper killing or taking a hare, pheasant, partridge, or other game, under colour of being for the use of the lord of the manor, and afterwards selling and disposing thereof without the consent of the said lord of the manor—upon conviction, on the complaint of such lord, and on the

* Greyhounds, lurchers, and setting-dogs, are the only dogs for keeping and using which the penalty of *§l.* is levied. But by another statute, a penalty not exceeding 20*s.* may be levied for keeping and using the above or any other dogs.

oath of one witness, before a justice, shall be committed to the house of correction for three months, and there kept to hard labour.

Any person who shall destroy, sell, or buy any hare, pheasant, &c. and shall in three months make discovery of any higher, chapman, carrier, innkeeper, alehouse-keeper, or victualler, that hath bought or sold, or offered to buy or sell, or had in their possession, any hare, pheasant, partridge, &c. so as any one shall be convicted; such discoverer shall be discharged of the pains and penalties hereby enacted for killing or selling such game, and shall receive the same benefit as any other informer.

Any justice of the peace, and lord within his manor, may take away any such hare, pheasant, partridge, &c. from any higher, chapman, innkeeper, victualler, or carrier, or any other person not qualified, which shall be found in his custody or possession.

Any person that shall knowingly and wilfully kill, take, or destroy, or use any gun, dog, snare, net, or other engine, with intent to kill, take, or destroy, any hare, partridge, or other game, in the night, viz. between the hours of seven at night and six in the morning, from the 12th of October to the 12th of February, and between the hours of nine at night and four in the morning, from the 12th of February to the 12th of October; or in the day-time on a Sunday or Christmas-day; shall forfeit for the first offence not exceeding 20*l.* nor less than 10*l.* For the second offence not exceeding 30*l.* nor less than 20*l.* For the third and every other subsequent offence, 50*l.*

[The information to be laid within one calendar month before a justice of the peace. The informer to be entitled to all costs and charges, and to half the penalty, the other half to be given to the poor of the parish.]

No person shall shoot with any cross-bow, hand-gun, or demihake, unless such person is really possessed of 100*l.* per annum, on pain of forfeiting 10*l.*

No person, of what estate or degree soever, shall shoot with, carry, keep, use, or have in his possession, any hand-gun, not being in the stock and gun of the length of one yard; or any hagbut, or demihake, not being in the stock and gun of the length of three quarters of a yard, on pain of forfeiting 10*l.*

Any person having 100*l.* per annum as above, may seize every such cross-bow, hand-gun, &c. being so deficient in length; but shall break and destroy them in 20 days after such seizure, on pain of forfeiting 2*l.*

No person shall command his servant to shoot with any cross-bow, hand-gun, hagbut, or demihake, at any deer, fowl, or other thing, except at a butt or bank of earth, on pain of forfeiting 10*l.*

N. B. Persons qualified to kill game, must be in possession of lands, tenements, or some other estate of inheritance, either in right of themselves or their wives, of the clear yearly value of 100*l.*—or for life, or lease of 99 years of 150*l.* per annum; other than the son and heir of an esquire, or person of a higher degree, or lord of a manor, or keepers of parks, chases, or free warrens.

The following is Lord Mansfield's opinion: "An unqualified person may go out to beat the hedges, bushes, &c. with a qualified person, and to see the game pursued or destroyed, provided the unqualified person has no gun or other engine with him for the destruction of the game, without being subject to a penalty."

The licences for killing game are under the following regulations:

By the 25 Geo. III. c. 50. and 31 Geo. III. c. 21. every person who shall use any dog, gun, net, or other engine, for

the taking or destruction of game (not acting as gamekeeper), shall deliver in an account in writing, containing his name and abode, to the clerk of the peace, and annually take out a certificate thereof; and every such certificate shall be charged with a stamp-duty of 2*l.* 2*s.* and 1*l.* 1*s.* making in the whole 3*l.* 3*s.*

Every deputation of a gamekeeper shall be registered with the clerk of the peace, and such gamekeeper shall annually take out a certificate thereof; which certificate shall be charged with a stamp duty of 10*s.* 6*d.* and 10*s.* 6*d.* making in the whole 1*l.* 1*s.*

Clerks of the peace delivering a certificate shall be entitled to 1*s.* for their trouble.

Every certificate to bear date the day when issued, and to continue in force until the 1st day of July then following.

Any person that shall use any greyhound, hound, pointer, setting-dog, spaniel, or other dog, or any gun, net, or engine, for taking or killing of game, without a certificate, is liable to a penalty of 20*l.*

If any gamekeeper shall, for the space of twenty days after appointment, neglect or refuse to register his deputation and take out a certificate thereof, he is liable to the penalty of 20*l.*

This act not to extend to the royal family.

If any gamekeeper, who shall have registered his deputation, and taken out a certificate thereof, shall be changed, and a new gamekeeper appointed in his stead, the first certificate is declared null and void, and the person acting under the same, after notice, is liable to the penalty of 20*l.*

Any person in pursuit of game, who shall refuse to produce his certificate, or to tell his name and place of abode, or shall give in any false or fictitious name or place of abode to any person requiring the same, who shall have obtained a certificate, is liable to the penalty of 50*l.*

The certificates are not to authorize persons to kill game at any time prohibited by law, nor give any person any right to kill game, unless such person shall be qualified so to do by the laws now in being; and if he is not qualified, although he may have such certificate, he is liable to the same penalties as if this act had not passed.

Witnesses refusing to appear on justice's summonses, or appearing and refusing to give evidence, forfeit 10*l.*

Penalties exceeding 20*l.* are to be recovered in any of his Majesty's courts of record at Westminster; and penalties not exceeding 20*l.* are recoverable before two justices, and may be levied by distress.

N. B. The above penalties go half to the king and half to the informer, if sued for within six months. 26 Geo. III. c. 82.

GANDERSHEIM, a town of Lower Saxony, in the duchy of Brunswick Wolfenbützel, with a celebrated muntery, 17 miles S.W. of Götting. Long. 18. 20. E. Lat. 51. 54. N.

GANDIA, a sea-port of Spain, in Valencia, with a small university, 55 miles N. of Alicante. Long. 0. 20. E. Lat. 39. 6. N.

GANDICOTTA, a town of the peninsula of Hindoostan, subject to the regent of Mysore, remarkable for a strong fortress, and a diamond mine near it. It is seated on the river Pennar, between Gooty and Cuddapa.

GANDINA, a town of Italy, in the Bergamasco, 10 miles N.E. of Bergamo.

GANGEA, or GANEA, a town of Persia, in the province of Erivan, 105 miles S. by E. of Tefflis. Long. 45. 50. E. Lat. 41. 10. N.

GANGELL, a town of Westphalia, in the duchy of Juliers, 12 miles S.E. of Ruremonde. Long. 5. 48. E. Lat. 51. 8. N.

GANGOTRI, a town of Thibet, on the Ganges, 138 miles N. of Delhi. Long. 76. 35. E. Lat. 33. 8. N.

GANGPOUR, a town of the peninsula of Hindoostan, in the country of Orissa, 226 miles S. of Patna. Long. 83. 57. E. Lat. 21. 25. N.

GANJAM, a town of the peninsula of Hindoostan, in one of the Northern Circars, subject to the English. It lies on the Bay of Bengal, between a river and the S.W. end of Chilka Lake. Long. 85. 20. E. Lat. 19. 22. N.

GANNAT, a town of France, in the department of Allier, 30 miles S. of Moulins.

GAOJA, a country of Africa, to the W. of Nubia. The inhabitants are said to be barbarous and uncivilized. It has a town of the same name, situate on a large lake. Long. 26° E. Lat. 16° N.

GAP, an ancient town of France, in the department of the Upper Alps, and lately a bishop's see. It was taken in 1692, by the Duke of Savoy, who burnt a great part of it. Gap is seated on the small river Bene, at the foot of a mountain, in which some mineral waters are found, 27 miles N. of Sisteron. Long. 6. 10. E. Lat. 44. 34. N.

GAPSAL, a town of Russia, in the government of Revel, 36 miles W.S.W. of Revel. Long. 60. 10. E. Lat. 59. 5. N.

GARACK, an island in the gulf of Persia, remarkable for the fine pearls fished upon its coasts. Long. 48. 0. Lat. 28. 15. N.

GARD, a department of France, including part of the late province of Languedoc. Nîmes is the episcopal town.

GARD, PONT DU, a Roman aqueduct, in France, nine miles N.E. of Nîmes, erected, it is supposed, by Agrippa, in the time of Augustus. It is 160 feet in height, and consists of three bridges rising above each other, and uniting two craggy mountains. The highest of these bridges has six arches, of great blocks of stone, without cement; the centre one has eleven; and the lowest (under which flows the Gardon, an inconsiderable, but rapid river) has 36. Lewis XIV. when he repaired, in 1699, the damages which this stupendous work had sustained by time, caused a real bridge, over which passengers now pass, to be constructed by the side of the lower range of arches. This aqueduct was built, in order to convey to Nîmes the water of the spring of Eure, which rises near Uzès.

GARDA, a town of Italy, in the Veronese, seated at the end of a lake of its own name, 17 miles N.W. of Verona. Long. 11. 4. E. Lat. 45. 36. N.

GARDELEBEN, a town of Germany, in the Old Marche of Brandenburg. It has a trade in hops and excellent beer, and is seated on the river Beise, 32 miles N. by W. of Magdeburg. Long. 11. 35. E. Lat. 52. 41. N.

GARDENS, FOR COTTAGERS. The following extract from an account of cottagers' gardens, in the county of Cambridge, by the Rev. James Plumtree, is published by the Society for bettering the Condition of the Poor.

"At Arrington, in the month of July, 1800," says Mr. Plumtree, "I observed on the church door a notice from the Earl of Hardwick, addressed to the cottagers and labourers of the parish, 'that premiums of one guinea and a half, one guinea, and half a guinea, would be given to the three persons of that description, who should appear to have taken the greatest care of their gardens, and to have raised and brought to perfection, in the course of the summer, the greatest quantities of peas, beans, carrots, turnips, cabbages, onions, or potatoes, in proportion to the extent of ground occupied.' The gardens were to be inspected by his lordship's gardener, and three other persons appointed for that purpose, as often, and at such times, as they might think proper; and

the premiums were to be adjudged on the 20th of October. Such persons as wished to be considered as candidates for the premiums, were previously to signify their intentions to the judges.

"A plan so well calculated to promote the industry, comfort, and resources of the cottager, and even of those candidates who should not be so fortunate as to gain the rewards, naturally excited curiosity; and on further enquiry it appeared that his lordship had instituted the same premiums in his other parishes of Wimple and Whaddon.

"When the time for adjudging the premiums was past, anxious to know the result, I made enquiries, and found that the plan, both as to external neatness, and the internal comfort and supply of their families, had fully answered. In order that these means of promoting the industry and comforts, and consequently improving the morals of the cottager, and rendering every village a pleasing scene of rural plenty and happiness, might be made known, and thereby the heads of other parishes be engaged to follow so benevolent an example, I inserted a statement of the above, with the names of the successful candidates, in the Cambridge Chronicle, for November 29, 1800.

"In the parish of Hinxton, in the same county, upon the first mention of these premiums, the principal land-proprietor immediately came into the plan, and gave notice that similar premiums would be distributed to the cottagers and labourers of that parish for the ensuing year. And as he and I purposed being two of the inspectors, I resolved to go over to Wimple, and see the gardens, and gain some further information respecting them.

"Accordingly, on the 18th of December, I went over to Wimple, and, accompanied by his lordship's gardener, visited the gardens of the successful candidates. All three of them lay together amongst others, fix in number, with a strong outward fence enclosing them, and divided from each other by young quick hedges, in a very thriving condition. Each garden might be about 16 poles; and, though it was so late in the season, and the principal crops were off the ground, yet the ground was in excellent order, and well stocked with cabbages, kale, &c. for winter vegetables. The potatoes and onions, of which each had a sufficient stock, were some of the finest I have seen this year. The cottages, to which these gardens belong, have been built within a few years by his lordship, and are of brick and very commodious; besides the garden, each has its pig-stye and other conveniences: a pond of water is near at hand. Even taste is displayed in these rustic scenes; and a honey-suckle, twining round a pole, formed an arch over the entrance into some of the gardens. We next visited the garden of another cottager, who, though he had not gained one of the premiums, had been distinguished for his industry. It was not above three poles of ground, but it was well stocked, and in good order.

"The garden of the cottager who gained the first premium at Arrington, was larger than those at Wimple. It might be about 20 poles. This had been kept in order by a very hard working man with a family of seven children; the eldest of which, a girl, was about 15 years of age; he used to work at it early and late. Besides a variety of other vegetables, he had got from it 50 bushels of potatoes, which at that time sold at 4s. per bushel. The gardens of the two other successful candidates, and others which I visited, were all in good order, and well stocked for the time of the year. As I thought I could not make a more acceptable present to these sons of industry, I took with me some of the *Information to Cottagers*, published by the society; a copy of which I gave at each cottage.

"Besides the encouragement given to the cottagers in their

gardens, he permits them to plant potatoes in his new plantations, and on the fallows, provided they dung the ground. One man from six loads of dung, had got 70 bushels of potatoes. Some waste ground by the road side had likewise been enclosed for the poor, which they sowed in what is called *lazy bed*. The method of doing this is, a space of eight feet wide is marked out for the bed, and then another two feet wide for the path, and so on. The potatoes or eyes, are laid on the sward, in alternate rows; the sward is then dug up from the path, and laid over the potatoes, and as they grow they are earthed up with the soil out of the path, which likewise serves as a drain, if the weather should prove wet.

"As I found it with difficulty that three persons were selected at Whaddon, deserving of the premiums, and that the gardens* were not so well worth seeing, I did not go thither; but was happy to find that a spirit of exertion began to be excited among the cottagers there, and they had promised better for the ensuing year.

"When the premiums had been awarded, the nine successful candidates, and six others (three from each of the parishes of Wimple and Arrington, recommended to Lord Hardwick's generosity on account of their industry), attended at church on the Sunday following, after which the gardener conducted them into the great hall, where his lordship distributed the rewards, with a gratuity to each of the others, with some good advice on the occasion; recommending industry and virtue in general, and promising his friendship so long as they were deserving of it.

"The advantages arising from this plan, appear to be so very obvious, that it seems scarcely necessary to enumerate them. For the sum of three guineas in a parish, a number of families; perhaps all the cottagers, are excited to industry. A valuable stock of vegetables is produced, both for summer and winter consumption; and great assistance given towards the keep of a pig. Besides the good accruing to the cottager in thus finding useful and innocent employment for his leisure hours, and in keeping him from the alehouse, an example is set to his family; which will probably be trained up, under his care, to follow the same useful employment throughout life. At the same time the cottager must derive no small degree of satisfaction, from the idea that he is become the object of the attention, and commendation, of his richer neighbour.

"The only difficulty which seems to occur, is in forming a correct estimate of the comparative merits of the gardens. This, however, I think is more in appearance, than in reality. I do not apprehend that the sum total of the excellence will often be so nicely balanced as to make it difficult. The requisites, in the judges, seem to be *science* and *impartiality*. The first of these was, most unquestionably, possessed at Wimple, and there is no cause to doubt of the existence of the other. At Hinxton, however, to the head and under gardener, we have added a very honest farmer and ourselves; thinking that some additional advantage might accrue from our attention; and from our being able to judge in some degree of the other estimates, by going our rounds, keeping an eye to the cottager, and on his cottage, his family, and his garden; and thus getting an insight into the real merits of our poorer neighbours.

"The method of estimating seems to be, to measure the ground of each candidate; and, at proper times, to go round, and value the respective crops. He, who produces most in

proportion to his ground, is the most deserving. A paper divided into columns, or a small memorandum book, with the name of the candidates at the top of each column or page, and their respective portions of ground, should be provided, and the memorandums and estimates placed under each. Two things seem especially necessary to demand attention; one, that the visits should be uncertain, in order that the cottager may be obliged to be always prepared; and the other, that the cottager may have the power to invite a visit, in order that his crops may be seen at the time when he himself thinks them in perfection."

GATEHOUSE, a considerable village in Kirkcubrightshire, at the mouth of the river Fleet. Here is a cotton-mill; and, sloops come up the river, within a short distance of the town. It is nine miles N.W. of Kirkcubright.

GAVARDO, a town of Italy, in the Bresciano, seated on the Weiße, seven miles W. of Lake Garda. Long. 10. 9. E. Lat. 45. 40. N.

GAUDENS, Str. a town of France, in the department of Upper Garonne, seated on the Garonne, eight miles N.E. of St. Bertrand. Long. 0. 56. E. Lat. 43. 1. N.

GAVEREN, or **WAVAREN**, a town of Austrian Flanders, seated on the Scheldt, eight miles S. of Ghent. Long. 3. 51. E. Lat. 50. 56. N.

GAVI, a town of Italy, in the territory of Genoa, seated on the Lemo, 19 miles N.W. of Genoa. Long. 8. 57. E. Lat. 45. 40. N.

GAUTS, or **INDIAN APPENNINES**, a stupendous wall of mountains, extending from Cape Cormorin, the S. extremity of Hindoostan, to the Tapti, or Sûrat River, at unequal distances from the coast; in one short space only, it approaches within six miles, the common distance is 40, and it seldom exceeds 70. They rise abruptly from the low country, called the Concan, or Cockum; supporting, in the nature of a terrace, a vast extent of fertile and populous plains, which are so elevated, as to render the air cool and pleasant. This celebrated ridge does not terminate in a promontory when it approaches the Tapti; but, departing from its meridional course, it bends eastward, in a wavy line, parallel with the river; and is afterwards lost among the hills, in the neighbourhood of Burhampour. In its course along the Tapti, it forms several passes, or descents (that is Gauts, according to the original import of the word, which means a landing-place), toward that river.

GEARON, or **JARON**, a town of Persia, in Faristan, in whose territory the best dates of Persia are produced. Long. 51. 17. E. Lat. 28. 15. N.

GEFLE, the capital of the province of Gefrike, in Sweden, seated on three branches of a river of the same name, which begins to be navigable here, and falls, in a short distance, into a bay of the Baltic. It is the most commercial town in this northern part of Sweden; and its exports are principally iron, pitch, tar, and planks. It is 55 miles N. by W. of Stockholm. Long. 17. 0. E. Lat. 63. 0. N.

GEGENBACH, a free imperial city of Suabia, and under the protection of the house of Austria. It is seated on the Kinzia, 12 miles S.E. of Strasburg. Long. 8. 2. E. Lat. 48. 24. N.

GEHMEN, a town of Westphalia, situate on the Aa, 16 miles N.E. of Wesel. Long. 6. 43. E. Lat. 51. 36. N.

* In a separate sheet is added a cottager's garden calendar; to inform and assist those cottagers who wish to make the most of their gardens, for the benefit of themselves and their families. Some of the articles are directed to a little profit by sale. It may be had gratis, at Hatchard's, Piccadilly, London, by the members of the Society.

† There were 14 candidates at Wimple, 12 at Arrington, and 10 or 11 at Whaddon.

GELEKIRCHER, a town of Westphalia, in the duchy of Juliers, eight miles N.W. of Juliers. Long. 5. 56. E. Lat. 51. 2. N.

GEILLDORF, a town of Suabia, near the river Kocher, with a castle belonging to the lords of Limpurg.

GEISLINGEN, an imperial town of Suabia, 17 miles N.W. of Ulm. Long. 10. 3. E. Lat. 48. 36. N.

GEISMAR, a town of Germany, in the principality of Hesse, 14 miles N.N.W. of Cassel, and 22 W. of Gottingen. Long. 8. 57. E. Lat. 51. 19. N.

GEMAPPE, a village of Austrian Hainault, three miles W. by S. of Mons, famous for a victory which the French obtained here over the Austrians, Nov. 5, 1792; in which the carnage on both sides was so great, that three coal-pits adjacent were filled up with the dead bodies of men and horses.

GEMBOLOURS, a town of Austrian Brabant, with an ancient abbey. Don John of Austria gained a battle here over the Dutch in 1578; and it was twice burnt down, in 1628 and 1712. It is seated on the Orneau, 22 miles S.E. of Brussels. Long. 4. 51. E. Lat. 50. 37. N.

GEMINIANI, Sr. a town of Tuscany, in the Florentino, seated on a mountain, in which is a mine of vitriol, 25 miles S.S.W. of Florence.

GEMMINGEN, a town of Germany, in the palatinate of the Rhine, 30 miles E. of Philippsburg. Long. 9. 13. E. Lat. 49. 6. N.

GEMUND, an imperial town of Suabia, with a manufacture of chaplets or beads. It was taken by the French in August 1796; and is seated on the Reims, 30 N. by W. of Ulm. Long. 9. 48. E. Lat. 48. 48. N.

GENAP, a town of Austrian Brabant, with an ancient castle, seated on the Dyle, 15 miles S.E. of Brussels. Long. 4. 40. E. Lat. 50. 40. N.

GENEVOIS, a duchy of Savoy, of which Geneva and its territory were formerly a part. Annecy is the capital.

GENGENBACH, a town of Suabia, 10 miles S.E. of Straßburg. Long. 7. 53. E. Lat. 48. 28. N.

GENGOUX DE ROYAL, Sr. a town of France, in the department of Saône and Loire, remarkable for its excellent wines. It is seated at the foot of a mountain, 17 miles S.W. of Chalons. Long. 4. 43. E. Lat. 46. 37. N.

GENIEZ, Sr. a town of France, in the department of Aveiron, 24 miles N.E. of Rhodéz. Long. 3. 0. E. Lat. 44. 35. N.

GENIS, a town of Savoy, seated on the Guier, 12 miles W. of Chambery. Long. 5. 30. E. Lat. 45. 40. N.

GENLIS, a town of France, in the department of Aisne, 12 miles S. of St. Quentin.

GENOA, a territory and republic of Italy, extending along that part of the Mediterranean called the gulf of Genoa, 152 miles; but its breadth is very unequal, being from eight to twelve miles. Where it is not bounded by the sea, it is bordered from W. to E. by Piedmont, Monterrat, Milan, Placentia, Parma, Tuscany, and Lucca. It is populous, well cultivated, and fertile near the sea; but the inner parts are mountainous, and barren in several places, having neither trees nor grass upon them. The corn grown is insufficient for its own consumption; but this is amply compensated by its vineyards, and abundance of excellent fruits, particularly lemons, oranges, pomegranates, almonds, and figs; and its mulberry and olive trees are innumerable.

GENTIAH, a town of the kingdom of Aflam, 370 miles E. of Patna. Long. 92. 10. E. Lat. 25. 10. N.

GEOGRAPHY (*Encycl.*). In the British Magazine for 1800 are the following Observations on the Geography of Homer's *Odyssey*, which are extremely curious and interesting.

The accidental geography of Homer seems never to have been examined with due accuracy, and the received opinions concerning it are liable to very strong objections. The learned Abbé Banier enquires *qui est ce qui peut dire où étoient les Cimmériens d'Homère, et l'Île de Calypso?* The Roman writers, whose national vanity arrogated the entire western geography of Homer to Italy and Sicily, may be considered as the predecessors of Rudbeck; who, perhaps with equal reason, has drawn the whole of that geography to Scandinavia.

For the sake of the general reader we shall omit the original passages, and content ourselves with Mr. Pope's translation of the *Odyssey*. Hence it will appear; 1. That Ulysses leaving Troy attacked the *Cicones*, beneath the mountain of Iliarus, in Thrace. Book ix. v. 41. *et seq.*

The winds from Ilion to the Cicon's shore,
Beneath cold Iliarus, our vessels bore;
We boldly landed on the hostile place,
And sack'd the city, and destroy'd the race.

2. That a violent north wind drove them down on *Cythera*, an island at the south-eastern corner of Peloponnesus. Book ix. v. 77. *et sequent.*

Strong was the tide, which by the northern blast,
Impell'd our vessels on Cythera cast.

3. That the tempest, in *ten days*, conveyed him to the coast of the *Lotophagi*, in the middle of the northern shore of Africa.—*Ibid.* v. 95. *et sequent.*

4. From the land of the *Lotophagi* they were borne along unknown coasts, and through unexplored seas, till they came to the land of the *Cyclops*, and the island of *Lachæa*. Verse 119, &c.

V. 133.—Oppos'd to the Cyclopean coasts, there lay
An ile, whose hills their subject fields survey;
Its name Lachæa, crown'd with many a grove,
Where savage goats thro' pathless thickets rove.

It would be difficult in this chorography to discover any resemblance of Sicily. The land of the *Cyclops* appears evidently to belong to the continent; and the general geography of the voyage must lead us to infer that it was in that part of Africa where Carthage was afterwards to bid defiance to Rome.

5. From the land of the *Cyclops*, Ulysses returned to the island of *Æolus*, probably one of the *Lipare*, on the western coast of Sicily; and in ten days of rapid navigation with a favourable wind, the special and miraculous gift of *Æolus*, they discovered *Ithaca*. Book x. v. 31.

6. Driven back to the island of *Æolus*, v. 59, the tempest still rages from the east; and in six days and nights drives them to the shore of the *Leirigons*, and the city of *Lamos*, in all appearance situated in Spain.

7. The tempest further impels them to the island of *Circe*, seemingly one of the Fortunate Islands, or what are now called the *Canaries*. That the island of *Circe* belonged to the Fortunate group, is positively asserted by several ancient writers.

8. Hence, Book xi. he proceeded to the land of the *Cimmeri* in one day, by the potency of *Circe's* magic. All the ancient traditions bear that his voyage lay along Portugal (where stood *Ulyssipona*); and thence even to Germany and Caledonia, where were the altars of Ulysses (*Tacit. Germ. chap. 3.*) These circumstances, however fabulous, evince the extensive ideas entertained by the ancients concerning the navigation of Ulysses.

9. Upon leaving the island of Circe, Ulysses endeavours to navigate homewards, by the rocks of the *Syrens*, and Scylla and Charybdis. The Syrens in all appearance dwelled in the islands styled the *Baleares*, now Majorca and Minorca.

The strait of Scylla and Charybdis was certainly between *Cosica* and *Sardinia*; for,

10. Long after passing that strait he arrived at *Trinacria*, which all grant to be Sicily; whereas if we take Scylla and Charybdis in the modern acceptation, when he had passed them he must in fact have passed Trinacria; instead of coming to it afterwards. An additional argument also here arises, that the Cyclops were not inhabitants of Sicily, for Homer mentions Trinacria as the island where the flocks of Apollo pastured, and says not one word of the Cyclops.

11. The ship leaving Trinacria is wrecked, and a *south* wind drives Ulysses back, through the strait of Scylla and Charybdis, to *Ogygia*, the island of Calypso, probably one of the *Hierres* on the coast of France.

12. In seventeen days and nights he reaches the coast of Phæacia. Book v. v. 345.

And now rejoicing in the prosperous gales,
With beating heart Ulysses spreads his sails;
Plac'd at the helm he sat, and mark'd the skies,
Nor clos'd in sleep his ever-watchful eyes.
There view'd the Pleiads, and the northern team,
And great Orion's more refulgent beam;
To which, around the axle of the sky,
The bear, revolving, points his golden eye;
Who shines exalted on th' ethereal plain,
Nor bathes his blazing forehead in the main.
Far on the left those radiant fires to keep,
The nymph directed, as he sail'd the deep.
Full seventeen days he cut the foamy way,
The distant land appear'd the following day;
Then swell'd to sight Phæacia's dusky coast,
And woody mountains, half in vapours lost,
That lay before him, indistinct and vast,
Like a broad shield amid the wat'ry waste.

From Phæacia Ulysses sail'd to Ithaca, in *one night*. The island of Ogygia has been absurdly placed on the east of Italy, at about twice the distance of Phæacia from Ithaca: whereas Ulysses employed seventeen days and nights, even with a prosperous gale, to sail from Ogygia to Phæacia, and only one night (Book xiii. v. 112) to pass from Phæacia to Ithaca!

Some observations on the state of geographical knowledge, at that remote period, here naturally suggest themselves. There are two errors which have greatly impeded the progress of our knowledge of ancient geography. The first, and the most destructive of just ideas on the subject, is that of those who have too far extended the knowledge of the ancients; the second, and by far the most rational, is that which restricts it within narrow bounds.

Sir Isaac Newton has attempted very much to reduce the Pagan chronology, by calculations from celestial appearances, which M. Bailly has since mathematically demonstrated, in his *Astronomie Ancienne*, are anterior by four or five hundred years to the period ascribed by our great English philosopher. The chief cause of Sir Isaac's failure was his approximation of celebrated events, while he seems to forget that tradition will preserve equally fresh a remote event of vast consequence, or of striking splendour, with a more recent occurrence of inferior moment. Thus, in the darkness of night, a beacon at the distance of thirty miles may display a similar appearance to that of a torch at the distance of three.

In like manner, if we attempt to compress the pristine, precise notions of geography, within too narrow and connected limits, we may fall into gross errors. The Phœnicians, and other nations on the Mediterranean sea, ever adventuring in quest of fresh sources of gain, or impelled by storms, and the prevalence of certain winds, could not fail, even in very early times, to discover every region adjacent to that vast basin. Nature had opened to them, as it were, a highway, which they could hardly help exploring to its furthest extremity. The *Tharjish* of Solomon is generally allowed to have been the *Tartessus* of the ancients near Cadiz, the port whence the silver from the Spanish mines was brought to the oriental world. But not to waste time in learned discussion, it is well known that the Phœnicians had, many ages before the days of Homer, made numerous discoveries in the west of Europe. Of these discoveries, when retailed by tradition, several confused notions must have been formed. Homer, certainly no stranger to Phœnician science, and desirous to enrich his poem with the new and the marvellous, has no doubt availed himself of their furthest discoveries; and the confined limits within which we restrict the voyage of Ulysses, seems, in the first place, to have proceeded from the vanity of the Roman writers; and, in the next place, from the complete inattention which the moderns have paid to the subject.

GEORGE, ST. (*Encycl.*). To what has been said in our original article, we wish to add the following curious disquisition on the figure of St. George, the patron of England, as it is found on the coins of Russia. See plate 33.

St. George, the patron-saint of England, and of the order of the Garter, is much revered in Russia, and his figure occurs in all the churches. He is represented as usual, riding on a horse, and piercing a dragon with his lance. This same device also forms part of the arms of the Russian sovereign, and is observed upon several of the coins. As most persons endeavour, if possible, to derive every custom and allusion from their own country, some of the English historians have conjectured, that Ivan Vassilievitch the Second, being presented with the Garter by Queen Elizabeth, assumed the George and the Dragon for his arms, and ordered it to be stamped upon the current money. But this supposition is erroneous, as it by no means appears, that the Tzar was created a knight of the Garter; and it is certain that the sovereigns of Moscow bore this device before they had the least connection with England; for the arms of Moscow are thus described by Chancellor, the first Englishman who discovered Russia, as being affixed to a dispatch sent in 1554, from Ivan Vassilievitch to Queen Mary:—"This letter was written in the Moscovian tongue, in letter much like to the Greeke letters, very fair written in paper, with a broad seale hanging at the same, sealed in paper upon waxe. This seale was much like the broad seale of England, having on the one side the image of a man on horseback in complete harness fighting with a dragon." Hackluyt, vol. i. p. 255.

The Russian antiquaries find great difficulty in endeavouring to ascertain the origin of St. George, and his first introduction into their country.

Among a list of the Russian coins accompanied with engravings, published by Le Clerc, are several of a very early date, which represent the figure of a horseman spearing a dragon: one particularly of Michael Androvitz, which appears to have been struck in 1305, 40 years before the institution of the order of the Garter. From this period numerous Russian coins are successively distinguished by the same emblem. Another, struck in the reign of Vassili Vassilievitch in the 15th century, exhibits also the coarse figure of a man on horseback piercing a serpent or a dragon: of which device

a learned antiquary* has ingeniously given the following solution. The reign of Vasilii Vasilievitch was an epoch of great troubles and intestine dissensions between the Great Duke and his relations. During these contests he was deposed and imprisoned, and his eyes were put out; but having regained possession of the throne, he ordered the money to be impressed with the figure of a man on horseback piercing a serpent, as an emblem of ingratitude punished and rebellion defeated. Soon after this period the succeeding great dukes used this device for their arms, instead of the custom which before prevailed of adopting the head of the saint by whose name they were baptized. About the beginning of the seventeenth century, wings being added to the serpent, it was changed into a dragon, and the knight on horseback into St. George. But this is conjecturing too curiously, and seems too far-fetched a solution for so barbarous an age. It is far more probable, that the Russians received the image of St. George and the dragon either from the Greeks or from the Tartars, by both of whom he was much revered; by the former as a Christian saint and martyr, and by the latter as a prophet, or a deity. With respect to the Greeks, we know from history that in the fourth or fifth century he was much worshipped amongst them; and that, afterwards, the crusaders, during their first expedition into the Holy Land, found many temples erected in his honour. The Russians, therefore, who were converted to Christianity by the Greeks, certainly must have received at the same time a large catalogue of saints, which made an essential part of the Greek worship, and we have no reason to imagine that St. George was omitted.

In a villa of Prince Dolgorucki, near Moscow, is an old basso-relievo of St. George and the dragon, found in a ruined church at Interemen, in the Crimea; it had a Greek inscription almost erased, but the words *ΑΙΩΟ ΤΕΟΡΡΟΟ*, or St. George, and the date 1330, were still legible. As it appears from this basso-relievo that he was worshipped in the Crimea so near the court of Russia, when the great dukes resided at Kiof, his introduction into that country is easily accounted for.

Notwithstanding, however, the probability of this opinion, it is very likely that the Russians received from the Tartars the image of a horseman spearing a serpent, as it is represented upon their most ancient coins, and which formed a part of the great duke's arms towards the beginning of the sixteenth century. And first, with respect to their coins: the Russians had no coins before they were conquered by the Tartars; and soon after they were brought under the Tartar yoke, they struck money: the first Russian coins bear a Tartar inscription; afterwards they have Tartar letters on one side, and Russian characters on the other; and there is still pre-

served in the cabinet of St. Peterburgh, a piece of money, exhibiting a horseman piercing a dragon, with the name of the great duke in Russian, and on the reverse a Tartar inscription.

With respect to the arms, Herberstein, in his account of his embassy to Moscow in 1718, under Vasilii Ivanovitch, has given a wooden print of that prince, at the bottom of which are engraved his arms, representing a naked man on horseback[†] piercing a serpent with his lance. See fig. A. The equestrian figure in this device has a Tartar-like appearance, and is so coarse and rude, that it seems to have been derived from a people in a far more uncivilized state of society than the Greeks: add to this, as the Greeks always represented St. George clad in armour, what could have induced the Russians, if they had adopted this emblem from them, to have figured the horseman naked?

Shall we conclude, therefore, that the Tartars were not unacquainted with an emblem similar to that of St. George and the Dragon? In proof of this opinion, we may venture to remark, that the story of a saint or a deity spearing a dragon was known over the east: that among the Mahometans (see Herbelot Biblioth. Orientalis, article Gergis), a person called Gergis or George, under a similar figure, was much revered as a prophet; and that similar emblems have been discovered among many barbarous nations of the east. Whether these nations took it from the Greeks, or the latter from them, is a matter that cannot be ascertained; for with respect to the real existence of such a person as St. George, no positive proofs have ever been advanced.

But whether we conclude that the Russians received the emblem of St. George from the Greeks, or from the Tartars, it will still be difficult to reconcile how under Vasilii Ivanovitch the arms of the great dukes exhibited a naked man on horseback spearing a dragon, and under his son, Ivan Vasilievitch II. the horseman is represented in armour. But perhaps we may reconcile these two opinions by supposing, that the naked man on horseback, spearing a dragon, is the Tartar emblem; and the knight in complete armour (which is evidently the figure of St. George) was adopted as the arms of the great dukes, and not improbably introduced by Ivan Vasilievitch II. in compliment to his grand-mother, Sophia, a Greek princess.

Since this period, the emblem of St. George and the dragon has uniformly been represented on the reverse of Russian coins, as may be seen by the engraving of a rouble of the late Emperors, Catharine II. See fig. B.

Although any enquiry into the origin of St. George, and his introduction into England, is foreign to the present purpose, yet it may be observed, that amongst us several contradictory opinions have been held of St. George; and a whimsical controversy has arisen, whether the patron of England

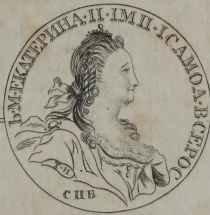
* See Tischerebetoff's Versuch neber die alten Russis. Muenzen in Journ. of St. Pet. for 1781, part II. p. 66.

† In una parte hominis nudi equo insidentis, et draconem hastâ ferientis imaginem habet; in alterâ verò parte, nomen magni ducis exprimitur. Herberstein Mosc. Descr. p. 157.

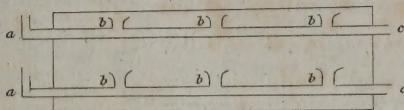
‡ The arguments brought by the ingenious Mr. Pegge to ascertain the existence and martyrdom of St. George, will serve equally to prove the existence of St. Januarius, or any other saint in the Roman Calendar. "We may depend upon it," he says, "that though at this distance of time we can recover so few particulars of St. George's story, and can arrive at so little certainty about the circumstances of it; yet the adventurers in the crusades undoubtedly regarded him as a real person, a most glorious and illustrious martyr. They found his name in the calendars; they met with various places denominated from him; they frequented his tomb and heard him invoked, and heard much of his apparitions; they saw churches and monasteries dedicated to him, and even received, as they thought, seasonable and special assistance from Heaven, through his mediation; and lastly, not to mention his relics, they could not but observe proper services appointed for him in the Greek and Roman Liturgies. After all which, it is not possible that our ancestors, on their return from the East, and in particular in the reign of King Edward III. should deem of him otherwise, than as having been once a true man, and more than an ideal figure of the brain." See Pegge's Observations on the History of St. George, in the fifth vol. of the Archaeologia, p. 5.



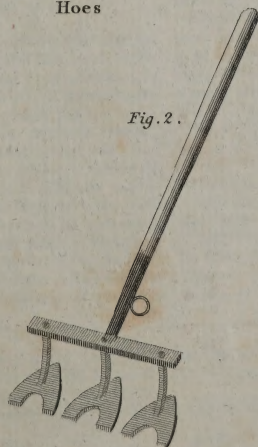
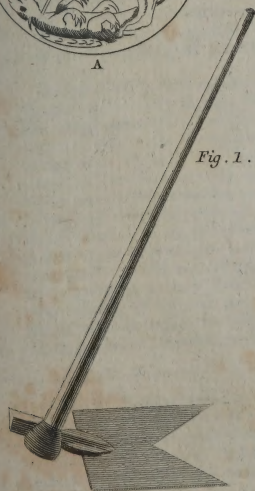
Russian Rouble



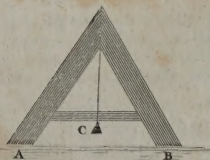
Steam flue for Hot beds.



Hoes



D. Andersons Water Level.



was a real or imaginary personage. Some are of opinion, that this history is an allegory; others maintain that the device is borrowed by the Christian church from the ancient story of Perseus and the sea-monster, of Bellerophon and the Chimera, or of Apollo and the serpent Python, or from some Egyptian hieroglyphics, or from charms and amulets worn by the Pagans*; others have traced his legend from the history of George† of Cappadocia, the Arian archbishop of Alexandria. Amongst the authors who have written upon this subject with the greatest success, must not be omitted, Mr. Byrom (Miscellaneous Poems, vol. I. p. 100), who has composed a metrical rhapsody addressed to Lord Willoughby, president of the Antiquarian Society, in which he endeavours to prove that St. George is a corruption of St. Gregory; and to use his own words:—

Now, my lord, I would ask of the learn'd and laborious,
If Ge-orgius bent a mistake for Gregorius?
In names so like letter'd it would be no wonder,
If hasty transcribers had made such a blunder;
And mistake in the names, by a flip of their pen,
May, perhaps, have occasion'd mistake in the men.
That this has been made, to omit all the rest,
Let a champion of yours, your own Selden attest;
See his book upon titles of honour—that quarter
Where he treats of St. George, and the knights of the
Garter.

And again:

This, my lord, is the matter—the plain simple rhymes
Lay no fault; you perceive, upon Protestant times:
I impute the mistake, if it should be one, solely
To the pontiffs succeeding, who christen'd wars holy;
To monarchs who, madding around their round tables,
Prefer'd, to conversion, their fighting and fables:
When soldiers were many, good Christians but few,
St. George was advanc'd to St. Gregory's due.
One may be mistaken—and therefore would beg
That a Willis, a Stukely, an Ames, or a Pegge,
In short, that your lordship, and all the fam'd set,
Who are, under your auspices, happily met
In perfect good humour—which you can inspire,
As I know by experience—would please to enquire,
To search this one question, and settle, I hope;
Was old England's old patron, a knight, or a pope?

In opposition to these opinions, several authors have entered the lists; particularly Heylin, Selden, and Fuller; and lately, Mr. Pegge endeavours to rescue this saint from annihilation, and to prove, at the same time, that he was a different personage from St. Gregory. But unfortunately for the arguments of the learned antiquarian, Mr. Byrom's treatise, which he opposes, is written in verse with so much ease, humour, and whimsical rhyming, that the reader is absolutely almost divested of his judgment, and with difficulty is prevented by the most weighty reasons from siding with the poet, who, instead of dull and dry disquisitions, treats us with much wit, couched in an easy flow of doggerel metre. However, after reading all (if any one can have patience† to read all) the disquisitions upon this subject, the reader retires without being convinced, or without yielding absolutely to any other

opinion than this, that the story of St. George is immersed in fable, and lost amid the uncertainty of ancient lore.

GERBSTADT, a town of Upper Saxony, 30 miles S.W. of Dessau, and 36 S. of Magdeburg.

GERMANS, Str. a borough in Cornwall, with a market on Friday. It was once the largest town in the county, and a bishop's see. What remains of the cathedral is used as the parish-church; and near it is the priory. The town now confists chiefly of fishermen's cottages, but is governed by a mayor, and sends two members to parliament. It stands near the sea, 10 miles W. of Plymouth, and 224 W. by S. of London. Long. 4. 24. W. Lat. 50. 22. N.

GERMAIN-LAVAL, Str. a town of France in the department of Rhone and Loire, remarkable for excellent wine. It is 18 miles S. of Roanne, and 225 S.E. of Paris. Long. 4. 2. E. Lat. 45. 50. N.

GERMAN DRAMA. See **DRAMA** in this Supplement.

GERMANO, Str. a town of Naples, in Terra di Lavoro, at the foot of Mount Cassano, and belonging to an abbey at the top of that mount. Long. 13. 59. E. Lat. 41. 13. N.

GERMERSHEIM, a town of Germany, in the palatinate of the Rhine, situate near the Rhine, five miles W. of Philipburg. Long. 17. 19. E. Lat. 49. 10. N.

GERMS, a town of the archduchy of Austria, 62 miles W.N.W. of Vienna. Long. 14. 57. E. Lat. 48. 32. N.

GEROLDSTEIN, a town of Westphalia, situate on the Kill, 24 miles N. of Treves. Long. 6. 19. E. Lat. 50. 49. N.

GERS, a department of France, which includes the late provinces of Gascony and Armagnac. It has its name from a river that waters Auch and Lectoure, and falls into the Garonne, above Agen. Auch is the capital.

GERSAU, a town of Switzerland, on the N. side of the lake of Schweiz, at the foot of the Rigi. It is a republic, the smallest in Europe. Its territory is two leagues in length and one in breadth. It contains 1000 inhabitants, who have their general assembly of burgesses, their landamman, council of regency, courts of justice, and militia. Gersau is composed entirely of scattered houses and cottages, of a very neat and picturesque appearance. The inhabitants are much employed in preparing silk for the manufacture at Basle. This republic is under the protection of the cantons of Lucern, Uri, Schwitz, and Unterwalden; and, in case of war, furnishes its quota of men. Gersau is 12 miles S.W. of Schwitz.

GERTRUDENBURG, an ancient town of Dutch Brabant, one of the principal bulwarks of the Dutch. It has a good harbour on the Maese, which here expands into a large lake, called Bies Bosch. It has been often taken, the last time by the French in 1795. It is 10 miles N. of Breda. Long. 4. 52. E. Lat. 52. 44. N.

GERUMENHI, an ancient town of Portugal, in Alentejo, with a strong castle; but was taken, in 1662, by the Spaniards. It is seated on a hill, near the river Guadiana, 18 miles below Badajoz.

GESEKE, a town of Westphalia, seated on the Weyck, eight miles from Lippe.

GESTRIKE, a province of Sweden, bounded on the N. by Helsingia, on the E. by the gulf of Bothnia, on the S. by Upland, and on the W. by Dalecarlia. It is diversified by forests, rocks, hills, and dales, pasture and arable land, lakes

* See Pettingal's ingenious Dissertation on the Original of the Equestrian Figure of the George and of the Garter.

† See Gibbon's History of the Decline and Fall of the Roman Empire, vol. II. p. 404, where the history of George of Cappadocia is investigated with great judgment and learning.

‡ Heylin's Historie of that most famous Saint and Soldier of Christ Jesus, St. George of Cappadocia, in quarto, contains 426 pages, printed very closely.

and rivers; and these beauties are much heightened by the Dam, the finest river in Sweden, which meanders through the whole extent of the province.

GEVAUDAN, a late territory of France, in Languedoc, bounded on the N. by Auvergne, on the W. by Rouergue, on the S. by the Cevennes, and on the E. by Velay. It is a mountainous, barren country; and now forms the department of Lozere.

GEX, a town of France, in the department of Ain, noted for excellent cheese. It is seated at the foot of Mount St. Claude, between the Rhone, the lake of Geneva, and Switzerland, 10 miles N.W. of Geneva. Long. 6. 1. E. Lat. 46. 20. N.

GEZIRA, a town of Diarbeck, in an island formed by the Tigris, 70 miles N.W. of Mouful. Long. 40. 50. E. Lat. 36. 36. N.

GEZULA, a province of Morocco, which is very productive, and contains mines of iron and copper. The inhabitants are numerous, and considered as the most ancient people of Africa: they live in tents, and are so independent, that they are rather the allies than the subjects of the emperor of Morocco.

GHANAH, or **GHINNAH**, a town of Cashna, seated between a lake and the river Niger, which is here called Neel-il-Abeed, or the Nile of the Negroes. It is 90 miles N.E. of Cashna, and 208 S. of Agadez. Long. 13. 12. E. Lat. 15. 55. N.

GHERGONG, a city and the capital of the kingdom of Affam. It is seated on a river which runs, in a short distance, into the Burrampooter, 400 miles N.E. of Calcutta. Long. 93. 15. E. Lat. 25. 55. N.

GHIZNI, or **GAZNA**, a town of Hindoostan Proper, in Cabul, once the capital of a powerful empire of the same name. It is called the second Medina, from the great number of illustrious persons who have been interred there. It is 54 miles S. of Cabul, and 150 E. of Candahar. Long. 68. 20. E. Lat. 16. 12. N.

GHOORBOND, a town of Hindoostan Proper, in the country of Cabul, 42 miles N.W. of Cabul. Long. 67. 52. E. Lat. 34. 55. N.

GIBBON (Edward), a celebrated English historian, was born at Putney in Surrey, on the 27th of April, 1737. He was the first-fruit of the marriage of Edward Gibbon, esq. and Judith Porten, the youngest daughter of a merchant in London. Mr. Gibbon appears to delight in tracing his pedigree from John Gibbon architect to King Edward III. who possessed lands in the hundred and parish of Rolvenden, in the district which is now called the *Weald* of Kent. In that district the elder branch of the family still adheres to its native soil, without much increase or diminution of property; but the fortunes of the younger branch, from which our historian sprang, were fluctuating.

So feeble was he, and so precarious his life during his childhood years, that at the baptism of each of his brothers (five in number) his father successively repeated the name of Edward, that, in case of the death of the eldest, this patronymick appellation might still be perpetuated in the family. His brothers and a sister died in their infancy; and, in terms of affectionate gratitude, he attributes his own preservation to the more than maternal care of a maiden aunt, his mother's eldest sister.

At the age of seven years he was delivered into the hands of Mr. John Kirby, who exercised, about eighteen months, the office of his domestic tutor; but he afterwards was sent to Kington-upon-Thames, to a school of seventy boys kept by Dr. Woodeson. He does not represent himself either as happy or as having made great progress at that school. The want of strength and activity disqualified him for the sports of

the field; his companions reviled him for the fins of his *Tory* ancestors; and his studies were frequently interrupted by sickness. After passing nearly two years at Kington, he was, in Dec. 1747, called away by the death of his mother. By this time he was well acquainted with Pope's *Homer*, the Arabian Nights Entertainments, Dryden's *Virgil*, and a translation of Ovid's *Metamorphoses*; and the entertainment which he received from these books gave him a taste for desultory reading.

After living a year with his maternal aunt, during which period he read many books on religious subjects too deep for the comprehension of a boy, he was in January 1749 entered at Westminster school, of which Dr. John Nicoll was then head master. "There (says he) in the space of two years, interrupted by danger and debility, I painfully climbed into the third form; and my riper age was left to acquire the beauties of the Latin and the rudiments of the Greek tongue. Instead of audaciously mingling in the sports, the quarrels, and the connections of our little world, I was still cherished at home under the maternal wing of my aunt, who now lived in College-street; and my removal from Westminster long preceded the approach of manhood."

He was first carried to Bath for the recovery of his health; then to Winchester, where he lived in the house of a physician; then to Bath again, where he read with a clergyman some odes of Horace and some episodes of Virgil; after which an unsuccessful trial was made to renew his attendance at Westminster school. "It might now be apprehended (says he) that I should continue for life an illiterate cripple; but as I approached my sixteenth year, Nature displayed in my favour her mysterious energies: my constitution was fortified and fixed; and my disorder, instead of growing with my growth, and strengthening with my strength, most wonderfully vanished." In consequence of this he was sent to Oxford; and before he had accomplished his fifteenth year, was, on April 3, 1752, matriculated a gentleman-commoner of Magdalen College, the tutors of which he represents as wholly regardless of his morals or his studies. Speaking of the best he says, "No plan of study was recommended for my use; no exercises were prescribed for his inspection; and at the most precious season of youth, whole days and weeks were suffered to elapse without labour or amusement, without advice or account." His contemporaries however have given different accounts of the college; and it is surely a very singular circumstance, that at this period of *idleness*, our author should have become enamoured of Sir John Marshall's *Canon Chronicon*, and have conceived the idea of writing an *Essay on the Age of Sesostris*. Such, however, was the case; and there is great reason to suppose Mr. Gibbon desirous of attributing to this negligent conduct of his tutors, his having at the age of sixteen bewildered himself in the errors of the church of Rome. On the 8th of June, 1753, at the feet of a priest in London, he solemnly, though privately, abjured the errors of heresy, and an elaborate controversial epistle, approved by his director, and addressed to his father, announced and justified the step he had taken. The old gentleman, however, in the first fury of passion having divulged the secret, the gates of Magdalen College were shut against the convert, and as it then was necessary therefore to form a new plan of education, our young Catholic was settled, on the 30th of June, under the roof of Mr. Paviliard, a Calvinist minister at Lausanne in Switzerland.

Under this amiable preceptor's tuition he describes his progress in the French and Latin classics, in history, geography, logic, and metaphysics, as uncommonly rapid; and he allows to the same man a handsome share of the honour of reclaiming him from the errors of popery. The various discriminating articles of the Romish creed disappeared like a dream;

and, after a full conviction, on Christmas-day 1754 he received the sacrament in the church of Laufanne. Thus had our author communicated with three different societies of Christians before the completion of his eighteenth year; and as such changes from church to church are always dangerous, we need not wonder that, in a mind so ill furnished as Mr. Gibbon's then was for theological investigations, they paved the way for his last change to Deism, of which he has since been the notorious advocate.

In 1757 Voltaire arrived at Laufanne, and our student's desire to see the man who was at once a poet, an historian, and, as he deemed himself, the prince of philosophers, was ardent, and easily gratified. He was received by the vain and arrogant Frenchman with civility as an English youth, but could not boast of any peculiar notice or distinction. "The highest gratification (says he) which I received from Voltaire's residence at Laufanne, was the uncommon circumstance of hearing a great poet declaim his own productions on the stage. His declamation was fashioned to the pomp and cadence of the old stage; and he expressed the enthusiasm of poetry rather than the feelings of Nature."

Mr. Gibbon now became enamoured of Mademoiselle Susan Curchod, the daughter of the minister of Crasly, in the mountains which separate the Pays de Vaud from the county of Burgundy. In terms of rapture he describes this lady as possessed of every accomplishment which could adorn her sex. She listened to the voice of truth and passion; her parents honourably encouraged the connection; and our author indulged in the dream of felicity: but on his return to England, he discovered that his father would not hear of this strange connection, and that without his consent he was destitute and helpless. "After a painful struggle (says he) I yielded to my fate. I sighed as a lover, I obeyed as a son; and my wound was infensibly healed by time, absence, and the habits of a new life." The lady consoled herself by giving her hand to the celebrated M. Neckar, then a rich banker of Paris, afterwards the minister, and at last one of the destroyers of the French monarchy.

In the spring of the year 1758 our author returned to London, where, having but few acquaintances, and hardly any friends, and being accustomed to a very small society at Laufanne, he was far from finding himself agreeably situated. This at length determined him once more to prefer the retirement of the country to the bustle of an over-grown metropolis, where he found hardly any entertainment but in the theatres.

Before he quitted Laufanne, however, he had begun a work on the study of ancient literature, which was suggested by the desire of justifying and praising the object of a favourite pursuit. "In France (says he), to which my ideas were confined, the learning and language of Greece and Rome were neglected by a philosophic age. The guardian of those studies, the Academy of Inscriptions, was degraded to the lowest rank among the three royal societies of Paris: the new appellation of *Erudits*, was contemptuously applied to the successors of Lippius and Casaubon; and I was provoked to hear, that the exercise of the memory, their sole merit, had been superseded by the nobler faculties of the imagination and the judgment. I was ambitious of proving by my own example, as well as by my precepts, that all the faculties of the mind may be exercised and displayed by the study of ancient literature." This laudable ambition continued; and in his father's house at Beiriton in Hampshire he finished his *Essai sur l'Etude de la Littérature*; which, after being revised by Mallet the poet and Dr. Maty of the British Museum, was, in 1761, published in a small 12mo. volume.

At the end of the war he again went abroad, and reached

Paris on the 28th of January, 1763, only 36 days after the disbanding of the militia in which he had borne the commission of a captain. In that metropolis he visited the palaces, churches, gardens, and theatres, was introduced to D'Alembert and Diderot, then considered as at the head of French science, and then proceeding to Switzerland, he once more took up his residence at his favourite Laufanne. Voltaire's impetuous had forced him from that town to his own castle at Ferney, where our author once visited him, without (he says) "courting his more intimate acquaintance."

The society in which Mr. Gibbon most delighted during his second residence at Laufanne was a very singular one. "It consisted of fifteen or twenty unmarried ladies of genteel families; the eldest perhaps about twenty, all agreeable, several handsome, and two or three of exquisite beauty. At each other's houses they assembled almost every day, without the control, or even the presence, of a mother or an aunt; they were trusted to their own prudence, among a crowd of young men of every nation in Europe. They laughed, they sung, they danced, they played at cards, they acted comedies; but in the midst of this carefree gaiety, they respected themselves, and were respected by the men; the invisible line between liberty and licentiousness was never transgressed by a gesture, a word, or a look, and their virgin chastity was never sullied by the breath of scandal or suspicion."

We readily agree with our author that this singular institution was expressive of the innocent simplicity of Swiss manners; and we only regret that he had not the same respect for the ladies of his own country as for those frolic females of Switzerland. He would not, in that case, have stained some of his most brilliant pages with obscene ribaldry.

We shall not follow him in his ramble through Italy, or repeat his remarks on the towns which he visited. It is sufficient to observe, that it was at Rome, on the 5th of October, 1764, while he sat musing amidst the ruins of the Capitol; that the idea of his great work first arose into his mind.

To that great work, The History of the Decline and Fall of the Roman Empire, he sat down seriously in 1768; and the history which he gives of his preparatory studies sufficiently accounts for the inaccuracy of his quotations. Through the darkness of the middle ages he explored his way in the annals and antiquities of Italy by the learned Muratori and other moderns; and seems to acknowledge that, from the beginning to the end of his work, he frequently contented himself with authorities furnished at second hand.

In 1776, the first volume of his history was published; and the success of it far surpassed his expectation. The encomiums lavished on it by Dr. Robertson and Mr. Hume in letters to the author, and the fulsome compliments which those three eminent historians paid to each other, are melancholy specimens of lettered littleness and vanity. The second and third volumes appeared in 1781; the fourth, fifth, and sixth in 1787; and Mr. Gibbon's fame was established as an historian. The work was admired both by natives and by foreigners, and translated into several of the languages of Europe. Dr. Zimmermann represents the author as excelling perhaps Hume and Robertson, who were historians of the first rank. "All the dignity (he adds), all the charms of historic style, are united in Gibbon: his periods are melody itself, and all his thoughts have nerve and vigour." This praise, however, must not be admitted without exception. Few writers, indeed, were possessed of such popular talents as our historian. The acuteness of his penetration, and the fertility of his genius, have been seldom equalled, and scarcely ever surpassed. He seizes, with singular felicity, on all the most interesting facts and situations, and these he embellishes with the utmost luxuriance of fancy and elegance of style. His periods are full

and harmonious; his language is always well chosen, and is frequently distinguished by a new and peculiarly happy adaptation. His epithets, too, are in general beautiful and happy; but he is rather too fond of them. The uniform statement of his diction sometimes imparts to his narrative a degree of obscurity, unless he defends to the miserable expedient of a note, to explain the minutest circumstances. His style, on the whole, is much too artificial; and this gives a degree of monotony to his periods, which extends, we had almost said, to the turn of his thoughts.

A more serious objection is his attack upon Christianity; the loose and disrespectful manner in which he mentions many points of morality regarded as important on the principles of natural religion; and the indecent allusions and expressions which too often occur in the work. An attack upon Christianity is not censurable merely as such; it may proceed from the purest and most virtuous motives: but, in that case, the attack will never be carried on in an insidious manner, and with improper weapons; and Christianity itself, so far from dreading, will invite every mode of fair and candid discussion. Our historian, it must be confessed, often makes, when he cannot readily find, an opportunity to insult the Christian religion. Such, indeed, is his eagerness in the cause, that he stoops to the most despicable pun, or to the most awkward perversion of language, for the pleasure of turning the Scripture into ribaldry, or calling Jesus an impostor.

Yet of the Christian religion has Mr. Gibbon himself observed, that it "contains a pure, benevolent, and universal system of ethics, adapted to every duty and every condition of life." Such an acknowledgment, and from such a writer too, ought to have due weight with a certain class of readers, and of authors likewise, and lead them seriously to consider, how far it is consistent with the character of good citizens, to endeavour, by fly insinuations, oblique hints, indecent sneer, and profane ridicule, to weaken the influence of *de pure and benevolent* a system as that of Christianity, acknowledged to be admirably calculated for promoting the happiness of individuals, and the welfare of society.

The part of the History which gave such offence to his own friend, as well as to the friends of the Christian religion in general, was the account which our historian has given of the progress and establishment of Christianity in the two last chapters of his first volume; in which he endeavours to prove that the wonderful triumph of that religion over all the established religions of the earth, was not owing to any miraculous attestations to its truth, but to five secondary causes which he enumerates; and that Christianity, of course, could not be of divine origin. Several answers appeared on this occasion, written, as we may naturally suppose, with different degrees of temper and ability. His principal opposers were Dr. Chelsum, Dr. Randolph, Dr. Watton (bishop of Llandaff), Lord Hailes, Dr. White, Mr. Aphorpe, Mr. Davis, and Mr. Taylor, author of *The Letters of Ben Mordecai*. One of them only, Mr. Davis, who had undertaken to point out various instances of misrepresentation, inaccuracy, and even plagiarism in his account, did our historian condescend particularly to answer, and that in a tone of proud contempt and confident superiority. To this Mr. Davis replied; and it is but justice to observe, that his reply bears evident marks of learning, judgment, and critical acumen, and that he has convicted our author of sometimes quoting inaccurately to serve a purpose. At his other answers Mr. Gibbon merely glanced, treating Dr. Watton, however, with particular respect; but his posthumous memoirs shew how much he felt the attacks made on him by Lord Hailes, Dr. White of Oxford, and Mr. Taylor. To Dr. Priestley, who, in his *History of the Corruptions of Christianity*, threw down his gauntlets at once to Bishop

Hurd and the historian of the Roman empire, and who presented the latter with a copy of his book, declaring, at the same time, that he sent it not as a gift but as a *challenge*, he wrote in such terms as produced a correspondence, which certainly added not to the honour of the dissenting divine.

At the beginning of the contest between Great Britain and America, our author was returned, by the interest of Mr. Eliot (now Lord Eliot), for the borough of Liskeard, and supported, with many a sincere and silent vote, the rights, though not, perhaps, the interest, of the mother country. "After a fleeting, illusive hope, prudence condemned me (says he) to acquiesce in the humble station of a mute. I was not armed by Nature and education with the intrepid energy of mind and voice. '*Vincemur strepitus, et natum rebus agendis*.' Timidity was fortified by pride; and even the success of my pen discouraged the trial of my voice."

That pen, however, was useful to the ministry whom he could not support by his eloquence in the house. At the request of the Lord Chancellor and Viscount Weymouth, then secretary of state, he vindicated, in a very able manner, against the French manifesto, the justice of the British arms; and his *Mémoire justificatif* was delivered as a state paper to the courts of Europe. He was rewarded for this service with the place of one of the lords commissioners of trade and plantations; and kept it, till the board was abolished by Mr. Burke's reform bill. For accepting this place he was severely, but most unjustly, blamed by some of the leaders of the opposition, as if he had deserted a party in which he had never enlisted, and to the principles of which he was rendered inimical both by family prepossession and by his own judgment.

On the downfall of Lord North's administration, Mr. Gibbon was of course in the opposition, deprived of an office, without the salary of which he could not conveniently support the expence of living in London. The coalition was indeed soon formed, and his friends were again in power; but having nothing to give him immediately, they could not detain him in parliament or even in England. He was tired of the bustle of the metropolis, and sighed once more for the retirement of Lausanne, at which he arrived before the overthrow of the coalition ministry, and where he lived happily till the last years of his life. It was in this retreat that he wrote the fourth, fifth, and sixth volumes of his history; and he left it only for a year, to superintend the publication of these volumes in London. This great work being concluded, he returned to the banks of the Leman lake, but found his enjoyments damped by the distress, and soon afterwards by the death, of his oldest and dearest Swiss friend. Lausanne had now lost much of its attraction; the French revolution had crowded it with unfortunate emigrants, who could not be cheerful themselves or excite the cheerfulness of others; and the demons of democracy had begun to poison the minds of the sober citizens with principles which Mr. Gibbon had always held in abhorrence. From the effects of this Gallic phreny, which began to be very visible so early as the beginning of the year 1792, Mr. Gibbon resolved to take shelter in England, and to abandon, for some time at least, what he called his paradise at Lausanne. Difficulties intervened, and forced him to postpone his journey from week to week, and from month to month; but on receiving the accounts of Lady Sheffield's death, he hastened to administer consolation to his friend, and arrived in London in the beginning of June 1793.

He continued well through the whole of that summer; but his constitution had suffered much from repeated attacks of the gout, and from symptoms of dropsy, under which he at last sunk, and died at his lodgings in St. James's street, London, on the 16th of January 1794.

To draw at once a general and just character of this extraor-

inary man, would be difficult perhaps to one who had enjoyed the pleasure of his acquaintance, and must be impossible to those to whom his person was a stranger. Of the extent of his erudition there can be but one opinion; but various opinions may be held respecting the accuracy of his knowledge. Lord Sheffield, who knew him well, and loved him much, assures us, that his conversation was still more captivating than his writings: but this could not result from the brilliancy of his wit; for of wit he declares, himself, that he had none. His memory was capacious and retentive, his penetration uncommon, and his colloquial eloquence ready and elegant; so that he could illustrate almost any topic of conversation from the copious stores of his own mind. From his private correspondence, and a journal not written for the public eye, he appears to have been a dutiful son, a loyal subject, and an affectionate and steady friend; but it is difficult to reconcile with so much moral and political worth his unfair and unmanly sneers at the religion of his country.

GIEN, a town of France, in the department of Loiret, seated on the Loire, 76 miles S.E. of Paris. Long. 2. 43. E. Lat. 47. 34. N.

GIENGEN, an imperial town of Suabia, 16 miles N.N.E. of Ulm, and 28 N.W. of Augsburg. Long. 10. 18. E. Lat. 48. 37. N.

GIENZOR, a town of Barbary, in Tripoli, 10 miles from the town of Tripoli.

GIERACE, an episcopal town of Naples, in Calabria Ulteriore, seated on a mountain, near the sea, 32 miles N.E. of Reggio. Long. 16. 40. E. Lat. 38. 13. N.

GIESEN, a town of Germany, in the landgrate of Hesse-Cassel, with a castle and a university. It belongs to the house of Darmstadt, and surrendered to the French in 1796, but was soon after taken by the Austrians. It is seated on the Lahn, 16 miles W.S.W. of Marburg. Long. 8. 41. E. Lat. 50. 30. N.

GIGA, a small island on the W. coast of Scotland, between the isle of Skye and the peninsula of Cantyre, in Argyleshire, in which county it is included. The inhabitants annually export a considerable quantity of grain.

GIGNAC, a town of France, in the department of Herault, situate on the Herault, 14 miles W. of Montpellier. Long. 3. 44. E. Lat. 43. 30. N.

GILCHRIST (Dr. Ebenezer), an eminent Scots physician, was born at Dumfries in 1707. He began the study of medicine at Edinburgh, which he afterwards prosecuted at London and Paris. He obtained the degree of doctor of medicine from the university of Rheims; and in the year 1732 he returned to the place of his nativity, where he afterwards constantly resided, and continued the practice of medicine till his death.

It may with justice be said, that few physicians of the present century have exercised their profession in a manner more respectable or successful than Dr. Gilchrist; and few have contributed more to the improvement of the healing art. Having engaged in business at an early period of life, his attention was wholly devoted to observation. Endowed by nature with a judgment acute and solid, with a genius active and inventive, he soon distinguished himself by departing, in various important particulars, from established but unsuccessful modes of practice. Several of the improvements which he introduced have procured him great and deserved reputation, both at home and abroad.

His practice, in ordinary cases, was allowed to be judicious, and placed him high in the confidence and esteem of the inhabitants of that part of the country where he lived. But his usefulness was not confined to his own neighbourhood. On many occasions he was consulted by letter from the most distant parts of the country.

VOL. X.

In different collections are to be found several of his performances, which prove that he had something new and useful to offer upon every subject to which he applied himself. But those writings which do him the greatest honour, are two long dissertations on nervous fevers, in the Medical Essays and Observations published by a Society in Edinburgh; and a treatise on the use of sea-voyages in medicine, which first made its appearance in the year 1757, and was afterwards reprinted in 1771. By means of the former, the attention of physicians was first turned to a species of fever which is now found to prevail universally in this country; and the liberal use of wine, which he was the first among the moderns to recommend, has since been adopted in these fevers by the most judicious physicians of the present age, and has probably contributed not a little to the success of their practice. His treatise on sea-voyages points out in a manner so clear, and so much on the sure footing of experience, their utility in various distempers, particularly in consumptions, that there is now a prospect of our being able to employ a remedy in this intractable disease much more efficacious than any hitherto in use. Dr. Gilchrist died in 1774.

GIMONT, a town of France, in the department of Gers, in the department of Gers, 12 miles E. of Auch. Long. 0. 48. E. Lat. 43. 37. N.

GIODDA, or **GIDDAN**, a sea-port of Arabia, on the Red Sea. It is the port of Mecca, and carries on a great trade. Long. 39. 27. E. Lat. 21. 30. N.

GIOVENAZZO, a town of Naples, in Terra di Bari, with a castle. It has high walls of rustic architecture, and high houses and towers, rising in narrow rows, built of polished stone with flat roofs, which give it a singular appearance. It is seated on a mountain, near the sea, 10 miles N.W. of Bari. Long. 16. 50. E. Lat. 41. 26. N.

GIREST, a large town of Persia, in Kerman. Its trade consists in wheat and dates. Long. 57. 55. E. Lat. 27. 30. N.

GIRGE, a town of Egypt, the capital of the Said, and residence of the bey of Upper Egypt, situate near the left bank of the Nile. It is about three miles in circumference; and is about 160 miles N. of Syene and 215 S. of Cairo. Long. 31. 22. E. Lat. 26. 30. N.

GIRVAN, a village in Ayrshire, at the mouth of a river of the same name, almost opposite the rock of Ailā. Here are some manufactures; particularly in the tanning of leather, and the making of shoes and boots. It is 16 miles S. by W. of Ayr.

GISBURN, a town in the W. riding of Yorkshire, with a market on Monday, 60 miles W. of York, and 210 N.W. of London. Long. 2. 22. W. Lat. 53. 55. N.

GISORS, a town of France, in the department of Eure. It belonged to the famous marshal Belleisle, whose only son, the count de Gisors, being killed at the battle of Grevelin, in 1758, the marshal, at his own death, in 1761, presented it to Lewis XV. It is seated on the Ept, 28 miles S.E. of Rouen. Long. 1. 43. E. Lat. 49. 15. N.

GITSCHIN, a town of Bohemia, which suffered greatly during the long war of the Swedes in Germany. It is 22 miles N.W. of Koniggratz, and 44 N.E. of Prague.

GIVET, a fortified town in the bishopric of Liege, divided in two by the river Maese, 21 miles S.W. of Namur. Long. 4. 34. E. Lat. 50. 13. N.

GIVIRA, a town of Italy, in the Milanese, seated on a lake of the same name, eight miles from Angbiera.

GLADBACH, a town of Westphalia, in the duchy of Juliers, 16 miles N. of Juliers. Long. 6. 10. E. Lat. 51. 14. N.

GLADENBACH, a town of Germany, in the principality of Upper Hesse, 12 miles N. of Gießen.

GLAMMIS, a village in the S.W. part of Angusshire.

Near it is Glammis castle, the ancient seat of the earl of Strathmore, in which is shewn the apartment where Malcolm II. was assassinated in 1034.

GLANFORDBRIDGE, or BAIGA, a town in Lincolnshire, with a market on Thursday; seated on the Ancholme, which is noted for fine eels, and has been lately made navigable for sloops to the Humber. It is 23 miles N. of Lincoln, and 156 N. by W. of London. Long. 0.23 . W. Lat. 53.35 . N.

GLASS-PAINTING. Having often been delighted with the grand effect produced by the windows of stained glass in old churches and monasteries, we have regretted that such fine and durable colouring should, in so many cases, have been prostituted upon wretched designs inferior to the productions of our sign-post daubers. We have wished that some mode could be devised of copying and multiplying pictures upon glass—some mechanical mode, which should require the aid of the artist in the first instance only, and leave all the subsequent operations to be performed by inferior hands, as in the case of copper-plate printing. Portraits at least, on a single piece of glass, which should perpetuate the features of great men and beautiful women, secure from that decay of colour and of canvas which has already begun to obliterate the finest paintings of the greatest artists whom the world has ever produced, might possibly be produced in the following way:

Suppose, after the outline of a likeness is drawn, that blocks were cut from it after the same manner as for calicoes, or paper-hangings, only with superior nicety, and in greater number for the purpose of multiplying and better blending the tints.

Enamellers must determine what shall be the proper substances for the different colours, and with what liquid they shall be moistened, that they may be readily taken up by the blocks, and thence transferred to another body by pressure.

From these blocks, and with these colours, let the figure be printed on paper; and, to prevent inaccuracy in bringing the separate parts, cut on the different blocks, to unite into a complete whole, let the paper be placed under a frame secured in an immovable position during the operation. The blocks being accurately squared, all exactly of the same dimensions, and each nicely fitting the frame, cannot, in passing through it to deliver their several impressions, make the smallest deviation from their intended places, but must produce an exact picture—at least on the paper.

To transfer that impression to glass, is, indeed, a work of nicety and difficulty. Were it not for some smaller strokes which must necessarily be in wood; the entire impression might in the outset be made on the glass itself, without any intervention of paper; since experience has proved to the callico-printers that the great masses of colour cannot be successfully delivered from wood; whereas they are obliged, in those parts of their patterns, to use bits of smooth worn-out beaver-hat, which might very well be pressed on the glass-plate.

However, from what we every day see effected in the case of prints affixed to glass without any of the paper remaining, and also of copper-plate embellishments upon porcelain and queen's ware, we doubt not that the picture, while fresh, may, by well-managed pressure, be transferred from the paper to an even plate of ground glass coated with a proper gluten which shall not, at least not materially, effusate its transparency; and experiment must determine whether the paper may afterward be gently drawn or peeled off, or must be burned away, or destroyed by a corrosive liquid, if any such can be found which will not injure the colours.

Suppose, however, the operation of removing the paper to

be satisfactorily performed, proceed we now to secure the delicacy of the picture.

Let a square plate of cast-iron, an inch or two in thickness, and as level and smooth as possible, be furnished on every side with a metal ledge rising an inch or more in height, which ought to be in two separate pieces, the one permanently fastened to the plate, the other capable of being removed at pleasure, for the purpose of laying in and taking out the glass without violence.

Within that ledge let the glass be fitted, closely touching it on every side, and lying with the painted surface uppermost. Upon this lay another plate of glass, fitted in the same manner.

Let, now, the metal frame, with the inclosed glasses, be exposed to the action of fire until the glass plates, without being melted to absolute fluidity, shall nevertheless become sufficiently soft to coalesce into one body under a strong pressure. The body which conveys the pressure, and lies in immediate contact with the glass, must equally fit and completely fill the entire space between the ledges, that there be no room for the soft glass to spread in any direction, so as to distort any of the lines of the picture.

Those who have witnessed the process pursued in softening tortoise-shell in the fire, and pressing it into the various shapes of snuff-boxes, *étuis*, &c. &c. will not conceive much difficulty in this use of the glass. It may be managed by the aid of a machine somewhat similar to, but more powerful than, a common printing-press, with a solid metal platine, to fit and fill the frame, as above; though much better contrivances may be found among the multifarious engines employed at Birmingham for the purposes of coining, and striking the heavy dies, than any we can possibly suggest.

In whatever manner the two glasses may be pressed into union, the united body may be afterward ground and polished and, in proportion to the greater smoothness of the two compressing bodies, the less grinding and polishing will be afterward required.

GLAUCHAU, a town of Upper Saxony, which has considerable manufactures of stufts. It is seated on the Muldaw, 46 miles W.S.W. of Dresden. Long. 12.35 . E. Lat. 50.45 . N.

GLAZING (*Encycl.*). The glazing of all our earthen ware is very apt to crack, both from moisture and heat, being composed of lead, one of the most pernicious metals that could be devised for such an important purpose. It is well known that lead is easily volatilized by heat, and readily decomposed by any vegetable acid: hence it has been affirmed by various eminent writers, that we are under the necessity of inhaling or swallowing, perhaps every day, a minute portion of a metal which is one of the slowest, but most destructive poisons, and lays the foundation of many fatal disorders, such as palsy, dry colic, consumption, &c. the remote cause of which has not, till lately, been suspected. In fact, there appears to be sufficient reason to believe, that our glazed culinary vessels are a latent source of disease; and when fruit or acids are allowed to remain in them for some time, the liquors or substances thus preserved will necessarily acquire a very dangerous impregnation from the metal. We therefore recommend various substitutes for lead to the attention of the public, both for this and other purposes.

M. Westrumb, an eminent German chemist, was required by the government of Hanover to devise a less pernicious method of glazing earthen ware than any hitherto practised. In consequence of numerous experiments, he has at length published the successful result of several compositions, in which not a particle of lead was employed, and which in

his opinion will prove an useful glazing for ordinary vessels. *First*: 32 parts of sand; 11, 15, or 20 parts of purified potash; and from 3 to 5 parts of borax. *Second*: 32 parts of glass (we suppose *flint-glass*); 16 parts of borax; and 3 parts of pure potash. *Third*: 150 parts of crystallized Glauber's-salt, with 8 parts of pulverized charcoal, previously roasted, till it has acquired a grey colour; 16 parts of sand; and 8 parts of borax.

Another method of *glazing without lead* has been invented by M. Niefleman, a potter at Leipzig: it consists of half a pound of saltpetre, half a pound of potash, and one pound of common salt. This composition is not very expensive, and said to produce an enamel not inferior to that prepared with lead. Professor Leonhardi has investigated, and found it eminently useful. We trust, therefore, our potters will in future, conscientiously desist from using that pernicious and slowly poisonous metal.

GLENARM, a small sea-port of Ireland, in the county of Antrim, with a castle; seated near a bay of its own name, 20 miles N.N.W. of Carrickfergus. Long. 6. 16. W. Lat. 55. 3. N.

GLENCOE, VALE OF, a valley, near the head of Loch Etive, in Argyshire; noted for a cruel massacre of its inhabitants in 1691. William III. having offered a general amnesty to the Highlanders who had been in arms for James II. provided they accepted it before the first of January, on pain of military execution after that period; the laird of Glencoe, on the last day of December, went to Fort William, the governor of which referred him to a civil officer. This made it the first of January before he could reach Inverary, where he surrendered to the sheriff, who, however, accepted his submission, in consideration of his offer to surrender the day before. The laird having taken the oaths, returned to Glencoe, in full assurance of safety; notwithstanding which, he, and his whole clan, were butchered, on the 15th of February, and all the houses in the valley were burnt.

GLENCROY, VALE OF, a wild and romantic tract, near the N.E. extremity of Loch Lomond, in Argyshire. The two ranges of mountains, which overhang this valley, approach each other, and between these the traveller is immersed. Their stupendous height, and the roaring of numerous cataracts, that pour over their broken surface, produce an awful effect.

GLENLUCE, a town in Wigtonshire, seated on the river Luze, near its entrance into the bay of that name, 16 miles W. by S. of Wigton.

GLENSHEE, SPITAL OF, a noted pass of the Grampian mountains, in Scotland, a little S. of the point where the counties of Perth, Angus, and Aberdeen meet. In 1718, a small body of Highlanders, with 300 Spaniards, took possession of this pass: but they retired at the approach of the king's forces, and were driven from one eminence to another till night, when the Highlanders dispersed; and, the next day, the Spaniards surrendered.

GLOMME, a river of the province of Aggerhuys, in S. Norway, which flows into the North Sea, at Fredericstادت. It receives the river Worme, which issues from Lake Mios. It is not navigable in any part of its course from this lake to Fredericstادت, its stream being intercepted by such frequent cataracts and shoals, as, in some places, to render it necessary to drag the trees, which are floated down, over the ground. At least 50,000 trees are annually floated by this river to Fredericstادت.

GLOUCESTER (*Encycl.*). See next article to **GLOBULE**. **GNESEN**. See **GENENA**.

GOAR, St. of GOWER, a town of Germany, in the circle of Lower Rhine, subject to the landgrave of Hesse Cassel.

It is seated under the stupendous rock and castle of Rheinfels, with which it surrendered to the French in 1794. It has a considerable commerce in wines and hides, and is 15 miles S.E. of Coblenz.

GOBCEIN, a town of Germany, in the palatinate of the Rhine, 18 miles S.E. of Philipburgh. Long. 8. 56. E. Lat. 49. 6. N.

GOCH, a town of Germany, in the duchy of Cleves, seated on the Neers, six miles S. of Cleves. Long. 5. 52. E. Lat. 51. 39. N.

GOCHSHEIM, or **GOCHSEN**, a town of Suabia, in the duchy of Wurtemberg, 16 miles S. of Heidelberg, and 24 N.N.W. of Stuttgart.

GOCIANO, a town of Sardinia, capital of a county of the same name, with a castle, seated on the Thurlo, 25 miles E. of Algher.

GODERVILLE, a town of France, in the department of Lower Seine, nine miles N.E. of Montivilliers.

GODRA, a town of Hindoostan Proper, in Guzerat, 55 miles E. of Amedabad. Long. 73. 40. E. Lat. 22. 50. N.

GOES, or **TER GOES**, a strong town of the United Provinces, in Zealand, and capital of the island of S. Beveland. It communicates with the Scheld by a canal, and is 20 miles E. of Middleburg. Long. 3. 50. E. Lat. 51. 33. N.

GOGMAGOG-HILLS, are hills so called, three miles from Cambridge, remarkable for the intrenchments and other works cast up here: whence some suppose it was a Roman camp; and others, that it was the work of the Danes.

GOGRA, or **SOORJEW RIVER**, a large river, which rises in Lake Lankee Dhe, in Thibet, and forcing its way through Mount Himmaleh, takes a S.E. direction, and unites with the Ganges, above Chuprah, in the province of Bahar.

GOHUD, a territory of Hindoostan Proper, in the province of Agra; subject to a rajah, who is tributary to the Poonah Maharrats. Gwalior is the capital.

GOLDBERG, a town of Silesia, in the duchy of Lignitz. It receives its name from a gold-mine near it, which was formerly very rich. The inhabitants are engaged in manufactures of woollen and linen. It is nine miles S.W. of Lignitz, and 36 W. of Breslaw. Long. 16. 23. E. Lat. 51. 3. N.

GOLD-FINCH, in ornithology. See **FRINGILLA**.

These are feed-birds of very curious colours, and which, were they not so common in this country, would probably be very much esteemed.

They are usually taken about Michaelmas, and soon become tame; but they differ very much in their song.—They frequently breed in the upper part of plum-trees, making their nests of the moss that grows upon apple-trees, and of wool; quilting the inside with all sorts of hairs they find upon the ground. They breed three times a-year; and the young are to be taken with the nest at about ten days old, and fed as follows:—Pound some hemp-seed very fine in a mortar; then sift it through a sieve, and add to it as much wheat-bread as hemp-seed; and likewise a little flower of canary-seeds: then with a small stick or quill, take up as much as the bigness of a white-pea, and give them several times a-day. This ought to be made fresh every day: for if it is suffered to sour, it will spoil their stomachs, causing them to cast up their meat; which if they do, it is very probable that they will die.—These young birds must be carefully kept warm till they can feed themselves, for they are very tender. In feeding, be sure to make your bird clean his bill and mouth. If any of the meat falls upon his feathers, take it off, or else he will not thrive. Such as eat hemp-seed, to purge them, should have the seeds of melons, succory, and mercury; or else let them have lettuce and plantane for that.

purpose. When there is no need of purging, give them two or three times a-week a little sugar or loam in their meat, or at the bottom of the cage; for all feels have an oiliness, so that if they have not something to absorb it, in length of time it fouls their stomachs, and brings on them a flux, which is very dangerous.

GOLDEN ISLAND, a barren island at the mouth of the river or gulf of Darien, where the Scots attempted to make a settlement in 1698. Long. 77. 10. W. Lat. 9. 0. N.

GOLDEN RULES, a distinguishing name for any precepts, worthy of universal observation. A better instance cannot be given than in "The twelve true old golden rules for those who like to fare better than they now do, and at the same time to thrive and grow rich," published during the late scarcity, by the Society for bettering the Condition of the Poor:

1. *The ready penny* always fetches the best bargain. He who buys upon trust, must not complain if he is cheated. The shopkeeper suspects his customer who *buys on trust*, and thinks that he means to cheat, and never to pay; and therefore he takes good care to be beforehand, and charges high accordingly.

2. The best pennyworth is to be had where most fit together, in the open market; and bargains are often cheaper in the latter end of the day.—When honest men have done their work, it is better for them to go to market, than to the alehouse.

3. When times are hard, why should we make them harder still? Is it not enough to be taxed once by government, without being taxed twice by folly, thrice by drunkenness, four times by laziness, and so on?—A good man, even in hard times, will do twice as well, as a bad man will in the best of times. Let us all then rise up *against ourselves*, who thus *tax and injure ourselves*: and we shall soon find that the times will mend. Let us *do good to ourselves at home*, and we shall become happy in our own habitations; and learn that it is a true saying, that "God helps those who help themselves."

4. *Time is our estate*; it is our most valuable property. If we lose it, or waste it, we can never—*never* purchase it back again. We ought, therefore, not to have an idle hour, or throw away an idle penny. While we employ our time and our property (however small that property may be) to the best advantage, we shall find that *a fortune may be made in any situation of life*; and that the poor man, who once wanted assistance himself, may become able to assist and relieve others.

5. *Industry* will make a man a purse, and *frugality* will find him strings for it. Neither the purse nor the strings will cost him any thing. He who has it, should only draw the strings as frugality directs; and he will be sure always to find a useful penny at the bottom of it. *The servants of industry* are known by their livery; it is always *whole and wholesome*. Idleness travels very leisurely, and poverty soon overtakes her. Look at the *ragged slaves of idleness*, and judge which is the best master to serve;—*Industry*, or *Idleness*.

6. *Marriage is honourable*: and the married state, when entered into with prudence, and continued in with discretion, is of all conditions of life the *most happy*; but to bring a wife home, before we have made provision for our industry and prudence, for her and our children, or to choose a wife, who has not, by attention and economy on her part, proved herself fit to manage a family, is *extremely imprudent and improvident*. Let, therefore, the young prepare themselves for the married state, by treasuring up *all the surplus of their youthful earnings*, and they will marry with confidence, and live together in comfort.

7. Of all *idolatry*, that ever debased any savage and ig-

norant nation, the worship of the *gin bottle* is the most disgraceful. The worshipper of the gin bottle becomes unfit for any thing; he soon rots his liver, and ruins himself and his family.

8. He who does not make his family comfortable, will himself never be happy at home; and he who is not happy at home, will never be happy any-where.—Charity begins at home: the husband and wife, who can hardly keep themselves and their children, should not keep a dog to rob the children of part of their food.

9. She who roasts or broils her meat, wastes half of it in the *fire*. She who boils it, loses half of it in the *water*. But when the good wife stews her meat gently, thickening the liquor with a little meal, ground rice, or pease and vegetables, and making it savoury with fried onions, herbs, and seasoning, her husband and the fare much better, their children thrive and grow hearty and stout, and their money goes twice as far.

10. When you stew or boil your meat, if you leave the vessel uncovered, a great deal of the best part goes off and is wasted in steam; and when you make the fire in a wide chimney, with a large open throat, there is at least twice as much of the heat goes up the chimney, as ever comes into the room to warm the family.

11. Sinning is a very expensive occupation.—Ask those who have practised it; they can tell you what it has cost them. The man who attempts to make you laugh at the fear of God is your worst enemy. In so doing, he endeavours to teach you to be *alto your own bitter and irreconcilable enemy for ever*, both in this world, and in the next.

12. Sin is the greatest of all evils; the salvation of the soul our best good; and the grace of God our richest treasure. Let the poor man find his way to the cheapest market on Saturday, to a place of divine worship on Sunday, and, like an honest man, go to his labour on Monday. Following these plain directions, he may be *twice happy*:—happy here, and happy hereafter to all eternity.

GOLEITA, an island of Africa, at the entrance of the bay of Tunis; taken by the emperor Charles V. when he attempted the siege of Tunis, and kept by the Christians several years. It is 29 miles N. of Tunis. Long. 10. 20. E. Lat. 37. 10. N.

GOLLING, a town of Germany, in the archbishopric of Saltzburg, 14 miles S.E. of Saltzburg.

GOLNAW, a town of Prussian Pomerania, seated on the lina, 18 miles N.E. of Stetin. Long. 14. 59. E. Lat. 53. 46. N.

GOMORRAH (anc. geog.), one of the cities of the plain or of the vale of Siddim in Judea, destroyed together with Sodom by fire from heaven, on account of the wickedness of the people. To determine its particular situation at present, is impossible.

GOMMERN, a town of Upper Saxony, situate on the Ehle, eight miles S.E. of Magdeburg, and 20 N.W. of Dessau. Long. 11. 50. E. Lat. 52. 5. N.

GOMS, a town of Switzerland, which gives name to one of the departments of the Valais. It is 33 miles E. of Sion.

GONAIVES, a sea-port of the island of St. Domingo, with an excellent harbour. Long. 72. 26. E. Lat. 19. 36. N.

GONAVE, an island in the W. Indies, near the W. coast of St. Domingo. Long. 73. 4. W. Lat. 18. 51. N.

GONDGAMA, or **GONDACOMMA**, a river of the peninsula of Hindoostan, which rises near Combam, forms the nominal boundary of the Carnatic on the N. and enters the bay of Bengal, at Mootapilly.

GONDRECOURT, a town of France, in the department

of Meuse, seated on the Orney, 20 miles S. of St. Michel. Long. 5. 37. E. Lat. 48. 30. N.

GONDREVILLE, a town of France, in the department of Meurthe, with a castle, and a magnificent hospital. It stands on a hill, on the river Moselle, eight miles from Nancy. Long. 6. 9. E. Lat. 48. 40. N.

GONSESSE, a town of France, in the department of Seine and Oise. It is the birth-place of King Philip Augustus, and noted for the goodness of its bread, which is brought twice a week to Paris. It is seated on the Crould, 10 miles N.E. of Paris. Long. 2. 30. E. Lat. 48. 58. N.

GONGA, an ancient town of Romania, seated near the sea of Marmora, 37 miles N.E. of Gallipoli. Long. 37. 31. E. Lat. 40. 53. N.

GONJAH, a kingdom of Africa, between the coast of Guinea on the S. and Tombuctou on the N. Gonjah, the capital, is 870 miles W. by S. of Cahna. Long. 6. 10. W. Lat. 13. 20. N.

GOORACPOUR, a town of Hindoostan Proper, in the country of Oude, 65 miles E. of Fyzabad. Long. 83. 35. E. Lat. 26. 45. N.

GORITZ, the capital of a county of the same name, in the duchy of Carniola, with a castle, seated on the Lifonzo, 16 miles N.E. of Aquileia. Long. 13. 30. E. Lat. 46. 20. N.

GORKAH, the capital of a country of the same name, in Asia, on the borders of Napaul, 35 miles N.W. of Catmandu, and 200 N. of Benares. Long. 84. 36. E. Lat. 28. 25. N.

GORZE, a town of France, in the department of Moselle. It had lately a rich abbey, and is seated on a hill, eight miles S.W. of Metz.

GOSSWEINSTEIN, or GOSSMANSTEIN, a town of Germany, in the circle of Franconia, and bishopric of Bamberg, 20 miles S.E. of Bamberg, and 23. N.N.E. of Nuremberg. Long. 11. 19. E. Lat. 49. 45. N.

GOSTYNEN, or GOSTAVIN, a town of Poland, in the palatinate of Rava, 36 miles N.E. of Rava. Long. 20. 40. E. Lat. 51. 54. N.

GOTTESBERG, a town of Silesia, in the duchy of Schweidnitz, remarkable for its silver mines. Near it is likewise a mine of gold, but it is not worked. It is 12 miles S.W. of Schweidnitz.

GOTTSCHEE, a town of Germany, in Carniola, 23 miles S.S.E. of Laybach, and 160 S.S.W. of Vienna. Long. 14. 43. E. Lat. 45. 53. N.

GOUDHURST, a town in Kent, with a market on Wednesday, 12 miles S.W. of Maidstone, and 44 S.E. of London. Long. 0. 31. E. Lat. 51. 8. N.

GOVERNULO, a town of Italy, in the Mantuan, seated on the Mincio, 12 miles S.E. of Mantua. Long. 10. 56. E. Lat. 45. 4. N.

GOURA, or GURA, a town of Poland, in the palatinate of Masovia, belonging to the bishop of Polesna. Long. 21. 50. E. Lat. 52. 1. N.

GOURAINCOURT, a town of France, in the department of Meuse, 15 miles N. E. of Verdun.

GOURDON, a town of France, in the department of Lot, 18 miles N.W. of Cahors. Long. 1. 24. E. Lat. 45. 43. N.

GOUROCK, a town in Renfrewshire, on a bay of the frith of Clyde. In its neighbourhood, a copper mine was lately worked.

GOWER, the peninsular extremity of Glamorganshire, to the W. of the bay of Swansea. It has very lofty lime-stone cliffs next the sea, whence large quantities of lime are exported to the English counties across the Bristol channel. The

coast abounds with oysters. The land is a fertile tract of arable and pasture.

GOWER, or GEVER. See GOAR, *St. Supp.*

GOZZI, or GOZES, an island of the Mediterranean, to the S. of the ile of Candia, 12 miles from fort Selino.

GOZZO, a fortified island of the Mediterranean, five miles N.W. of Malta, and belonging to the knights of that island.

GRABOW, a town of Lower Saxony, in the duchy of Mecklenburg, 18 miles S. of Schwerin. Long. 11. 44. E. Lat. 53. 26. N.

GRACCHUS (Tiberius), elected tribune of the Roman people, demanded in the senate, in their name, the execution of the Agrarian law; by which all persons possessing above 200 acres of land were to be deprived of the surplus, for the benefit of the poor citizens, amongst whom an equal distribution of them was to be made; having carried his plan into execution by violent measures, he fell a victim to his zeal, being assassinated by his own party, 133 B.C. Caius, his brother, pursuing the same steps, was killed by the consul Opimius, 121 B.C.

GRACIAS A DIOS, a town of Mexico, in the province of Honduras, 140 miles E. of Guatemala. Long. 72. 15. W. Lat. 14. 30. N.

GRACIOSA, one of the Azores, or Western Islands. Its inhabitants are about 300, and its produce is wheat, wine, butter, and cheese. Long. 27. 58. W. Lat. 39. 2. N.

GRACIOSA, a rocky, barren, uninhabited island, one of the Canaries, to the N. of Lacerota. It is three miles long, and two broad.

GRAFTON, a village in Northamptonshire, between Stony Stratford and Northampton, where there is a manor-house and park, given by Charles II. to the Duke of Grafton, whence the title is derived.

GRAHAM'S MURR, between the Carron Works and Falkirk, in Scotland, a field celebrated for being the spot where Sir William Wallace, in 1298, cut his way through the midst of his victorious enemies.

GRAMAT, a town of France, in the department of Lot, 22 miles N.N.E. of Cahors. Long. 1. 37. E. Lat. 44. 47. N.

GRAN, a town of Lower Hungary, with an archbishop's see. It has been several times taken and retaken, but lost of all by the Austrians, in 1683. It is seated on the Danube, 87 miles E. by S. of Vienna. Long. 18. 6. E. Lat. 47. 46. N.

GRANARY (*Encycl.*) In the 8th vol. of the "*Letters and Papers of the Bath and West of England Society*," &c. Thomas South, esq. gives a description of a cheap and efficacious ventilator, for preserving corn on ship-board. This machine consists of a forcing pump, with perforated tubes annexed to it; and by means of which fresh air may be communicated to every part of the cargo.—Mr. South's air-vessel is, for the sake of cheapness, confined to a diameter of 10 inches; but he observes that, if the latter be enlarged to 14 inches, the effect of the machine will be nearly doubled; and if the length of the trough (by the suction-valve) be extended 10 inches, a power will be obtained capable of ventilating a cargo of 400 tons in the course of one hour. The price of a ventilator on the smaller plan, is computed by Mr. South at about five or six guineas; one on a larger scale might perhaps amount to twenty guineas: a sum which, in either case, enhances the price of corn only at a rate of less than four pence per quarter, on the first cargo. These machines, if well painted and properly preserved, will continue useful for many years.—A more minute account of Mr. South's invention is

contained in the volume of the "*Letters*," &c. before quoted, where its various parts are specified and illustrated by an engraving.

To preserve corn in barns or granaries, Dr. Darwin observes, it is requisite first to make them dry, and, secondly, to keep them in that state; because no seeds will vegetate without moisture. In order to dry feeds, the heaps should be frequently turned over in warm dry weather: hence, in this climate, the doors and windows of granaries should open towards the south, for the reception of the warmth of the sun, with air-holes round the building, for sufficient ventilation; and which apertures ought to be sheltered from rain or snow, by boards placed for that purpose on the outside.—Heaps of corn should be surrounded with planks, in order to prevent them from touching either brick or stone walls; because, when cold north-east winds are succeeded by moist and warm south-west winds, such walls frequently precipitate the moisture from the atmosphere, and communicate it to those bodies which are in contact with them.—According to Mr. Tull, the safest method of preserving a large quantity of wheat is, to dry it gradually in a malt-kiln on a hair-cloth, with no other fuel than clean straw, and with a heat scarcely exceeding that produced by the rays of the sun.—In this temperature, the grain is to remain from 4 to 12 hours, in proportion to its previous dampness. The vegetative principle of the corn is not destroyed by this process; as instances have occurred of its growing when sown, after it had been thus kept for seven years.

GRANDEUR and SUBLIMITY. These terms have a double signification: they commonly signify the quality or circumstance in objects by which the emotions of grandeur and sublimity are produced; sometimes the emotions themselves.

In handling the present subject, it is necessary that the impression made on the mind by the magnitude of an object, abstracting from its other qualities, should be ascertained. And because abstraction is a mental operation of some difficulty, the safest method for judging is, to choose a plain object that is neither beautiful nor deformed, if such a one can be found. The plainest that occurs, is a huge mass of rubbish, the ruin perhaps of some extensive building; or a large heap of stones, such as are collected together for keeping in memory a battle or other remarkable event. Such an object, which in miniature would be perfectly indifferent, makes an impression by its magnitude, and appears agreeable. And supposing it so large, as to fill the eye, and to prevent the attention from wandering upon other objects, the impression it makes will be so much the deeper. See **ATTENTION**.

But though a plain object of that kind be agreeable, it is not termed *grand*: it is not entitled to that character, unless, together with its size, it be possessed of other qualities that contribute to beauty, such as regularity, proportion, order, or colour: and according to the number of such qualities combined with magnitude, it is more or less grand. Thus St. Peter's church at Rome, the great pyramid of Egypt, the Alps towering above the clouds, a great arm of the sea, and above all a clear and serene sky, are grand; because, beside their size, they are beautiful in an eminent degree. On the other hand, an overgrown whale, having a disagreeable appearance, is not grand. A large building agreeable by its regularity and proportions, is grand; and yet a much larger building destitute of regularity, has not the least tincture of grandeur. A single regiment in battle-array, makes a grand appearance; which the surrounding crowd does not, though perhaps ten for one in number. And a regiment where the men are all in one livery and the horses of one colour, makes

a grander appearance, and consequently strikes more terror, than where there is confusion of colour and dress. Thus greatness or magnitude is the circumstance that distinguishes grandeur from beauty: agreeableness is the genus, of which beauty and grandeur are species.

The emotion of grandeur, duly examined, will be found an additional proof of the foregoing doctrine. That this emotion is pleasant in a high degree, requires no other evidence but once to have seen a grand object: and if an emotion of grandeur be pleasant, its cause or object, as observed above, must infallibly be agreeable in proportion.

The qualities of grandeur and beauty are not more distinct, than the emotions are which these qualities produce in a spectator. All the various emotions of beauty have one common character, that of sweetness and gaiety. The emotion of grandeur has a different character: a large object that is agreeable, occupies the whole attention, and swells the heart into a vivid emotion, which, though extremely pleasant, is rather serious than gay. And this affords a good reason for distinguishing in language these different emotions. The emotions raised by colour, by regularity, by proportion, and by order, have such a resemblance to each other, as readily to come under one general term, viz. *the emotion of beauty*; but the emotion of grandeur is so different from these mentioned, as to merit a peculiar name.

Though regularity, proportion, order, and colour, contribute to grandeur as well as to beauty, yet these qualities are not by far so essential to the former as to the latter. To make out that proposition, some preliminaries are requisite. In the first place, the mind, not being totally occupied with a small object, can give its attention at the same time to every minute part; but in a great or extensive object, the mind, being totally occupied with the capital and striking parts, has no attention left for those that are little or indifferent. In the next place, two similar objects appear not similar when viewed at different distances: the similar parts of a very large object, cannot be seen but at different distances; and for that reason, its regularity, and the proportion of its parts, are in some measure lost to the eye; neither are the irregularities of a very large object so conspicuous as of one that is small. Hence it is, that a large object is not so agreeable by its regularity, as a small object; nor so disagreeable by its irregularities.

These considerations make it evident, that grandeur is satisfied with a less degree of regularity, and of the other qualities mentioned, than is requisite for beauty; which may be illustrated by the following experiment. Approaching to a small conical hill, we take an accurate survey of every part, and are sensible of the slightest deviation from regularity and proportion. Supposing the hill to be considerably enlarged, so as to make us less sensible of its regularity, it will upon that account appear less beautiful. It will not, however, appear less agreeable, because some slight emotion of grandeur comes in place of what is lost in beauty. And at last, when the hill is enlarged to a great mountain, the small degree of beauty that is left, is sunk in its grandeur. Hence it is, that a towering hill is delightful, if it have but the slightest resemblance of a cone; and a chain of mountains not less so, though deficient in the accuracy of order and proportion. We require a small surface to be smooth; but in an extensive plain, considerable inequalities are overlooked. In a word, regularity, proportion, order, and colour, contribute to grandeur as well as to beauty; but with a remarkable difference, that in passing from small to great, they are not required in the same degree of perfection. This remark serves to explain the extreme delight we have in viewing the face of nature, when sufficiently enriched and diversified with objects. The

bulk of the objects in a natural landscape are beautiful, and some of them grand: a flowing river, a spreading oak, a round hill, an extended plain, are delightful; and even a rugged rock, or barren heath, though in themselves disagreeable, contribute by contrast to the beauty of the whole; joining to these the verdure of the fields, the mixture of light and shade, and the sublime canopy spread over all; it will not appear wonderful, that so extensive a group of splendid objects should swell the heart to its utmost bounds, and raise the strongest emotion of grandeur. The spectator is conscious of an enthusiasm which cannot bear confinement, nor the strictness of regularity and order: he loves to range at large; and is so enchanted with magnificent objects, as to overlook slight beauties or deformities.

The same observation is applicable in some measure to works of art. In a small building, the slightest irregularity is disagreeable: but in a magnificent palace, or a large gothic church, irregularities are less regarded. In an epic poem, we pardon many negligences that would not be permitted in a sonnet or epigram. Notwithstanding such exceptions, it may be justly laid down for a rule, that in works of art, order and regularity ought to be governing principles; and hence the observation of Longinus, "In works of art we have regard to exact proportion: in those of nature, to grandeur and magnificence."

The same reflections are in a good measure applicable to *SUBILITY*: particularly, that, like grandeur, it is a species of agreeableness; that a beautiful object placed high, appearing more agreeable than formerly, produces in the spectator a new emotion, termed the *emotion of sublimity*; and that the perfection of order, regularity, and proportion, is less required in objects placed high, or at a distance, than at hand.

GRANICUS (*Encyel.*). Authors disagree very much about the number of the Persians engaged in this remarkable battle, though all agree that they were vastly more numerous than the Greeks. Justin and Orosius tell us, that the Persian army consisted of 600,000 foot and 20,000 horse; Arrian makes the foot amount to 200,000; but Diodorus tells us, that they were not more than 100,000 foot, and 10,000 horse. The Macedonian army did not exceed 30,000 foot, and 5000 horse. The Persian cavalry lined the banks of the Granicus, in order to oppose Alexander wherever he should attempt a passage; and the foot were posted behind the cavalry on an easy ascent. Parmenio would have had Alexander to allow his troops some time to refresh themselves; but he replied, that, after having crossed the Hellespont, it would be a disgrace to him and his troops to be stopped by a rivulet. Accordingly a proper place for crossing the river was no sooner found, than he commanded a strong detachment of horse to enter, he himself following with the right wing which he commanded in person; the trumpets in the mean time sounding, and loud shouts of joy being heard through the whole army. The Persians let fly such showers of arrows against the detachment of Macedonian horse, as caused some confusion; several of their horses being killed or wounded. As they drew near the bank a most bloody engagement ensued; the Macedonians attempting to land, and the Persians pushing them back into the river. Alexander, who observed the confusion they were in, took the command of them himself; and landing in spite of all opposition, obliged the Persian cavalry, after an obstinate resistance, to give ground. However, Spithroates, governor of Ionia, and son-in-law to Darius, still maintained his ground, and did all that lay in his power to bring them back to the charge. Alexander advanced full gallop to engage him; neither did he decline the combat, and both were slightly wounded at the first encounter. Spithro-

bates having thrown his javelin without effect, advanced sword in hand to meet his antagonist, who ran him through with his pike as he raised his arm to discharge a blow with his scymitar. But Rofaces, brother to Spithroates, at the same time gave Alexander such a furious blow on the head with his battle-ax, that he beat off his plume, and slightly wounded him through the helmet. As he was ready to repeat the blow, Clitus with one stroke of his scymitar cut off Rofaces's head, and thus in all probability saved the life of his sovereign. The Macedonians then, animated by the example of their king, attacked the Persians with new vigour, who soon after betook themselves to flight. Alexander did not pursue them; but immediately charged the enemy's foot with all his forces, who had now passed the river. The Persians, disheartened at the defeat of their cavalry, made no great resistance. The Greek mercenaries retired in good order to a neighbouring hill, whence they sent deputies to Alexander, desiring leave to march off unmolested. But he, instead of coming to a parley with them, rushed furiously into the middle of this small body; where his horse was killed under him, and he himself in great danger of being cut in pieces. The Greeks defended themselves with incredible valour for a long time, but were at last almost entirely cut off.—In this battle the Persians are said to have lost 20,000 foot, and 2,500 horse, and the Macedonians only 55 foot, and 60 horse.

GRANT (Francis), Lord Cullen, an eminent lawyer and judge in Scotland, was descended from a younger branch of the family of the Grants of Grant in that kingdom, and was born about the year 1660. When he commenced advocate he made a distinguished figure at the Revolution, by opposing the opinion of the old lawyers, who warmly argued on the inability of the convention of estates to make any disposition of the crown. The abilities he shewed in favour of the revolution recommended him to an extensive practice; in which he acquired so much honour, that when the union between the two kingdoms was in agitation, Queen Anne unexpectedly, and without application, created him a baronet, with a view of securing his interest in that measure; and upon the same principle, the soon after created him a judge, or one of the lords of session. From this time, according to the custom of Scotland, he was styled, from the name of his estate, Lord Cullen; and the same good qualities that recommended him to this honourable office, were very conspicuous in the discharge of it; which he continued for 20 years with the highest reputation, when a period was put to his life by an illness which lasted but three days. He expired without any agony on March 16th, 1726.

His character is drawn to great advantage in the *Biographia Britannica*; where it is observed, among other remarks to his honour, "that as an advocate he was indefatigable in the management of business; but at the same time that he spared no pains, he would use no craft. He had so high an idea of the dignity of his profession, that he held it equally criminal to neglect any honest means of coming at justice, or to make use of any arts to elude it."

"In respect to fortune, though he was modest and frugal, and had a large practice, yet he was far from being avaricious. His private charities were very considerable, and grew in the same proportion with his profits. He was, besides, very scrupulous in many points; he would not suffer a just cause to be lost through a client's want of money. He was such an enemy to oppression, that he never denied his assistance to such as laboured under it; and with respect to the clergy of all professions (in Scotland), his conscience obliged him to serve them without a fee. He saw their wrongs required assistance, and he knew their circumstances would not admit of expence. His additions, therefore, to his paternal estate were much infe-

rior to what might have been expected, and a large accession of character was the principal produce of that activity and diligence by which he was distinguished at the bar.

"When his merit had raised him to the bench, he thought himself accountable to God and man for his conduct in that high office; and that deep sense of his duty, at the same time that it kept him strictly to it, encouraged and supported him in the performance. The pleadings in Scotland are carried on chiefly in writing, which renders them sometimes very prolix, so as to take up much of the judge's time, and to exercise alike his parts and his patience in going through and making himself master of them. In this the diligence and dexterity of Lord Cullen were equally conspicuous: he went through every thing that came into his hands very carefully, and sifted it thoroughly; so that the lawyers at the bar never found themselves too strong for the bench, but on the contrary were often told many things by his lordship, which had either escaped their notice, or which the interest of their client had engaged them to conceal. As his attention to the pleadings guided him to the real merits of the cause; so when he was once master of these, his second care was to dispatch it. He knew, that, in judicature, the next fault to denying, was delaying justice; by which families are always injured, and too often ruined. Whenever, therefore, he had provided against being mistaken, he was desirous of bringing the matter to a short decision; and as he was very solicitous about the former, so the parties themselves helped him not a little as to the latter. Whenever he sat as lord ordinary; the paper of causes was remarkably full, for his reputation being equally established for knowledge and integrity, there were none, who had a good opinion of their own pretensions, but were desirous of bringing them before him, and not many who did not sit down satisfied with his decision. This prevailed more especially after it was found that few of his sentences were reversed; and when they were, it was commonly owing to himself: for if, upon mature reflection, or upon new reasons offered at the re-hearing, he saw any just ground for altering his judgment, he made no scruple of declaring it; being persuaded, that it was more manly, as well as more just, to follow truth, than to support opinion: and his conduct in this respect had a right effect; for instead of lessening, it raised his reputation.

"He would not, however, with all his great stock of knowledge, experience, and probity, trust himself in matters of blood, or venture to decide in criminal cases on the lives of his fellow-creatures; which was the reason that, though often solicited, he could never be prevailed upon to accept of a seat in the judiciary court.

"He was so true a lover of learning, and was so much addicted to his studies, that notwithstanding the multiplicity of his business while at the bar, and his great attention to his charge when a judge, he nevertheless found time to write various treatises, on very different and important subjects: some political, which were remarkably well-timed, and highly serviceable to the government: others of a most extensive nature, such as his essays on law, religion, and education, which were dedicated to his present Majesty when Prince of Wales; by whose command, his then secretary, Mr. Samuel Molyneux, wrote him a letter of thanks, in which were many gracious expressions, as well in relation to the piece, as to its author. He composed, besides these, many discourses on literary subjects, for the exercise of his own thoughts, and for the better discovery of truth; which went no further than his own closet, and from a principle of modesty were not communicated even to his most intimate friends.

"In his lordship's private character he was as amiable as he was respectable in his public. There were certain circum-

stances that determined him to part with an estate that was left him by his father; and it being foreseen that he would employ the produce of it, and the money he had acquired by his profession, in a new purchase, there were many decayed families who solicited him to take their lands upon his own terms, relying entirely on that equity, which they conceived to be the rule of his actions. It appeared that their opinion of him was perfectly well grounded. For being at length prevailed upon to lay out his money on the estate of an unfortunate family, who had a debt upon it of more than it was worth; he first put their affairs into order, and by calling the different demands, and compromising a variety of claims, secured some thousand pounds to the heirs, without prejudice to any, and of which they had never been possessed but from his interposition and vigilance in their behalf: so far was he either from making any advantage to himself of their necessities, or of his own skill in his profession; a circumstance justly mentioned to his honour, and which is an equal proof of his candor, generosity, and compassion. He was charitable without ostentation, disinterested in his friendships, and beneficent to all who had any thing to do with him. He was not only strictly just; but so free from any species of avarice, that his lady, who was a woman of great prudence and discretion, finding him more intent on the business committed to him by others, than on his own, took upon herself the care of placing out his money; and to prevent his postponing, as he was apt to do, such kind of affairs, when securities offered, she caused the circumstances of them to be stated in the form of cases, and so procured his opinion upon his own concerns, as if they had been those of a client. These little circumstances are mentioned as more expressive of his temper, than actions of another kind could be; because, in matters of importance, men either act from habit, or from motives that the world cannot penetrate; but, in things of a trivial nature, are left upon their guard, shew their true disposition, and stand confessed for what they are."

GRASMERE-WATER, a small lake of Westmoreland, to the W. of Ambleside. Its margin is hollowed into small bays, with bold eminences; some of rock, some of turf, that half conceal and vary the figure of the lake. From the shore, a low promontory projects far into the water; and on it stands a white village, with the parish church rising in the midst of it.

GRASON, an island in the gulf of Bothnia, near the coast of Sweden. Long. 18. 20. E. Lat. 60. 12. N.

GRASSANO, a town of Naples, in Basilicata, 18 miles E.S.E. of Cirenza.

GRASSE, a town of France, in the department of Var. It was lately a bishop's see; and is seated on an eminence, 15 miles W. of Nice. Long. 6. 56. E. Lat. 43. 39. N.

GRASSE, a town of France, in the department of Aude, seated on the river Othien, at the foot of the mountain of Courbiere, 18 miles S.E. of Carcassonne.

GRATELEY, a village in Hampshire, on the S.E. side of Quarley hill, in the road from Andover to Salisbury, where, in 926, King Athelstan held a grand council of the nobility. Near it is a great Roman camp, and on Quarley hill is a large British camp.

GRATES (*Encycl.*) Grates are peculiarly adapted to the use of pit-coal, which requires a greater draught of air to promote its burning freely, than any other kind of fuel. Most of them however are ill contrived for the purpose, and are especially injudicious, count Rumford observes, when made of, or connected to, large masses of iron, which being a rapid conductor of heat, sends off a large portion of what the fuel supplies, and which would otherwise be reflected into the room. No substance in nature, he says, has a stronger power

of reflecting heat than brick, a fact both understood and applied in the culture of wall-fruit: it is therefore of consequence to have as little iron as possible in our fire-places, and as much brick or fire-stone. See FIRE-PLACE.

Count Rumford's *cottage and gridiron* grates, are important contrivances to those who wish to derive a great deal of comfort from a small quantity of fuel. But for this end it is necessary to have the fire-place constructed with a scrupulous regard to his instructions, and to the models to be seen at the Royal Institution.

In the year 1791, a patent was granted to Mr. BENJAMIN CHARLES COLLINS, of Salisbury, Wilts, for a grate on a new construction, to be used either in or out of a chimney. This invention is said to be calculated to increase the action of the air upon fire, by augmenting and directing the passage of the former through the latter. Thus the fire may be rendered so intense as to present a perfect white heat; and, as the draught of air is very great, the patentee observes, that "all, or nearly all of the unignited smoke is carried down into the fire and then consumed, instead of passing off in the common way." To effect this purpose, he constructs one or more air-flues provided with stops, by which he may at pleasure promote the draught of air to the requisite degree of heat.

Grates of this construction are asserted to be very useful for light-houses, and other places requiring a strong fire, such as laboratories, brew-houses, smelting-furnaces, glass-houses, &c. — For a more circumstantial account of this patent, we must refer the reader to the 8th vol. of the *Repository of Arts and Manufactures*.

A later invention is that of Mr. BURNS's for fire-grates and fives.

The object of this supposed improvement is to prevent those disagreeable currents of air which gush from every opening and crevice in an apartment toward the fire-place, and also to impart greater equality to the temperature of the air in the different parts of the room. These objects he accomplishes by a contrivance similar to that used by many chemists for supplying their furnaces with fresh air. In lieu of our present fives or grates, he substitutes an urn-shaped stove standing in the chimney, having an opening in front to throw the fire, and supplied with air from without the house, where practicable, by means of a tube communicating with the fire, passing through the pedestal of the stove, and conducted through the hearth, in whatever manner is most convenient, to the outside of the house. Where the tube cannot be thus made to communicate with the external atmospheric air, it is conducted to a cellar or any other cool part of the house, whence the fire draws its requisite supplies of air, and at the same time creates a wholesome circulation in the air of that cellar or other room. The ashes fall into a metal drawer, where they remain concealed from view, and in which they are removed at once without raising any dust in the apartment.

Those who attempt to appreciate inventions of this kind, should examine well whether they are not (many of them) constructed on false principles; not perhaps as to the *production* but the *application* of heat.

GRAUDENTZ, a town of Poland, in the palatinate of Culm, with a castle; seated on the Vistula, 30 miles N. of Thorn, and 110 N.W. of Warsaw. Long. 18. 52. E. Lat. 53. 36. N.

GRAVEN MACHEREN, a town of Luxemburg, on the Moselle, 18 miles E.N.E. of Luxemburg. It was sacked and burnt, in 1552, by the Marquis of Brandenburg.

GRAVENWERT, a town of Lower Bavaria, 42 miles E.N.E. of Nuremberg.

GRAVESANDE, a town of Holland, where the ancient counts of Holland resided. It is seven miles W. of Delft.

GRAULHET, a town of France, in the department of Tarn, 12 miles N.W. of Castres.

GRAY'S THURROCK, a town in Essex, with a market on Thursday, seated on the Thames, 24 miles E. of London. Long. 0. 24. E. Lat. 51. 26. N.

GREBENSTEIN, a town of Germany, in the principality of Hesse Cassel, 12 miles N.W. of Cassel, and 16 N.N.E. of Naumburg. Long. 8. 58. E. Lat. 51. 16. N.

GREENLAW, the county-town of Berwickshire, seated on a river that joins the Tweed, before it reaches Berwick. It is 17 miles W. by S. of that town. Long. 2. 18. W. Lat. 53. 43. N.

GREENSBURGH, the county-town of Westmoreland, in Pennsylvania, 178 miles W. by N. of Philadelphia. Long. 78. 36. W. Lat. 40. 8. N.

GREENSTED, a village in Essex, one mile W. of Chipping Ongar, remarkable for its little church (built prior to the Conquest), the walls of which are formed of the trunks of trees placed in rows.

GRIEFFENHAGEN, a town of Upper Saxony, 37 miles N. of Custrin. Long. 15. 9. E. Lat. 53. 12. N.

GREIN, a town of the archduchy of Austria, situate on the Danube, 62 miles W. of Vienna. Long. 18. 5. E. Lat. 48. 16. N.

GREITZ, a town of Upper Saxony, in Voightland, with some stuff manufactures; situate on a small river, which runs into the Elster, 12 miles S.W. of Zwickau.

GRENADE (*Encycl.*). See GRANADA.

GREVENBROICH, a town of Westphalia, in the duchy of Juliers, 10 miles E.N.E. of Juliers. Long. 6. 18. E. Lat. 51. 6. N.

GREUSSEN, a town of Upper Saxony, in the county of Schweitzburg, 16 miles N. of Erfurt, and 18 E. of Muhlhausen. Long. 10. 45. E. Lat. 51. 6. N.

GRIESSEWALDE, a town of Upper Saxony, 24 miles S.E. of Stralund. Long. 11. 18. E. Lat. 54. 4. N.

GRIFFENHAKEN, a town of Prussian Pomerania, in the duchy of Stetin, seated on the Oder, opposite Gartz. Long. 14. 42. E. Lat. 53. 25. N.

GRIMBERGEN, a town of Austrian Brabant, with an abbey and a castle, six miles N. of Brussels. Long. 4. 27. E. Lat. 50. 57. N.

GRIMM, a town in the electorate of Saxony, with a citadel, seated on the Muldaw, 10 miles S.E. of Leipzig. Long. 12. 35. E. Lat. 51. 15. N.

GRIMMEN, a town of Swedish Pomerania, five miles S. of Stralund. Long. 13. 27. E. Lat. 54. 12. N.

GRIMPERG, a town in the electorate of Treves, with a bishop's see, 17 miles S.E. of Treves. Long. 6. 59. E. Lat. 49. 35. N.

GRIMSBY, GREAT (*Encycl.*). The market at this place is on Friday only.

GRINDELWALD, a town of Switzerland, in the canton of Bern, seated among mountains, at the foot of a celebrated Glacier, 25 miles S.E. of Thun. Long. 7. 43. E. Lat. 46. 27. N.

GROHNDE, a town of Lower Saxony, on the Weser. Near it is a monument of stone, erected in memory of a bloody battle fought there in 1421. It is nine miles S. of Hamelin.

GROLL, a town of Dutch Guelderland, in the county of Zutphen. It was often taken and retaken in the wars between the Dutch and Spaniards. The French took it in the year 1672, and demolished the fortifications. It is seated on the Slinghe, 15 miles S.E. of Zutphen.

GROSSA, an island of Dalmatia, in the gulf of Venice, near the coast of the county of Zara. It is 50 miles in circumference, and belongs to the Venetians.

GROSE (Francis), a distinguished antiquarian, born about the year 1731, was the son of Mr. Francis Grose of Richmond, jeweller, who filled up the coronation crown of George II. By his father he was left an independent fortune, which he was not of a disposition to add to, or even to preserve. Having once had a commission in the army, he entered into the Surrey militia, of which he became adjutant and paymaster; but to much had dissipation taken possession of him, that in a situation which above all others required attention, he was so careless as to have for some time (as he used pleasantly to tell) only two books of accounts, viz. his right and left hand pockets. In the one he received, and from the other paid; and this too with a want of circumspection which may be readily supposed from such a mode of book-keeping. His losses on this occasion roused his latent talents. With a good classical education he united a fine taste for drawing; and encouraged by his friends, as well as prompted by his situation, he undertook the work from which he derived both profit and reputation; we mean, his *Views of Antiquities in England and Wales*, which he first began to publish in numbers in the year 1773, and finished in the year 1776. The next year he added two more volumes to his *English Views*, in which he included the islands of Guernsey and Jersey, which were completed in 1787. This work answered his most sanguine expectations; and, from the time he began to the end of his life, he continued without intermission to publish various works (a list of which we subjoin), generally to the advantage of his literary reputation, and almost always to the benefit of his finances. His wit and good-humour were the abundant source of satisfaction to himself, and entertainment to his friends. He visited almost every part of the kingdom, and was well received wherever he went. In the summer of 1789 he set out on a tour in Scotland; the result of which he began to communicate to the public in 1790 in numbers. Before he had concluded this work, he proceeded to Ireland, intending to furnish that kingdom with views and descriptions of her antiquities, in the same manner as he had executed those of Great Britain; but soon after his arrival in Dublin, being at the house of Mr. Hone there, he died suddenly of an apoplectic fit, on the 6th of May, 1791, and was interred in Dublin. His natural tendency was to humour, in which he excelled both by the selection of anecdotes and his manner of telling them: it may be said, too, that his figure (extremely uncouth and bulky) rather assisted him, for it was in fact the very title page to a joke. He had neither the pride nor malignity of authorship: he felt the independency of his own talents, and was satisfied with them, without degrading others. His friendships were of the same cast; constant and sincere, overlooking some faults, and seeking out greater virtues. He had a good heart; and, abating those little indiscretions natural to most men, could do no wrong.

He married at Canterbury, and resided there some years, much beloved and respected for his wit and vivacity. He had two sons, Francis Grose, a major in the army, who, after several campaigns in America, was appointed in 1790 deputy governor of the new settlement at Botany Bay; and Onslow Grose, in the service of the East-India Company, lately deceased. Besides these he had two daughters both living.

His works are as follow: 1. *The Antiquities of England and Wales*, 8 vols. 4to. and 8vo. 2. *The Antiquities of Scotland*, 2 vols. 4to. and 8vo. 3. *The Antiquities of Ireland*, 2 vols. 4to. and 8vo. 4. *A Treatise on ancient Armour and Weapons*, 4to. 1785. 5. *A Classical Dictionary of the Vulgar Tongue*, 8vo. 1785. 6. *Military Antiquities*; being

History of the English Army from the Conquest to the present time, 2 vols. 4to. 1788. 7. *The History of Dover Castle*, by the Rev. Wm. Danell, 4to. 1785. 8. *A Provincial Glossary,*

with a Collection of local Proverbs and popular Superstitions, 8vo. 1788. 9. *Rules for drawing Caricatures*, 8vo. 1789, 10. *Supplement to the Treatise on Ancient Armour and Weapons*, 4to. 1789. 11. *A Guide to Health, Beauty, Honour, and Riches*; being a Collection of humorous Advertisements, pointing out the Means to obtain those Blessings; with a suitable introductory Preface, 8vo. 12. *The Olio*; being a Collection of Essays in 8vo. 1793.

GROSETTO, a town of Tuscany, with a castle and a bishop's see; situate near the sea, 30 miles S.W. of Sienna. Long. 11. 1. E. Lat. 42. 40. N.

GROYNE, a river of Spain, in Galicia, which enters the bay of Biscay, at Corunna.

GRUCKFELDT, a town of Carinthia, with a castle, on the river Save. Long. 15. 45. E. Lat. 46. 7. N.

GRUNBERG, a town of Germany in the principality of Upper Hesse, where the kings of the Merovingian race and Charlemagne held their court. It is 10 miles E. of Gießen, and 28 W. of Fulda.

GRUNBERG, a town of Silesia, in the principality of Glogau, surrounded with vineyards. Here is a manufacture of cloth. It is 12 miles N. of Freystadt, and 24 N.W. of Glogau.

GRUNDE, a town of Germany, in the duchy of Brunswick, and in the mountains of Hartz. Long. 13. 35. E. Lat. 52. 10. N.

GRUNHAYN, a town of Upper Saxony, in the circle of Erzgebirg, 46 miles W.S.W. of Dresden. Long. 12. 46. E. Lat. 50. 32. N.

GRUNINGEN, a town of Lower Saxony, in the principality of Halberstadt, on the river Elbe. Long. 11. 41. E. Lat. 52. 4. N.

GRUNSTADT, a town of Germany, in the circle of Upper Rhine, and county of Leiningen, 22 miles N.N.W. of Spire, and 28 S. of Mentz. Long. 7. 58. E. Lat. 49. 32. N.

GUACOCKINGO, a town of New Spain, 30 miles S.E. of Mexico. Long. 99. 45. W. Lat. 19. 36. N.

GUADARAMA, a town of Spain, in Old Castile, remarkable for its great trade in cheese. It is seated on the Guadarama, 25 miles N.W. of Madrid. Long. 3. 48. W. Lat. 41. 45. N.

GUADRAMIRO, a town of Spain, in Leon, 33 miles W.S.W. of Salamanca.

GUARDAMAR, a sea-port of Spain, in Valentia, at the mouth of the Segura. The chief trade consists in the exportation of salt. It is 17 miles S.S.W. of Alicante. Long. 6. 18. W. Lat. 38. 7. N.

GUARMA, a sea-port of Peru, 120 miles N.W. of Lima. Long. 77. 49. W. Lat. 10. 10. S.

GUASTO, or VASTO, a town of Naples, in Abruzzo Citeriore, on the Gulf of Venice, 15 miles S.E. of Lanciano, Long. 15. 6. E. Lat. 42. 15. N.

GUAYAQUIL, a sea-port of Peru, in the audience of Quito, and the capital of a jurisdiction of the same name. It is defended by three strong forts, and situate on the river Guayaquil, at its entrance into the gulf of Guayaquil, 140 miles N.N.E. of Paita, and 150 S.S.W. of Quito. Long. 78. 36. W. Lat. 2. 12. S.

GUERCHE, a town of France, in the department of Ille and Vilaine. 20 miles E.S.E. of Rennes. Long. 1. 20. W. Lat. 47. 57. N.

GUERGELA, a town of Barbary, in Biledulgerid, 80 miles S. of Mount Atlas. Long. 4. 50. E. Lat. 31. 45. N.

GUERNSEY (*Encycl.*). Of this island, Dr. Campbell gives the following account: "It lies 20 leagues south-west from Weymouth in Dorsetshire, between eight and nine leagues west from the coast of Normandy, 13 south of Bre-

tagne, seven north-west from Jerfey, five south-west of Alderney, and two west from Sark. In length from north-east to south-west, about twelve miles; in breadth, from south to north, about nine; in circumference, upwards of 30; containing 50 square miles, or 32,000 acres. The climate is mild and temperate; not subject to excessive heats, much less to severe cold; somewhat windy; but, taking all things together, equally healthy and pleasant. The soil is, generally speaking, rich and fertile; the country, though sufficiently enclosed with stone fences, yet more open than in Jerfey, and as capable of cultivation of every kind. On the north side, the coast is commonly low and flat, rising gradually, so that on the south side the cliffs are of a prodigious height. The face of the country is variegated with hills and little eminences, and tolerably well watered with springs and sharp gravelly streams. There was formerly a fine lake, about half a league in extent, now filled up, and turned into a meadow; but many gentlemen have still very beautiful and convenient fish-ponds.

"There are very few countries in the world more capable of improvement. Most of the rising grounds afford a short thick grass, equally beautiful to the eye, and succulent as pasture. Roots and herbs it produces of all kinds, excellent, medicinal, and aromatic; with a profusion of flowers that grow wild, and are exquisitely fragrant. All sort of shrubs and fruit-trees flourish here: and there is some, though but little, timber; not through any defect of soil or climate, but because they cannot conveniently afford it room. Grain they have of every species we cultivate in Britain, but more especially wheat; and though they have not either lime, chalk, or marle, yet the sea-wreck answers all the intention of manure, so well as to keep their ground in constant heart. They have large quantities of sheep, but small in size; and had formerly a very singular breed, of which the ewes had four horns, and the rams six; but these are now become very scarce. Their black cattle are in such abundance, as not only to support their own uses, but to furnish also a considerable exportation; and their horses, though but little, are equally strong and hardy. The sea also furnishes a prodigious variety as well as plenty of fish, more especially red and grey mullet, excellent mackerel, and above all, conger-eels. To these advantages we may add, the singular privilege of being free from all venomous creatures.

"There are in this island ten parishes, each of which is divided into several vintons, for the more easy management of affairs, civil, ecclesiastical, and military, and the choice of their respective officers and magistrates. Though the country is very fully peopled, yet the houses are scattered up and down, according to the humour or the convenience of the inhabitants: so that there is, properly speaking, but one town in the island, which is likewise the only haven of any resort; though there are some creeks on the north and west sides of the island, such as Bazon, L'Aucresse, Ferminier, St. Sampson, and the West Passage. All these ports are in a state of nature; but might be certainly improved and fortified, which would be productive of many advantages to the island; as was long ago observed and proposed to government by Captain Yarranton. In the reign of King Charles II. when the French formed an insidious design of making themselves masters of this island by treachery, it left such an impression on his majesty's mind, that some years after he sent over the Lord Dartmouth, accompanied by certain engineers, who discovered on the north-west side of the isle, a deep bay, which, by the help of a mole, might cover a numerous squadron, even of ships of the line, under the protection of what was also intended to be built, a strong castle: but his exchequer being exhausted, this necessary work was never carried into execution. As this port would look full into the channel,

it deserves consideration, how far it might be useful to us in the time of a French war, and of what infinite detriment it might prove if this island should ever fall into the hands of our enemies.

"The inhabitants are very industrious in their respective employments; naturally sober, frugal in their manner of living, honest in their dealings, sincere in their religion, which is that of the church of England, and loyal to their princes, as well as steady to the British interest. They are, however, reserved to a degree, that makes them sometimes thought morose; they are somewhat suspicious; and, which is their greatest error, they are, or at least were, very litigious. They are good husbandmen in their own way, and manage the sea-wreck (which first serves the poor people for fuel), and then its ashes are employed by those in better circumstances (for manure) with great skill, and under very prudent regulations. The wreck is cut in summer, and about the vernal equinox, by the proclamation of the magistrates, and when dried, distributed by their order. As for the winter-wreck, which after storms is thrown in large quantities on the coast; this is also equitably divided, and being firewood wet, and so ploughed into the ground, renders it continually fertile. They have a stronger turn, however, to grazing, than to agriculture; and though they bring in annually some corn, yet in the same space they feed out a few hundred cattle. They are still more inclined to orchards, which enables them to make many thousand hogheads of cyder every year; of which, it being the common drink of the people, they export but little. The woollen is their principal manufacture, for the carrying on of which they are allowed to import 2000 tons from England, which they work up chiefly in stockings, waistcoats, and breeches. They might certainly make their fishery turn to profit, more especially as of late years they have set up salt works; and yet, except lobsters, I never heard that any of their fish went to a foreign market. Our French and Portugal merchants have large stocks of wine here, which they import as they have occasion. As they are enabled, by this method, to keep it to a proper age before they are obliged to pay the duty, it seems to be a benefit to the mother-country, by putting it in their power both to buy and sell cheaper: as on the other hand, from the rent of warehouses, the subsisting factors and their servants, the resort of ships employed in this trade, it must be very advantageous to the inhabitants of this island. It is a point of justice to observe, that this manner of depositing wines, has nothing at all to do with smuggling; a practice equally injurious to the interests of this country and to the people of Guernsey, as it breeds few seamen, is carried on in very small vessels, and upon the whole is not only an infamous, but a very unprofitable kind of traffic. Heretofore, merchants of this isle traded to most parts of Europe, and had several stout ships of their own; and if this vile practice was abolished, as it might easily be, without any violation of the liberties of the people, they would soon find their account in it, by the revival of many lucrative branches of commerce. As they take away from England some of the necessaries, and almost all the conveniences, of life, such as corn, malt-liquor, sugars, spices, coals, household-furniture, many species of the iron and leather manufactures, grocery, haberdashery, and hard-wares, the balance is greatly in our favour; and must continually increase, in proportion as they augment in number, and grow easier in circumstances. At present, upon a very moderate computation, there are in Guernsey upwards of 15,000 souls.

"The several islets and vast chains of rocks that surround this country on every side, and cause such a variety of tides and currents, add much to the security of the place, by ren-

dering it equally difficult and dangerous for ships to approach it, unless they have pilots aboard extremely well acquainted with the coast. On the fourth side, the cliffs are prodigiously high; so that the old writers say, it looks like a park in the sea, impaled with rocks. On the west side lie the Hanoyas, or, as the French write them, *Hanocaua*, which cover that coast so effectually, that a descent there is little to be feared. At the north-west extremity lies a little island called *the Houe*; which would be a very convenient place for a salt-work, glass-house, or manufactory of soap. At the north-east extremity we meet with St. Michael in the Vale, a peninsula some miles in extent, connected with Guernsey by a very narrow isthmus, with bays that might be rendered useful on both sides. This peninsula is likewise guarded by rocks and islets, the most considerable of which are the Bryants, the Hummet, and the Hays. South-east from the vale, lies the island of Harnet, or Arne, about a league in compass, formerly desert, but now cultivated. At a league south from thence lies Briboe, of less extent; and between both, the little island of Gythau, or Jethau, which serves the governor for a kind of park, or rather paddock.

GUETA, a town of Spain, in New Castile, 60 miles E. of Madrid. Long. 1. 56. W. Lat. 40. 22. N.

GUGLINGEN, a town of Suabia, in the duchy of Wirtemberg, situate on the Zaber, 18 miles N. of Stuttgart, and 22 S.S.E. of Heidelberg. Long. 8. 56. E. Lat. 49. 2. N.

GULLAIN, St. a town of Austrian Hainault, seated in marshy land, on the river Haine, six miles W. of Mons. Long. 3. 53. E. Lat. 50. 27. N.

GUILLESTREE, a town and castle in the Alps, once belonging to Dauphiny, in France. It was taken by Prince Eugene in 1692, and is nine miles N.E. of Embrun. Long. 6. 36. E. Lat. 44. 41. N.

GUIMALAENS, an ancient town of Portugal, in the province of Entre-Douero-e-Minho. It has formerly been the residence of their kings, and is divided into the Old and New. The public buildings are magnificent, and the collegiate church is said to be founded on the ruins of a temple of Ceres. It is 10 miles S.E. of Braga. Long. 8. 21. W. Lat. 41. 35. N.

GUM (*Encycl.*). The following account of a discovery made by Citizen Leroux, of a gummy substance contained in the bulbous root of the *Hyacinthus non-scriptus*, is given by Citizen Deyeux, in the *Annales de Chimie*.

"It had long since been observed," says Citizen Leroux, "that the bulbous roots of some plants contained a mucilaginous substance; but no one had yet attempted to extract it, and still less to analyze it. A particular circumstance having given me occasion to employ the bulbs of the *Hyacinthus non-scriptus*, I was so much surprised at the great degree of viscosity which I found them to possess, that I did not suffer the favourable opportunity to escape me, which presented itself, for subjecting these roots to various experiments. It would be superfluous here to give an account of all the different trials which I have made: it will be sufficient for the present to inform you, that, having reduced 50 kilogrammes of the above-mentioned bulbs into a paste, by pounding them in a mortar, I diluted this paste with a sufficient quantity of water: the liquor, having been strained through a fine piece of linen, was afterwards evaporated to the consistence of a thick syrup. In this state it was poured into moulds of tinned iron, which were immediately placed in a stove.

The desiccation took place pretty rapidly; and when it was completed I found, at the bottom of each mould, a brittle transparent substance, which exhibited all the external characters of a real gum.

The 50 kilogrammes of the bulbs, which I employed, yielded me 8 kilogrammes of this gummy product. On comparing this product with various kinds of gums, it possesses the same properties; for, 1. treated with nitric acid, it yielded a twelfth of its weight of oxalic acid.

2. Dissolved in water, it rendered this fluid very (tinctu- cent).

3. This solution, left to itself in a rather warm temperature, soon grew four and mouldy.

4. Mixed with alcohol, it became turbid, and deposited a white flaky matter.

5. By distilling the dried gummy matter in a retort, the following products were obtained: phlegm, a very small quantity of oil, and the pyro-mucous acid. All these fluids had the smell of burnt bread, &c.

It is probable that this matter, as it exists in this root, is perfectly colourless; on cutting several pretty large bulbs transversely, the fluid, which flowed out spontaneously, dried upon the surface that had been laid bare, and formed a very transparent, and entirely colourless, pellicle.

The quantity of gum that may be extracted from these roots is sufficiently considerable to render its extraction an object worthy of attention. On calculating the expense with which it would be attended, it already appears, that if the extraction were carried on upon a large scale, it would not only repay the costs, but one might also hope to obtain some profit from it.

Citizen Leroux, after having prosecuted these experiments, imagined that he had succeeded, by a very simple process, in converting the above-mentioned gum into a substance analogous to the amylineous matter.

A patent was obtained in June, 1788, by Mr. Francis Blaikie, of Glasgow, merchant, for the invention (discovered to him) of a substitute for gum, in thickening colours for printing, which fully answers the purpose, and at a more reasonable rate.—This article is prepared by boiling flax-seed in water, till the whole substance is completely extracted; the liquor is next to be strained through a linen or woollen cloth, and boiled down to the consistence of a jelly. It is then to be put into a close vessel, and a small quantity of spirits, or sweet oil, poured on the top, in order to preserve it in a fresh state. In using this substitute, the printer is directed to put a certain portion into a gallon of colour, according to the nature of the latter, and the particular kind of work; while he should regulate himself by trial, in the same manner as is practised in employing common gum.

GUM (*Gumma*), in medicine, is a tumour arising out of the substance of a bone; it is so soft as to yield to the finger. When these tumours are harder they are called *tophi*; when harder still, they receive the name of *nodes*: but the hardest tumours in bones are *exostoses*. In venereal patients such tumours often happen on the head, and even in the middle of the most solid bones. They seem to be produced when the vessels running between the bony laminae, being either obstructed or inflamed, are dilated, and so raise the incumbent laminae. Perhaps the bone degenerates too into a morbid softness. A softness of the bones sometimes succeeds abscesses of the adjacent parts; and sometimes the origin of the disorder is lodged in the substance of the bone, especially in the lues venerea; gummata have, however, been discovered, when no such adequate cause could be observed. See SURGERY.

GUN (*Encycl.*) The following is the specification of a patent granted to Mr. Proffer, of Charing Cross, sword-cutter, for a water-proof pan and hammer for gun and pistol locks, and also a breech for gun and pistol barrels, for the purpose of a quicker and more forcible explosion of gunpowder. It

is dated Dec. 9, 1800, and the proprietor thus describes and ascertains the nature of his invention, and in what manner it is to be performed. A, in plate 32, is the hammer, perforated with a large hole, a little conical, to receive the cylinder B, round which A moves forward and backward. The end, No. 1, of the hammer A, in the inner side, has a circular groove, to receive the ward No. 2, which is on the screwed end of the cylinder B. This ward is for the purpose of preventing the admission of any water (which may fall between the hammer and the barrel of the gun or pistol) into the joint. The heel, No. 2; when the cock strikes the hammer A, falls upon the hammer spring, and prevents the hammer A going further round on the cylinder B than is necessary to expose the pan on the cylinder B. At the bottom of the face of the hammer A is a hole, made exactly the shape and size of the pan in the cylinder B; which hole, when the hammer A is turned round to its extent, admits the fire to fall into the pan on the cylinder B. Inside of the end, No. 3, of the hammer A, is a female screw, to receive the male screw C into it, which, when screwed into the end No. 3 of A, completely encloses the end of the cylinder B, so as to prevent the admission of water. B, is the cylinder, round which the hammer A acts, and which cylinder may be made of iron, steel, or metal, and is made a little conical. In this cylinder the pan and touch-hole are made; at the end of which is a male screw, No. 1, of a smaller diameter than the cylinder. This screwed end, No. 1, passes through the whole of the end No. 1 of the hammer A, and screws into the female screw of the hole No. 1 of the breech D. This screw goes quite into the chamber of the breech D, and a large conical hole is made in it, quite up to the touch-hole in the pan. This hole is made so large as to admit with ease the powder that falls into the chamber into it, and brings the bottom of the charge of powder quite close to the prime in the pan. The shoulder or ward No. 2, on the end of the cylinder B, when the cylinder B is in the hammer A, works in the circular groove, which is in the inner side of the end No. 1 of the hammer A, for the purpose before described. One side of the cylinder B is filed away to the same shape as the hole in the face of the hammer A, so as to give no impediment to the falling water of the face of the hammer A, when it is turned round over the pan. The hammer A is prevented falling too near the cock by having a knob of iron on the false breech of the barrel. The toe, No. 4, of the hammer A, works upon the usual kind of hammer springs, and might be used either with a roller or swivel spring. The breech D is made of two parts, and are screwed into each other, there being a male and female screw, each half being concaved into nearly equal parts, so as to form an oval chamber; at the bottom of which the touch-hole is placed, and at the top the chamber is contracted, so as to prevent the ramrod entering into the chamber; by which means the powder is left all loose, and free from pressure, and consequently will more forcibly, and with greater quickness, explode on the side of the breech D. A small screw, No. 2, is made to screw into the screwed end of the cylinder B, to prevent its turning round with the hammer A when it is operating. The above water-proof hammer and pan can be applied to any gun or pistol already made, either separate from, or in conjunction with, the breech D. The section E is a true representation of the form of the chamber in the breech D, when both parts are screwed together; and of the cylinder B, when screwed into the hole No. 1 of breech D."

GUNDELSINGEN, a town of Bavaria, in the duchy of Neuburg, situate on the Brenz, near the Danube, 19 miles N.E. of Ulm. Long. 10. 12. E. Lat. 48. 34. N.

GUNPOWDER (*Encycl.*) Some writers having lately attributed the invention of gunpowder to the Indians, and

Vol. X.

asserted that they employed it in their wars against Alexander, the writer of the following remarks was induced to examine the subject with some attention: he found the best account of gunpowder, as known to the Asiatics in early ages, given by the learned *Casiri*, in his *Biblioth. Hispan.-Arabica*, or Catalogue of the Oriental Manuscripts deposited in the Library of the *Escorial* in Spain (vol. II. p. 6). He there digresses into a curious little essay entitled, "*De Tormentorum bellicorum et nitrati pulveris apud Arabas antiquitate et usu*:" from which we have extracted and translated the following passages:

It is sufficiently known to those who have made ancient tactics the subject of their study, that the Greeks and Romans used missile fires, such as torches or flambeaux, burning arrows, and other instruments of fiery destruction, which they either cast by means of certain engines and machines, or flung with the hand into the places besieged.

Vegilius, in his book *De re militari*, and *Leo*, in his *Tactica*, treat very fully of these matters. The former, among his precepts to those who study the art of war, has the following passage: "If there should be houses in the fortrefs, or place besieged, of such materials as may be easily kindled, you may burn them by means of fiery arrows directed various ways, especially if the wind blow violently. You may also use squared stones full of fire and *manganica alacotia*, which project stones," &c. But among the Greeks and Romans we do not find any mention of *pulvis nitratus*, or gunpowder; and the time of its invention is not exactly ascertained by the antiquaries. *Charles Du Fresnoie*, in his *Glossar. Med. et inf. Latinit.* (in the word *Bombarda*), informs us, that "the inventor of gunpowder is said to have been a certain chemist, a monk, named *Berthold Schwartz*, or *Black*; and, according to the calculation of *Bartholomew du Drach*, it was used in France since the year 1338. But the invention has been ascribed to many others more modern than *Schwartz*."

The records, however, of the Arabians, trace the use of gunpowder to ages of far greater antiquity, among the Persians and the Africans. Whence it is very probable that the knowledge and use of it passed from the Arabians to the Spaniards, and from the Spaniards to the French, who, in process of time, improved on the original invention by reducing the crude powder to grains, and blending the various ingredients according to certain rules of composition. That this was the case, appears from several Arabic manuscripts deposited in the *Escorial* library, and particularly from one (No. MDCXXXIV), of which the author (who flourished in the year 1240) thus describes the various instruments of destruction by fire used in his time among the Arabians: "Scorpions (says he), twisted round and blazing with *nitrous powder*, creep along, hissing as they go, and at length exploding, they send forth flames like lightning, and burn: then you may behold a *manganum* discharged, stretching like a cloud through the air, making a noise like thunder, and vomiting out fire on all sides, overthrowing, burning, and reducing all things to ashes."

From this passage it would appear, that our author alluded to the globes or bombs of iron, burst by means of artificial fire; for he uses the words *naphtha* and *barud*, of which, in those times, gunpowder was composed. By the word *barud*, the Persians, Turks, and Arabians, formerly understood *nitre*. At present they use it to express *nitrous powder*, or gunpowder. *Naphtha* signifies a kind of bitumen mixt with sulphur. A noble writer of Granada, *Abu Abdallah Ebn Alkatib*, in his *History of Spain* (about the year of Christ 1312 and 1323), speaking of the globes or balls exploded by means of *naphtha* over the heads of enemies, has the following passage: "Abalvalid Iismael ben Nasir, at that time king of Granada,

moving his camp, laid siege to the town of *Beca*, where he exploded at the fortified tower, by means of fire, an immense machine furnished with *naphtha* and a globe or ball, making a loud noise."

That the use of such instruments of war obtained among the Arabs, may be gathered from the *Chronicle of Alfonso XI.* cap. 223, wherein we read, that whilst *Algezira* was besieged (in 1380), the Moors discharged many *peals of thunder* upon the army, casting iron balls equal in size to very large apples, some of which went so far as to pass the station of the troops, &c. In the same work (cap. 227) the matter is more clearly expressed: "In the year 1382, five vessels entered the port, laden with corn, honey, butter, and the powder with which *thunder was darted forth*," &c.

Of the former transaction Peter Mexia takes notice in his *Sylva Varie Lectionis*, lib. 1, cap. 8; but he is silent on the other: proving, however, the great antiquity of those machines (in the edition of his work published in 1570), he mentions a sea fight between the Tunisians and Spaniards, in which the ships of the Mahometans were furnished with iron ordnance, or *bombardas*, discharged by means of fire, with great effect upon the enemy. From this circumstance the author infers, that the instruments of destruction which we now denominate *artillery*, must have existed among the Mahometans above four hundred years ago, but less perfect than at present (1570).

There is also a passage of *Elmakine* (translated from Arabic into Latin, by Erpenius), which shews that the use of gunpowder was known to the very ancient Arabs; for he tells us, that in the year of the *Hegira* 71 (of Christ, 690), *Hejaje* besieged Mecca, and destroyed, by means of fire, the holy Caaba, using *manganas* and mortars, with fire and *naphtha*.

To these may be added the testimonies of European writers (apud Fabric. Biblioth. Antiq. p. 636). *Hyde*, in his *Hist. Shahiludii*, p. 175, informs us, that the Indians had for many centuries the use of gunpowder, and of machines for sending forth fire; and that the Chinese learned the knowledge of them from the Indians; and it appears in his *Var. Observat.* p. 89, that the Saracens learned it from the Chinese; and Joinville, an eye-witness, acknowledges that the Saracens used instruments of fiery destruction against St. Louis, king of France.

GUNTOOR, one of the Northern Circars, in the peninsula of Hindoostan. It is also called *Mortinazagur* and *Condavir*, and occupies the space between *Condapilla*, the southernmost of the four English Circars, and the N. part of the Carnatic; extending more than 30 miles along the bay of Bengal. The maritime parts of this circar are flat and open, but the interior parts contain some very strong fortresses and posts. It is subject to the Nizam of the Decan.

GUNTZBERG, a town of Suabia, in the Margravate of Burgaw, with a castle, seated on the Danube, 16 miles N.E. of Ulm. Long. 10. 25. E. Lat. 48. 35. N.

GUNTZENHAUSEN, a town of Franconia, 5 miles from Weissenburg. It is seated on the Altmul, near a forest, and subject to the King of Prussia.

GURIEF, a town of Russia, in the government of Astracan, seated near the Caspian Sea, between the mouths of the Ural, 210 miles E. by N. of Astracan. Long. 52. 50. E. Lat. 46. 32. N.

GURRAH, a town of Hindoostan Proper, situate near the river Nerbuddah, 168 miles S.S.W. of Allahabad, and 208 S.W. of Benares. Long. 80. 23. E. Lat. 23. 9. N.

GURRAMCONDA, a town of the peninsula of Hindoostan, in the kingdom of Myfore, 73 miles N.E. of Bangalore, and 112 N.N.W. of Madras. Long. 78. 36. E. Lat. 13. 47. N.

GUSTROW, a city of Germany, in the duchy of Mecklenburg-Schwerin, and capital of the circle of Wenden. The chief courts of judicature for the duchy are held here; and it has an elegant palace, in which the dukes sometimes reside. It is 35 miles E. by N. of Schwerin. Long. 12. 13. E. Lat. 53. 57. N.

GUTTA, a town of Hungary, seated on the E. side of the Danube, opposite the island of Schut, 25 miles E. by S. of Presburg. Long. 17. 47. E. Lat. 48. 10. N.

GUTSKOW, a town of Swedish Pomerania, capital of a county of the same name. It is seated on the Peene, 14 miles W. of Wolgast. Long. 13. 39. E. Lat. 54. 0. N.

GUZERAT, a peninsula of Hindoostan Proper, 200 miles long and 140 broad, formed by the Arabian Sea and the gulfs of Cambay and Cutch. The west part is mountainous and woody, inhabited by a wild hardy race, and governed by rajahs of their own; but the largest and finest part is included within the extensive empire of the Maharrattas. Amedabad is the capital.

GWALIOR, an ancient fortress of Hindoostan Proper, in the province of Gohud. It stands on a vast rock, about four miles in length, but narrow and of unequal breadth, and nearly flat on the top. The sides are so steep as to appear almost perpendicular in every part; for where it was not naturally so, it has been scraped away; and the height from the plain below, is from 200 to 300 feet. The rampart conforms to the edge of the precipice all around; and the only entrance is by steps running up the side of the rock, defended on the side next the country by a wall and bastions. The area within is full of noble buildings, reservoirs of water, wells, and cultivated land; so that it is a little district within itself. At the N.W. foot of the mountain is the town, pretty large, and well built, the houses all of stone. This place is considered as the Gibraltar of the East; but, in 1780, Major Popham took it by an unexpected nocturnal escalade. It is 80 miles S. of Agra. Long. 78. 30. E. Lat. 26. 9. N.

GYPHORN, a town of Lower Saxony, in the duchy of Lunenbug, seated on the rivers Aller and Iser, 25 miles N. of Brunswick. Long. 10. 49. E. Lat. 52. 49. N.

H.

HABITATION, a general name given to any dwelling or place of residence calculated for shelter and domestic accommodation. The term, however, is most commonly applied to dwellings of an inferior order: such as the low houses and cottages in which the poor reside. The following observations on the situation of cottages, with a plan for enabling cottagers to build them, is extracted from "An Address to the Landed Interest," by William Morton Pitt, Esq. M.P. published in 1797.

"There are few parishes," says the author, "without several rough, encumbered, and uncultivated tracts of land, which might be converted into large gardens, and on which cottages might be erected, either by some of the poor themselves, to be held on lives, or at the expence of the parish, or of the proprietors of estates. Where there is no land uncultivated, other grounds, which can be most conveniently spared, should be allotted to them. Many young men, having saved a little money, would be very desirous of taking such spots of ground on leases for three lives, and of building cottages thereon. I have frequently remarked that the labourers who possess this kind of property, are the most industrious, sober, and frugal, that they seldom apply to their parishes for relief, and that their houses have an appearance of neatness and comfort, not often met with elsewhere. If these were more attainable by the poor, frugality would revive amongst them, and young people would strive to lay up a sum of money for this purpose. Every labourer possessing such property of his own, would consider himself as having a permanent interest and stake in the country. The hope of improving their lot is the main spring of industry in all other stations in life. Would it not then be policy as well as humanity, to afford to the agricultural poor the same opportunity? The wealth and greatness of this country has been attributed, not only to the spirit of enterprise of our merchants and manufacturers, but to the effect which the possession and the security of property, enjoyed under our free and excellent constitution, have on the minds of men. If this effect has been so salutary among other classes, why may not similar encouragement create the same energy among the cultivators of the land; and why should those alone remain in a dispirited, and distressed state?

"To attach this numerous, hardy, and less corrupted body of men more and more to their country, nothing would so much contribute, as allowing them the means of improving by industry their own situation in life, or that of their children. A man who owns a house, with a large garden annexed to it, on a lease for lives, for which he only pays a moderate quit-rent, is richer by far than he who receives much higher wages, but who has to pay a considerable rent for a cottage, with little or no garden ground, and who is obliged to purchase all he consumes. The produce of a garden diminishes the consumption of bread, which is the most considerable article of a poor man's expenditure: it is an advantage wholly created by the cultivator's industry, at times when not otherwise engaged, and by that of his wife and children; and is therefore so much labour, or in other words riches, gained to the community: and the employment gives health and vigour to his children, inures them to fatigue, and trains them to industry. The value to him who receives the ground is immense, yet it is no loss to him who

grants it. It procures the poor man comfort and plenty; and, by so doing, keeps within moderate bounds the wages of labour. Every man, who is averse to raising the wages of labour in husbandry, should at least encourage the culture of gardens.

"As the land, on which such cottages would be built, will usually be of an inferior value, it will be enough to estimate it, at an average, at 10s. an acre; where the land is better, a higher rent may be added without injustice; for, the better the land, the greater will be the advantage to the lessee from its produce as a garden. The quantity of land to be attached to such a cottage should be half an acre; if it be more than sufficient to produce the vegetables wanted for a family, a part of it may be sown with a little wheat for bread, pease to fatten the pigs, and barley for malt, to enable them to brew a little small-beer; the want of which induces many to frequent the alehouse, and proves the source of vicious courses.

"The corn in these gardens should be raised by dibbling, which is already very much practised in many parts of the kingdom. The cultivation of the garden will be chiefly conducted by the wife and younger children of the family (who will thus very soon contribute largely to their own support, if not wholly maintain themselves, so that a numerous offspring will cease to be a great burthen), to which must be added a certain proportion of assistance from the father, at his extra hours. Where 10s. an acre is the value of the land, 5s. per annum must of course be added, for the half acre of ground, to the quit-rent for the house. Let that be 5s. and the whole annual payment will be 10s.; and, when it is considered that the proprietor of the estate has been at no expence whatsoever in building or repairing the cottage, and that he receives annually the quit-rent for the house, in addition to the full rent of the land on which it is built, I think the fine, to be required in putting in a life, should not exceed one year's purchase, computed on the real value. The cottager then, who builds a house upon this principle, acquires the following advantages; permanency of property, that all improvements are for the benefit of himself and his family, respectability of situation, a diminution of annual expenditure, and that he cannot be removed under any circumstances.

"This arrangement will answer in all cases, where a labourer has a sufficiency of money to enable him to build a cottage; but that cannot be the lot of all. Yet a plan may be devised, by means of which, a man, having but a small proportion of the sum requisite for such an undertaking, may be enabled to adopt it. The owner of the land may, without risk, advance to any labourer in want of such assistance, 10l. or even 15l. towards carrying on his work, not to be paid to him in money, but laid out for his use as wanted, in the purchase of materials, or in wages to the workmen whom he is obliged to call in to assist him in the construction of his house. The cottage itself would be a sufficient security for the loan; since the money will only be issued, in proportion, as the work advances. The cottager should pay interest, at 5 per cent. and part of the principal, at least 10 per cent. every year. If he fail in making these payments, his effects should be liable: or, if the demand be not otherwise satisfied in a reasonable time, the house itself. The sooner he discharges his debt, the better it will be for him; and he will look forward with

impatience to the time of its liquidation, that he may enjoy the effects of his industry and so comfortable a situation. In 10 years, however, at all events, he will be clear from incumbrances, and in the mean while he will have to pay each year not more, and in many parts of England not so much as he would have given as annual rent for an ordinary cottage. The landlord would also be benefited, by being relieved from the expence of repairs, and by the reduction of poor's rate; he would receive his quit-rent annually, and a fine from time to time, in addition to the full rent of his land, as well as 3 per cent. interest on the money lent, the whole debt being discharged in 10 years at furthest."

To these judicious remarks we shall annex some observations on the larger sort of cottages, and the mode of erecting them, extracted from "Hints to Gentlemen of Landed Property," by Nathaniel Kent, Esq. published in 1775.

"The larger sort of cottages," says Mr. Kent, "which may sometimes be preferred, will cost, when built of brick and tiles, 70*l*. These might be appropriated to the use of labourers of the most industrious disposition. And, as it would have an excellent effect to make some gradation among cottages, as well as farms, it would be highly proper, and useful, to lay (besides half an acre of garden-ground) a small portion of pasture-land, about 3 acres, to each of these larger cottages, to enable the occupiers of them to support a cow; which would be a real comfort to their families, as milk is the natural food of children. If we value these three acres and a half of land at a guinea an acre upon an average, and add it to the rent of the house, it will bring the rent to 6*l*. 9*s*. 6*d*. The value of the cow, if her produce were even sent to market, would at least amount to 4*l*.; but being used in the family, would, with the assistance of the garden, enable them to keep a sow, or two store pigs, which would at least double the market price. As one acre or more of this ground might be mowed every year for hay, the cow might be kept in good order with this quantity; and it would be better worth a cottager's while, to give this rent for this lot of land, than to trust to the precarious advantage of a common, which always starves his cow in the winter. If it should be alleged, that there is not one cottager in twenty who can afford to buy a cow; this difficulty may be easily obviated, by the landlord's letting him a cow, as well as the land; in the manner that dairies are generally let.

"This would be dealing with the poor as we would wish to be dealt with ourselves, in a similar situation; but, instead of this, cottagers are chiefly left by gentlemen to the farmer's disposal; and, when they are accommodated with a small quantity of land, are obliged to pay, at least, a double proportion of rent for it, to what the farmers pay themselves.

"Warm cottages of this sort would require much less fuel than those in the present style, which is a very considerable article to a cottager.

"The next consideration is, to choose a convenient situation for cottages. Great farmers are very unwilling to admit them close to their farms; and nothing is more common, than for a poor labourer to be obliged to come a mile, and sometimes more, to his labour, and return home again at night, in all kinds of weather, after he has done a hard day's work. Cottages should therefore be erected, if possible, on some sheltered spot, near the farm where the labour lies; and

such policy points out, that every farm ought to have a sufficient number of such useful appendages, in proportion to its size. Such cottages, under some such regulations as these, would be of great use and ornament to a country, and a real credit to every gentleman's residence; as, on the contrary, nothing can reflect greater disgrace upon him, than a flattered miserable hovel at his gate, unfit for human creatures to inhabit. Upon encouragement like this good tenants would never be wanting. Industry would meet with a reward, the poor-rates would necessarily be lightened, and population increased. A farm thus provided with such a sufficient number of labourers as might, at all times and seasons, be depended upon, would be of more value on that account. The tenant of such farm would not be subject to pay exorbitant wages, as he otherwise must, on particular occasions. He would not be obliged to court the vagrant to lend him a precarious assistance, or to have recourse to towns, to pick up disorderly people. In summer, besides the usual business of haymaking, he might employ even the women and children, in wedding, and other usual business.

"Almost every parish is, in a great measure, subject to some particular gentleman, who has sufficient power and influence over it, to correct the present grievance, and to set a better example. Such gentlemen should consider themselves as guardians of the poor, and attend to their accommodation and happiness: it is their particular business, because they and their families have a lasting interest in the prosperity of the parish; the farmers only a temporary one. If a gentleman's fortune be so large, that he cannot attend to objects of this sort, he should, at least, recommend the cottagers to the attention of his agent; and give him strict instructions, to act as their friend and protector: for unless some such check be put upon great farmers, they are very apt to contribute to the demolition, instead of the protection of cottages; and when the nest is destroyed, the bird must emigrate into some other parish. A cottager, in this case, has no other choice, unless it be to make application to the neighbouring justice of the peace, for his order to the parish-officers to find him some other place to lay his head in. If it were not for this excellent law, which obliges parish-officers to find habitations for their poor, I am sorry to remark, that in many parishes they would be literally driven into the open fields.

"There is another plan relative to cottages, which generally answers extremely well, and that is, to lease them off to industrious labourers, for the term of three lives, at their nomination; taking a very moderate fine, not exceeding 10*l*. or 12*l*. upon a cottage worth about 40*s*. a-year; reserving a small quit-rent, not exceeding half a crown a-year, and making it a point to renew any life which drops off, upon one year's value only. This scheme is beneficial for landlord and tenant; for though the farmer does not let his cottages for so much as he might at rack-rent, yet what he does get is all clear money; and by this means he preserves the value of all other parts of his estate, by keeping up a proper number of inhabitants. The latter finds his account in it, because he makes a settlement for his family; and can repair and improve his cottage at leisure hours with his own hands; and if he be an industrious man, he can generally find a friend to lend him his first fine on such an occasion, if he cannot raise it himself.*

*"I am persuaded that if there were a certain number of comfortable cottages, with two or three acres of grass land each, in proportion to the size of the estates, to be bestowed as a reward to labourers of particular good conduct, it would do wonders towards the reduction of the rates, and the preservation of order; for I have been witness to several striking proofs of this, in two or three labourers, who have been thus favoured; whose attachment to their masters was exemplary, as they were not only

"I should recommend that cottages should be built double; because it will be a considerable saving in the expence of their erection.—Where pollards are plenty, and bricks scarce, it will sometimes be proper to prefer the wooden-lath and rough-cast cottages, because half the quantity of timber may be pollards; but, where they are built with brick, the following particulars should be attended to:

"The walls should be fourteen inches thick to the bottom of the chamber-floor, except in the window spaces; and the upper part of the walls nine inches. In these brick buildings no framed timber should be used; but the lintel of the windows should be laid the whole length of the building, nine inches scantling by two and a half; and then the same piece will serve to lay joists upon, which should be pinned with oaken pegs, which will prove a great tie to the walls. The joists should be cut eight inches by two and a half, and laid edgewise. The length of the spar to be 10 feet, being a proper pitch for tiling; and to be cut two inches and a half thick, five at bottom, and three and a half at the top. The lower rooms to be seven feet high, in the clear, under the joists. In the largest sized brick cottages, the roof to be hipped in at the ends, which will save the two peaks of brick-work, and will not require more tiling, than would be made use of without it. One great advantage derived from hip-ping, is, in the building's being better braced together, and more secure from the effect of tempests; for, where the gable ends are carried up in peaks, to any considerable height, without chimneys to strengthen them, they are not so well fitted to resist an end-wind.

"The ceiling should be between the joists, nailing first a few laths at about a foot apart, cross-ways, and the other laths length-ways over them; otherwise the mortar has nothing to get hold of. This makes less expence than ceiling over the joists; and is besides better calculated to retain the mortar, and will afford more space; for the joists, being left naked, will be very useful to hang many things to. The ceiling joists upon the top of the chamber need be only five inches by one and a quarter, and may be nailed to the spars-feet, and not pinned. The other scantlings are as follow: The partition studs three inches by two. The lower cills six inches by five. The window-frames three inches by three. Lower door-sashes five inches by four. Cross mantle-pieces for the chimneys eight inches by eight.

"In the wooden cottages, the frame-studs are to be six inches by five. The intermediate, or smaller studs, five inches by three. The girt-pieces six inches by five, and the upper cill five inches square."

HABITE and REPUTE, in Scots law, the common opinion of the people, among whom a person lives, with respect to any circumstance relating to him.

HADAMAR, a town of Germany, in Weteravia, with a castle, seated near the Elbs, 22 miles N.W. of Mentz. Long. 8. o. E. Lat. 50. 23. N.

HADLEY, a village in Essex, five miles S.W. of Rochford. Here are some considerable ruins of a castle, on the brow of a steep hill, on a channel of the Thames between Canvey Island and the shore.

HADLEY, a village in Middlesex, N. of Barnet. Over the west floor of the church is the date 1498, and on the top of the steeple is an iron pitch-pot, originally placed there as a beacon.

HAGENBACH, a town of Germany, in the palatinate of

the Rhine, 12 miles S.E. of Landau. Long. 8. 7. E. Lat. 48. 50. N.

HAGENBURG, a town of Westphalia, in the county of Schaumburg, 15 miles W. of Hanover, and 46 S.S.E. of Bremen. Long. 9. 7. E. Lat. 52. 30. N.

HAGGERSTOWN, or **ELIZABETH TOWN**, a flourishing town of Maryland, in the fertile valley of Conegocheague. It carries on a considerable trade with the western country, and is 73 miles N.W. of Baltimore.

HAGIAR, a town of Arabia Deserta, 87 miles N. of Medina. Long. 39. 25. E. Lat. 25. 30. N.

HAILBRON, a free imperial town of Suabia, in the duchy of Wirtemberg. The inhabitants, who are Protestants, derive a great advantage from the baths near it, whence the town has its name, which signifies the fountain of health. It is seated on the Neckar, over which is a stone bridge, 25 miles N. by E. of Stuttgart. Long. 9. 15. E. Lat. 49. 9. N.

HAIMBURG, a town of Lower Austria, on the Danube, 10 miles W. of Prefburg, and 25 E. of Vienna. Long. 16. 58. E. Lat. 48. 12. N.

HAIN, a town of Upper Saxony, in Misnia. It has a manufacture of cloth, and is seated on the Rhedar, 12 miles N.W. of Dresden.

HAINBURG, a town of Austria, on the Danube, 35 miles E. of Vienna. Long. 17. 18. E. Lat. 48. 14. N.

HAINGEN, a town of Suabia, in the lordship of Gundelfingen, 21 miles S.W. of Ulm. Long. 10. 2. E. Lat. 48. 12. N.

HAIR-POWDER. On the licence for wearing this, there is a tax of one guinea per annum, with the following exemptions: Nothing in the act shall extend to any of the royal family, or to any of the immediate servants of his majesty, or any of the royal family, serving in any of the capacities described in the act imposing a duty on servants.

Neither shall it extend to charge any clergyman who shall not be possessed of an annual income of one hundred pounds, or upwards, whether arising from ecclesiastical preferment or otherwise. Nor any preacher of any congregation of Dissenters, or any person dissenting from the church of England in holy orders; or pretended holy orders, entitled to the benefit of the several statutes made for the relief of dissenters; or persons professing the Popish religion; and who shall not be possessed of an annual income of one hundred pounds or upwards, however arising.

Neither shall the act extend to charge any subaltern or non-commissioned officer, or private man, in the army, artillery, militia, marines, corps of engineers, or fencible corps;—nor any officer employed in the navy under the rank of commander;—nor any officer or private man in any corps of yeomanry or volunteers, either cavalry or infantry, *voluntarily enrolled for the defence of the kingdom during the war.*

Parents having more than two unmarried daughters, being assisted for them in twice the duty of a single person wearing hair powder, such assistance shall exempt the whole.

Persons claiming exemption are to prove their right; and the income of beneficed clergymen is to be estimated on the average of seven years.

If a master pay the hair-powder duty for his servants (returning a list), they shall be exempted from it during their continuance in his service, and their successors during the year for which it is paid.

steady in themselves, but by their example kept others from running into excess. *I know of no law that can enforce industry; it may be encouraged, and great good will result from it; but it never can be effected by compulsion.*"—*Kent's Agricultural Survey of Norfolk.*

HALDENSLEBEN, a town of Lower Saxony, in the principality of Magdeburg, 12 miles N. of Magdeburg.

HALLENBERG, a town of the duchy of Westphalia, 62 miles E. of Cologne.

HALVA, a town of the kingdom of Fez, seated on the Cebti, eight miles S. of Fez. Long. 5. 5. W. Lat. 33. 32. N.

HAMAR, a town of Norway, in the government of Agderhuys, 60 miles N.E. of Christiana. Long. 11. 5. E. Lat. 60. 30. N.

HAMARS, a town of France, in the department of Calvados, 13 miles S.S.W. of Caen.

HAMBACH, a town of Westphalia, in the duchy of Juliers, five miles S.E. of Juliers. Long. 6. 38. E. Lat. 50. 54. N.

HAMBACH, a town of the upper palatinate of Bavaria, six miles N.N.W. of Amberg. Long. 12. 10. E. Lat. 49. 33. N.

HAMBLEDON HILL, near Sturminster, in Dorsetshire. Here was a Roman camp, and many Roman coins have been dug up. It is the antagonist camp to that of Hog Hill, and extends E. and W. three quarters of a mile.

HAMBURGH (*Encycl.*). The following is extracted from an account of the management of the poor at Hamburg, by that truly benevolent prelate, the Bishop of Durham.

In the beginning of the year 1788, an infirmary was formed for the poor at Hamburg. Of 110,000 * inhabitants in Hamburg, there were above 7000 distressed persons in want of regular relief, besides an average of 2500 in the hospitals.—There were peculiar circumstances attending this great and commercial city, which contributed to increase the number of poor, requiring assistance;—severe winters, heavy taxes on the necessaries of life, fluctuation of trade, the attraction of the poor from neighbouring countries in expectation of employment; and a great number of female servants at very low wages, of whom many must necessarily remain unprovided for, when age or sickness should unfit them for active service.

As soon as the outline of the plan was agreed upon, an arrangement was formed, that such revenues as till then had been expended in alms by the several churchwardens, and those the administration whereof had been connected with the workhouse, should be united under one administration with the monies to be collected from private benevolence. The most respectable inhabitants went round personally to collect subscriptions; and the town was divided into sixty districts, each being allotted to the care of three overseers; and the whole

being under the direction of a board, or committee of fifteen directors, elected from among the overseers.

The general object was to provide comfort and subsistence for the aged, and for those afflicted with incurable disease, or labouring under temporary sickness; to supply the means of occupation for those who could work; and, by giving education and employment to children, to afford the most beneficial relief to those burthened with large families.

For the reception of the aged, a public building, or asylum, was provided; but in cases where they had friends, who would receive them, they were allowed as much as their expense in the asylum would have amounted to. For the sick, and particularly for women at a period when they have the greatest need of charitable relief, medical assistance was provided. For the different districts in the town there were appointed five physicians, five surgeons, and five midwives, who upon notice were to attend the lodging of the patient, if not capable of going abroad. Food and medicine were immediately supplied, with so much attention and economy, that, in the course of the three first years, 12,660 poor persons had been attended in sickness, whole cure (including broth and an occasional supply of other food) had not cost more, upon an average, than 3s. 6d. each.

For a provision for the children of the poor, where, from the vice or the decay of a parent, no suitable home remained for the child, they boarded them in the houses of the better sort of poor. In other cases they allow the mother † a weekly sum for the younger children. They also prepared a warm room in every parish, and bread, milk, and potatoes in plenty; so that parents, who went out to work, might leave their young children there during the day, and thus prevent any obstacle to their own industry, or to that of their elder children. At the same time they came to a determination, "that no family should be allowed any relief for any child above six years of age; but that such child, being sent to school ‡, should receive not only payment for its work, but also an allowance in the compound ratio of attendance at school, good behaviour, and application to work." For the instruction of the children, three sorts of schools were opened:—the first for those who had no other employment; these were schools of occupation as well as instruction: the second, evening schools for the education of children who worked with their parents during the day;—the third were Sunday schools, which continued alike open to all, as well to those who had gone into service in Hamburg, as to children on the school list. The average number in these schools were 600; the expense of them about £,700. a-year.

The most difficult part of the undertaking still remained:—

* This account is extracted from an excellent publication on the subject by Mr. Voght, published in 1796, by Kay, No. 332, Strand; and from the twenty-third report of the directors, published in German at Hamburg in January, in 1798. The first is earnestly recommended to the attention of those who interest themselves in the welfare of the poor: the latter, it is hoped, the society will be able to get translated, and published for the perusal of the English reader.

† See Mr. Voght's excellent work, published by Kay, as above stated. His observations on the removal of children from their parents are feeling and judicious.—"We were averse (says he) to place the children in a general hospital, and the poor mothers would have been still more so."—May all the favourers of those houses, such as they are, seriously reflect whether the advantages they offer, can compensate for the education of the heart, which nature yields in those huts of poverty, where both parties become so necessary to each other; and where heroic exertions of parental and filial piety are not seldom become habitual. Would the humane and philosophical observer look through the rags of pale misery; calculate the sacrifices daily made there in many families, and amongst neighbours; and enjoy the rapture with which a mother embraces her son, whom she sees eagerly devour the crumb of bread that she had refused to her own wants; the annals of the poor might reconcile him to human nature, when disgusted with the list of crimes which blacken the page of its history.

‡ It should be observed that this was in a town, where children can attend school conveniently. In the country (we speak from observation) great prejudice, both to the health and to the morals of children, attends their being sent to and returning from a distant school, or manufactory, at early and late hours, and in all variety of weather and season.

that of procuring regular and suitable employment for those who could work; and of ascertaining who were, and who were not able. A resolution was adopted, "not to permit any one to receive a shilling, which he would have been able to have earned for himself; and at the same time to reduce the support of those, who required relief, below the scale of what any industrious person, in such circumstances, could earn." Printed queries were sent to the poor, the answers to which were written on the blank column of the page, verified by the evidence of their neighbours, and by the personal attendance of the overseer, or (where the state of health was in question) of the physician. Many of the queries were calculated to ascertain the average earning of each member of the family; but in this respect the truth was, for some time, very difficult to be obtained; it being the interest of the party, to make his capacity for work appear less than it really was.

A manufactory for spinning flax existed at that time in Hamburg. The proprietor gave it up to the institution, together with the stock, the teachers, and the experience of several years. As the poor who wanted relief, were chiefly women and children, this was adopted as their general work. The clean flax was sold to the women at a certain and low price; and the yarn which they spun, purchased of them at £.30. per cent. above the usual rate. To whatever fineness the yarn was spun, the whole profit was received by the poor. Every poor woman brought with her work a book, in which the pieces delivered in by her were noted; so that she thereby received a certificate of industry, and the institution had a regular account always before them of the employment of the poor. In the mean time, the men and larger boys (who were not the numerous or necessitous part of the poor) were employed in mending the roads, cleaning the streets, making rope yarn, and other labour, at a certain allowance per day.

After these general preparations were made, the committee conceived that they could now offer relief to all sorts of poor; as they had the means of enforcing the only condition required;—that of their contributing towards their own support, the degree of exertion which they were capable of. The overseers therefore went through the streets, and made enquiries if any inhabitants were in need of relief. Those who applied, if capable of work, were supplied with employment; if prevented by want of skill, they were admitted into a school opened for that purpose; and in the course of three months were taught to spin; being allowed for the first week a gratuity of two shillings: every week after, two pence less; and, in the twelfth week, dismissed with the donation of a pound of flax, and a spinning wheel.

The quantity of work, which the disabled poor were capable of, was easily and accurately ascertained by a week's trial at the spinning school. The result was produced weekly before a sub-committee; and the sum that each poor person could earn, was entered in a book: from that time they were paid weekly, what their earnings fell short of *s. 6d.* a-week, whenever it appeared by their book, that they had earned to the known extent of their abilities. The means of subsistence however, are much cheaper at Hamburg than in London.

In the proportion of two shillings a-week, an allowance was made for their lodging. But as this is paid every six months, and the pauper's allowance is weekly, it was thought proper (except in cases where the lodging was otherwise provided for) to retain four pence a-week, for the purpose of paying the landlord's rent; thereby keeping the poor out of

debt, and giving them a more comfortable habitation, than what otherwise they could have expected.

Clothing and bedding were at first much wanted; but in order to prevent their being pawned or sold, it was thought proper to mark them as the property of the institution, which the pauper was to keep while he behaved well. The committee purchased the materials by wholesale, and employed some of the poor in making them up. They were delivered to the pauper on the recommendation of the overseer, countersigned by the director of the district; or, to children, upon the recommendation of the sub-committee of the schools.

A complete list of the poor being at length obtained, public notice was given, in the month of October, 1788, that no deserving poor person could or would, in future, remain unnoticed. Instructions were very generally distributed among the poor, as to the mode of obtaining relief; and the public was intreated to inform the committee, if any pauper had not been duly attended to.—No such case has hitherto occurred.

It was established as a general rule, that three years' residence in Hamburg should entitle the party to relief; allowance being also made for accidents, illness, or child-bed; which, in all cases, were held to be proper objects of charity. A place of reception was opened for foreign poor, where they were taken care of for three days, and then discharged with the means of subsistence home. At the same time, in order to prevent the further influx of other poor, it was prohibited to receive any stranger, without informing the magistrate or overseer, under pain of bearing all the expence of supporting such stranger, if he should become an object of charity within three years.

These general regulations have been strictly adhered to for ten years; except in the cases of poor persons being ill, when they have sick tickets given them, which exempt them from the general rules; and during the most severe winter weeks, when a regular increase of allowance is ordered by the committee. But no inequality of distribution is ever admitted, whatever may have been the prior situation of the party. Those who had formerly been in a more respectable situation, continued to be the proper objects of private benevolence; of which no public institution ought to supersede the exertions.

The conduct of the institution is in the general committee, consisting of fifteen directors. They appoint four sub-committees from among themselves; one for manufactures, another for the schools, a third for clothing, and a fourth for the police of the poor. The sub-committees have each their separate officers, and keep distinct accounts, which are given in every month to the treasurer and the board.

Ten of the directors are selected; each one of them superintending six of the sixty districts, to receive from the overseers accounts of what is wanted in the respective districts for fixed support, for occasional relief, for accidents, and for discretionary assistance; which, when certified by the director of the district, is sent for payment to the treasurer; whose accounts are laid every month before the committee, and checked by the director's certificate. These ten directors may be considered as "the advocates for the institution," to prevent, in their several districts, excess of expence.

From the enquiries made at the commencement of the institution, it appeared that there were more than 4,000 women, 2,000 children, and 1,000 men, then in Hamburg in the utmost want of immediate relief. The whole number consisted of 7,391 individuals, and composed 3,903 families.

* The poor at Hamburg had been habituated to live almost entirely on a miserable beverage, which was called *coffee*, and sold in messes, with about half a pound of indifferent bread. This wretched substitute for food they took twice a-day. About

The first clothing of so great a number of destitute persons, would have exceeded the powers of the institution, but for the quantity of ready-made shirts and other apparel, which the ladies supplied with a liberal hand. Clothing and schools for instruction are now wanted only for the children.

The purchase of spinning wheels, and of other instruments of employment, and the support of schools where 500 grown persons were at the same time instructed in spinning, added to the allowance made to the poor for the loss of time while they were learning to spin, occasioned a very enormous expence at the commencement of the institution. But this was not of long continuance. The schools for teaching spinning to grown persons soon became unnecessary; 3,354 spinning wheels had been given to those who had proved themselves able to spin. These were employed in spinning, when more lucrative employment was not to be found. 2,000 poor, who at the time they entered the school could do nothing at all, have since earned from eight pence to twenty pence a-week, at times, and during hours, which were formerly entirely lost to them. The average of all expences attending the employment of the poor during three years, up to December, 1796, including the loss upon the sale of manufactured goods, has been only £611 per annum; and, in the worst cases that have occurred, the expence of enabling a pauper to earn five guineas a-year, has not been more than half-a-guinea.

It will not be a small recommendation to many persons, that since the year 1788 *scarce a beggar has been seen at Hamburg*. But there is another much more important circumstance; the decrease of sickness and misery among the poor. The average mortality of the medical institution at Hamburg, before 1788, had been above one in ten. In the year 1789, it was greatly reduced, and has since, by a gradual progress, diminished to less than one in twenty.—This and the extension of the schools, and of the benefit of the medical institution to persons not *actually entitled to relief*, has greatly diminished, and must still have a much greater effect in diminishing, the list of distressed poor, and in increasing the number of industrious and thriving citizens at Hamburg.

OBSERVATIONS.—The division of labour has not produced more extraordinary effects in a well-constructed manufactory, than the division of *attention* in a well-arranged institution. The giving to every acting member his peculiar and appropriate duty, not interfered in by any other person, as has been done with great effect at Hamburg, is of the utmost importance in every establishment. Those who have attended much to the conduct of charities, must have had frequent occasion to regret, that, even among the best-intentioned men, more time, and more power, is often wasted in the counteraction and controversion of petty and trivial measures, than in the furtherance of the real objects of the institution. This is the *friction*, the impediment of action, the obstruction to progress, which it is most essential to prevent; and it is in this respect, that the benevolent and enlightened founders of the institution at Hamburg, have been peculiarly judicious and successful.

The maxims adopted at Hamburg in the execution of their plan, are very deserving of attention:—"That every allowance, which supercedes the necessity of working, becomes a premium to idleness:—that labour, not alms, should be

offered to all who have any ability to work, however small that ability may be!—that one shilling, which the poor man earns, does him more real service than two which are given him:—that, if the manner in which relief is given is not a spur to industry, it becomes in effect a premium to sloth and profligacy;—and that, if the mere support of a pauper is above what any industrious person in the same circumstances could earn, idleness will become more profitable than industry, and *beggary* a better trade than the *workshop*." In proportion as the conductors of the institution at Hamburg have rigidly adhered to these maxims, they have found the benefit extended and increased; whenever they have relaxed, the *thermometer of industry* has been lower, and less work has been done.

One great cause of the success of the institution at Hamburg has been the *publicity* and *regularity* of the accounts. Without this all charities become jobs, the directors grow indifferent to public approbation or censure, and the administration falls into the hands of under officers, who soon learn to entangle the business, that no subsequent director is ever able to unravel the clue.

That which has been done in Hamburg, by the co-operation of its best and wisest citizens, has been effected at Munich by the abilities and perseverance of one truly distinguished individual, Count Rumford. (See *SOUP* in this Supplement.) The particulars of that establishment are so well and so generally known, that it is unnecessary for us to enter into the detail of them. The institution has, in both instances, been wisely adapted to the circumstances and condition of the respective places;—at Munich with additional power, from the establishment being blended with the government of the state, and producing an influence on the country, of which that city is the capital; and from its being connected with a variety of useful and extraordinary inventions and improvements, which Count Rumford has made, and is now making, for the benefit of mankind.

HAMERSTEIN, a castle and village of Germany, belonging to the elector of Treves. The castle is seated on a lofty mountain, on the E. side of the Rhine, two miles N. by W. of Andernach.

HANSBACH, a town of Bohemia, in the circle of Leitzmeritz, with manufactures of cotton, thread, and paper, 12 miles N. of Kamnitz.

HANSFELDEN, a town of Germany, in the duchy of Stiria, eight miles N.N.W. of Judenburg.

HAN-TCHONG-FOU, a large and populous city of China, in the province of Chenfi. It has 16 cities of the second and third class under its jurisdiction, and is seated on the river Han, 84½ miles S.W. of Peking. Long. 106. 55. E. Lat. 32. 45. N.

HAN-YANG-FOU, a populous and commercial city of China, in the province of Hou-quang. It has one city under its jurisdiction.

HARDBERG, a town of Germany, in the duchy of Stiria, 52 miles S. of Vienna. Long. 16. 12. E. Lat. 47. 22. N.

HARDEGEN, a town of Lower Saxony, in the principality of Calenberg, with a considerable manufacture of leather, 10 miles N.W. of Gottingen.

HARDENBERG, a town of Westphalia, in the duchy

two years ago, the directors introduced the use of Count Rumford's stoves, with great benefit to the poor at Hamburg. It has been a saving of 9 parts in 16, or rather more than half the former expence of their food. Children, in particular, have derived great advantage in health and strength from the use of these stoves. The saving to the institution in respect of fuel, by the introduction of Count Rumford's boilers, is stated in the Report (which contains a great deal of minute and curious detail in respect to fuel as well as food) to have been rather more than 61 parts in 66; the cost of their fuel, which is very scarce at Hamburg, being at present not a tenth of what it was.—*Hamburg Report of Jan. 1798.*

of Berg, 13 miles E.N.E. of Duffeldorp. Long. 6. 43. E. Lat. 51. 19. N.

HARDENBURG, a town of Overijssel, situate on the Vecht, 10 miles S.W. of Coevorden.

HARLEBECK, a town of Austrian Flanders, on the river IJis, three miles N.E. of Courtray. Long. 3. 29. E. Lat. 50. 52. N.

HARLESTON, a town in Norfolk, with a market on Wednesday, seated on the Waveney, 16 miles S. of Norwich, and 100 N.E. of London. Long. 1. 20. E. Lat. 52. 26. N.

HARMONSWORTH, a village in Middlesex, two miles E. by N. of Colnbrook. It is remarkable for one of the largest barns in England, whose supporting pillars are of stone, and supposed to be of great antiquity.

HARNESSE (*Encycl.*). The following is the specification of a patent granted to Mr. Dickinson, of Long-acre, for certain improvements in the construction of saddles, harnesses, and other gear, used for the employ of horses and other animals in riding or carrying loads, or in drawing carriages of any description. It is dated November 10, 1801.

"Whereas (says the inventor), in the construction of the saddles, and other gear and appendages hitherto made or manufactured, the several parts have generally possessed no elasticity, except that slight degree which might depend upon the nature of the materials themselves, and it consequently follows, that saddles and cruppers are either girthed too tight, so as to impede the respiration of the animal, and so as to endanger their breaking, or so loosely as to render the seat of the rider more or less unsafe, and very seldom can be fixed with that exact degree of tension which is best adapted to every useful purpose. And, moreover, in the adjustment of the crupper, and with the breast-plate, a difficulty of the same nature presents itself, namely, that in the first tension of these, if the same be too loose, the saddle will not be duly confined to its place, or if the same be too tight, the animal will be very much incommoded, and in either case, when by sudden jerks, or other motions, the breast-plate or crupper, or girth, shall be required to produce their respective effects, the parts will either break, or else the action, particularly of the crupper upon the tail of the animal, will be sudden, unqualified, and pernicious. Now my said improvements in the construction of, and additions to the saddles, harnesses, and other gear aforesaid, consist in certain springs, or elastic portions, interposed between, and in effect constituting parts of the said instruments or parts; that is to say, more particularly, I improve the construction of saddles, by affixing one or more spiral springs, similar to those used in the small instrument for weighing, commonly called spring steel-yards, unto those parts of the saddle to which the girths, the crupper, and the breast-plate, are respectively to be fastened. The said spiral springs are so lodged in certain cavities, sheaths, or receptacles, that a piece of catgut or wire, or chain, or other fit material, passing within the cavity of the spring, and fastened to, or bearing against one end of the said spring, shall, when drawn or acted upon, cause the turns of the spring to approach more nearly together, and consequently cause it to react against the said catgut or rod, or chain, or other fit material, and tend to draw the same towards the saddle itself. I fix to the end of the said catgut, rod, chain, or other fit material, straps or buckles, or other fastenings, for the ready fixing of the girth, breast-plate, and crupper, in the usual manner. And moreover, in some cases, where convenience or choice may cause the preference, I fix the said spiral springs within proper sheaths or receptacles, of metal, wood, cloth, leather, or other fit material, so as to form a separate piece capable of being applied or attached between the saddle, and the extremity of the girth, breast-plate, or crupper, respectively, so

as to communicate to the said appendages the effect of its own elastic extensibility in the longitudinal direction or otherwise. I fix the said springs so fitted up in the breast-plate and crupper in such a manner, that the same shall constitute parts of those appendages to the saddle, and communicate the same effect as in the other cases just described. And further, I do hereby declare, that I do not confine myself in the structure and use of the springs or elastic parts of my said invention to any such precision of figure or material as not to allow of considerable variations. The springs may be made to act by drawing the convolutions or turns further apart, instead of compressing the same together, as before described. The wire of which the springs are made, may be taken of any fit metal, but steel is the best, and it may be either round, square, or of any other figure, as to its section or base, and the springs may be either straight or curved, according to the numerous well-known forms of springs, and the application thereof; but I consider the spiral or helix, as before described and applied, as the cheapest, most convenient, and as good as any. On some occasions I make use of a simple strap or piece of Indian rubber, or *caoutchouc*, instead of the springs; the use of which springs is supplied by the natural elasticity of the said *caoutchouc*; but I do not consider this last material as deserving any general preference, because its spring or elastic force is greatly weakened by heat, and in cold weather it becomes rigid, and liable to snap."

HARO, a town of Spain, in Old Castile, the chief place of a county; seated on the Ebro, 32 miles N.E. of Burgos. Long. 2. 23. W. Lat. 42. 40. N.

HARPONNELLY, a town of the peninsula of Hindoostan, capital of a district of the same name, in the Mysoor country, 152 miles N.N.W. of Seringapatam. Long. 75. 28. E. Lat. 14. 40. N.

HARRISBURG, a town of Pennsylvania, capital of the county of Dauphin, situate on the E. branch of the Susquehanna, 86 miles W. by N. of Philadelphia. Long. 76. 55. W. Lat. 40. 15. N.

HARRODSBURG, a town of Kentucky, in the county of Mercer, on the head waters of the Salt River, 60 miles S.E. of Louisville.

HARTENSTEIN a town of Upper Saxony, in the lordship of Schonburg, six miles S.E. of Zwickau.

HARTFORD, a commercial town of Connecticut, divided by a small river, over which is a bridge. It is seated on the W. side of the river Connecticut, 50 miles from its entrance into the Sound, and 30. S.W. of Boston. Long. 72. 35. W. Lat. 41. 50. N.

HARTZGERODE, a town of Upper Saxony, in the principality of Anhalt-Bernburg, situate near the Hartz mountain. The walls and houses are built of a motley kind of marble. It has a mine office and a castle; and is 24 miles S.W. of Bernburg, and 44 W.S.W. of Dessau. Long. 11. 2. E. Lat. 51. 46. N.

HASLINDEN, a town in Lancashire, with a market on Wednesday, 16 miles N. by W. of Manchester, and 196 N.N.W. of London. Long. 2. 16. W. Lat. 53. 40. N.

HASTENBECK, a town of Lower Saxony, in the principality of Calenberg, near which the French, under Marshal d'Estrees, gained a victory over the Duke of Cumberland, in 1757. It is five miles S.E. of Hameln.

HAT (*Encycl.*). A patent was granted in January 1782 to Mr. Robert Golding, of Southwark, hat-dyer; for his method of dyeing, staining, and colouring beaver hats green, or any other colour. The inventor directs the nap of the hat to be raised by means of a card, on the side intended to be dyed, and then boiled in alum argol. A thin paste should be made of flour, or clay, which is spread over every part that is not

to be dyed, and then closed; or the hat may be previously puffed, and instead of being boiled, it should only be simmered in the same liquor. As soon as the paste is spread, plates of copper or other metal, shaped like a common funnel, are fixed over the paste, to prevent the dye from penetrating through. In this state the hat is immersed in the dye, till the colour be sufficiently fixed; when it is taken out, opened, and cleaned from the paste: but if any colouring particles have penetrated through the felt, they may be removed by rubbing them with a small quantity of spirit of salt, aqua fortis, &c. The compounds employed in dyeing, are fustic, turmeric, ebony, saffron, alum, argol, indigo, and vitriol, with urine, or pearl-ash, at the option of the dyer; all of which are used together, or separately, according to the colour required.

Among the different patents granted to hatters, for discovering new materials in this manufacture, such as that of Mr. J. Burn, in 1792, for *mole-fur*; and another to Mr. J. Tiltstone, in 1794, for *kid-hair*; we shall first notice an invention of Mr. George Dunnage, who, in November 1794, obtained a patent for his *Water-proof Hats*, in imitation of beaver.

The articles he employs are similar to those commonly used for the making of hats, with which he mixes Bergam, Piedmont, or Orgazine silk. These are dressed and worked in a peculiar manner; though we understand that hats thus prepared become heavy and oppressive to the wearer, while they acquire an ugly colour.—The curious reader will find the patentee's specification inserted, at full length, in the 4th vol. of the *Repository of Arts and Manufactures*. The same manufacturer procured another patent in November 1798, for a method of ventilating the crowns of hats. This invention consists in separating the top from the sides of the crown, so that the tip, or top-crown, may be either raised or let down at pleasure, in order to admit the external air, or to exclude it from circulating in the crown of the hat. The whole contrivance is effected by means of springs, sliders, sockets, grooves, loops, and cables, which are connected with the top and side-crown: thus the admission or exclusion of atmospheric air in front, behind, or on either side, may be regulated accordingly.—As this invention is ingenious, we refer the reader to the 10th vol. of the work last quoted, where he will find a minute account given of it.

The following is the specification of a patent granted to Messrs. Walker and Alphey, for making and manufacturing caps and hats, and rendering them perfectly water-proof; as also all kinds of leather, silks, linen, cotton, stuffs, pasteboard, and other manufactures and substances, for the purpose of being worked up into boots, shoes, gaiters, women's hats or bonnets, and other wearing apparel, so as to be used on all occasions, where the repelling of wet or moisture may be required. It is dated November 3, 1801, and the patentees express themselves in the following terms:

"For the making and manufacturing of our new-invented caps, which are principally intended for the use and wear of the military, we take a suitable piece or pieces of manufacture, called pasteboard; and cover both sides thereof with linen cloth, or any other texture wrought in a loom, which we cement thereto by glue or paste, or paste and glue mixed, out of which the cap is then cut and shaped on a block, or otherwise, according to the shape and fashion the same is ordered to be made, and as circumstances may require. The seams or joinings of the pasteboard are united by sewing, and by glue or paste, or paste and glue mixed; and also by slips of leather, linen, or other wove texture, glued or pasted over the same, both inside and outside, where found necessary. It is then painted both inside and outside,

with any kind of oil-paint, or oil and lamp-black (which latter is greatly to be preferred), with one or more coats, as circumstances may require: when this is dry, it is then to be covered with one or more coats of Japan or varnish, mixed with lamp-black or ivory-black. The peak or rim of the cap, together with the cape behind, agreeable to the quality and fashion ordered to be made, is also to be painted, japanned, or varnished, on one or both sides, as may be thought necessary, in like manner as the other parts of the cap are. When the peak or rim, together with the cape and lining, are affixed to the crown, in the usual manner, the cap is then finished, exclusive of any ornament or ornaments that may be thought proper to affix to the same. The men's hats are made in the same manner, and with the same materials as the crown of the cap, except being principally covered with silk, linen, cotton, or other texture, wrought in a loom, cemented to the pasteboard in like manner as described for the cap. And also except that such breadth is given to that side or inner part, or edge of the flap, or rim, that is next the crown, as will admit of its being notched and turned up; so as to lie close to the side of the crown, and is to be united thereto by sewing. And, with the same cement as applied to the cap and other articles, the parts so turned up, sewed, and cemented to the crown, are to be covered with leather, or any texture wove in a loom: the whole is then to be painted, japanned, or varnished, on one or both sides, as may be thought proper, and in like manner as the caps. The preparation of leather for boots, shoes, gaiters, or other articles where a power of repelling wet is required, is to be painted, japanned, or varnished, in like manner as the caps are, on one or both sides as may be found necessary. When this operation is performed upon leather, it must be upon such leather only which has not been dressed with oil, or any other greasy substance. The preparations of pasteboard, and silk, linen, cotton, stuffs, or any other texture wrought in a loom, for the purpose of making shoes, gaiters, women's hats or bonnets, are to be painted, japanned, or varnished on one or both sides, as may be found necessary, in like manner as the caps are herein-before specified to be done."

The following duty on hats commenced October 2, 1784, by the act 24 Geo. III. c. 51.

	£. d.
Licence to sell hats retail in London, Westminster, Borough, and within the Bills of Mortality	2 0 0
Ditto in other parts of the kingdom	0 5 0
No hats to be sold without such licence, under forfeiture of	50 0 0
And "Dealers in hats" to be written over the door, under forfeiture of	2 0 0
Duty on every hat of 4s. or under	0 0 3
Ditto above 4s. and not exceeding 7s.	0 0 6
Ditto above 7s. and not exceeding 12s.	0 1 0
Ditto above 12s. and upwards	0 2 0

And by the *New Act*, 36 Geo. III. c. 125, it is enacted that, after Aug. 5, 1796, the above duty shall be calculated according to the full price of the hat, and of all the mountings and other ornaments (except gold and silver lace) sold therewith.

And every hat made wholly of felt, wool, stuff, beaver, or leather, or any mixture therewith, shall be liable to the duties.

And every such hat, after Aug. 5, 1796, shall, previous to the sale and delivery, be lined or covered in the inside of the crown with silk, linen, or other proper materials, with a durable stamp affixed thereon to denote the above duties.

And, after Aug. 5, 1796, if any person (other than licensed dealers buying hats from other licensed dealers) shall

receive on sale, or if any person shall, after April 5, 1797, wear or use any hat wherein no lining or inside covering shall be affixed, or if the lining or covering shall not be stamped according to this act, or not have the stamp placed therein in a visible manner, every such person shall forfeit 10*l*.

And no person (other than manufacturers or dealers selling to other dealers) shall sell or exchange any hat wherein no lining or inside covering shall be affixed, or wherein there shall be a lining that shall not be stamped, or that shall not be stamped with a stamp placed in the inside of the crown so as to be visible, or that shall be stamped with a stamp of less value than required, on pain to forfeit 10*l*.

Persons carrying about hats for sale without any lining, or with a lining not duly stamped, may be apprehended and carried before a magistrate, and the apprehender, on conviction of the offender, is to be entitled to 40*s*, and the offender in such case is to be committed to the house of correction for not exceeding six nor less than two calendar months.

And if any person shall take out of any hat the stamped lining after the same shall have been used or worn, with intent to affix the same to any other hat, or shall affix any such stamped lining after the same shall have been used or worn, such person shall forfeit 20*l*.

Shapes for linings may be sent to the office to be stamped; and an account of the numbers brought, and the duties, are to be entered in a book, and the shapes to be then stamped, on payment of the duty. Or the commissioners may open accounts at the Stamp Office with dealers or manufacturers, and stamp the linings on credit, if such dealers or manufacturers enter into such bond as the commissioners shall direct for payment of the amount of the duty, at such times as the commissioners may fix, not being at less than two payments in the year.

And the commissioners are to make such regulations as they shall think fit, as well to prevent the concealment of the stamp upon the linings, as to prevent the stamps from being made use of again; which regulations, being printed, shall be delivered to all dealers upon their taking out their licence.

Dealers may send any number of hats, not less than one dozen at one time, wherein a lining shall then be affixed, to be stamped; and they may sell to other dealers lined hats for sale for home consumption, or to any persons for exportation, without being stamped.

Persons are not liable to penalty for wearing hats stamped according to the former act, if they were worn before Aug. 5, 1796; but proof of that, and also that the duty has been paid, lies on the owner of the hat.

Persons offending, discovering the other party, if convicted, freed from the penalty.

Stamped linings damaged, or stamps under the former act not used, may be cancelled by the commissioners, and exchanged for others.

Such discount to be made on purchasing stamps to the amount of 10*l*, as the commissioners of the Treasury shall direct.

Price of hats in bargains or bills to be distinguished from duties.

Hats, not less than a dozen in a package, may be exported unlined, or with unstamped linings.

Persons counterfeiting stamps, &c. guilty of felony.

The pecuniary penalties are to be divided (if sued for within the space of six calendar months), one moiety to his Majesty and the other to the informer; and may be recovered, with costs, either in the Court of Exchequer, or before one Justice of the Peace, in a summary way. And if witnesses neglect or refuse to give evidence, the penalty is 5*l*.

HATTENGEN, a town of Westphalia, in the county of

Marck, seated on the Roer, 17 miles E.N.E. of Duffeldorp. Long. 7. 14. E. Lat. 51. 17. N.

HATTENHEIM, a town of Germany, in the electorate of Mentz, situate on the Rhine, 12 miles W. of Mentz.

HAUENSTEIN, a town of Suabia, capital of a county of the same name, in the Austrian Brigau. The county contains rich mines of iron, and is divided into eight communities. The town is situate near the Rhine, 13 miles N.W. of Baden.

HAVERING BOWER, a village in Essex, three miles N.E. of Rumford. It was once the seat of a royal palace, in which died Joan queen of Henry IV.

HAUTE-RIVE, a town of France, in the department of Upper Garonne, seated on the Ariège, 10 miles S. of Toulouse. Long. 1. 26. E. Lat. 43. 26. N.

HAUTVILLIERS, a town of France, in the department of Marne, with a late famous rich abbey. It is seated on the Marne, 20 miles S. by E. of Rheims.

HAWICK, a town in Roxburghshire, seated on the Ti-viot, amid wooded rocks, cataracts, and bridges, 15 miles S.W. of Kelso.

HAWKERS (*Encycl.*). The following are abstracts from the Acts for granting duties on hawkers, pedlars, and petty chapmen; and for regulating their trade.

By 29 Geo. III. c. 26. from August 1, 1789, the following duties shall be paid by every hawker, pedlar, petty chapman, and every other trading person or persons, going from town to town, or to other men's houses, and travelling either on foot, or with horse, horses, or otherwise, in England, Wales, or the town of Berwick-upon-Tweed, carrying to sell, or exposing to sale, any goods, wares, or merchandizes, a duty of 4*l*. per annum.

Every person so travelling with a horse, ass, or mule, or other beast bearing or drawing burthen, the additional sum of 4*l*. yearly for each beast he or she shall so travel with, over and above the first-mentioned duty of 4*l*.

Persons applying for licences to produce a certificate of their good character, signed by the clergyman of the parish and two reputable inhabitants.

Hawkers are to mark on every pack, box, bag, trunk, case, cart, waggon, or other vehicle of conveyance, and every room or shop in which they shall trade, and likewise upon every handbill or advertisement which they shall distribute, the words *licensed hawker*, with the number, name, or other mark of distinction, written or printed upon the respective licences, in large Roman capitals, under a penalty of 10*l*. for every offence. Unlicensed persons so marking their packs, &c. to forfeit 10*l*.

Hawkers selling smuggled goods, or goods fraudulently procured, either by themselves or others, with their privacy or knowledge, shall forfeit their licences, and for ever be incapable of obtaining a new licence, over and above the penalties inflicted on illegal trafficking.

Nothing herein shall authorize any hawker to open a room or shop, and expose to sale any goods by retail, in any town, parish, or place, not being a householder there, or the same not being an usual place of his abode, or of his carrying on business, nor to sell any goods by auction, on the penalty of 50*l*. for every offence.

Every person forging or travelling with a forged or counterfeit licence shall forfeit 100*l*.

Every person lending or letting his licence to hire, and every person travelling or trading with a borrowed licence, shall forfeit 20*l*. and the licence of the person lending it shall be from thenceforth forfeited and void, and he or she shall be utterly incapable of having any licence again.

It shall be lawful for any person whatsoever to seize and detain any hawk who shall be found trading without a licence, or shall refuse to produce to such person a licence according to this act, or after being required so to do, for a reasonable time, in order to give notice to a constable, headborough, tithingman, or other peace officer, who are hereby required to carry such persons so seized, unless they shall in the mean time produce their respective licences, before some justice of the peace, who upon proof by confession of the party offending, or by the oath of one or more credible witnesses of the like offence, and no licence being produced by such offender before the said justice, he is required by warrant under his hand and seal to cause the said sum of 40*l*. [this is a mistake in the act, for the penalty of trading without a licence is only 10*l*.] to be levied by distress, rendering the overplus, if any, to the owner of the goods, after deducting the charges of the said distress.

It shall and may be lawful for any person or persons authorized by two commissioners, shewing that such authority, or upon demand of any justice of the peace, mayor, constable, or other officer of the peace where the hawk shall trade, or by any officer of the customs or excise, to demand any hawk found trading to produce a licence according to this act, and upon refusal, or not having his licence ready to produce, shall forfeit 10*l*. and for non-payment thereof the justice may, by 35 Geo. III. c. 91. levy the same by distress and sale of goods, and in the mean time he may commit the offender to goal, there to remain until the penalty is levied by distress, or until the same shall be paid thereon.

Every constable, &c. refusing to assist in the execution of this act, shall on conviction by the oath of one or more credible witnesses or witnesses before a justice of the peace, forfeit 10*l*. for each offence.

The clauses restricting hawkers from selling in market towns, except on a fair or market day, is repealed by 35 Geo. III. c. 91.

Hawkers, &c. who were licensed on May 1, 1789, may set up, occupy, use, or exercise, any craft, mystery, or occupation, in the place where they are resident inhabitants, though not brought up thereto by apprenticeship, and may employ therein persons who have not been apprentices, notwithstanding the act of 5 Eliz. and if they shall be prosecuted may plead the general issue.

Nothing in this act shall extend to prohibit any persons from selling any printed papers, licensed by authority, or any fish, fruits, or victuals, nor to hinder any persons who are the real workers or makers of any goods, wares, or manufactures of Great Britain, or his, her, or their children, apprentices, agents, or servants, from carrying abroad, exposing to sale, and selling by retail or otherwise, any of the said goods, wares, or manufactures, in any mart, market, or fair, and in every city, borough, town corporate, and market town; nor any tinkers, coopers, glaziers, plumbers, harness-menders, or other persons usually trading in mending kettles, tubs, household goods, or harness whatsoever, from going about and carrying with him or them proper materials for mending the same.

No wholesale dealer in British goods, selling by wholesale only from house to house, to be deemed a hawk.

Penalties above 20*l*. are to be recovered with costs in any of his Majesty's courts of record at Westminster, by action of debt, &c. one moiety to his Majesty, and the other moiety to the person who shall inform or sue for the same.

Penalties under 20*l*. shall be recoverable before a justice, either by confession of the party, or by oath of one or more credible witness or witnesses, and appropriated as above. And

in case of non-payment, shall be levied by distress; and if not sufficient distress, to be committed to prison for any term not less than one and not exceeding three months.

Persons aggrieved may appeal to the quarter-sessions.

Witnesses who shall neglect to appear, or refuse to be examined on oath, shall forfeit 10*l*. Defendants may plead the general issue, and recover treble costs.

HAWKINS (Sir John), was the youngest son of a man who, though descended from the great admiral of that name, followed the business of a carpenter, though he became afterwards a surveyor and builder. He was born in London, March 30, 1719, and educated for his father's profession; having, however, previously acquired some knowledge of Latin at two different schools. He changed his plan after this, and was articled to Mr. John Scott, an eminent attorney and solicitor, who, it seems, took little pains to make him acquainted with the practice of the law. This marked neglect, however, rather sharpened the diligence of his pupil, who, by abridging himself of his rest, and devoting all his hours of leisure to private study, not only rendered himself an able lawyer but acquired a knowledge of general literature, particularly of poetry and music, for which he had a natural taste. More especially to cultivate the latter, in the year 1741, he, with others, instituted a musical club under the name of the *Madrigal Society*; and he afterwards became a member of the Academy of Ancient Music.

His advancement in life was greatly promoted by his marriage with the daughter of Peter Stover, esq. of Highgate, in 1753; and his fortune was a few years afterwards considerably augmented by the death of that lady's brother in 1759, on which occasion he quitted the business of an attorney. In 1761, on the recommendation of his friend Paul Whitehead, his name was inserted in the commission of the peace for Middlesex; and he did himself much credit, not only as an active and useful magistrate, but by framing an act of parliament, now in force, for the repair of the highways. In 1763 he assisted Dr. Johnson, and Sir Johnna, then Mr. Reynolds, in forming a literary club at the Turk's Head in Gerard-street. In 1764 he stood forward as an opposer of the unreasonable claims, made on the public purse, by the city of London, on the rebuilding of Newgate. His opposition being successful, he was afterwards (in 1765) appointed to the vacant situation of Chairman of the Quarter-sessions; and in 1772 his activity, as a magistrate, in suppressing riots, at the time of the Middlesex elections, procured him the honour of knighthood. Dr. Johnson, who, at the commencement of Sir John's professional career as a solicitor, had occupied an apartment in his house, in Clement's-lane, Lombard-street, and who had always entertained sentiments of kindness towards him, on making his will, in 1783, appointed him one of his executors. Sir John Hawkins, as a literary character, was more remarkable for industry than genius. Besides contributing to an edition of Shakspeare by Johnson and Stevens, he wrote: 1. *The Complete Angler*. 2. *An History of the Science and Practice of Music*. 3. *The Life and Writings of Dr. Samuel Johnson*, in 11 vols. 8vo.: and also many fugitive pieces. He died on the 21st of May, 1789, of a palsy, and was interred in the cloisters of Westminster abbey.

HAWKSHEAD, a town in Lancashire, with a market on Monday, 24 miles N.N.W. of Lancaster, and 273 of London. Long. 3. 6. W. Lat. 54. 24. N.

HAWES-WATER, a lake in Westmoreland, S. of Penrith, three miles long, and half a mile over in some places. It is almost divided in the middle by a promontory of inclosures, so that it consists of two sheets of water.

HAYE, a town of France, in the department of Indre

and Loire. It is the birth-place of Des Cartes, and seated on the Creufe, 25 miles S. of Tours, and 135 S.W. of Paris. Long. o. 46. E. Lat. 46. 56. N.

HAYLSHAM, a town in Suffex, with a market on Saturday, 12 miles E. of Lewes, and 58 S.E. of London. Long. o. 20. E. Lat. 50. 55. N.

HAZEBROUCK, a town of France, in the department of the North, 18 miles W. of Lille, and 19 S. of Dunkirk. Long. 2. 26. E. Lat. 50. 43. N.

HEADFORD, a town of Ireland, in the county of Galway, 12 miles N. of Galway. Long. o. 3. W. Lat. 53. 29. N.

HEAD OF ELK, or ELKTON, a town of the United States, in Maryland, situate near the head of Chesapeake Bay, on a small river of its own name. It enjoys great advantages from the carrying-trade between Baltimore and Philadelphia, being about 50 miles from each.

HEAN, a town of Tonquin, on the river Domca, 20 miles S. of Cachao, and 80 N. of the bay of Tonquin.

HEAT (*Encycl.*). The following important observations on the use of steam as a vehicle for conveying heat from one place to another, by Count Rumford, are inserted in the Journals of the Royal Institution of Great Britain.

"More than fifty years ago," says Count Rumford, "Colonel William Cook, in a paper presented by him to the Royal Society, and published in their Transactions, made a proposal for warming rooms by means of metallic tubes filled with steam, and communicating with a boiler situated out of the room; which proposal was accompanied by an engraving, which shewed, in a manner perfectly clear and distinct, how this might be effected. Since that time this scheme has frequently been put in practice with success, both in this country and on the Continent*.—Many attempts have likewise been made, at different periods, to heat liquids by means of steam introduced into them; but most of these have failed: and, indeed, until it was known that fluids are non-conductors of heat, and, consequently, that heat cannot be made to *descend* in them (which is a recent discovery), these attempts could hardly succeed; for, in order to their being successful, it is absolutely necessary that the tube which conveys the hot steam should open into the *lowest* part of the vessel which contains the liquid to be heated, or on a level with its bottom; but as long as the erroneous opinion obtained, that heat could pass in fluids in *all directions*, there did not appear to be any reason for placing the opening of the steam-tube at the bottom of the vessel, while many were at hand which pointed out other places as being more convenient for it.

"But to succeed in heating liquids by steam, it is necessary, not only that a steam should enter the liquid at the bottom of the vessel which contains it, but also that it should enter it *coming from above*. The steam-tube should be in a vertical position, and the steam should *descend* through it previous to its entering the vessel, and mixing with the liquid which it is to heat; otherwise this liquid will be in danger of being forced back by this opening into the steam-boiler; for the hot steam being suddenly condensed on coming into contact with the cold liquid, a vacuum will necessarily be formed in the end of the tube; into which vacuum the liquid in the vessel—pressed by the whole weight of the incumbent atmosphere—will rush with great force, and with a loud-noise; but if this tube be placed in a vertical position, and if it be made to rise to the height of six or seven feet, the liquid which is thus

forced into its tower end will not have time to rise to that height before it will be met by steam, and obliged to return back into the vessel.—There will be no difficulty in arranging the apparatus in such a manner as effectually to prevent the liquid to be heated from being forced backwards into the steam boiler; and, when this is done, and some other necessary precautions to prevent accidents are taken, steam may be employed with great advantage for heating liquids; and for keeping them hot, in a variety of cases, in which fire, applied immediately to the bottoms of the containing vessels, is now used.

"In dyeing, for instance, and in brewing, and in the processes of many other arts and manufactures, the adoption of this method of applying heat would be attended not only with a great saving of labour and of fuel, but also of a considerable saving of expence in the purchase and repairs of boilers, and of other expensive machinery: for when steam is used instead of fire for heating their contents, boilers may be made extremely thin and light; and, as they may easily be supported and strengthened by hoops and braces of iron, and other cheap materials, they will cost but little, and seldom stand in need of repairs. To these advantages we may add others of still greater importance: boilers intended to be heated in this manner may, without the smallest difficulty, be placed in any part of a room, at any distance from the fire, and in situations in which they may be approached freely on every side. They may moreover easily be so surrounded with wood, or with other cheap substances, which form warm covering, as most completely to confine the heat within them, and prevent its escape. The tubes by which the steam is brought from the principal boiler (which tubes may conveniently be suspended just below the ceiling of the room) may, in like manner, be covered, so as almost entirely to prevent all loss of heat by the surfaces of them; and this to whatever distances they be made to extend.

"In suspending these steam-tubes, care must, however, be taken to lay them in a situation *not perfectly horizontal* under the ceiling, but to incline them at a small angle, making them rise gradually from their junction with the top of a large vertical steam-tube, connecting them with the steam-boiler, quite to their furthest extremities: for, when these tubes are so placed, it is evident that all the water formed in them, in consequence of the condensation of the steam in its passage through them, will run backwards, and fall into the boiler, instead of accumulating in them, and obstructing the passage of the steam, which it would not fail to do were there any considerable bends or wavings, upwards and downwards, in these tubes; or of running forward, and descending with the steam into the vessels containing the liquids to be heated, which would happen if these tubes inclined downwards instead of inclining upwards, as they recede from the boiler.

"In order that clear and distinct ideas may be formed of the various parts of this apparatus, even without figures, I shall distinguish each part by a specific name: the vessel in which water is boiled in order to generate steam, and which, in its construction, may be made to resemble the boiler of a steam-engine, I shall call the *steam-boiler*: the vertical tube, which, rising up from the top of the boiler, conveys the steam into the tubes (nearly horizontal) which are suspended from the ceiling of the room, I shall call the *prime-conductor*: to the horizontal tubes I shall give the name of *horizontal con-*

* Although one should naturally imagine that the notoriety of these facts would have been sufficient to prevent all attempts in our days to claim a right to this invention, yet it is said that a patent for it was taken out only a few years ago.

ductors, or simply *conductors of steam*: and to the (smaller) tubes, which, descending perpendicularly from these *horizontal conductors*, convey the steam to the liquids which are to be heated, I shall, exclusively, appropriate the appellation of *steam-tubes*.

"The vessels in which the liquids are put that are to be heated I shall call the *containing vessels*.—These vessels may be made of any form; and, in many cases, they may, without any inconvenience, be constructed of wood, or of other cheap materials, instead of being made of costly metals, by which means a very heavy expence may be avoided.

"Each *steam tube* must descend perpendicularly from the *horizontal conductor* with which it is connected to the level of the bottom of the *containing vessel* to which it belongs; and, moreover, must be furnished with a good brass cock, perfectly steam-tight; which may be best placed at the height of about six feet above the level of the floor of the room.

"This *steam tube* may either descend *within the vessel* to which it belongs, or *on the outside of it*, as shall be found most convenient. If it comes down on the outside of the vessel; it must enter it at its bottom, by a short horizontal bend; and its junction with the bottom of the vessel must be well secured, to prevent leakage. If it comes down into the vessel, on the inside of it, it must descend to the bottom of it, or at least to within a very few inches of the bottom of it; otherwise the liquid in the vessel will not be uniformly and equally heated.

"When the *steam tube* is brought down on the inside of the containing vessel, it may either come down perpendicularly, and without touching the sides of it, or it may come down on one side of the vessel, and in contact with it.

"When several *steam tubes*, belonging to different containing vessels, are connected with one and the same horizontal *steam conductor*, the upper end of each of these tubes, instead of being simply attached by soldering to the under side of the conductor, must enter at least one inch within the cavity of it; otherwise the water resulting from a condensation of a part of the steam in the conductor, by the cold air which surrounds it, instead of finding its way back into the steam boiler, will descend through the steam tubes and mix with the liquids in the vessels below; but when the open ends of these tubes project upwards within the steam conductor, though it be but to a small height above the level of its under side, it is evident that this accident cannot happen.

"It is not necessary to observe here, that, in order that the ends of the steam tubes may project within the *horizontal conductor*, the diameters of the former must be considerably less than the diameter of the latter.

"To prevent the loss of heat arising from the cooling of the different tubes through which the steam must pass in coming from the boiler, all those tubes should be well defended from the cold air of the atmosphere, by means of warm covering; but this may easily be done, and at a very trifling expence. The horizontal conductors may be enclosed within square wooden tubes, and surrounded on every side by charcoal dust,—fine saw-dust,—or even by wool;—and the steam tubes, and prime conductor, may be surrounded, first by three or four coatings of strong paper, firmly attached to them by paste or glue, and covered with a coating of varnish, and then by a covering of thick coarse cloth. It will likewise be advisable to cover the horizontal conductor with several coatings of paper; for if the paper be put on to them while it is wet with the paste or glue, and if care be taken to put it on in long slips or bands, wound regularly round the tube in a spiral line, from one end of it to the other, this covering

will be useful, not only by confining more effectually the heat, but also by adding very much to the strength of the tube, and rendering it unnecessary to employ thick and strong sheets of metal in the construction of it.

"However extraordinary and incredible it may appear, I can assert it as a fact, which I have proved by repeated experiments, that if a hollow tube, constructed of sheet copper $\frac{1}{8}$ of an inch in thickness, be covered by a coating only twice as thick, or $\frac{1}{4}$ of an inch in thickness, formed of layers of strong paper, firmly attached to it by good glue, the strength of the tube will be *more than doubled* by this covering. I found by experiments, the most unexceptionable and decisive—of which I intend at some future period to give to the public a full and detailed account,—that the strength of paper is such, when several sheets of it are firmly attached together with glue, that a solid cylinder of this substance, the transverse section of which should amount to only one superficial inch, would sustain a weight of 30,000 lb. avoirdupois, or above 13 tons, suspended to it, without being pulled asunder or broken. The strength of hemp is still much greater, when it is pulled equally, in the direction of the length of its fibres. I found, from the results of my experiments with this substance, that a cylinder of the size above mentioned, composed of the freight fibres of hemp, glued together, would sustain 92,000 lb. without being pulled asunder.

"A cylinder, of equal dimensions, composed of the strongest iron I could ever meet with, would not sustain more than 66,000 lb. weight; and the iron must be very good not to be pulled asunder with a weight equal to 55,000 lb. avoirdupois.

"I shall not, in this place, enlarge on the many advantages that may be derived from a knowledge of these curious facts. I have mentioned them now in order that they may be known to the public; and that ingenious men, who have leisure for these researches, may be induced to turn their attention to a subject, not only very interesting, on many accounts, but which promises to lead to most important improvements in mechanics.

"I cannot return from this digression without just mentioning one or two results of my experimental investigations relative to the force of cohesion, or strength of bodies, which certainly are well calculated to excite the curiosity of men of science.

"The strength of bodies of different sizes, *similar in form*, and composed of the *same substance*,—or the forces by which they resist being pulled asunder by weights suspended to them, and acting in the direction of their lengths, are *not in the simple ratio of the areas of their transverse sections*, or of their *fractures*;—but in a higher ratio;—and this ratio is different in different substances.

"The form of a body has a considerable influence on its strength, *even when it is pulled in the direction of its length*.

"All bodies; even the most brittle, appear to be *torn asunder*, or their particles separated, or fibres broken, *one after the other*; and hence it is evident, that that *form* must be most favourable to the strength of any given body, pulled in the direction of its length, which enables the greatest number of its particles, or longitudinal fibres, to be separated to the greatest possible distance—short of that at which the force of cohesion is overcome,—before any of them have been forced beyond that limit.

"It is more than probable that the apparent strength of different substances depends much more on the number of their particles that come into action before any of them are forced beyond the limits of the attraction of cohesion, than on any specific difference in the intensity of that force in those substances.

"But to return to the subject more immediately under consideration.—As it is essential that the steam employed in heating liquids, in the manner before described, should enter the containing vessel at, or very near, its bottom, it is evident that this steam must be sufficiently strong, or elastic, to overcome, not only the pressure of the atmosphere here, but also the additional pressure of the superincumbent liquid in the vessel; the steam boiler must, therefore, be made strong enough to confine the steam, when its elasticity is so much increased by means of additional heat, as to enable it to overcome that resistance. This increase of the elastic force of the steam need not, however, in any case, exceed a pressure of five or six pounds upon a square inch of the boiler, or *one third part*, or *one half*, of an atmosphere.

"It is not necessary for me to observe here, that in this and also in all other cases, where steam is used as a vehicle for conveying heat from one place to another, it is indispensably necessary to provide *safety valves* of two kinds;—the one for letting a part of the steam escape, when, on the fire being suddenly increased, the steam becomes so strong as to expose the boiler to the danger of being burst by it;—the other for admitting air into the boiler, when, in consequence of the diminution of the heat, the steam in the boiler is condensed, and a vacuum is formed in it; and when, without this valve, there would be danger, either of having the sides of the boiler crushed, and forced inwards by the pressure of the atmosphere from without; or of having the liquid in the containing vessels forced upwards into the horizontal steam conductors, and from thence into the steam boiler. This last-mentioned accident, however, cannot happen, unless the cocks in some of the steam tubes happen to be open. The two valves effectually prevent all accidents.

"The reader will, no doubt, be more disposed to pay attention to what has here been advanced, on this interesting subject, when he is informed that the proposed scheme has already been executed on a very large scale, and with complete success; and that the above details are little more than exact descriptions of what actually exists.

"A great mercantile and manufacturing house at Leeds, that of Messrs. Gott and Company, had the courage, notwithstanding the mortifying prediction of all their neighbours, and the ridicule with which the scheme was attempted to be treated, to erect a *dyeing-house*, on a very large scale indeed, on the principles here described and recommended.

"On my visit to Leeds the last summer, I waited on Mr. Gott, who was then mayor of the town, and who received me with great politeness, and shewed me the cloth halls, and other curiosities of the place; but nothing he shewed me interested me half so much as his own truly noble manufactory of superfine woollen cloths. I had seen few manufactories so extensive, and none so complete in all its parts. It was burnt to the ground the year before I saw it, and had just been rebuilt on a larger scale; and with great improvements in almost every one of its details. The reader may easily conceive, that I felt no small degree of satisfaction on going into the dyeing-house, to find it fitted up on principles which I had some share in bringing into repute, and which Mr. Gott told me he had adopted in consequence of the information he had acquired in the perusal of my *seventh* essay. He assured me that the experiment had answered, even far beyond his most sanguine expectations; and, as a strong proof of the utility of the plan, he told me, that his next-door neighbour, who is a dyer by profession, and who, at first, was strongly prejudiced against these innovations, has lately adopted them, and is now convinced that they are real improvements. Mr. Gott assured me that he

had no doubt but that they would be adopted by every dyer in Great Britain in the course of a very few years.

"The dyeing-house of Messrs. Gott and Company, which is situated on the ground-floor of the principal building of the manufactory, is very spacious, and contains a great number of coppers of different sizes; and as these vessels, some of which are very large, are distributed about promiscuously, and apparently without any order in their arrangement, in two spacious rooms,—each copper appearing to be insulated, and to have no connection whatever with the others,—all of them together form a singular appearance. The rooms are paved with flat stones, and the brims of all the coppers—great and small—are placed at the same height—about three feet above the pavement: some of these coppers contain upwards of 1800 gallons; and they are all heated by steam from one steam boiler, which is situated in a corner of one of the rooms.

"The horizontal tubes which serve to conduct the steam from the boilers to the coppers are suspended just below the ceiling of the rooms: they are made—some of lead—and some of cast-iron; and are from four to five inches in diameter; but when I saw them, they were naked, or without any covering to confine the heat. On my observing to Mr. Gott that covering for them would be useful, he told me that it was intended that they should be covered, and that coverings would be provided for them.

"The vertical *steam tubes*, by which the steam passes down from the horizontal *steam conductors* into the coppers, are all constructed of lead, and are from $\frac{1}{2}$ of an inch to $\frac{1}{4}$ inches in diameter; being made larger or smaller, according to the sizes of the coppers to which they belong. These steam tubes all pass down on the *outside* of their coppers, and enter them horizontally at the level of their bottoms. Each copper is furnished with a brass cock, for letting off its contents; and it is filled with water from a cistern at a distance, which is brought to it by a leaden pipe. The coppers are all surrounded by thin circular brick walls, which serve not only to support the coppers, but also to confine the heat.

"The rapidity with which these coppers may be heated, by means of steam, is truly astonishing. Mr. Gott assured me that one of the largest of them, containing upwards of 1800 gallons, when filled with cold water from the cistern, requires no more than *half an hour* to heat it till it actually boils!—By the greatest fire that could be made under such a copper, with coals, it would hardly be possible to make it boil in less than an hour.

"It is easy to perceive, that the *saving of time* which will result from the adoption of this new mode of applying heat will be very great;—and it is likewise evident, that it may be increased, almost without limitation, merely by augmenting the diameter of the steam tube: care must, however, be taken that the boiler be sufficiently large to furnish the quantities of steam required.—The *saving of fuel* will also be very considerable: Mr. Gott informed me, that, from the best calculation he had been able to make, it would amount to near two-thirds of the quantity formerly expended, when each copper was heated by a separate fire.

"But these savings are far from being the only advantages that will be derived from the introduction of these improvements in the management of heat: there is one, of great importance indeed—not yet mentioned—which alone would be sufficient to recommend the very general adoption of them.—As the heat communicated by steam can never exceed the mean temperature of boiling water by more than a very few degrees, the substances exposed to it can never be injured by it. In many arts and manufactures this circumstance will be

productive of great advantages, but in none will its utility be more apparent than in cookery; and especially in public kitchens,—where great quantities of food are prepared in large boilers; for, when the heat is conveyed in this manner, all the labour now employed in stirring about the contents of those boilers, to prevent the victuals from being spoiled by the burning to the bottoms of them, will be unnecessary; and the loss of heat occasioned by this stirring prevented; and, instead of expensive coppers, or metallic boilers, which are difficult to be kept clean, and often stand in need of repairs—common wooden tubs may, with great advantage, be used as culinary vessels; and their contents may be heated by *portable fire-places*, by means of steam boilers attached to them.

“As these portable fire-places and their steam boilers may, without the smallest inconvenience, be made of such weight, form, and dimensions, as to be easily transported from one place to another by two men, and be carried through a doorway of the common width—with this machinery, and the steam tubes belonging to it, and a few wooden tubs—a complete public kitchen, for supplying the poor and others with soups, and also with puddings, vegetables, meat, and all other kinds of food prepared by *boiling*, might be established in half an hour, in any room, in which there is a chimney (by which the smoke from the portable fire-place can be carried off); and, when the room should be no longer wanted as a kitchen, it might, in a few minutes, be cleared of all this culinary apparatus, and made ready to be used for any other purpose.

“This method of conveying heat is peculiarly well adapted for heating baths: it is likewise highly probable that it would be found useful in the bleaching business, and in washing linen. It would also be very useful in all cases where it is required to keep any liquid at about the boiling point for a long time without making it boil; for the quantity of heat admitted may be very nicely regulated by means of the brass cock belonging to the steam tube. Mr. Gott shewed me a boiler in which shreds of skins were digesting in order to make glue, which was heated in this manner; and in which the heat was so regulated, that, although the liquid never actually boiled, it always appeared to be upon the very point of beginning to boil.

“This temperature had been found to be best calculated for making good glue. Had any other *lower* temperature been found to answer better, it might have been kept up with the same ease, and with equal precision, by regulating properly the quantity of steam admitted.

“I need not say how much this country is obliged to Mr. Gott, and his worthy colleagues.—To the spirited exertions of such men—who abound in no other country—we owe one of the proudest distinctions of our national character;—that of being an *enlightened and an enterprising people*.”

For the method of applying heat by steam in houses, &c. see the articles *HOT-HOUSE* and *HOT-BED* in this SUPPLEMENT.

HEBRON, a town of Palestine, situated partly on a hill and partly on a plain. The Christians have a church here, which they say contains the tombs of Abraham and Sarah, to which the Mahometans, as well as Christians, come in pilgrimage. The valley or plain of Maure is not far from Hebron; it is fertile, and planted with excellent vineyards. Constantine built a church here, the walls of which are yet in existence: eight leagues S.W. Jerusalem.

HECHINGEN, a town of Germany, in the circle of Swabia, which gives name to a branch of the family of Hohenzollern, and is the residence of the prince; 30 miles S. Stuttgart, and 52 E.S.E. Stralsburg.

HEDEMORA, a town of Sweden, in the province of Dalecarlia, and one of the principal towns of the kingdom, situated near a lake, well built and commercial. Here is a large manufacture of gunpowder: 53 miles N.W. Upfal. Long. 16. E. Greenwich. Lat. 60. 17. N.

HEDGE (*Encycl.*). The late Mr. Bakewell was remarkably curious in his fences: he used to plant one row at the distance of a foot from set to set; and, after making the ditch, to lay the earth dug out of it, so as to form a bank on the side opposite to the quick. In other parts of England, the bank is made on the side of the quick above it. The advantage of Mr. B.'s method is, that the plants grow only in the *surface-earth*, not secluded from the atmosphere; whereas, in the common practice, the best earth is generally loaded by a thick covering of mud taken from the ditch, and placed obliquely on the bank. There is, however, a considerable waste of land in the former method: for, after the whole was thus formed, he usually added a double post and rail; one on the outside of such bank, and the other on the outside of the quick.

Hedges designed for ornament in gardens, are sometimes planted with evergreens, among which the holly is preferable to any other; next in rank is the yew, but the dead colour of its leaves renders such hedges less agreeable. The laurel is another plant that may be employed as a fence for gardens; as it is one of the most beautiful evergreens; but it shoots forth with such luxuriance, that it is very difficult to confine it to any shape: its leaves, too, are very large, and, if cut through with the sheers, present a very disagreeable appearance: hence they ought to be pruned with a knife, and the shoots exactly cut down to each leaf.

In the 3d vol. of the *Transactions of the Society for the Encouragement of Arts*, &c. Mr. Leatham, of Barton, gives an account of his method of planting quickset hedges on dry, gravelly, or thin soils. He considers the causes which render such hedges very indifferent, to be—1. That they are set too low or flat on the surface, to allow the roots to strike deeply into the soil. 2. That, when planted higher, they are generally too near the slope of the bank, and thus cannot receive the benefit of the rain. To remedy these inconveniences, two lines are marked out, 12 feet apart; the upper part of the soil is taken from three feet within each line, and thrown into the centre of the space, so as to form a flat bed, three feet in breadth, in the midst of which the quicks are planted; the remaining space of 18 inches on each side is filled up with the earth, gravel, or sand taken out of the ditches on both sides, by which means the bed is extended to five feet, allowing six inches for the slope of the bank. Quicks, thus planted, will find sufficient nourishment in the soil, before the tap-root reaches the barren gravelly bottom; and the earth thus placed, will retain moisture enough to nourish the plants; so that they will in a short time form an excellent fence, which, by elevating the bank on each side at pleasure, may be protected at a small expence from the ill effects of sharp winds, or the air of the sea. Mr. Leatham observes, that the space, on such low-priced ground, is but small; and, as a good thriving fence is obtained, it amply compensates the expences. A hedge, constructed according to the dimensions above stated, cost him fifteen pence per rod of seventy yards in length.

In the 1st vol. of the *Letters and Papers of the Bath and W'est of England Society*, we meet with a communication, in which *elms* are recommended for fences. When elm-timber is felled in the spring, the chips made in trimming the trees are to be sown on a piece of newly-ploughed land, and harrowed in, as is practised with corn. Every chip, that has an

eye or bud, will speedily shoot like the cuttings of potatoes; and, as such plants have no tap-roots, but strike their fibres horizontally in the richest part of the soil, they will be more vigorous, and may be more easily transplanted, than if they had been raised from seeds, or in any other manner. They possess this further advantage, that five or six stems will generally rise from the same chip; and, after being cut down to within three inches of the ground, they will multiply their side-shoots in proportion, and form a thicker hedge, without running to naked wood, than by any other method hitherto practised. Lastly, if they be kept carefully clipped for the first three or four years, they are said to become almost impenetrable.

In the second volume of the same instructive work, we find another communication on the subject of hedges; and the great advantages that might be derived from them, by planting cyder-fruit-trees. If a judicious mixture of such trees were set in hedges, the profit they afford would amply compensate the expences incurred, without any loss of ground. And, as the best kinds of this fruit are so extremely four at the proper season of gathering, that even hogs will scarcely touch them, depredations are not to be apprehended.

Having already treated on FRANCES, we shall only add, that those of our readers who wish to acquire a more complete information on the subject, may with advantage peruse the first and second volumes of Dr. Anderson's *Essays on Agriculture*, in which it is fully discussed, and the plants best calculated for making hedges are judiciously pointed out.

HEILIGE-LAND, an island of the German Ocean, between the mouths of the Eyder and the Elbe. It belongs to the king of Denmark. Long. 8. 20. E. Lat. 54. 21. N.

HEILIGENBERG, a town of Germany, in the archduchy of Austria: 1 mile N. Rotz.

HEILIGENSTADT, a town of Germany, capital of the territory of Etchfel, belonging to the elector of Mentz. It is seated at the confluence of the Geitland and Leina, 30 miles N.W. of Eisenach. Long. 10. 14. E. Lat. 51. 22. N.

HEILSBRUNN, a town of Franconia, in the principality of Anspach, with a medical spring, 10 miles E.N.E. of Anspach, and 16. S.W. of Nuremberg.

HEIRSHIP MOVEABLES, in Scots law, the best of certain kinds of moveables, which the heir of line is entitled to take, besides the heritable estate.

HELL-GATE, a celebrated strait near the W. end of Long Island Sound, eight miles E. of New York. It is remarkable for its whirlpools, which are occasioned by the narrowness and crookedness of the pass, and a bed of rocks extending quite across; but, at proper times of the tide, a skilful pilot may conduct a ship of any burthen through this strait.

HELMERSHAUSEN, a town of Germany, in the principality of Hesse-Cassel, 19 miles W. of Göttingen, and 22 N. of Cassel. Long. 9. 32. E. Lat. 51. 32. N.

HELMONT, a town of Dutch Brabant, with a strong castle, seated on the Aa, 17 miles S.E. of Bois-le-Duc. Long. 5. 37. E. Lat. 51. 31. N.

HELZSTADT, a town of Upper Saxony, in the county of Mansfeld, 9 miles N. of Eisleben, and 16. S.E. of Quedlinburg. Long. 12. 14. E. Lat. 51. 47. N.

HEMATH, or HAMATH (anc. geog.), the name of a city (whose king was David's friend, 2 Sam. ix.) to the south of Lebanon; from which a territory was called *Nemath*, on the north of Canaan and south of Syria, as appears by the spies, Numb. xiii. 1 Kings viii. Ezek. xlvii. Whether one or more cities and districts of this name lay in this tract, neither interpreters nor geographers are agreed. The eastern part was called *Hemath-zoba*, 2 Chron. viii. unless we suppose that there was a city in *Zoba* of this name fortified by

Solomon. In defining the boundary of Palestine, it is often said, *from the entering of Hamath*; as a province to be entered into through a fruit or defile. And if there was such, the next question is, from what metropolis it was called *Hemath*? Antioch, capital of Syria, is supposed to be called *Hemath* or *Amutha* (Jonathan, Targum; &c.); and again *Epiphania*, (Josephus). Both were to the north of Lebanon; consequently not the *Hemath* of Scripture, the immediate boundary of Palestine to the north, and lying to the south of Lebanon.

HEMMENDORF, a town of Lower Saxony, in the principality of Calenberg, situate on the Saale, 12 miles E. of Hamelin.

HENRY IV. emperor of Germany in 1056, styled *the Great*, was memorable for his quarrels with Pope Gregory II. whom at one time he deposed, for having presumed to judge his sovereign; but at another, dreading the effects of the papal anathemas, he had the weakness to submit to the most humiliating personal solicitations and penances to obtain absolution, which impolitic measure increased the power of the pope, and alienated the affections of his subjects: thus circumstanced, he re-assumed the hero, but too late; marched with an army to Rome, expelled Gregory, deposed him, and set up another pope. Gregory died soon after: but Urban II. and Pascal II. successively excited his ambitious sons, Conrad and Henry, to rebel against him, and the latter was crowned emperor by the title of Henry V. in 1106; and he had the inhumanity to arrest his father, and to deprive him, not only of all his dignities, but even of the necessaries of life. The unfortunate Henry IV. was reduced to such extremities (after having fought 62 battles in defence of the German empire), that he solicited the Bishop of Spire to grant him an underground place in his cathedral, but was refused. He died the same year, at Liege, aged 55, a martyr to the ignorance and superstition of the age, and to his own blind confidence in favourites and mistresses.

HENRY IV. king of France (in 1589) and Navarre, justly styled *the Great*, was the son of Anthony de Bourbon, chief of the branch of Bourbon (so called from a fief of that name which fell to them by marriage with the heiress of the estate). His mother was the daughter of Henry de Albert, king of Navarre; a woman of a masculine genius; intrepid, simple, and rustic in her manners, but deeply versed in politics, and a zealous protestant. Foreseeing that her party would want such a protector (for her husband was a weak indolent prince), she undertook the care of the education of the young hero: his diet was coarse; his clothes neat, but plain; he always went bare-headed; the sent him to school with the other children of the same age, and accustomed him to climb the rocks and neighbouring mountains, according to the custom of the country. He was born in 1553; and in 1569, the 16th year of his age, he was declared the Defender and Chief of the Protestants at Rochelle. The peace of St. Germain, concluded in 1570, recalled the lords in the Protestant interest to court; and in 1572 Henry was married to Margaret de Valois, sister to Charles IX. king of France. It was in the midst of the rejoicings for these nuptials, that the horrid massacre of Paris took place. Henry was reduced, by this infernal stroke of false policy, to the alternative of changing his religion or being put to death: he chose the former, and was detained prisoner of state three years. In 1587 he made his escape; put himself at the head of the Huguenot party, exposing himself to all risks and fatigues of a religious war, and enduring all the hardships of the common soldier: but he gained a victory this year at Courtras, which established his reputation in arms, and endeared him to the Protestants. On the death of Henry III. religion was urged as a pretext for

one half of the officers of the French army to reject him, and for the leaguers not to acknowledge him. A phantom, the Cardinal de Bourbon, was set up against him; but his most formidable rival was the Duke de Mayenne: however, Henry, with few friends, fewer important places, no money, and a very small army, supplied every want by his activity and valour. He gained several victories over the duke; particularly that of Ivry in 1599, memorable for his heroic admonition to his soldiers: "If you love your ensigns, rally by my white plume, you will always find it in the road to honour and glory." Paris held out against him, notwithstanding his successes: he took all the suburbs in one day; and might have reduced the city by famine, if he had not humanely suffered his own army to relieve the besieged: yet the bigotted friars and priests in Paris all turned soldiers, except four of the Mendicant order; and made daily military reviews and processions, the sword in one hand and the crucifix in the other, on which they made the citizens swear rather to die with famine than to admit Henry. The scarcity of provisions in Paris at last degenerated to an universal famine; bread had been sold, whilst any remained, for a crown the pound, and at last it was made from the bones of the charnel-house of St. Innocents: human flesh became the food of the obdurate Parisians, and mothers ate the dead bodies of their children. In fine, the Duke of Mayenne, seeing that neither Spain nor the league would ever grant him the crown, determined to assist in giving it to the lawful heir. He engaged the states to hold a conference with the chiefs of both parties; which ended in Henry's abjuration of the Protestant religion at St. Denis, and his consecration at Chartres in 1593. The following year Paris opened its gates to him; in 1596, the Duke of Mayenne was pardoned; and in 1598, peace was concluded with Spain. Henry now shewed himself doubly worthy of the throne, by his encouragement of commerce, the fine arts, and manufactures, and by his patronage of men of ingenuity and sound learning of every country; but though the fermentations of Romish bigotry were calmed, the heaven was not destroyed; scarce a year passed without some attempt being made on this real father of his people; and at last the monster Ravallac stabbed him to the heart in his coach, in the streets of Paris, on the 14th of May, 1610, in the 57th year of his age, and 22d of his reign.

HENRY, of Huntingdon, an English historian, of the 12th century, was canon of Lincoln, and afterwards archdeacon of Huntingdon. He wrote, 1. A History of England, which ends with the year 1154. 2. A continuation of that of Bede. 3. Chronological tables of the kings of England. 4. A small treatise on the contempt of the world. 5. Several books of epigrams and love-verses. - 6. A poem on herbs: all which are written in Latin. - His invocation of Apollo and the goddesses of Tempe, in the exordium of his poem on herbs, may not be unacceptable as a specimen of his poetry:

Vatum magne parens, herbarum Phoebe reperto.
Vosque, quibus resonant Tempe iocosa Deae!
Si mihi ferta prius hederæ florente paratis,
Ecce meos flores, ferta parate fero.

HENRY, of Susa, in Latin *de Segusio*, a famous civilian and canonist of the 13th century, acquired such reputation by his learning, that he was called the *source and splendor of the law*. He was archbishop of Embrun about the year 1258, and cardinal bishop of Ostia in 1262. He wrote *A summary of the canon and civil law*; and *A commentary on the book of the decretals*, composed by order of Alexander IV.

HENRY (Matthew), an eminent dissenting minister and

author, was the son of Philip Henry, a nonconformist minister, and was born in the year 1662. He continued under his father's care till he was 18 years of age; in which time he became well skilled in the learned languages, especially in the Hebrew, which his father had rendered familiar to him from his childhood; and from first to last the study of the scriptures was his most delightful employment. He completed his education in an academy kept at Ilidngton by Mr. Doolittle, and was afterwards entered in Gray's Inn for the study of the law; where he became well acquainted with the civil and municipal law of his own country, and from his application and great abilities it was thought he would have become very eminent in that profession. But at length, resolving to devote his life to the study of divinity, in 1686 he retired into the country, and was chosen pastor of a congregation at Chester, where he lived about 25 years, greatly esteemed and beloved by his people. He had several calls from London, which he constantly declined; but was at last prevailed upon to accept an unanimous invitation from a congregation at Hackney. He wrote, 1. *Expositions of the Bible*, in 5 vols. folio. 2. *The Life of Mr. Philip Henry*. 3. *Directions for daily Communion with God*. 4. *A Method for Prayer*. - 5. *Four Discourses against Vice and Immorality*. 6. *The Communicant's Companion*. 7. *Family Hymns*. 8. *A Scriptural Catechism*; and, 9. *A Discourse concerning the Nature of Schism*. He died of an apoplexy at Nantwich, when upon a journey, in 1714; and was interred at Trinity-church, in Chester.

HEPPENHEIM, a town of Germany, in the electorate of Mentz, with a castle and an abbey; seated between Heidelberg and Darmstadt, about 14 miles from each. Long. 8. 41. E. Lat. 49. 29. N.

HERAT, a town of Persia, in the province of Korafan, 160 miles S. E. of Mechid. Long. 61. 0. E. Lat. 34. 30. N.

HERAULT, one of the 83 departments of France, so named from a river which falls into the gulf of Lyons. It includes part of the late province of Languedoc: and the capital of Montpellier.

HERBEMONT, a town of the Austrian Netherlands, in the duchy of Luxemburg, with a castle seated on a mountain, near the river Semoy, three miles from Chiny.

HERBAL (*Encycl.*). Among the different methods adopted by botanists, for obtaining a *HORTUS SICCUS*, the following appear to be the most practicable:

1. Lay the plants flat between papers; then place them between two smooth plates of iron screwed together at the corners: in this state they are to be committed to a baker's oven for two hours. After being taken out, they must be rubbed over with a mixture consisting of equal parts of brandy and vinegar, then passed down on paper with a solution of gum-tragacanth in water, after which they are to be laid in a book, where they will adhere, and retain their original freshness. - Although this process was suggested by Sir R. Southwell, in the 237th Number of the *Philosophical Transactions of the Royal Society*, yet the following method is more simple:

2. Flatten the plant, by passing a common smoothing iron over the papers between which it is placed; and dry it slowly in a sand-heat. For this purpose, the cold sand ought to be spread evenly, the smoothed plant laid gently on it, and sand sifted over so as to form a thick bed; the fire is then to be kindled, and the whole process carefully watched, till the plant is gradually and perfectly dried. - Thus, the colour of the tenderest herb may be preserved, and the most delicate flowers retain all their pristine beauty.

3. Another, and far more complete method, was suggested by the ingenious Mr. Whately; and bears a slight resemblance

to that last specified. He directs those who intend to follow his plan, previously to procure—1. A strong oak-box of the same size and shape as those employed for packing up tin plates; 2. A quantity of fine sifted sand, sufficient to fill the box; 3. A considerable number of pieces of plant paper, from one to four inches square; and, 4. Some small flat leaden weights, and a few small, bound books.

He then directs the specimen of the plant intended for the herbal to be gathered, when dry and in full bloom, with all its parts as perfect as possible, and conveyed home in a tin box, well secluded from the air. The plant is first to be cleared from the soil as well as the decayed leaves, and then laid on the inside of one of the leaves of a sheet of common cap-paper. The upper leaves and flowers are next to be covered, when expanded, by pieces of the prepared paper, and one or two of the leaden weights placed on them. The remainder of the plant is now to be treated in a similar manner.

The weights ought next to be gently removed, and the other leaf of the sheet of paper folded over the opposite one, so as to contain the loose pieces of paper and plants between them. A book or two is now to be applied to the outside of the paper, till the intended number of plants is thus prepared; when a box is to be filled with sand to the depth of an inch, one of the plants put in, and covered with sand sufficient to prevent the form of the plant from varying. The other plants may then be placed in succession, and likewise covered with a layer of sand, one inch thick between each; after which the whole is to be gently pressed down in a greater or less degree, according to the tenderness or firmness of the plants.

The box is next to be carefully placed before a fire, one side being occasionally a little raised, as may be most convenient; the sides being alternately presented to the fire, two or three times in the day; or, the whole may be put into an oven gently heated. In the course of two or three days, the plants will be perfectly dry, when the sand ought to be taken out, and put into another box: the plants should likewise be removed to a sheet of writing paper.

This method of preserving plants, Mr. Whately states to be preferable to every other, as both the flowers and leaves, if kept loosely within the paper, in a dry room, without being exposed to the air, will retain their beauty for several years. It will, however, be necessary to inspect them once in the course of a year, for the purpose of destroying any small insects, that may accidentally breed among the plants.

HERBORN, a town of Germany, in the circle of the Upper Rhine and territory of Naïssau, with a famous university and woollen manufacture; 8 miles S.W. of Dillenburg. Long. 8. 20. E. Lat. 50. 40. N.

HERETABLE RIGHTS, in Scots law, all rights affecting lands, houses, &c. or any immovable subject.

HERETAGE, in Scots law, lands, houses, or any immovable subject, in contradistinction to moveables or moveable subjects. It also sometimes signifies such immovable property as a person succeeds to as heir to another, in contradistinction to that which he himself purchases or acquires in any other manner, called *conquest*.

HERICOUR, a town of France, in the department of Upper Saône, 11 miles S.E. of Lure, and 23 E. of Vesoul. Long. 6. 28. E. Lat. 47. 34. N.

HERMBACH, a town of Westphalia, in the duchy of Juliers, 17 miles S. of Juliers. Long. 6. 20. E. Lat. 50. 42. N.

HERMUS (*Encycl.*). Erroneously spelt **HERMES**.

HERNHUT, a famous place in Upper Lusatia, in the territory of the elector of Saxony, between Zittaw and Loebau.

Here, in 1722, some persecuted Moravian brethren (descendants of the church of the ancient United Brethren, established in Bohemia and Moravia, as early as the year 1456) settled in the fields of the village of Betheldorf, belonging to count Zinzendorf, and began to build another village. They were joined by some Protestants, who had been bred in other societies. They all agreed in adopting the confession of Augsburg, and lived as brethren, without quarrelling about particular sentiments; and when, after some time, the number of those admitted from other Protestant churches, became greater than the number of the Moravian brethren, they took the name of Evangelical Brethren, or the Brethren's Unity of the Augsburg Confession. They considered Count Zinzendorf as their bishop and father, and were, for some time, called *Hernhutters*, as this place continued their principal nursery. There were afterward extended into many different countries; were introduced into America, in 1741, by Count Zinzendorf, and settled at Bethlehem in Pennsylvania. Their societies, which are now numerous in that country, afford the most pleasing examples of piety and virtue. See **BETHLEHEM**, **LITIZ**, and **NAZARETH**.

HEROD, falsely styled *the Great*, king and execrable tyrant of Judæa; who, on the strength of a misinterpreted prophecy, caused all the male children of Bethlehem and its neighbourhood to be massacred by his soldiers at the time of the birth of Christ, in the vain hope of destroying the Saviour of mankind. He died, eaten with worms, two or three years after the birth of our Saviour, at the age of 71, after a reign of 40 years. He had ordered that all the persons of quality, whom he kept in prison, should be massacred the moment the breath was out of his body, in order that every considerable family in the kingdom might shed tears at his death; but that inhuman order was not executed.

HEROLDSBERG, a town of Franconia, in the territory of Nuremberg, 7 miles N.N.E. of Nuremberg.

HERRIEDEN, a town of Franconia, in the bishopric of Aichstet, situate on the Altmuhl, 5 miles S.W. of Anspach. Long. 10. 40. E. Lat. 49. 10. N.

HERSTAL, a town of Germany, in the bishopric of Liege, with an ancient castle, seated on the Maese, 3 miles N. of Liege. Long. 5. 40. E. Lat. 50. 40. N.

HERZEGOVINA, a fortified town of Turkish Dalmatia, capital of a duchy of the same name, and the residence of a Turkish governor. It is 80 miles S.S.W. of Belgrade.

HEURNIUS, or **VAN HEURN** (John), a learned physician, was born at Utrecht, in 1543; and studied at Louvain, Paris, Padua, and Pavia. At his return to his native country he became magistrate of Amsterdam; after which he was professor of physic at Leyden, and rector of the university of that city, where he died in 1601. He wrote, among other works, several treatises on the diseases of different parts of the body, and several commentaries on the works of Hippocrates. *Otho Heurnius*, his son, was also professor of physic at Leyden, and wrote some books.

HEYLESEM, a town of Austrian Brabant, 14 miles S.E. of Louvain. Long. 5. 7. E. Lat. 50. 45. N.

HEYMERISEN, a town of Germany, in the electorate of Cologne, situate on the Riff, 30 miles E. of Aix la Chapelle. Long. 6. 37. E. Lat. 10. 46. N.

HEYTESBURY, a borough in Wilts, that sends two members to Parliament, but has now no market. It is 20 miles N.W. of Salisbury, and 93 W. by S. of London. Long. 2. 8. W. Lat. 51. 12. N.

HILLIGENHAVEN, a town of Lower Saxony, in the duchy of Holstein, situate on the Baltic, 37 miles N. of Lubec.

HILLSBOROUGH, a town of N. Carolina, 180 miles W. by N. of Newbern.

HINDIA, a town of the Deccan of Hindoostan, capital of a district of the same name, in the county of Candesh. It is situate on the Nerbudda, 90 miles N.N.E. of Burham-pour. Long. 77. 10. E. Lat. 22. 35. N.

HINLOPEN, see **HINDELOPEN**.

HINTERGERSDORF, a town of Upper Saxony, in the circle of Erzgebürg, eight miles E. of Freyburg.

HIORRING, a town of Denmark, in N. Jutland, once the see of a bishop, but the bishopric was removed to Alburg, by Frederic II. It is 27 miles N.N.W. of Alburg. Long. 9. 38. E. Lat. 57. 2. N.

HIRSH-HORN, a town of Germany, in the palatinate of the Rhine, with a castle. It is seated on the side of a hill, on the Neckar, near Eberbach.

HIRSCHOLM, a town of Denmark, in the island of Zealand, 12 miles N. of Copenhagen.

HISSAR, a town of Hindoostan Proper, capital of a district of the same name, in the country of Delhi. It is seated near the river Sursoory, 112 miles W.N.W. of Delhi. Long. 75. 40. E. Lat. 29. 5. N.

HOANG-TCHEOU, a city of China of the first rank, in the province of Hou-quang, on the Yang-tse: 585 miles S. of Peking. Long. 132. 12. E. Ferro. Lat. 38. 28. N.

HOANG-TCHEOU, a town of the kingdom of Corea, in the province of Hoang-hai: eighty-five miles N.N.W. King-ki-tao. Long. 143. 38. E. Ferro. Lat. 38. 42. N.

HOENG (*Encycl.*). Under **HUSBANDRY** we have spoken fully on the practice of hoeing.

In order further to facilitate this important object, we shall present to our readers three hand-hoes, much superior to those in common use, and which, from their simplicity, deserve to be more generally known. See Plate 33. where fig. 1. is the *Portuguese hoe*, lately described and recommended by Lord Somerville.

The handle of this implement is from three feet to three feet four inches in length; and, as it is both light and short, it is peculiarly calculated for strong lands and mountainous situations; because the hoe, by its weight and pointed form, cuts deeply into earth, without requiring much exertion.

Fig. 2. is the *Horse-shoe hoe*, invented by Mr. Mark Duckett, of Esher, Surrey:

This hoe is furnished with a ring or loop, as there represented, near the bottom of the handle, for holding a strap, which is fastened round the waist of the persons at work, as they walk backwards. It is eminently useful for cleaning crops of every description, whether drilled or hand-set in rows. Mr. Duckett has judiciously availed himself of a short handle, and heavy iron-work, the exact reverse of the common hoe, which requires great exertion to make any impression on the soil (excepting on the lightest sands), especially if it has become dry and hard.

It is evident from the engraving, that Mr. Duckett's hoes, by their convex form, earth up as well as down; though the same implement may also be made with *straight* edges; namely, for drilled or dibbled crops at six inches interval; for clearing peas, beans, &c. at 18 inches distance; and for dressing crops of any description, at 12 inches interval.—Should these hoes, however, from their *straight* edge, be unequal to cope with stiff land, Lord Somerville suggests the expediency of adopting the *conical* edge (or the edge opposite to that in the horse-shoe hoe) which will remarkably increase their power. Lastly, his Lordship observes, that *three* flat hoes at six inches; *two* flat ones at twelve inches; and *three* horse-shoe hoes, form the whole number requisite; and that they all crew into the same frame and handle.

HOEI-TCHEOU-FOU, a commercial city of China, in the province of Quanton. Its jurisdiction contains 11 cities

of the second and third class. Long. 113. 58. E. Lat. 23. 1. N.

HOGARTH (*Encycl.*). A handsome monument to the memory of this exemplary artist is to be seen in the church-yard at Chiswick. It consists of a handsome ornamented base bearing an urn upon a smaller pedestal. On the north side is the following inscription:

Farewel, great painter of mankind,
Who reach'd the noblest point of art;
Whose pictur'd morals charm the mind;
And through the eye correct the heart.

If genius fire thee, reader, stay;
If nature touch thee, drop a tear!
If neither move thee, turn away;
For HOGARTH'S honour'd dust lies here.

D. GARRICK.

On the east side,

Here lieth the body
of WILLIAM HOGARTH, Esq.
who died Oct. 26, 1764,
aged 67 years.

HOHENZOLLERN, a town of Suabia, capital of a county of the same name, with a castle. It is seated on a mountain, 28 miles S. of Stuttgart. Long. 9. 6. E. Lat. 48. 24. N.

HOLBECK, a sea-port of Denmark, in the island of Zealand, with a good harbour, from which great quantities of corn are annually exported. In 1290 this town was destroyed by a fleet from Norway. It is 30 miles W. of Copenhagen. Long. 11. 44. E. Lat. 55. 42. N.

HOLSTEBRØE, a town of Denmark, in N. Jutland, situate on a shallow river which runs into the North Sea. Its principal trade is in corn, oxen, and horses. It is 24 miles W. of Wiburg, and 68 N. of Ripen. Long. 9. 25. E. Lat. 56. 20. N.

HOLTZMUNDEN, a town of Lower Saxony, in the principality of Wolfenbüttele, 28 miles N.W. of Göttingen.

HOLZAPFEL, a town of Westphalia, capital of a county of the same name, which gives a seat in the diets. It is situate on the Lahn, at the foot of a mountain, on which is the tower of an ancient castle, the original seat of the princes of Nassau, four miles N.E. of Nassau. Long. 7. 44. E. Lat. 50. 22. N.

HONDISCHOOETE, a town of France, in the department of the North, seven miles S.E. of Dunkirk.

HONEY (*Encycl.*). For a method of extracting sugar from this substance, see **SUGAR**, in this SUPPLEMENT.

HORADAU, a town of Persia, in the province of Farfistan, 76 miles N.W. of Shiras.

HORSE DEALERS. The following duty imposed on horse dealers by stat. 21 Geo. III. c. 31. is repealed, and a new duty charged instead thereof, viz.

By 36 Geo. III. c. 17. every person exercising the trade or business of a horse dealer, must take out a licence from the Stamp Office, for which he shall pay annually, if within London, Westminster, the bills of mortality, the parish of St. Pancras, or the borough of Southwark, 20l. elsewhere 10l.

The commissioners are to grant licences to horse dealers for not exceeding one year; and every licence shall cease on Sept. 29 in the year for which the same shall be issued, and commence from the date; and every licence taken out for any year subsequent to the year in which the same shall be issued, shall commence from Sept. 29 then next ensuing, and

continue till Sept. 29 following; and a fresh licence is to be taken out ten days at least before the expiration of the year.

One licence is sufficient for partners, and the licence is confined to the place mentioned therein.

But no licences to be granted to horse dealers unless they declare they seek their living by buying and selling horses, and add the name of the place where the said business is carried on. 29 Geo. III. c. 49.

Horse dealers, so licensed, shall cause the words *Licensed to deal in Horses*, to be painted or written in large and legible characters, either on a sign hung out, or on some visible place in the front of their house, gateway, or stables; and if he shall sell any horse, without fixing such token, he shall forfeit 10l. to be recovered by action, half to the king and half to the informer. 36 Geo. III. c. 17.

Horse dealers (not having a licence under the old act of 24 Geo. III. c. 31.) who shall after Jan. 1, 1796, carry on the said business without having obtained a licence under this act, shall be liable to be assessed to the duties on Riding Horses, and shall deliver lists thereof as other persons.

HORSE-HELPER, ALEXIPPOS, or portable SLIDING-LEVER, a curious invention, for which the thanks of the Society for the encouragement of Arts, &c. were voted to Mr. John Smart, optician, of Tooley-street, London. It is designed to be fixed to the under side of a cart, for the relief of the horse when thrown down and entangled in the thills. We earnestly wish, for the sake of humanity, to alleviate the cruelties to which horses are subjected, and hope the plan here given will at least afford a useful hint for further improvements in this line. This machinery will also afford some advantages in loading carts, where the common length of the cart is too short for the articles intended to be carried.

Views of this invention are given in Plate 34.

Fig. 1. A A A, plan of a common town cart inverted. B B, sliding bars or levers, i. e. the Horse-helper. C, cross-bar, or handle of the Horse-helper. D D, spring swivels or hooks to receive the ends of the ropes F F. E E, stops, to prevent overwinding the ropes. F F, H, ropes and hand-rings to project them. G, a prop, to prevent hanging the horse. H H, the bearing plates of the horse-helper, with pulleys or shivers attached thereto. I I, transverse cavities under the axletree to admit the passage of B B. K, the extra bar for country carts. L L, the handspikes for ditto. M M, the axletree or fulcrum. N N, n, the hind and fore ear breadths. O O, the extremities of the shafts. P, the back chain. Q, the prop.

Fig. 2. A profile view of the improved cart with the horse-helper upon a proper angle to clear the packing hooks, &c.

Fig. 3. A scale of feet and $\frac{1}{4}$ parts of a foot.

Mr. Smart's account of his invention is the following: "As all librating bodies," says he, "act in an exact and direct ratio to their elongations from the fulcrum, considered in connection with their proportion of weight, and *vice versa* (the first resistance by the inequality of their matter being excepted), it appears, that as is the solidity of the part of the lever resting on the fulcrum, to the solidity of its extremities, so is its resistance to be acted upon by a weight which is less than its disproportion; which inequality of power is to the weight added in an inverse ratio, but directly as the diminution."

It is evident that the construction of carts at present is very unfavourable to the relief of the fallen horse, who is intentionally placed at the longest arm of the lever (for the shafts act as a lever by supposing the axletree to be the quiescent fulcrum), that he may the better resist the weight of the load, should the equilibrium be by any means destroyed;

for any given weight upon the hind part of the cart has less than half the power of resistance of the horse; so that, if such horse falls, this advantage is prejudicial to his being raised. The inventor, therefore, of the horse-helper, presumes that a plan, the object of which is humanity, will sufficiently apologize for his offering to the public an invention which so obviously more than counteracts the before-mentioned disadvantages, as may be seen by inspecting the plan in connection with its scale.

"Let A A A (fig. 1.) be a plan of a common town cart inverted, whose hind ear-bred, or ear-breadth, N N, projects from its fulcrum, or axletree, M M, 4 feet 7 inches, while the back chain P is 7 feet 6 inches; and the extremities of the shafts, O O, which press upon the tugs in the horse's collar, are 9 feet 6 inches. Now, admitting that the horse who falls weighs 15 cwt. and that his bearing is 1 cwt. which is 16 cwt. it is very evident that it will require 3316lb. weight gross at the ear-breadth N N (which is but 4 feet 7 inches from the fulcrum M M) to counteract such a weight; even admitting that the load had not slipped forward at all by the sudden concussion and depression of the fore parts of the cart. The estimate, therefore, now will be nearly as follows: 4 feet 7 inches, or 55 inches, to 9 feet 6 inches, or 114 inches, will give for the weight 3316lb. which is more than that of twenty-two men, at 150lb. weight each, before a disabled horse can be raised from the ground: but we know that six men cannot bear their weight with advantage on one of our present-made carts, without endangering their persons or clothes; or both; so that the horse is left to struggle with three-fourths of the weight himself, and this in a very bad posture, as he is embarrassed by the shafts, &c. Hence many horses, if not immediately killed, are at least ruined for ever."

"The advantage of the sliding-lever is in the proportion of 126 inches, the length of the levers at C, to 114 inches, the length of the shaft, viz. O O; and this without the addition of the handspike L L, which gives a further advantage of one-fourth. Again, if 55 inches, the length of the lever, at N N, require 3316lb. weight, what will 126 inches require? Answer, 1447 $\frac{1}{2}$ lb. which is less than the weight of ten men, at 150lb. weight each. This, however, is not half the advantage of the lever, as it affords convenient accommodation for more than twenty men, without hazard to clothes or persons. And, if we suppose a sliding bar at K, one man (if men are scarce, as in the country), by applying the two handspikes L L, may gain power sufficient to raise his horse himself, especially as it fortunately happens that country luggage very frequently consists of such articles as might be removed from the front of the cart, and placed on the bars C and K; such, for instance, as sacks of corn, feed, potatoes, bran, flour, peas, beans, &c. &c. which, by being taken from the front, and placed behind, would have more than double the advantage of its real weight; and, in town, where the luggage is different, assistance is always to be obtained from bystanders.

"Notwithstanding the statement of powers for relief which I have here given," says Mr. Smart, "it is plain, from daily observation, that less than half the power here stated is only used in general, as eight or nine men can often (though with much danger and trouble) raise the fallen horse. Hence, by using the sliding lever three or four men, without danger, delay, or trouble, will be sufficient. As immediately the horse falls the driver has only to go behind the cart, lay hold of the hand rings F F, and at one pull the whole apparatus is projected; then lay hold of C, or B B, according as the case requires, and the horse will be instantly relieved."

Mr. Smart adds, that this apparatus is quite portable,

cofts but little, and adds not more than $\frac{1}{30}$ to the weight of the cart.

HORSENS, a sea-port of Denmark, in Jutland, seated on the bottom of a bay, which opens into the Categate near the island of Hiarnoe, 125 miles W. by N. of Copenhagen. Long. 9. 40. E. Lat. 55. 57. N.

HORSES. The following is the duty imposed on horses kept 38 Geo. III. c. 41. f. 2. There shall be paid for all horses kept for riding, or drawing any carriage chargeable with duty :

	£.	s.	d.
For one such horse, mare, or gelding, and no more	1	4	0
Two	1	16	0
Three	2	2	0
Four	2	5	0
Five	2	6	0
Six	2	10	0
Seven, and not more than eight	2	11	0
Nine	2	11	6
Ten, and not more than twelve	2	12	0
Thirteen, and not more than sixteen	2	12	6
Seventeen	2	13	0
Eighteen	2	13	6
Nineteen	2	14	0
Twenty or upwards	2	15	0

And by 41 Geo. III. c. 9. there shall be charged, from and after April 5, 1801, upon every person keeping one horse and no more, for which the duty of 1l. 4s. is now chargeable, an additional duty of 10s.

And upon every person keeping or using two or more horses, upon which a progressive duty is now chargeable, an additional duty of 20s. for each horse.

But the additional duties imposed by 41 Geo. III. c. 9. are not to extend to horses used solely in stages or carriages for conveying passengers for hire, nor to hackney coaches.

The said rates and duties to be paid by the person keeping and using the said horses, mares, or geldings, and to be subject to all the exemptions contained in any act in force. 38 Geo. III. c. 41. and 41 Geo. III. c. 9.

The act allows the following exemptions. By 24 Geo. III. c. 31., 29 Geo. III. c. 49., and 36 Geo. III. c. 16., it is provided that nothing therein shall charge any horse belonging to any non-commissioned officer, or private soldier, of any regiment of cavalry in the King's service; or any regiment of yeomanry cavalry; nor any horse belonging to, and kept for sale and not for hire, in the stable of a licensed dealer, nor let to hire for travelling post by the mile, or from stage to stage, or let to hire for a day or less period of time, by any post-master, inn-keeper, or person licensed by the commissions of the stamp duties.

Also no person who shall serve in any volunteer corps, and shall provide a horse, or who shall furnish a horse for any person serving in such corps, shall be charged for such horse, with any of the duties imposed by 38 Geo. III. c.

Also every rector, vicar, or curate, doing duty in his church or chapel, who shall not be assailed to any duties on income, granted by any act relative to the duties on income, and who shall not keep more than one horse for the purpose of riding, is exempted from the duty by 41 Geo. III. c. 40.

But not to extend to persons occasionally performing the duty of rector, &c. unless regular officiating ministers of the place.

The duties are to be paid by all persons using or hiring horses or carriages by the year, month, or any other period, not the person who lets them out; 29 Geo. III. c. 49.

Horse dealers are to give in a list of such as they keep for riding or drawing, and pay the duty; 29 Geo. III. c. 49.

No person keeping a horse, &c. used really for husbandry,

or drawing any carriage (except such as was heretofore liable to an excise duty), or carrying burthens in the course of the trade of the person to whom such horse, &c. shall belong, shall be chargeable with these duties, in case such horse, &c. shall not be used for any other purpose of riding, except when returning from any place to which any load or burthen shall by such horse, &c. have been carried, or going to any place from whence a burthen is to be carried, or being rid to procure medical assistance, or to or from market, or place of public worship, or election of members to serve in parliament, or to or from any court of justice, or to or from any meeting of commissioners of taxes. 26 Geo. III. c. 79.

Persons excused from church and poor, are also exempted for one horse.

Also no person occupying a farm of less than 70l. a-year, and making a livelihood solely thereby, shall be chargeable with the duty for any horse occasionally used in riding, if such horse be *bona fide* kept for the purposes of husbandry. 24 Geo. III. c. 31., 36 Geo. III. c. 16.

Likewise no person occupying his own estate solely, or his own estate together with a farm, the value of which in the whole shall be less than an equivalent to a farm of the rent of 70l. a-year (reckoning the value of the estate as equivalent to double the like amount of the rent of any rented farm) and making a livelihood solely by such estate, or by such estate and farm jointly, shall be chargeable for any horse occasionally used in riding, if it be *bona fide* kept and usually employed for the purposes of husbandry. 36 Geo. III. c. 16. f. 6.

Also stage-coach horses are exempted from the whole of the duties, by 37 Geo. III. c. 134. f. 8.

TABLE of the DUTIES on HORSES.

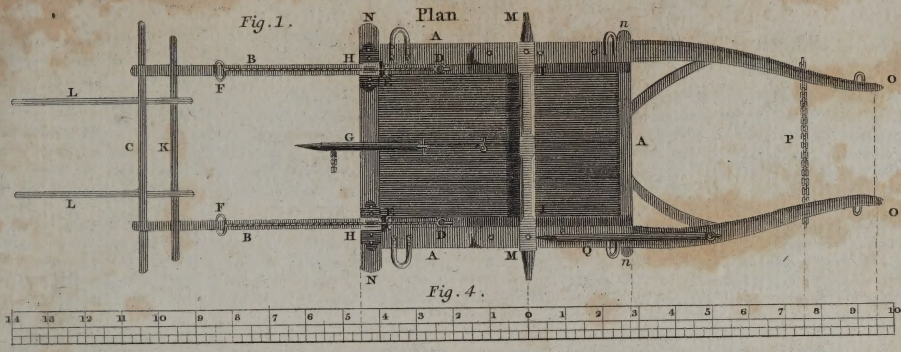
No. of Horses.	Duties for each.	Total Amount.
	£. s. d.	£. s. d.
1	1 14 0	1 14 0
2	2 16 0	5 12 0
3	3 2 0	9 6 0
4	3 5 0	13 0 0
5	3 6 0	16 10 0
6	3 10 0	21 0 0
7	3 11 0	24 17 0
8		28 8 0
9	3 11 6	32 3 6
10	3 12 0	36 0 0
11		39 12 0
12		43 4 0
13	3 12 6	47 2 6
14		50 15 0
15		54 7 6
16		58 0 0
17	3 13 0	62 1 0
18	3 13 6	66 3 0
19	3 14 0	70 6 0
20	3 15 0	75 0 0

And so on at the rate of 3l. 15s. for every horse exceeding the number of 20.

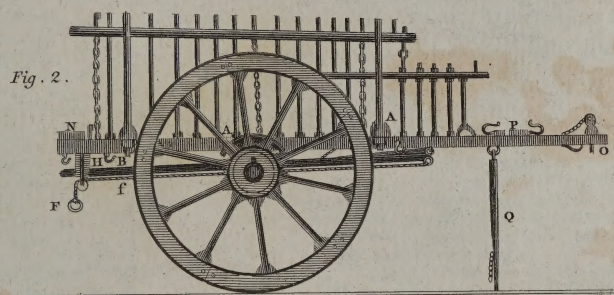
By 38 Geo. III. c. 41. f. 2. there shall be paid the following duties for horses, mares, and geldings, not charged with any other duty, and also on mules.

	£. s. d.
For each horse, mare, gelding, or mule, kept by any person, on which is now charged the duty of	0 6 0
By 41 Geo. III. c. 9, an additional duty of	0 4 0
The said rate or duty to be paid by the person keeping such horses, mares, geldings, or mules, and to be subject to all	

M. Snart's Horse-Helper or Sliding Lever for Relieving fallen Horses.

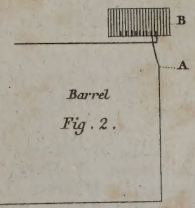
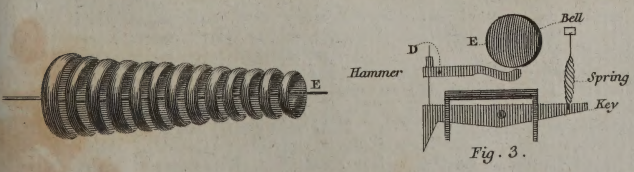
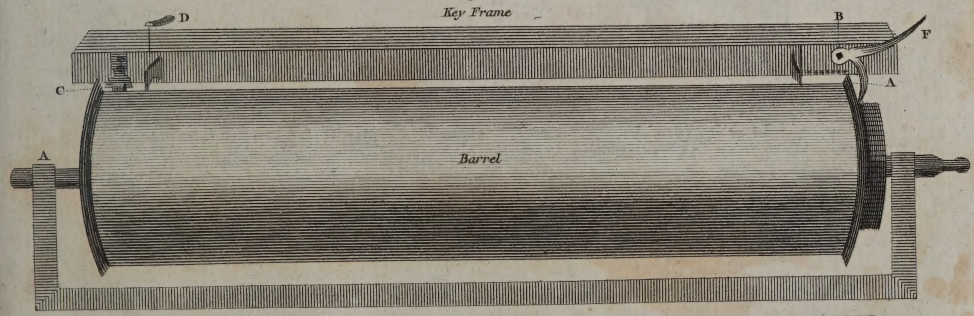


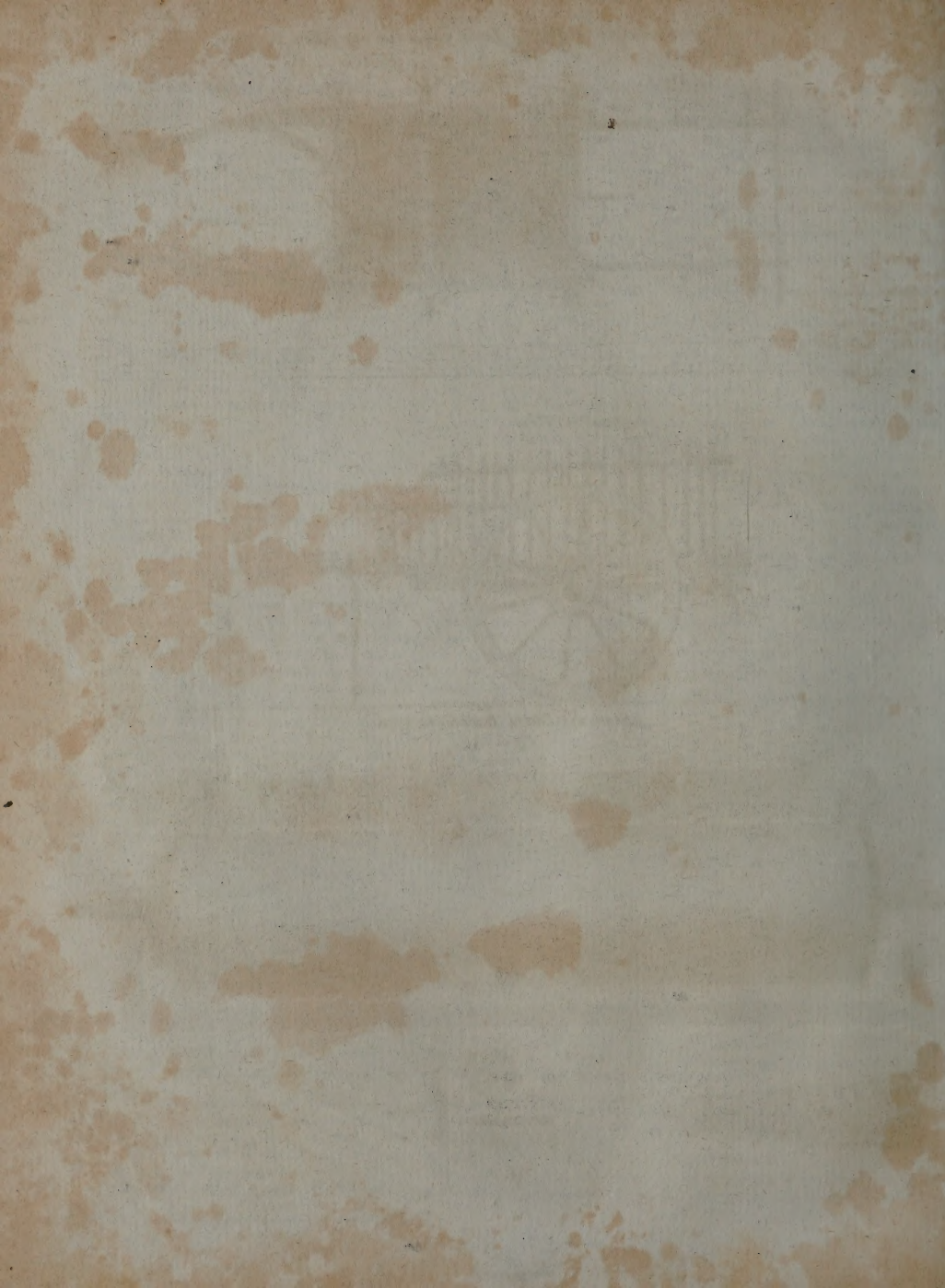
Profile View.



Longman's Patent Barrel-Organ.

Fig. 1.
Key Frame





the exemptions contained in any act in force, and not to be charged for any mule which shall not have been used. 38 Geo. III. c. 41., and 41 Geo. III. c. 9.

The exemptions are these: This tax does not extend to post horses, nor to any horse, mare, or gelding, under the height of thirteen hands, of four inches to each hand, nor to any horse, mare, or gelding, which shall not at any time preceding the assessment have been ridden, or used as a draught horse, or for the purpose of carrying any burthen, 36 Geo. III. c. 15.

But the horses for whom such exemption is claimed must be included in the list delivered to the assessors under the title of *Horses exempted from Duty*, and on demand must be produced for examination; and if not produced, or if found not to be exempted, the owner is to be surcharged double the duty.—*Ibid.*

Also, persons serving in any volunteer corps, or who shall furnish a horse for such service, shall not be chargeable with the duty. 37 Geo. III. c. 106., 38 Geo. III. c. 41.

Likewise by 41 Geo. III. c. 9. no person occupying a farm, the rack rent of which shall be less than 20l. a-year, and making a livelihood solely thereby, or occupying any other estate on any tenure otherwise than as tenant at rack rent, or such other estate together with a farm at rack rent, the value of which in the whole shall be less than equivalent to a farm at the rack rent of 20l. a-year, reckoning the value of every estate occupied by the owner thereof on any tenure, except at rack rent, as equivalent to double the like amount of any farm at rack rent, and making a livelihood solely by such occupation, and keeping not more than two horses or mules, shall be chargeable with any of the duties imposed either by the former or this act. So as the persons claiming such exemption return in their lists the number of horses kept, and the value of their farms.

TABLE of DUTIES on HORSES and MULES.

Duty	Total	Duty	Total
for each	Amount.	for each	Amount.
—	—	—	—
1	£. s. d.	1	£. s. d.
10	10 0 0	11	5 10 0
2	1 0 0	12	6 0 0
3	1 10 0	13	6 10 0
4	2 0 0	14	7 0 0
5	2 10 0	15	7 10 0
6	3 0 0	16	8 0 0
7	3 10 0	17	8 10 0
8	4 0 0	18	9 0 0
9	4 10 0	19	9 10 0
10	5 0 0	20	10 0 0

HORSE-SHOE. See the articles *Horse-SHOE* and *Frog* ; *Suppl.*

HORSE-SHOE NAIL. See *Nail* ; *Suppl.*

HORTSMAR, a town of Westphalia, in the bishopric of Munster, 15 miles N.W. of Munster. Long. 7. 2 E. Lat. 52. 9. N.

HOT-BEDS (*Encycl.*). These are of such general use in the modern art of gardening, that any method of improving them deserves the notice of every gardener.

Mr. Richard Weston, of Leicester, has described a *water-flue* in the thirteenth volume of the Repertory of Arts, &c. p. 238, which is capable of being employed in a double manner; that is, it may convey heat into a hot-bed, either by the steam of water, or of dung. In places where hot water cannot so conveniently be procured, and where there is plenty of dung, this will be found very useful.

Those persons who already have a water-flue, may alter it for the expense of two or three shillings, to answer both purposes.

The alteration necessary consists in changing the pipe of one inch diameter (which is to draw off the water when cold), into a larger one of three inches, and to have the head of a watering-pot of six inches diameter made of tin, with a pipe of one foot long to put on it, with holes of a quarter of an inch wide to admit the steam, both in the pipe and rose.

When you choose to heat a hot-bed with steam, the bed must be made in the usual manner, except that in the front, or at one end, with oblong pipes, the dung should be laid about a yard square, to form a strong body of steam, to pass into the flues, and convey the heat to the earth, and the roots of the plants; but three good corks must be first put into the two upright steam-pipes within the bed *c c*, and the one on the outside *c*, by which the flue is filled with water to prevent the steam from passing off through them.

To examine the heat of the bed at any time, draw out the cork, and the heat of the steam will inform you of the condition of the bed. If declining too much, the dung must be stirred up, and fresh added.

If at any time dung cannot be readily procured, it may instantly be converted into a water-flue.

On applying to a plumber, who had made several, it seems that instead of their being made oval, if two pipes of eleven feet long each (for a nine-feet frame), turned up a foot at one end, to fill them with water, and one or more upright pipes to each in the middle, to convey the steam of the hot water into the bed, be laid lengthways in the bed, about three feet asunder, there will be a saving of six or seven shillings on account of less solder, and trouble in making, and will be found rather more convenient, as appeared from one made which is at work.

The use of steam from hot water was also proved by a gentleman, who observed his cucumber-plants declining in vigour, and not having a water-flue, placed four jugs in the bed, and filled them with hot water for three nights, till the fresh lining took effect, which instantly recovered his plants, and he afterwards had a flue.

Indeed, the introduction of steam from hot water, in increasing the growth of cucumbers is very strongly proved from the experiments of Mr. Wakefield, published in the same work.

"In a frame consisting of three lights," says Mr. Weston, "I would propose four, or even six steam-pipes, and if the top of each be enlarged to four inches in diameter, in the shape of the bottom of a trumpet, it will convey more steam into the bed. In pl. 33. this is represented. *a*, shews the pipes to fill them. *b*, steam-pipes. *c*, to draw off the water, or put on the rose when converted into dung steam-pipes.

"From the proofs also of steam being so advantageous to cucumbers, I would recommend a pan, made of copper, brass, or lead (six inches wide and three deep, with a pipe, one foot long, to come through the end of the frame, to draw off the water when cold), to be placed at the back of the hot-bed frame, to be filled with hot water at night, and if necessary again in the morning.

"If a hole be bored assant through the back of the hot-bed-frame, the pan may be filled with hot water, without the glass being taken off; and I would rather recommend the flues to be four inches diameter within, than three, because of containing more water or steam."

HOT-HOUSE, a building calculated to produce fruit or flowers from plants before the arrival of the natural season; or else to preserve alive such as are natives of warmer climates.

The following is the specification of a patent granted to Dr. Anderdon, of Aberdeen, for a method of economising fuel in the heating of houses, and for improving the construction of hot-houses by a new application of known principles. It is dated Feb. 10, 1807.

"Let the heated smoke, as it issues from the fire, be conducted into a chamber that will be most commodiously situated beneath the floor of the house or apartment intended to be heated; extending the whole of its length and width, if it can conveniently be done, leaving only a vacancy between the inner side of the wall of the house and the wall of the smoke-chamber, all round, of two feet or thereabouts; no precise nicety as to its dimensions being requisite; the chamber for the smoke may be of any form or dimensions so as to suit the situation, and from two to six feet or more in depth, as circumstances will admit (the deeper always the better); and the roof of it ought to be below the level of the floor of the house or apartment intended to be heated, so as to leave a vacancy there of one foot, at least, in depth, and if two feet or more, so much the better. The roof and sides of this smoke-chamber should be made air-tight, and may be constructed of plates of metal, or any other matter that is capable of bearing heat, and of easily transmitting it, and of being made air-tight. The grate where the fuel is to be consumed ought to be placed lower than the floor of this chamber, if it can conveniently be done, (but this is not indispensably necessary), and the chimney leading from the fire ought to rise upwards within the smoke-chamber till it reach within about one foot of its roof, where it should be discontinued and left open, having a spark-flare or cover laid over it to spread the heat. The chimney for carrying the smoke from this chamber, and for making the fire burn, should communicate with the chamber near the floor or bottom of that chamber, and in no other place, unless occasionally for particular purposes, by an opening formed into it immediately below the roof of the smoke-chamber, which is shut, in general, by means of a valve that can be opened at pleasure. This chimney may either rise directly to the height of the building, without interruption, or it may be made to open into a succession of chambers of a similar construction to the smoke-chamber just described, as far as respects the transmission of the smoke, though they may be varied in all other respects to suit the circumstances of the case *ad infinitum*: that is to say; these chambers may vary in size, shape, and proportions; in position, being either above or below, or upon the same level with the original chamber, and so on. But although the best position for the smoke-chamber be directly beneath the building to be heated, yet, should obstructions prevent this, it may be placed without it, or under some other building, as near the building that is to be heated as may be.

"Connected with the original smoke-chamber, there may be formed another of an auxiliary sort, which should also be air-tight in the roof and sides. This auxiliary smoke-chamber should communicate with the first by means of two pipes, that can be closed or opened at pleasure; one placed immediately above the floor, and the other next the roof of the principal smoke-chamber; and it should also communicate with the open air by another opening or pipe issuing from the bottom of that auxiliary chamber. This last pipe ought to have a valve to stop or open at pleasure, and should always be closed when the fire is burning, and opened whenever it is extinguished, the lower opening into the principal smoke-chamber being closed at the same instant that the other is opened; and if there be no auxiliary smoke-chamber, an opening of this sort must be made into the principal smoke-chamber. Either at the top, or in any other convenient

part of the chimney, should be fitted a valve or stopper, which admits of being opened, or perfectly closed, at pleasure. When closed, it will stop circulation, and soon extinguish the fire. Whenever it is closed, the air-hole of the furnace (if the heat be not required for another chamber) ought also to be closed, and the fire will then be instantly extinguished; and the chamber being full of heated smoke will gradually transmit that heat through its cover and sides to the air-chamber which surrounds it: the hottest part of the air thus heated will rise to the top. As the heat in the smoke-chamber gradually abates, it will, of course, contract in bulk; and, by thus forming a kind of vacuum, must then draw in a supply of air from the auxiliary smoke-chamber to supply that want. As the higher opening into that chamber alone is now open, it must draw in now only the hottest part of the air, while the air from without is drawn into the bottom part of the auxiliary chamber; and as it will continue to occupy the lowest place, no cool air can be drawn in, until the whole of the heated air shall be exhausted.

"The vacancy immediately above and around the principal smoke-chamber is intended for an air-chamber: the floor above which, and its sides all over, must be impervious to air or water, and may be formed of flooring tiles or stone, or any other material proper for such cases that can be got cheapest at the place. From this air-chamber let a pipe or pipes pass into the apartment intended to be heated, that can be opened or closed at pleasure, and that can admit at pleasure also of being opened either immediately below the floor, or at any greater depth, so as to allow air, more or less heated, as shall best suit the purpose, to pass into the apartment intended to be heated. This heated air may (when thus admitted) be either allowed to spread in the apartment immediately above the floor, so as to heat the whole of the apartment; or it may be conveyed nearly to the roof before it is let loose, so that the upper part of the apartment may be heated to a great degree without affecting the lower part of it, if it should be so required.

"Connected with the air-chamber may also be an auxiliary air-chamber, capable of retaining the heated air; between which two chambers, there should likewise be a communication by means of a pipe; and this auxiliary air-chamber should also communicate with the common air by an opening just above the floor of it in the lowest place, and no-where else. The pipe that communicates between the air-chamber and its auxiliary, should be so made as that the end of it which enters into the principal chamber, should be placed just above the floor, and the other end of it should open into the auxiliary chamber high up, very near the upper part of it, and should never be closed. In consequence of this arrangement, when the air in the principal chamber, or heated air, comes to be heated, if the pipe communicating with the apartment above be kept shut, then as the air expands in consequence of the heat acting on it from the smoke-chamber below, the coldest part of the air in that chamber will be forced to pass into the auxiliary air-chamber, which, in its turn, will force some from thence into the open air. In this way, after the cold air is all discharged from the principal air-chamber, some part of the heated air will be driven into the auxiliary air-chamber, in which, assuming the highest place, it will there be retained, forcing the colder air below to pass out into the atmosphere. The process must be continued as long as the air in the internal air-chamber continues to augment in heat, but when a portion of that heated air is let off into the apartment above, or when the fire is slackened so as to communicate no more heat to it, then in that case a suction will be made from the inner chamber so as to draw in air from the auxiliary air-chamber; but as the pipe opens into

the higher part of the chamber, it will draw back only the hottest part of the air in it, and so on it will continue to draw back the superfluous air so as to derive the whole benefit of it without any waste whatever. But although this auxiliary air-chamber will be of great utility, it may, nevertheless, be dispensed with if the owner so chooses: but the opening into the air-chamber below is indispensable.

"If the apartment placed above, and communicating with the principal chamber of heated air, be intended to be employed as a hot-house, its walls ought to be made of glass all round, if circumstances will admit of it, on the north as well as towards all other points of the compass; thus to obtain not only the benefit of the sun's heat to the fullest extent, but also to obtain as much light as possible, which is of the utmost utility to plants of all kinds, as, without it, they cannot be preserved in good health. The whole should be made air-tight. The under part of each of the front glasses should be so formed as to admit of being opened, or to shut quite close at pleasure.

"A row of windows, or air-holes, that admit of being opened at pleasure, should be placed along the north, or other sides, towards the top, with this single variation, that they should be made to open alternately from below; rising upwards, or from above falling downward, but so as always to admit of being shut so close as to be air-tight. These openings are to serve the purpose of emitting the air at pleasure, and assisting in ventilating the house. The edges of the door should be also so made as to shut quite close.

"For the purpose of a *pinery*, or *vinery*, or peach-house, and most other uses to which a hot-house is usually applied, the roof of the apartment (in other words the hot-house) should be placed in a horizontal position, or nearly so, something like the ceiling of an ordinary apartment, only that that ceiling should be made of glass instead of plaster, and should be fixed to the joists above, and made altogether air-tight. The vines or other fruits intended to be forced may be extended close under the glass. The bed in the stove should be raised so high as to be as near the roof-glasses as the leaves of the plants in it will permit. Pipes of different lengths, which may be opened or shut at pleasure, ought to be passed through the upper-part of the hot-house for the purpose of letting off the heated air to that degree which shall be deemed eligible at the time, and should reach to that depth in the house that shall be thought proper, for the purpose of regulating the heat of the stove, and keeping up an equality of temperature at all times without any attendance from the gardener. The stove being first made air-tight everywhere, let a pipe be placed in the floor, communicating directly with the chamber of heated air below; and let the top of that pipe be closed by means of a light valve that opens upwards. Let another pipe be placed above, that may communicate with the open air, if judged proper, having a light valve upon its upper end opening upwards also. Let an opening be then made into the stove near the floor, so as to admit a free communication by that means with the open air; lift up then the valve of the bottom pipe, the heated air will rise upwards through it into the stove, gradually filling it; while the cool air that was in the chamber is imperceptibly driven off through the opening below into the atmosphere.

"When the stove has gradually acquired the degree of heat required (say ninety degrees of Fahrenheit's thermometer), shut the opening below, and all others, quite close. The hot-house being now air-tight, it must follow, that if more heated air arises from below, it will tend to expand the air already in the hot-house; in other words, to raise the temperature above ninety degrees. But in consequence of that

expansive effort from within, an effort will be felt to close the lower valve (as is felt in a bellows when the two handles are pressed together), so that no more heated air can find access by that means. The same expansive effort will have a necessary tendency to open the upper valve, and thus heated air will be allowed to escape until the air in the chamber has come into an equilibrium with that of the atmosphere; or, in other words, till it be at ninety degrees, at which temperature alone it ever can, as thus regulated, attain that equilibrium.

"If, however, from the coldness of the night air, or from any other cause, the heat of the stove should be diminished, so as to fall below ninety degrees, the bulk of the air in it will be at the same time contracted, and a kind of vacuum be experienced. In that case, in consequence of the suction inwards, the upper valve would be firmly closed, so that no cold air can be there admitted; and, from the same cause, the lower valve will be opened so as to admit heated air again from below. In this way, as soon as the temperature shall attain the ninetieth degree, or such other regulated degree of heat as shall have been fixed upon, the lower valve would be closed, and thus an equal temperature would be kept up within the house at all times, whatever variations might take place in the atmosphere, without the attendance of any person whatever. If care be taken to keep up the heat in the air-chamber above ninety, or the regulated degrees, and provided the apartment above it (the stove) be perfectly air-tight, the variation of heat that could prove hurtful to the tenderest plant could never be experienced.

"In the *vinery*, peach-house, and others that require nearly a similar temperature, where the sun becomes the principal, if not the sole, source of heat, an auxiliary chamber ought also to be provided for receiving the heated air when there is an excess of it, and restoring it back again during the night-time, when the cold or other circumstances render the contraction within sensible. This auxiliary chamber should be constructed exactly in the same manner with those already described. In this case also, as in the former, though the pipe of communication opens also into the auxiliary chamber near its roof, it ought to be made to issue from the hot-house itself, either higher or lower at pleasure, which may be effected by fitting upon its orifice pipes of different lengths. As it may be convenient to rear vines entirely on the outside of the house, proper openings ought to be provided for introducing the vines from without, and for withdrawing them at pleasure. These openings may be made either immediately under the roof of glass, or occasionally just above the floor of the hot-house, as shall suit the inclination of the owner. They should consist of horizontal slits of a length and depth sufficient to admit of the shoots being passed through them with ease, and admit of being closed either with a case with glass in it, or a wooden frame, the openings between the shoots being closed up with soft moss, close rammed, so as to be air-tight, or with a plaster of grafting loam, or any other soft material that is fit to prevent the passage of the air without too much cramping the shoot.

"Peaches and cherries, which require the influence of the open air in the winter, may be raised in large tubs or boxes that admit of being removed; and if the stems be trained perpendicularly, nearly as high as the horizontal roof glass, and then bended over and trained horizontally, they may be admitted into the house, or withdrawn from it through horizontal slits, similar to those above described, which admit of being closed in the same manner.

"For the purpose of forwarding lettuce, or other low-growing plants in winter, or strawberries early in the spring, let a set of frames be provided, consisting of open spars strong enough to support the weight that is to be put upon

them; each of these frames should be of such dimensions as to hold three rows of pots of the usual size for that purpose, and of a length the whole width of the house, wanting two feet or thereabouts. A set of pans or boxes, made of any light material that can hold water, and having edges turned up one inch, should be provided to be laid on these frames, and into these pans or boxes the pots should be placed. These frames may be suspended from the ceiling or roof of the chamber by means of cords passed over pulleys, so as to admit of being raised or lowered into a warmer or cooler region of the chamber at pleasure. The plants may be supplied with moisture by pouring water into the pans without lowering them, and the fruit may be seen, without moving them, through the glass above.

"Hitherto it has been the practice to have no hot-houses of more than one stage or story in height, but upon the present plan, in situations where they can be secured from effects of wind, nothing is to prevent them from being of two or more stages or stories; and where this can be safely done, it will prove a considerable saving on account of the roof. In that case, all the difference that will occur between the first and higher stages is, that the floor of these last, as well as the roof, will be of glass. A foot-path of wood or grating for the gardener should be always, in that case, formed along the inside of the north wall, having a slight rail on the inside, of about three feet high, like the rough tree of a ship; or otherwise, to guard against accidents; and a loose deal ought also to be provided to be shoved along to the top of the joists, when wanted, as a platform for the necessary purposes. Over the highest stage or story must be thrown a roof, the south side of which, and the east and west ends, may be made of glass, and the north side either of glass or proper opaque materials. This may be so constructed as to be employed for the purpose of a vinery, and at the same time of a reservoir-chamber for heated air, which may be freed from its superfluous heat, when that becomes too great, by means of a tube from the top, which admits of being opened or closed at pleasure.

"With a view to obviate the bad effects that might occasionally result from too great a degree of heat in the higher regions of the hot-house, continued too long through accidental inadvertence in the gardener, the following apparatus may be used. Take a bladder, or other flexible bag, that is impervious to air, turn the mouth of it, while it is open, upwards, and heat it then to a considerable degree before a fire, or otherwise; when it has been made to attain a degree of heat higher than that of the hot-house, tie the neck close while it is not yet fully distended, though nearly so, taking care previously to fix a string to the bottom of it, by tying in a part of it, or otherwise. Then attach it to some fixed object; afterwards turn the house to a proper degree of temperature, and while it is in that state fasten the string that proceeds from the bag tight to some other object, the consequence must be, that when the heat augments the bag will become more distended, and, consequently, will augment in diameter, and contract in length, so as to tighten the cords, and when the heat abates it will become more flaccid, and of course slacken the cords, so that this may be employed as a moving power to open or close a valve as it contracts or dilates; and it will necessarily regulate the heat of the house by its spontaneous movements, without requiring attention from any one.

"For the purpose of agitating the air in the house at pleasure, without the necessity of introducing air from without, and for many other indispensable purposes, the following apparatus has been contrived:—Make a cylindrical box of

a construction similar to that of a drum; pass through it length-wise an axle, carrying arms of thin wood, or other light and firm material, to act, when put in motion, as a fan. This axle is to be properly supported at each end, and in such manner as to leave an opening at one or both of the ends for the purpose of admitting air to the fan. The fan may be moved by means of a simple handle, or, if greater velocity is wished, by a large wheel at one end, acting upon a pinion upon the end of the axle, or by a large screw acting upon a small one, connected together by a band, belt, or chain. On one side of the cylindrical part of the drum leave an opening for the passage of the air when the fan is in motion, to which can be fitted at pleasure a pipe that admits of movements, and of being occasionally lengthened or shortened; it may be flexible or otherwise, as shall suit the circumstances of the case, terminating in a small nozzle to admit of its being directed to any point where it may be wanted. Let the mouth of another pipe, similar to the above, be so formed as to cover the end, opening, or openings of the drum, for the supply of air, so that all the air that can pass into the drum must first pass through this pipe: by means of this apparatus, the air can be sucked up by the machine from any part, either within or without the house, and spouted out into any other part of it, with a greater or less degree of violence, as circumstances shall render eligible. The machine itself may be driven either by the hand, like a common winnowing machine, or it may be driven by means of a vane, moveable by the wind, placed on some convenient part of the building: or by water, or steam, or horses, or any other moving power, which circumstances may render eligible. Or this kind of ventilator may be produced by means of a bellows, having pipes of the sort above described, adapted to the nozzle and the under valve of the bellows.

"With a view further to economize fuel when that becomes necessary for the production of heat, care should be taken to have the whole of the smoke that arises from the burning fuel consumed. To effect this, let a fire-place be constructed in the following manner:—Let this fire-place have two grates, so connected as to admit of communicating alternately with each other: each grate should have two air-holes opening into the cavity below the grate, being close every-where else: one of these air-holes should communicate with the atmosphere directly in front of the grate, and the other with a passage below, that goes directly from the one grate to the other. These two air-holes should admit of being opened or closed at pleasure, but so as they can never be both open at the same time unto the same grate; this may be conveniently effected by a shifting door, or valve, which, when it closes the one hole, must necessarily open the other. For the sake of distinctness, let one of these grates be called No. 1, and the other No. 2. When the fire is to be lighted, let the air-hole in front of the grate No. 1 be opened, and the other air-hole to that grate will of course be closed. The coals in No. 1 being then kindled, the smoke, as it issues from the fire, should be conducted at first right upwards for a small distance, and it should then bend in the same plane with the wall, so as to assume a horizontal position, and in a direction pointing towards the other grate No. 2. It should then bend downward, still in the same plane, and proceed in that direction until it comes into the passage that leads from the one grate to the other beneath the level of the grates respectively. As the opening from this passage into the grate No. 1 is at this time closed, the air-hole in front being open, the smoke must pass on towards the other grate, No. 2, whose air-hole in front being now closed, it can receive no air to keep alive the burning fuel but that which comes through that passage;

and as this air conveys along with it the whole of the smoke that came from the burning fuel in the grate No. 1, that smoke, in passing through the fire No. 2, will be inflamed and entirely consumed, thus tending greatly to augment the heat. It being always understood that the fuel in the grate No. 2, is at this time in the state of charred coal, having been kindled previously to that in No. 1. After passing through the grate No. 2, the heated air rises at first through the chimney of No. 2, in a perpendicular direction, to the same height as that of No. 1. It then bends in a horizontal direction towards No. 1, in the same plane with the wall; from thence it bends backwards in a horizontal direction for a small space, and may be then carried off through a chimney in any other direction that convenience can suggest. But when the fuel, that had been put upon the grate No. 1, shall be so far consumed as to emit little smoke, let the front air-hole of No. 2 be opened, and fresh fuel be put upon it, the other air-hole of that grate being necessarily closed when the front air-hole is opened. The smoke arising from thence, will now pass upwards as before, but, instead of going back into the chimney as before, a moveable door or valve there being shifted, that opening is then closed, and another opening made into the same chimney to receive the vapour arising from the fire No. 1. The smoke will then be obliged to pass downwards, and should be conducted in the same manner as that before described of No. 1, into the passage that communicates between the two grates, and thus be forced to go under the grate No. 1 (the air-hole leading from that passage to No. 1, having been previously opened by shutting the air-hole in front), where it must pass through the fire and be inflamed, from whence it rises up, and passes off through the chimney, as that from No. 2 did before.

“Observe that at the place where the smoke enters from above into the passage that leads between the two grates, there is a moveable valve, which is opened at the same time that the said air-hole into the chimney on that side is shut; the said valve, when it opens, thus closing the similar opening belonging to the other grate. Thus may the two fires have fresh fuel put upon them alternately, and be interchangeably shifted as often as can be wanted so as always to consume the whole of the smoke. The form and situation of these chimneys, grates, and valves, may be varied at pleasure, preserving the principle of causing the unconsumed smoke to pass through the fire that has ceased to smoke.

“For the purpose of obtaining steam when wanted, let the upper part of the chimney above described, where it runs in a horizontal position between the two grates, be made of such a width as shall be deemed convenient, and that upper surface should consist of the flat bottom of a pan; or a flat pan may be placed above any kind of grate. Let a chamber be made above that, whose tops and sides are formed by a vessel containing water flat above, but projecting downward all round to the depth of several feet, so that water shall surround the chamber on all sides, except at the bottom part, which is the pan. The edges of the water-chamber should go an inch or two lower than the pan, being wider than it; and an opening should be left below the edges of the water chamber. Within this chamber, and immediately over the pan, let there be placed another vessel containing water. The pan is to be used for boiling and evaporating water. It is to be supplied with water from this inner vessel, in proportion as it is evaporated, by means of a ball cock or float, and that vessel, in its turn, is to be in like manner supplied with water, as it is drawn off from the outer vessel that surrounds the chamber; so that it will be always heated before it reaches the evaporating pan. The steam that is first raised, will fill

the chamber above described, where it will accumulate until that chamber be wholly filled, so as to make its escape below the bottom of the sides, from whence it may be conveyed, by a proper conduit, into a house, when it is there wanted. A pipe should also be taken through one of the sides, close below the upper part of what may be called the ceiling of the water-chamber, that admits of being opened at pleasure, by means of which the whole of the steam can be let off when it shall be judged proper. But as it may often happen that steam will be wanted only in moderate quantities, and at particular times, so as to render it unnecessary to continue the evaporation of water during the whole time that the fire burns; in that case, the following apparatus may be resorted to. By means of a bellows formed for that purpose, or a forcing pump, throw in a small shower of water from time to time, into the dry bottom of the pan, properly guarded by tiles laid above the bottom, so as to cover it when fully heated, which will be instantly converted into steam; and, after a short interval, another and another, until as much steam shall be generated as shall be wanted at that time, when the evaporation may be discontinued.

“For the purpose of obtaining a moderate degree of heat occasionally, without being under the necessity of lighting a fire in the house, the following apparatus may be adopted.—Make a hollow cylinder of metal, or other matter that is capable of retaining smoke and transmitting heat, open at bottom, but close at top. This cylinder ought to be of considerable proportional depth, and of a size proportioned to the use intended by it. The sides of this cylinder may do for some purposes if only single; but, in general, it ought to be double, leaving an opening between the two cylinders all round of about an inch or more in the clear. These two cylinders should be joined close together at the bottom, and the outer cylinder should rise somewhat higher than the part that closes the inner cylinder above; round the top of the outer cylinder should be formed a horizontal rim, of such a breadth as to admit of being depressed into a circular groove all around it, for the purpose of receiving a perpendicular rim running round the lower part of the cover, like that of the lid of a tea-pot. The cover itself may be made of such shape and dimensions as shall best suit the purposes intended at the time. Let the cylinder thus prepared, be heated to the degree wanted, by an Argand's lamp placed within it, which, instead of a glass tube to receive the flame, has one made of metal fitted to it, which is of such a length as to reach from the lower edges of the cylinder till within half an inch of the top of the inner cylinder; or it may be heated by suspending it over a good fire, upon a crow or otherwise, until it be sufficiently warmed, when it may be carried into the place where it is wanted, and there suffered to stand till it communicates heat to the surrounding bodies. If water be put into the upper cavity above the top of the inner cylinder, the cover being at the same time taken off, steam in small quantities may be raised in the house where a greater degree of heat is wanted; and, for long continuance, this apparatus may be made of very large dimensions, and of any form that may best suit, and fixed in its place. The sides may be made of bricks, or other solid substances, and a culinary fire adopted instead of the lamp, so that its power may be thus augmented to such a degree as to answer many important purposes.”

HOËAT, an island of France, between that of Belleisle and the Continent. It is 10 miles in circumference.

HOUDAIN, a town of France, in the department of the Straits of Calais, six miles S. of Bethune. Long. 2. 34. E. Lat. 50. 39. N.

HOUDAN, a town of France, in the department of Eure

and Loire. It has a manufacture of woollen stockings, and is seated on the Vegre, 32 miles S.W. of Paris. Long. 1. 41. E. Lat. 48. 47. N.

HOULSTON (Thomas), an eminent physician and active philanthropist, was born at Liverpool, on the 26th of November, 1746. After a good classical education, being designed for the medical profession, he made himself acquainted with pharmacy, and spent a considerable time in medical attendances in London, where his extraordinary diligence and eager-desire of information attracted the notice and partiality of Dr. George Fordyce, to whom he afterwards dedicated his Inaugural Thesis. To demonstrate the sufficiency of his acquirements, even before the usual course of study in that then most celebrated University, he took the degree of Doctor of Physic, at Leyden, where his abilities obtained him distinguished marks of approbation from the professors Albinus and Gaubius, &c. As he was yet only of the age of twenty-one, and his natural thirst after knowledge was by no means satisfied, he travelled through the Continent for further improvement, and visited most of the foreign universities. This tour, in which he was much distinguished and employed by English travellers of rank, occupied him upwards of seven years, his stay being considerably prolonged in those parts of the Continent where the salutary practice of inoculating for the small-pox had either not been introduced, or had declined under the prejudices of the people. In this pursuit he laboured with a degree of zeal and perseverance that obtained him great celebrity; and at Vienna, where he continued about two years, he most effectually established the practice, and was honoured by the late Emperor Joseph II. with a long conversation on that subject. But—"envy will merit, like its shade, pursue"—such distinguished patronage could not but subject the doctor to opposition even where before he had experienced support. The celebrated Van Swieten, sacrificing candour and the good of his fellow creatures to the artful insinuations of Brambillo, an Italian surgeon employed by the court, became the discourager of inoculation; and the latter, who necessarily took a part in the inoculation of the then King of Poland's nephew and niece, exulted in (if he did not infamously promote) the unfortunate event of the loss of an eye to the princefs. This, though a mere consequence of serofulous inflammation, and much more likely to have happened under the natural small-pox, checked the progress of inoculation among the higher ranks, and had, no doubt, a corresponding effect on the stronger prejudices of the multitude. This obstacle, however, produced only temporary effects; and Dr. Houlston had the satisfaction of witnessing the preservation of thousands by inoculation, before he returned to his native country, which he did in 1771 or 2, preferring his native place, where he might enjoy the society of his family for the rest of his life, to the more splendid prospects of medical practice in the metropolis.

In this more limited scene, where there existed fewer incitements to professional exertion, he nevertheless enjoyed an abundant share of celebrity; but here the predominant feature of the doctor's character, which was philanthropy, rather superseded the usual anxiety for medical pre-eminence. This propensity also acquired strength with the decline of his health,

a fixed distrust of life and its pursuits, and a growing confidence in the promises of Christianity, of which he was a firm believer. At this period, the shades which mark the human character, it is said, were not unobserved by the most partial of his friends; yet, his errors were of that venial sort which unfortunately disgust without injuring mankind. His continual charities to the poor must protect his memory from the insinuations of those who accuse him of an undignified partiality to the means of affording them; and the sum of his good deeds must be balanced against those failings, which too uniformly deteriorate the character of man.

He wrote, 1. Dissertation inauguralis de Inflammatione. 2. A Method of treating the Small-pox (a translation). 3. An Essay on Poisons, in which the means of counteracting those of the mineral class was first suggested; (see Poisons, Supp.) 4. A paper on the preservation of those who are in danger from having drank largely of spirituous liquors. Several other of his productions, particularly those calculated to extend the means of recovering drowned persons, are to be found in fugitive publications.

Doctor Houlston died in 1787, after labouring a long time under the effects of an incurable fistula. He was, from the first of his settling there, physician to the hospital at Liverpool; a member of some of the learned societies; and, what is not generally known, he was the great grandson, by the mother's side, of President Bradshaw.

HOUSE OF CORRECTION, a place where crimes are punished by confinement, discipline, and extraordinary labour; (see BRIDEWELL). The mode of remedying the defects and abuses existing in these establishments, will appear from the following account of the jail and house of correction at Dorchester, by William Morton Pitt, esq. M. P.

The building of the new jail, at Dorchester, and the reform in the management of the old one, began in 1790. The old house of correction at Sherborne was sold in 1794, and its prisoners were transferred to one of the wings of the new prison, which was then appointed the house of correction for the county. From that period, both establishments have been under the direction of the same keeper, and under the inspection of the same magistrates; and have had but one chaplain, surgeon, &c. The present prison, built on a plan approved by Mr. Howard, cost £. 16,179. 10s. 6d. and was first occupied in December, 1793. It contains eighty-eight sleeping cells, besides those for the condemned, the reception cells, and working cells, which are all *single*—the infirmaries, two large dormitories for male debtors, in addition to the cells in the debtors' wing, and two for female debtors and female fines, and also dark *single* cells for the refractory. Each dormitory contains four beds, but is capable of containing more in case of necessity.

In 1791, manufactures were introduced, for the employment of all such prisoners as either were compelled by law, or could be induced by encouragement, to work. Convicts, and all persons sentenced to imprisonment and hard labour (to whom the law has not already allotted any certain portion of their earnings), are allowed one-sixth part thereof, besides broth in addition to their bread; and, if they earn to the amount of five shillings per week, they are also allowed meat*.

* In many of our houses of correction, the prisoners, even to this day, are fed chiefly, and *without distinction*, on bread and water; a diet that has been found to have a tendency to dropical complaints; and that has as little good effect on the health of the culprit, as the indiscriminate system of treatment, devoid of inducement or encouragement, can produce on his morality and industry. The persons confined might be very comfortably fed, at the same expence as they now are on bread and water; especially if a difference was made in the diet of the industrious and well behaved, and of the idle and vicious, as has been done with great effect at Dorchester. That, and the securing to them a fixed and liberal interest in their labour, to be paid them on their discharge, would produce an immediate change in our prisons and houses of correction; and make them really the in-

Debtors, and persons committed for trial, not being compellable to work, enjoy the whole of their earnings, if they purchase their own raw materials and sell the produce on their own account; but, if they are supplied with the materials, and the county has the risk of the sale of the goods, they have then only the half of such earnings.

In all cases, except where debtors and others voluntarily working, provide themselves with materials, the jailer is allowed one-sixth of the earnings, as a gratuity for his extra trouble, and as an incitement to further exertions; and the remainder (after deducting the jailer's and prisoners' shares) is placed to the credit of the county. The full amount, however, of the shares of the earnings, except those of debtors, are not paid to the prisoners until their discharge, but are carried to their respective accounts; and two pence per week only is allowed them for the purpose of procuring for themselves any little indulgences, consistent with the police of the

prison; even the sums placed to their accounts being liable, in the whole or in part, to forfeiture, in case of misbehaviour. There are instances of men who have received eight or ten pounds, or more, on quitting the prison; and the money has for the most part been laid out by them in clothes, tools, furniture, a flock of bacon, or other provisions, &c. for their future comfort and advantage*.

The produce of the work, the expence of maintenance, &c. are stated in the table, No. I. In No. II. is added an account of the manner in which the donations left the prison, and other charitable contributions, have been applied, in liberating and assisting debtors, in aid and relief to other prisoners discharged at the assizes or sessions, and in rewards to persons who have heretofore been in confinement, and who have obtained certificates, properly authenticated, of their industry, honesty, and good behaviour, in the services in which they have been since they have left the jail.

TABLE. No. I.

Number of prisoners, account of earnings and salaries.

	1791.	1792.	1793.	1794.	1795.	1796.
Average number of prisoners in the several years - - -	40	47	50	50	51	49
General amount of earnings in the several years - - -	£. 40 s. 6 d. 11	£. 275 s. 6 d. 0	£. 287 s. 2 d. 0	£. 366 s. 11 d. 5	£. 382 s. 11 d. 11	£. 462 s. 12 d. 0
Annual average of each prisoner's individual earnings - - -	1 7 5	17 0 5	14 10 5	7 6 7	7 9 11	9 8 8
General amount of prisoner's shares of earnings - - -	8 15 6	75 5 1	60 16 11	64 0 5	72 3 5	99 4 3
Annual average of each prisoner's individual share of earnings - - -	0 4 10	1 12 0	1 4 4	1 5 7	1 8 3	2 0 5
Amount of salaries, a permanent expence attached to the establishment -	270 0 0	270 0 0	270 0 0	293 10 0	298 0 0	298 0 0

instruments of correcting, instead of their being as at present the means of increasing habits of vice, dependancy, and idleness. The wild beast may be starved into submission, or compelled to subjection; but beings endowed with reason, and destined by their Creator for social intercourse, are not to be reformed merely by solitary confinement, by depression of condition, or privation of food: there must be added—encouragement to those who do well—distinction between them and the ill-behaved; the objects of labour must be made easily attainable, and its consequences and advantages desirable.

* It were much to be wished that the example of the reform of Dorchester jail and house of correction were followed in every prison and house of correction in the kingdom. The reader will perceive that it has been produced, by securing to the prisoner, not only a preference in diet and accommodation, but a *certain and liberal share* of the earnings of his industry, and by husbanding that produce for him against the time of his quitting the house; so that he may go out, not only with habits of application and with character, but with the means of subsistence, and of carrying his industry to the most advantageous market. To expect, from the general mass of mankind, a *willing continuance in labour from day to day*, without the spur of interest, without an object of expectation, and without the engagement of the inclination by a share, at least, of the profits,—or to hope for success in the attempts daily made, in our houses of correction, to *compel* prisoners to work, not as the means of increased comfort and advantage to them, but as a *punishment* of their offences, is absurd and ridiculous.—Compare the difference between that which persons may be *induced*, and what they may be *compelled* to do.—In the spinning-school at Epping, a little child, of 9 years old, will, with cheerfulness and pleasure, and without abridging its hours of play and recreation, earn four pence a-day; and will dine plentifully and comfortably, for a penny; while a stout active man, in the prime of life, in one of our houses of correction, with an allowance of *nine pence* a-day for his food, is (in a state of mortification and suffering) earning one penny a day in picking oakum.

† N. B. The working system did not commence till late in the year 1791.

TABLE. No. II.

Application of donations and charitable contributions.

	1792.	1793.	1794.	1795.	1796.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Paid for the liberation of debtors -	0 0 0	21 7 1	25 4 5	0 0 0	5 0 0
Paid to prisoners on their discharge -	1 17 9	1 1 6	11 1 0	3 9 3	2 10 6
Paid gratuities to debtors by order -	2 0 0	3 3 0	4 1 0	0 0 0	0 0 0
Paid for coals for debtors -	0 0 0	0 0 0	2 9 9	9 16 7	0 0 0
Paid for clothes for a distressed convict on his discharge -	0 0 0	0 0 0	1 14 10	0 0 0	0 0 0
Paid rewards to persons who had been discharged, and afterwards obtained certificates of good behaviour -	0 0 0	0 0 0	4 4 0	4 4 0	5 5 0

In this institution, the object has been to combine the two principles of industry * and reflection, and, by the judicious application of solitude in a greater or lesser degree as the specific cases may require, to reform the offenders, so as to restore them to society in an improved state, and encourage them to persevere in a course of industry and virtue.—The attempt has in a great measure succeeded.

In the last six years there have been but as many instances of offenders having been a second time committed to prison; viz. one for felony, two for petty larceny, one for an assault, one for leaving his family chargeable, and one for returning unlawfully to her parish after an order of removal. Of those who have been discharged, twenty-seven have entered into the sea service, nine into the land service; and thirty-five are known to be, at this time, maintaining themselves and their families by honest industry. This would probably be found to have been the case with many more, who are strangers to the county, if information were obtained of their present residence and situations in life.

HOUSE OF INDUSTRY, a house of reception for paupers,

who either from advanced age, or the want of talents, health, strength, or even of inclination, are unable to procure a livelihood by their exertions elsewhere. The following extract from an account of an incorporated house of industry, for two united hundreds, in the county of Norfolk, by Edward Parry, esq. appears in the Reports of the Society for bettering the Condition of the Poor.

“The house of industry, for the hundreds of Mitford and Launditch, in the county of Norfolk, was established and incorporated by act of parliament in the year 1775. These hundreds contain 32 parishes; two of them large market-towns, but without manufactories. This house of industry certainly has the merit of being managed with great attention to the health, comfort, and (in some degree) to the morals of the poor. I speak of it (says Mr. Parry) from experience, having been an active director of it for 13 years, during my residence in the county of Norfolk. The following is the plan on which it is conducted.—There is a large building which contains on an average about 500 persons of all ages; and there is an hospital, about a quarter of a mile from the house,

* Upon examining the general produce of labour, in a workhouse or house of correction, it should seem that there is something in the name, the air, the situation, or in the system of them, that pallies the power of human industry, and reduces the energy of a strong vigorous man to a level with that of an helpless child. Mr. Bernard, however, states an exception, equally honourable to the individual, to the magistrates, and to Mr. Ayres, the governor of the Middlesex house of correction, in Cold-Bath-Fields.—In February, 1797, a person was committed to that house for a twelvemonth, on account of his concern in a fraudulent transaction, which he had been drawn into by a combination of artful Jews; and, in the progress of which, he had been stripped of nearly all his own property. He was a smith, and a very excellent workman. With permission of the magistrates, Mr. Ayres, the governor, fitted him up a forge, and employed him to repair the locks of the house, which are 800 in number, and were got into bad condition. The locks are, of necessity, large, and of an expensive construction. In the course of eleven months, ending on the 8th of February, 1798, he cleaned and put in order all the locks in the prison, so completely, that they are now better than when they were first put on. During those eleven months, he has, by his own wish, extended his working hours beyond those of the other prisoners. He had sometimes the assistance of a person to blow his bellows; but he has compensated for this by doing a good deal of other work in the house, besides repairing locks. The whole, therefore, of that work may be fairly placed to his own account. Estimating what he has done, at a lower rate than the county smith has ever charged to the house, his eleven months' work amounts to the sum of 160l. 12s. On the time of his confinement being expired, the magistrates ordered him a donation of 30l. out of the produce of his work. He then said, that he had received such ill treatment in the world, and had experienced such kindness and real friendship in that place, from the governor of the house, that, if he could maintain his wife and two children decently by his labour, he would pass the remainder of his days there. An apartment has, in consequence, been fitted up for him and his wife; his two children being placed in a charity-school: he is appointed the county smith, and she the inspectress of the female prisoners, with a salary perfectly satisfactory to them both.—I am favoured with this account by the Rev. Dr. Glasse.

in which the sick are kept separate, according to their different disorders. They have a governor and matron, to which appointments, by preference, a man and wife are elected; and they have apartments in the house, where they must constantly reside. The former has £60. a-year, the latter £25; and they have coals, candles, and washing. There is a chaplain, who is generally a neighbouring clergyman, and has a salary of 30l. a-year; his duty is to read prayers once every day, and preach on Sundays. There is also a surgeon, who has 60l. a-year; he is a resident of one of the neighbouring market-towns; but must attend every day, and has an apothecary's shop in the house, the medicines being found by the corporation.

"There are also four surgeons for the out districts of the hundreds; who for attendance and medicines are allowed 45l. a-year each, and attend all casualties, and report the state and condition of the patient and his family to the next committee. The director's clerk, who is always an attorney, has 50l. a-year; he attends all committees and meetings. There must, by the act of parliament, be 36 directors, and 24 guardians. Every person, having a freehold estate of 300l. a-year, and being resident in the district, is compelled to be a director, and to act as such; and, in case there are not enough of that description, the deficiency to be made good out of resident freeholders of 150l. a-year (in which all rectors of livings of that value are included), until the whole number of directors is completed.

"The guardians are chosen by ballot, annually, out of the farmers who rent 100l. a-year and upwards, or persons having estates of that value. There is an annual meeting, and three quarterly meetings, of the directors and guardians, at one of the inns at the town of Dereham. At the annual meeting, which must be in the month of June, the directors and guardians are formed into twelve committees by ballot; three directors and two guardians being to attend, every month, at the house of industry, on each Tuesday, from ten o'clock in the forenoon, till three, four, and sometimes five o'clock in the afternoon; for the purpose of visiting, and inspecting the state of the house and the governor's accounts; of receiving reports from the overseers of the parishes, signed by the surgeons of the district, as to the state and condition of the sick poor in the several parishes—and of granting them temporary relief—and also of directing that employment may be found for such as apply for it.

"There is a farm of about 150 acres of land, belonging to the house, and kept in hand and managed by the governor; this provides a dairy, and occasionally fats a few oxen and sheep: there is likewise a garden of six or seven acres; which is cultivated by the old men of the house, and produces an abundant supply of vegetables. The governor purchases the wheat, at market, from harvest till March or April, for the whole year: it is ground into meal by a mill belonging to the house; and is made into bread, unsifted even from the bran, a kind of bread commonly eaten in all farmers', and most gentlemen's houses, in Norfolk.

"All the meat is purchased in the animal, and killed in

the house. There are several manufactories established in the house; and all articles of their wearing apparel are made by the poor themselves; the whole establishment being managed with economy, but with sufficient plenty.

"From this account it may be supposed that the poor of those hundreds are upon the whole well taken care of, and made comfortable in their old age; at the period when their labour is over.

"And it is certainly true that those in the house are, generally speaking, well lodged, fed, and clothed: but, when it is considered that these five hundred people are, or are presumed to be, merely paupers, it will appear that there must remain a large class of industrious poor, who only want assistance occasionally, being generally employed. As to those with large families, the mode is to relieve them, by taking some of their children into the house: but I have known many parents, who, rather than consent to this, have half starved themselves and their children; and sometimes carried it so far, that, by reducing themselves too low, they have been at length obliged to leave their cottage, and to be carried altogether to the house of industry; the man's spirit broken, and he himself (if he has stamina left to recover) becoming a burthen all his life; as he seldom returns out of the house, capable of the same industry and exertion that he possessed before he went in.

"It is further to be observed, that as the farmers pay a certain and limited rate to the corporation, which cannot be raised, they care very little about the poor; and they frequently send whole families into the house, who might with the little assistance support themselves out of it. Besides this, the separation of their children from them, destroys all natural affection, and often occasions a wish that it would please God to take the child, instead of their being compelled to send it into the house of industry.

"Of the 500 persons in the house, about half are children under 14 years of age. At that age, the children are ballotted on the farmers or tradesmen (keeping servants)* for one year; who are compelled by the act of parliament to take them, or pay 10l.; but at the end of that year it happens that many return to the house of industry, unable to get another place; being found too delicate to perform that service, which the farmer gets from those whom he hires out of cottages; and in consequence, many of them become fixed to the house for life.

"The other half consists of profligate men, who, through idleness and debauchery, have reduced their families to depend on the establishment for their support;—disolute wenches, who come to lie-in of bastard children, or to be cured of bad diseases;—and (with these) the honest industrious poor, who, after many years of hard labour or long service, can no longer provide for themselves; and are then of necessity driven from their peaceful cottages to a society, which must disgust and distress them the remainder of a life, the preceding part of which has been usefully employed in the service of the community.

"The above are part of the many objections to institutions

* The benefit of parishes placing out young persons in service, though only for a year, is, that it soon makes them fit for service in other parishes, and relieves their own parish from any further burthen. The compulsory binding of poor children under the statute law, till the age of twenty-one, is liable to this objection; that the master is not likely to use his apprentice so well, or the apprentice to serve his master so diligently, as if the contract was of shorter duration, and by mutual consent. Mr. Adam Smith is of opinion, that even in trades, or what he terms *skilled labour*, long apprenticeships are unnecessary and prejudicial to industry; and he gives powerful reasons for his opinion (vol. i. p. 184—102): but whatever may be the case as to trades, surely to bind a young lad, from fourteen years of age to twenty-one, to husbandry, or service, merely because he is out of work at the time, is a harsh and violent measure, and must have a tendency to check industry and exertion. In the house of industry, which is the subject of Mr. Parry's paper, children cannot be bound to husbandry for a longer term than three years.

of this sort: and I confess that, after having attentively considered the subject some years, I think if workhouses of any kind shall be deemed useful (which I do not hold to be the case, except perhaps in cities and large towns), the best plan is to unite three or four, or at most six parishes; which shall have a small new-built house, planned on purpose, merely as an asylum for the aged and infirm; to be superintended by the gentlemen and farmers who reside in the parishes; and to be subject to the inspection and control of the magistrates acting for the division in which they are situated. That all the poor capable of work, though requiring occasional relief, either on account of bodily infirmity, or of large families, should receive it at their own houses; and in general in clothes, or other necessaries in preference to money. It is well known that the present wages do not enable a labourer to support several small children during the period that they are incapable of labour. I therefore think he should be allowed one shilling per week with every child above three, who shall be under the age of twelve years; and that when these children are to enter upon a service, they should always be clothed by the parish. This latter article is almost universally followed at the house of industry, which I have before mentioned. It was adopted, about eight years ago, on my recommendation: at first it met with many opponents; but is, I believe, now considered by all the directors and guardians as a very great stimulus to the parents to get them services, and thereby to preclude them from afterwards being any burthen to the parish.

"In general, workhouses are very improperly so called; being mostly filled with aged and infirm poor, who are considered as past work; or with idle profligate wretches, whom the overseers suffer to live in filth and inactivity, rather than complain to a magistrate to have them compelled to labour, or than to offer them any employment, whereby a part of their maintenance might be obtained. This state of the workhouse being known throughout the parish, the honest and industrious labourer, who has brought up a large family with credit, and who from misfortune is poor, and from age past his labour, will rather submit to be half starved, than take up his abode amidst such wretchedness and profligacy; although he knows the overseer will give him no relief out of the house. This, I am sorry to say, I have found to be the case; and in one instance, upon hearing such a declaration from a poor man, a gentleman, who acted in the same division as myself, went with me unexpectedly to visit a parish workhouse; where we found men, women, and children, of different families, crowded together, nineteen persons in two rooms of twelve feet square, and little more than six feet high.

"Children should on no account be put into workhouses*, if they have parents or relations who will take care of them; although it be requisite to give some allowance, and even to the full of what they would cost in the workhouse. Experience proves that children brought up in cottages, half naked, and indifferently fed, make harder and better labourers, than those in parish workhouses. This I have seen demonstrated in houses of industry, where though the children are taken early from their parents, well clothed and well fed during their con-

tinuance in the house, and though they generally look healthy, yet they become so delicate, as to be unfit for husbandry labour, in a farmer's service; and are frequently a heavy expence to their employer, from disorders they contract, when taken from warm work-rooms, and exposed to field employments in winter.

"It is however to be observed, that one general system cannot be adopted in all cases; and that, in large manufacturing towns, houses of industry, well managed, may still be desirable, because the children, being brought up to sedentary employments, will be thereby accustomed to the habits of life which they will in all probability be induced to follow.

"One great advantage Norfolk has long derived from the custom of putting out all work by the piece, thrashing by the quarter, &c. (and which is making its way to other counties), is, that the father takes his sons to the field as soon as they can handle a hook, or raise a mattock; and they soon earn their living, besides being at an early age inured to industry and weather.

"I think every thing should be done to give the labouring man an idea, that he has an interest in the prosperity of the parish he lives in; and that his children will be taken care of, if death, or misfortune, prevent his ability to do it. The two great points are, first, to provide employment for all the poor, while able to work: secondly, to encourage, by every unexceptionable mode, friendly societies, or purse clubs; that, when their labour is over, they may look forward to a comfortable support, without the dreary prospect through life, of a workhouse, to end their days neglected by their relations, perhaps at a distance from them; and where every morsel of victuals is often grudged them by an abusive overseer, or by a man who has farmed them at so much per head."

Houses of industry are too frequently undervaluing of the name, from a want of superintendency; and hence they have acquired the quaint names of *poor-house*, or *work-house*, denoting rather what is expected than what is performed. It may be seen, however, under the article DUBLIN (*Supp.*), that these institutions are capable of considerable amelioration; and this will be still more evident on perusing the following extract from a further account of the improvements in the house of industry in Dublin, by the Right Hon. Thomas Pelham.

The acting governors of the house of industry in Dublin, have made a second report of their proceedings, by which it appears that (notwithstanding the confusion which must necessarily have attended the rebellion in Ireland, during great part of the summer) the zeal, the activity, and the diligence of the governors of this institution have not abated; but that improvements, which they had commenced and suggested in the preceding year, have been confirmed and realized in the last. They have stated to the parliament of Ireland, the means by which they have encouraged the industry, and increased the comfort, of those who have been confined to their care.

They have augmented the former allowance of 2d. in the shilling earned by the poor in the house, to 8d.; and the payment of this quota is in a coin, current only in the house; which has effectually prevented the purchase of spirituous

* The defect of several workhouses is, that many persons are kept there, who could do better for themselves, and with less expence to the parish, out of it. In one, that I have attended to, I found, on visiting it, 53 persons: of these, 13 were above the age of 50; 3 helpless men and women under that age; and 11 children, too young to be placed out in the world: 15 of the remaining 26 were placed out by me in service, or otherwise, in the course of a month; and the other 11 were only kept till places could be found for them.—In this instance it is to be observed that 26 of these 53 persons would have been better out of the workhouse; but the house *had been farmed*; and on that account it had not been the man's interest to put them out, as that would have occasioned some immediate expence; and it might probably have been the cause of his allowance from the parish being reduced at the end of the year, or of his losing his contract by the competition of a lower offer.

linens, and is laid out in extra provisions and clothes, at a shop established within the house, upon the plan of the village shops recommended in a former report of this society. The adult poor have no clothing, but such as they procure by their industry; and they are better clad than formerly.—A workshop with twelve flocking frames has been erected, in which a number of females have been employed; and it is well observed by the governors, “that the employing females in this manufacture, and in others of a like kind, where an expert hand is more requisite than masculine strength, should be encouraged.”

The children of both sexes are apprenticed for seven years, to those who superintend their instruction, with a reservation to the Board, of the power of assigning over their indentures at the end of the two first years, to such manufacturers as shall propose to take them for the remaining five. The persons who instruct the children, have at present a fixed salary. It is intended to give them one-third of the earnings; to lay out one-third in clothing the children, and the remainder to be expended in premiums.—The hospital is open to all the poor of Dublin; and it appears, that, in the year 1798, out of 1,659 patients admitted, 1,443 were restored to health, and to their families; and that of 66 lunatics, 47 have been cured.—The walls of the sick wards are washed every month with lime, and it is purposed to have a detached house exclusively for fevers.

“With a view to better the condition of the poor of Dublin in general, and to prevent the funds of the house of industry from being incumbered by unnecessary claims, the board of governors determined to open a public kitchen, or soup shop, detached from the house of industry.” Their addresses to the public, and their proceedings respecting their public kitchen, are worthy of applause and imitation. The success is proved by the numbers that have been benefited by it: 6,431 persons were supplied with food from this kitchen*, between the 4th day of February, the day of opening, and the 28th of February, the date of their report.

It is to be observed, that this institution differs very materially from any poor-house, or other institution, in Great Britain, both in its object, its government, and its resources. In Ireland there are no poor laws, or local taxes, for the support of the poor. This institution was intended for the purpose of providing employment, and for the maintenance of the poor of Dublin, and for the punishment of the vagrants and beggars who infested the streets of that city. The government was vested by act of parliament in a certain number of public officers; the mayor and aldermen of Dublin, and many other individuals; some of whom were named in the act, and others elected; and considerable grants have been annually made by parliament for its support. The institution certainly did not at first answer the expectation of the public, but fell into discredit.

The statement of these circumstances will render the report of the acting governors more intelligible, and, by explaining their situation, enhance the merit of their exertions.

HOUSE OF RECOVERY, an institution of a very recent description, but of infinite consequence to the preservation of the poor, as will appear from the following account of the

House of Recovery, established by the Board of Health at Manchester, by Thomas Bernard, Esq.

In May, 1796, an house for the *prevention of infectious fevers*, was opened upon private subscription, at Manchester, by the Board of Health there; and placed under the inspection of a medical committee, consisting of the medical gentlemen of the Infirmary. The following **REGULATIONS** were adopted respecting it:

1st. That the physicians of the Infirmary shall be authorized to give one or two shillings from the funds of this institution (by a ticket to the secretary of the Board of Health) to the person who shall furnish the earliest information of the appearance of fever in any poor family, within the limits of their respective districts.

2d. That as soon as the secretary has received this ticket, he shall apply, or take care that application be made, to some trustee of the Board of Health, living within the district, and who is a subscriber to the infirmary, for an immediate recommendation of the sick person as a home patient.

3d. That such patients as the physicians shall deem peculiar objects of recommendation, either on account of their extreme poverty, or of the close and crowded state of their habitations, shall be conveyed in a sedan chair (provided with a moveable washing lining, and kept for the sole purpose, and distinguished by proper marks) to the House of Recovery.

4th. That the physicians shall be requested to form the necessary regulations for the domestic government of the families of the home patients, afflicted with fever.

5th. That a reward to the amount of £1 shall be given to the heads of the family, after the cessation of the fever, on condition that they have faithfully observed the rules prescribed for cleanliness, ventilation, and the prevention of infection, amongst their neighbours. This reward shall be doubled in cases of extraordinary danger, and when the attentions have been adequate and successful.

6th. That, after the visitation of fever has ceased in any poor dwelling-house, the sum of £1 or a sufficient sum, shall be allowed (to be expended under the direction of an inspector) for white-washing and cleansing the premises, and for the purchase of new bed-clothes, or apparel, in lieu of such as it may be deemed necessary to destroy, to obviate the continuance or propagation of fever.

7th. That an inspector shall be appointed in each district of the Infirmary, to aid the execution, and to enforce the observance of the foregoing regulations. And that the gentlemen of the Stranger's Friend Society shall be requested to undertake this office.

The following are the *Internal Regulations* for the House of Recovery:

1st. Every patient, on admission, shall change his infections for clean linen; the face and hands are to be washed clean with lukewarm water, and the lower extremities fomented.

2d. The clothes brought into the house by patients, shall be properly purified and aired.

3d. All linen and bed-clothes, immediately on being removed from the bodies of the patients, shall be immersed in cold water before they are carried down stairs.

* A public kitchen had been previously tried with success at Cork; (see *CORK, Supp.*). The distribution made at Dublin, amounted to 12 ounces of bread and a quart of soup; which was given *gratis* to any poor person who applied, and who was not in receipt of relief from the House of Industry. Inconveniences, however, had attended the mere donation; and in truth, that which is indiscriminately given is never duly valued. It was thought better that the soup and bread should be sold at a reduced price; so that the poor might receive it by tickets given them by their more opulent neighbours, and that the working mechanic might be supplied at a very moderate rate; that of two pence for half a pound of bread and a quart of soup. This has been accordingly done.

4th. All discharges from the patients shall be removed from the wards without delay.

5th. The floors of the wards shall be carefully washed twice a-week, and near the beds every day.

6th. Quick-lime shall be flaked in large open vessels, in every ward, and renewed whenever it ceases to bubble on the affusion of water. The walls and roofs shall be frequently washed with this mixture.

7th. No relation or acquaintance shall be permitted to visit the wards, without particular orders from one of the physicians.

8th. No strangers shall be admitted into the wards; and the nurses shall be strictly enjoined not to receive unnecessary visits.

9th. No linen or clothes shall be removed from the House of Recovery, till they have been washed, aired, and freed from infection.

10th. No convalescents shall be discharged from the house, without a consultation of the physicians.

11th. The nurses and servants of the house shall have no direct communication with the Infirmary; but shall receive the medicines in the room already appropriated to messengers from the home patients.

12th. The committee of the Stranger's Friend Society shall be requested to undertake the office of inspecting the House of Recovery.

13th. A weekly report of the patients, admitted and discharged, shall be published in the Manchester newspapers.

14th. When a patient dies in the wards, the body shall be removed as soon as possible, into a room appropriated to that use; it shall then be wrapped in a pitched cloth; and the friends shall be desired to proceed to the interment as early as is consistent with propriety.

15th. All provisions and attendance, for the patients in this House of Recovery, shall be provided from the funds of this institution, without any communication with the Infirmary.

The circumstances of the first patients, removed to the House of Recovery, all tended to prove the truth of the position, that the most contagious and destructive fevers, by which manufacturing and other crowded towns have been afflicted, had proceeded from *individual infection*; and that if, upon the appearance of the fever, the poor patient had been removed to a clean well ventilated room, and dismissed after recovery with clothes properly purified, much disease and misery would have been prevented, and many lives saved.

As the statement of the circumstances of the first patients that were admitted into the House of Recovery, may tend to shew the sufferings of the poor, where no house of recovery is prepared for them, we here state them from the physician's reports inserted in the Minutes of the Board of Health.

"Mary Parkinson, aged 20, the second daughter of Ann Parkinson, lodging with her mother and sister, at James Rushton's (who rents a garret, No. 50, Great Turner-street), was seized on the 17th instant with a spotted fever, and visited in a day or two after, as a home patient of the Infirmary.

"She was found almost destitute of covering, lying upon a collection of rags spread upon the floor of a close, dirty, and noisome garret. In this wretched substitute for a bed, the mother and another grown-up daughter (just recovering of fever) likewise slept. In an opposite corner of the room, James Rushton, his wife, and three children, slept upon a bed, similar to that above described. Under such circumstances, I was fully convinced, that it would be impracticable to prevent the fever from spreading, unless the infected person could be removed. But, as the House of Recovery was not then opened, the removal of the patient could not be effected. In a day or two, as I expected, the daughter of James Rushton

sickened, and became dangerously ill of the fever. As the wife (who was far advanced in her pregnancy), and the rest of the inhabitants of the room, might be supposed to be in hourly danger of infection; I proposed, therefore (the House of Recovery being now ready), as the most likely method of saving the lives of the two women so dangerously affected, and of preventing the rest from receiving the infection, that the sick persons should be instantly removed into the House of Recovery. With every expression of joy and gratitude, the parents of both the patients accepted the offer, and they were accordingly removed without suffering any injury, or apparent inconvenience, by the removal.

"Mary West, the wife of a soldier belonging to the Manks Fencibles, was infected with fever from attending her husband, who had recovered, and was ordered to join the regiment.—She had been driven out of doors upon the symptoms of fever appearing, and was refused admittance wherever she applied. In consequence of exposure to cold, and distress of mind, her complaint rapidly increased, and she got a recommendation as in-patient to the Infirmary. But the rules of this charity forbade her admittance. She was, therefore, received into the House of Recovery, as an object peculiarly claimed by the nature of the institution.

"Jeremiah Bowcock was removed, on the first appearance of fever, from a family living at No. 74, Newton-lane; and, besides himself, consisting of seven men, four women, and three children. On the same floor with, and adjoining to the chamber (at No. 78, Newton-street) in which he and three others slept, a man, his wife, and three children, constantly reside. The ground floor is occupied by two men, one woman, and three children; and the cellars are let for work-rooms. The disease was introduced into his house by Bowcock's brother, who had been turned into the streets, when labouring under typhus, by the persons with whom he lodged.—Immediately after the removal of this patient, the room in which he had been confined was duly washed and ventilated; and means were taken to dis-infect the clothes and bedding, by a free exposure of them in the open air.

"Margaret Billington, wife of a private in the York Fencibles, was removed on the 10th day of her disease, from a small room, at No. 8, Pump-street, which has been for some time the nightly abode of four grown persons, and three children. On her removal, the bedding was exposed to the air, in an open space, for several hours; the floor of the apartment was scoured; the walls were white-washed; fumigations with nitrous gas were employed, according to the practice of his majesty's naval hospitals; and a reward was promised to the heads of the family, provided their endeavours to extinguish contagion were attended with success.

"John Owen, Robert Williams, and William Williams, from a house in Salford, where six persons lay ill of a fever at the same time, in two very small rooms. One patient only remains in that house, who is now recovering.

"William Lomax, a child from a house in Longworth-street, where a family of five persons had only one bed-room for their accommodation. The eldest daughter was first taken ill; after the recovered, the father, mother, and this boy, were all seized with the fever together. The father died. The mother miscarried, from grief and fatigue, the day after his death. A younger daughter has since been taken ill, and will be admitted as soon as possible.

"Samuel Gould, from a large family with whom he lodged. His fever is of a very dangerous nature, and it is hoped that, by his removal, the infection of the whole family will be prevented."

The beneficial effects of the House of Recovery, even after a year and a half, are almost beyond belief. The facts are, how-

ever, established by authentic documents.—The number of fever patients (as entered in the physician's book at the Infirmary) in Portland-street, Silver-street, and the other streets in that pile of buildings, in the neighbourhood of the House of Recovery, for the two preceding years and eight months, were 1,256, something more than the average of 400 a-year:—those in the same district from July, 1796 (a period commencing two months after the establishment of the House of Recovery), to July, 1797 (being twelve months), were only twenty-six;—of these, there were, in July, 1796, only five such patients; in August, but one; in September, 1796, none; and in the four last months, from March to July, 1797, only one fever patient.

In the report of the weekly board of the Infirmary at Manchester, notice is taken of the extraordinary effects of the House of Recovery, in diminishing the proportion of the fever patients in the Infirmary. It appears from the physician's books of the Infirmary, that in January, 1796 (before the establishment of the House of Recovery), the whole number of the home patients at the Manchester Infirmary was 296, of which 226 were cases of fever: and that in January, 1797, the number of their home patients was 161; and, of these, only 57 were cases of fever.

From the opening of the House of Recovery, on the 19th of May, 1796, to the 2d of November, 1797, 542 fever patients have been admitted. Of these, 465 have been cured and sent home; 48 (and these were some very bad cases) have died; and 29 were, on the 2d instant, remaining in the house. The account, therefore, up to the 2d instant, stands thus:

Cured and discharged	-	-	465
Dead	-	-	48
Remaining in the house	-	-	29

Total admitted - 542

But the proportional number of cures in the last half-year (a benefit that will probably increase) is greater than that of the preceding period; because the poor are now induced to apply in the earlier stages of the fever, when medicine can be applied with more effect. The account from the 8th of May, 1797, to the 2d instant, being near six months, is as follows:

Cured and discharged	-	-	141
Dead	-	-	8
Remain in the house	-	-	29

Total - 178

Many of the opponents of the House of Recovery in Manchester* are become its active friends; and that, which was at first an act of philanthropy in a few individuals, is now supported by the good wives and contribution of the greater part of the respectable inhabitants at Manchester. Other consequences have attended the extraordinary success of this institution:—viz. first, that the Board of Health does now receive fever patients into the house from places beyond the

districts for which it was first established; by which means the environs of the town will be cleared of the epidemic fever: secondly, that the Infirmary also receives a variety of patients, which they were obliged to refuse, when the Infirmary and town were oppressed by the enormous crowd of fever patients, whose claims seemed to supercede those of persons not afflicted with contagious diseases: and thirdly, that in the year 1796, there was a decrease of near 400 in the bills of mortality at Manchester.

It may be observed, in conclusion, that a Board of Health and a House of Recovery, upon the plan of that at Manchester, would be useful in all towns; but particularly where the poor, employed in manufactures, are incapable of receiving proper medical relief, in their own confined habitations; and where they are peculiarly liable to communicate contagion, not only to their own family, and to those who dwell under the same roof, but to the neighbourhood. A Board of Health, to prevent the spreading of contagious diseases among the poor, is peculiarly applicable to a populous town: but it is not exclusively so. It would be very useful in country villages and country neighbourhoods, to assist and stimulate the overseers in that part of their duty which relates to the health of the poor, and to prevent the progress of infectious disorders. It is peculiarly in the prevention of disease and contagion, that the benefit returns with increase upon the benefactor, and that the merciful receive mercy.

A subsequent report from the Society for bettering the Condition of the Poor, acquaints us, that in August, 1798, there were 19 patients in the house. Their apartments appeared to be as airy, as clean, and as comfortable as could be wished. The upper floors are laid together, so as to form four large wards; and each of the front rooms below will contain two beds, so as to accommodate in the whole 28 patients conveniently. The rooms on the ground floor are appropriated to the convalescents; and to the use of the servants, who consist of a head nurse and three other nurses; occasional assistance being hired, when necessary. The wards are furnished with iron bedsteads, without curtains, and with ticks filled with straw, which is changed at proper periods. The mode of removing the sick into the house is in a sedan-chair, kept in an out-building for that purpose.

When patients are admitted into the house, a flannel dress is provided for them, and their own clothes are carried into the yard, to be washed, scoured, and ventilated. During their convalescence they wear the dress of the house; which consists of a jacket and trowsers for the men, and of a wrapping gown and petticoat for the women. Part of a vacant piece of ground, adjoining to the houses, is enclosed with a wall for the purpose of washing and airing the clothes of the patients. At the time of discharging them their own clothes are returned to them perfectly clean, and they rejoin their families, and resume their occupations, without the hazard of communicating infection to others.

To fo great a degree have contagious fevers been reduced †, since the establishment of the House of Recovery, that the limits

* Similar establishments have been successfully made in London, Chester, Stockport, Liverpool, and some other places in England, and at Waterford, in Ireland. For a detail of the principles and rules to be adopted in country towns, to check the progress of disease and infection, the reader is referred to a very excellent pamphlet by the Rev. Sir William Clerke, bart. rector of Bury in Lancashire, published by Johnson, St. Paul's Church-yard; and also to a tract on the same subject by the late Dr. Murray, who has recently fallen a sacrifice to his zeal and activity, in promoting the views of the Society for bettering the Condition of the Poor, in this respect.

† In the former report it was stated the extraordinary diminution that had taken place in the bills of mortality at Manchester, since the opening of the House of Recovery. An additional proof, of a singular nature, appears in the last year's accounts of the overseers of the poor; in which the charge for deceased paupers' codlins is 100l. 10s. It used to be half as much again.

of the house are now extended to the whole of Manchester and its extensive suburbs, and to every part of the vicinage, for two miles round, from whence a fever patient can be safely removed. The number of home patients of the infirmary at Manchester has also, in consequence, been gradually diminished. There were admitted on the physicians' books during the year, ending 1st June, 1796 2880

Ditto in the year ending June, 1797, being the first year of the house of recovery being opened 1739

Ditto in the year ending June, 1798, 1564

During the spring and summer of the preceding year, contagious fevers of an alarming nature had appeared in different parts of the town and neighbourhood. By removing, however, the patient into the House of Recovery, the extension of the fever was in every instance prevented. The account of the house for one year, ending the 31st of May, 1798, at which time 710 patients had been admitted, is as follows:

Cured and discharged	300
Dead	16
Remained then in the house	23

Account for another Year, to 31st May, 1799.

Cured and discharged	364
Dead	24
Remained in the house, 31st May, 1799	11

To a poor creature who has been languishing in a cold, damp cellar, or in a garret exposed to the injuries of the weather, amidst the neglect and confusion of a wretched family, —to such a patient a clean bed, a quiet ward, an attentive nurse, and the frequent visits of the physician, are of most potent efficacy. To these causes it must be imputed that, upon a return of the epidemic fever of 1797, of 149 dangerous cases received from the beginning of May to the beginning of October, only four patients died.

Of the benefits of the House of Recovery, it is one of no small consequence, that the owners of cotton mills are now induced to pay a more scrupulous attention to the health of their work-people; and that their buildings are, in general, kept cleaner and better ventilated. A salutary impression has also been made on the minds of the poor, respecting the utility of cleanliness in their houses. The idea of fever comprehends, among them, that of ruin to their circumstances, and desertion by their neighbours. It may therefore be expected, that they will catch at every means within their reach to avoid so dreadful an evil: and when they find that a public charity extends its care to them so far, as to whitewash their houses, when the physicians report it to be necessary, they must feel the propriety of attending more to this object.

HOYER, a town of Denmark, in the duchy of Sleswick, celebrated for its oyster-fishery, four miles W. of Tonderen.

HUBERTSBERG, a town of Upper Saxony, with a magnificent hunting-seat, built by Augustus III. then electoral prince. A peace was concluded here between the kings of Prussia and Poland and the empress queen. It is 22 miles E. of Leipzig.

HUDDESFIELD, a town in the W. riding of Yorkshire, with a market on Tuesday. It is situate near the Calder, amid barren moors, and is the mart for narrow cloths, called plains. It is 42 miles S.W. of York, and 189 N.N.W. of London. Long. 1. 40. W. Lat. 53. 40. N.

HUDICKSWALL, a sea-port of Sweden, in the province of Helsingland, with a good harbour. The inhabitants carry on an advantageous trade in the timber, flax, linen, butter, fish, &c. It is 130 miles N. of Upfal. Long. 18. 36. E. Lat. 61. 48. N.

HUDSON, a city of the United States, in New York,

seated on eminence, on the E. side of Hudson's River, 30 miles S. of Albany, and 130 N. of New York. Long. 75. 20. W. Lat. 42. 23. N.

HUESSEN, a town of Dutch Guelderland, seated on the Rhine, three miles S. of Arnheim.

HUETINBERG, a town of Germany, in Carinthia, eight miles S.W. of Reichenfels.

HUETTA, a town of Spain, in New Castile, 67 miles E. of Madrid. Long. 1. 55. W. Lat. 40. 22. N.

HUPFINGEN, a town of Suabia, in the principality of Furtenburg, four miles N.N.W. of Furtenburg.

HULHEN, a town of Austrian Brabant, nine miles S.E. of Brussels. Long. 4. 37. E. Lat. 51. 44. N.

HUNDSELD, a town of Silesia, seated on the Wide, eight miles N.E. of Breslaw. Long. 17. 18. E. Lat. 51. 9. N.

HUNDRUCH, a district of Germany, in the circle of Upper Rhine, situate between the Rhine, the Moselle, and the Nahe; belonging partly to the elector of Treves, the elector palatine, and the prince of Hesse.

HUNGEN, a town of Germany, in the circle of Upper Rhine, and county of Solms Braunsfels, 14 miles S.E. of Wetzlar.

HUNMANBY, a town in the E. riding of Yorkshire, with a market on Tuesday, 34 miles N.E. of York, and 209 N. of London. Long. 0. 12. W. Lat. 54. 12. N.

HUNTER (John), a celebrated physiologist, was the youngest child of John Hunter, of Kilbride, in the county of Lanark. He was born on the 14th of July, 1728, at Long Calwood, a small estate belonging to the family. His father dying when he was about ten years of age, though he attended the grammar-school he made no progress in learning; and may be said to have been almost totally illiterate when, in September 1748, he arrived in London. His brother, Dr. William Hunter, was then celebrated as a teacher of anatomy, and John had expressed a desire to assist him in his researches. Accordingly, he had here every opportunity of improvement, as all the dissections at this time carried on in London were confined to that school.

In the summer 1749, Mr. Cheselden, at the request of Dr. Hunter, permitted him to attend at Chelsea Hospital; and he there learned the first rudiments of surgery. The following winter he was so far advanced in the knowledge of human anatomy, as to instruct the pupils in dissection, to whom Dr. Hunter had very little time to pay attention. This office, therefore, fell almost entirely upon him, and was his constant employment during the winter season. In the summer months of 1750, Mr. Hunter attended the hospital at Chelsea; in 1751, he became a pupil at St. Bartholomew's, and in the winter was present at operations occasionally, whenever any thing extraordinary occurred. The following summer he went to Scotland; and in 1753 entered, it is difficult to conceive for what reason, as a gentleman commoner at St. Mary-hall, Oxford. In 1754 he became a surgeon's pupil at St. George's Hospital, where he continued during the summer months; and in 1756 was appointed house-surgeon. In the winter 1755, Dr. Hunter admitted him to a partnership in his lectures, and a certain portion of the course was allotted to him; besides which, he gave lectures when the doctor was called away to attend his patients.

Anatomy and physiology seem to have been pursuits for which Mr. Hunter's mind was peculiarly fitted, and he applied to them with an ardour and perseverance of which there is hardly any example. His labours were so useful to his brother's collection, and so gratifying to his disposition, that although in many other respects they did not agree, this simple tie kept them together for many years.

Mr. Hunter employed himself for ten years on human anatomy, during which period he made some addition to that knowledge. He traced the ramifications of the olfactory nerves upon the membranes of the nose, and discovered the course of some of the branches of the fifth pair of nerves. In the gravid uterus, he traced the arteries of the uterus to their termination in the placenta. He was also the first who discovered the existence of the lymphatic vessels in birds.

Many parts of the human body being so complex, that their structure could not be understood, nor their uses ascertained, Mr. Hunter was led to examine similar parts in other animals, in which the structure was more simple, and more within the reach of investigation; this carried him into a wide field, and laid the foundation of his great collection in comparative anatomy. This active enquirer began with the more common animals, and preserved such parts as appeared by their analogy, or in some other way, to elucidate the human economy.

In 1760 his health was so much impaired by excessive attention to these pursuits, that he was advised to go abroad, having complaints in his breast, which threatened a consumption. Mr. Adair, inspector-general of hospitals, appointed him surgeon on the staff; and in the following spring he went with the army to Belleisle, leaving Mr. Hewison to assist his brother during his absence.

Mr. Hunter served, while the war continued, as senior surgeon on the staff, both in Belleisle and Portugal, till the year 1763; and in that period acquired his knowledge of gun-shot wounds. On his return to England he settled in London; where, not finding the emoluments from his half-pay and private practice sufficient to support him, he taught practical anatomy and operative surgery for several winters. He returned also, with unabated ardour, to comparative anatomy; and as his experiments could not be carried on in a large town, he purchased for that purpose, above two miles from London, a piece of ground near Brompton, at a place called Earl's Court, on which he built a house. In the course of his enquiries, this excellent anatomist ascertained the changes which animal and vegetable substances undergo in the stomach when acted on by the gastric juice; he discovered, by means of feeding young animals with madder (which tinges growing bones red), the mode in which a bone retains its shape during its growth; and explained the process of exfoliation, by which a dead piece of bone is separated from the living.

On the 5th of February, 1767, he was chosen a fellow of the Royal Society. His desire for improvement in those branches of knowledge which might assist in his researches, led him at this time to propose to Dr. George Fordyce, and Mr. Cumming, an eminent mechanic, that they should adjourn from the meetings of the Royal Society to some coffee-house, and discuss such subjects as were connected with science. This plan was no sooner established, than they found their numbers increased; they were joined by Sir Joseph Banks, Dr. Solander, Dr. Maskelyne, Sir George Shuckburgh, Sir Harry Englefield, Sir Charles Blagden, Dr. Nooth, Mr. Ramdén, Mr. Watt of Birmingham, and many others. At these meetings discoveries and improvements in different branches of philosophy were the objects of their consideration; and the works of the members were read over and criticised before they were given to the public. It was in this year that, by an exertion in dancing, after the muscles of the leg were fatigued, he broke his tendo Achillis. This accident, and the confinement in consequence of it, led him to pay attention to the subject of broken tendons, and to make a series of experiments to ascertain the mode of their union.

VOL. X.

In the year 1768, Mr. Hunter became a member of the corporation of surgeons; and in the year following, through his brother's interest, he was elected one of the surgeons of St. George's Hospital. In May 1771, his Treatise on the Natural History of the Teeth was published; and in July he married Miss Home, a daughter of the surgeon to Burgoyne's regiment of light horse. After his marriage, his private practice and professional character advanced rapidly, and though his family began to increase, he still devoted much of his time to the forming of his collection, which, as it daily became larger, was also attended with greater expence. The whole suite of the best rooms in his house were occupied by his preparations; and he dedicated his mornings, from sunrise to eight o'clock (the hour for breakfast), entirely to his pursuits. To these he added such parts of the day as were not engaged in attending his patients.

The knowledge he derived from his favourite studies, he constantly applied to the improvement of the art of surgery, and omitted no opportunity of examining morbid bodies; from which he made a collection of facts which are invaluable, as they tend to explain the real causes of symptoms, which during life could not be exactly ascertained, the judgment of the practitioner being too frequently misled by theoretical opinions, and delusive sensations of the patients.

In the practice of surgery, where cases occurred in which the operations proved inadequate to their intention, he always investigated, with uncommon care, the causes of that want of success; and in this way detected many fallacies, as well as made some important discoveries, in the healing art. He detected the cause of failure, common to all the operations in use for the radical cure of the hydrocele, and was enabled to propose a mode of operating, in which that event can with certainty be avoided. He ascertained, by experiments and observations, that exposure to atmospheric air simply, can neither produce nor increase inflammation. He discovered in the blood so many phenomena connected with life, and not to be referred to any other cause, that he considered it as alive in its fluid state. He improved the operation for the fistula lachrymalis, by removing a circular portion of the os unguis instead of breaking it down with the point of a trochar. He also discovered that the gastric juice had a power, when the stomach was dead, of dissolving it; and gave to the Royal Society a paper on this subject, which is published in the Philosophical Transactions.

In the winter 1773, he formed a plan of giving a course of lectures on the theory and principles of surgery, with a view of laying before the public his own opinions upon that subject. For two winters he read his lectures *gratis* to the pupils of St. George's Hospital; and in 1775, gave a course for money upon the same terms as the other teachers in the different branches of medicine and surgery. But giving lectures was always particularly unpleasant to him; so that the desire of submitting his opinions to the world, and learning their general estimation, were scarcely sufficient to overcome his natural dislike to speaking in public. He never gave the first lecture of his course without taking 30 drops of laudanum to take off the effects of his uneasiness.

Comparative anatomy may be considered as the pursuit in which Mr. Hunter was constantly employed. No opportunity escaped him, as is evident from the various accounts of the peculiar structure of different animals published in the Philosophical Transactions.

In January 1776, Mr. Hunter was appointed surgeon-extraordinary to his Majesty; and in the spring he gave to the Royal Society a paper on the best mode of recovering drowned persons.

In the autumn he was taken extremely ill, and the nature

of his complaints made his friends, as well as himself, consider his life to be in danger. When he reflected upon his own situation, that all his fortune had been expended in his pursuits, and that his family had no provision but what should arise from the sale of his collection, he became very solicitous to give it its full value, by leaving it in a state of arrangement. This he accomplished with the assistance of Mr. Bell, an ingenious draughtsman who resided in his house, and his brother-in-law, Mr. Home.

In 1781 he was elected a fellow of the Royal Society of Sciences and Belles Lettres at Göttingen. And in 1782 he gave the Royal Society a paper on the Organ of Hearing in Fish. Besides the papers which he presented to that learned body, he read six Croonian lectures upon the subject of Muscular Action, for the years 1776, 1778, 1779, 1780, 1781, and 1782. In these lectures he collected all his observations upon muscles, respecting their powers and effects, and the stimuli by which they are affected; and to these he added Comparative Observations upon the moving Powers of Plants. These lectures were not published in the Philosophical Transactions, for they were withdrawn as soon as read, not being considered by the author as complete dissertations, but rather as materials for some future publication.

In 1783 he was chosen into the Royal Society of Medicine and the Royal Academy of Surgery in Paris; and the same year the lease of the house which he occupied in Jermyn-street having expired, he purchased the lease of a large house on the east-side of Leicester-square, and the whole lot of ground adjoining to Castle-street, on which there was another house. In the middle space between the two houses, he erected, at the expence of 3000*l.* a building for his collection; though, unfortunately for his family, the lease did not extend beyond 24 years.

In the building formed for the collection there was a room fifty-two feet long, by twenty-eight feet wide, lighted from the top, and having a gallery all round, for containing his preparations. Under this were two apartments; one for his lectures, and the other, with no particular destination at first, but afterwards made use of for weekly meetings of medical friends during the winter. To this building the house in Castle-street was entirely subservient; and the rooms in it were used for the different branches of human and comparative anatomy.

About this period Mr. Hunter may be considered as at the height of his surgical career; his mind and body were both in their full vigour. His hands were capable of performing whatever was suggested by his mind; and his judgment was matured by former experience. Instances of his extraordinary skill are numerous and well known.

Among other important discoveries, was a new mode of performing the operation for the popliteal aneurism, by taking up the femoral artery on the anterior part of the thigh, without doing any thing to the tumor in the ham. The safety and efficacy of this mode have been confirmed by many subsequent trials; and it must be allowed to stand very high among the modern improvements in surgery.

If we consider Mr. Hunter at this period of his life, it will afford us a strong picture of the turn of his mind, of his desire to acquire knowledge, and his unremitting assiduity in prosecuting whatever was the object of his attention.

He was engaged in a very extensive private practice; he was surgeon to St. George's Hospital; he was giving a very long course of lectures in the winter; he was carrying on his enquiries in comparative anatomy; had a school of practical human anatomy in his house; and was always employed in some experiments respecting the animal economy.

He was always solicitous for some improvement in medical education; and, with the assistance of Dr. Fordyce, instituted a medical society, which he allowed to meet in his lecture-rooms, and of which he was chosen one of the patrons. This society, called the *Lyceum Medicum Londinense*, under his auspices and those of Dr. Fordyce, has acquired considerable reputation, both from the numbers and merits of its members.

In the year 1786, in consequence of the death of Mr. Middleton, Mr. Hunter was appointed deputy surgeon-general to the army. He now published his work upon the Venereal Disease; and his Observations on certain parts of the Animal Economy.

In the year 1787, his collection, which had been the great object of his life, both as a pursuit and an amusement, was brought into a state of arrangement; and he had then the satisfaction of shewing to the public a series of anatomical facts formed into a system, by which the economy of animal life was illustrated.

Upon the death of Mr. Adair, which happened in the year 1792, Mr. Hunter was appointed inspector-general of hospitals, and surgeon-general to the army. He was also elected a member of the Royal College of Surgeons in Ireland. In the year 1791, he was so much engaged in the duties of his office, as surgeon-general to the army, and his private practice, that he had little time to bestow upon scientific objects; but his leisure time, small as it was, he wholly devoted to them, as his various publications, at that period, evince.

Earl's Court to Mr. Hunter was a retirement from the fatigues of his profession; but in no respect a retreat from his labours; there, on the contrary, they were carried on with less interruption, and with an unwearied perseverance. From the year 1772, till his death, he made it his custom to sleep there during the autumn months, coming to town only during the hours of business in the forenoon, and returning to dinner.

It was there he carried on his experiments on digestion, on exfoliation, on the transplanting of teeth into the combs of cocks, and all his other investigations on the animal economy, as well in health as in disease. The common bee was not alone the subject of his observation, but the wasp, hornet, and the less known kinds of bees, were also objects of his attention. It was there he made the series of preparations of the external and internal changes of the silk-worm; also a series of the incubation of the egg, with a very valuable set of drawings of the whole series. The growth of vegetables was also a favourite subject of enquiry, and one on which he was always engaged in making experiments.

The collection of comparative anatomy which Mr. Hunter has left, and which may be considered as the great object of his life, must be allowed to be a proof of talents, assiduity, and labour, which cannot be contemplated without surprise and admiration. It remains an unequivocal test of his perseverance and abilities, and an honour to the country in whose schools he was educated, and by the patronage of which he was enabled on so extensive a scale to carry on his pursuits. In this collection (now possessed by the Royal College of Surgeons in London) we find an attempt to expose to view the gradations of Nature, from the most simple state in which life is found to exist, up to the most perfect and most complex of the animal creation—man himself.

By the powers of his art, this collector has been enabled so to expose, and preserve in spirits, or in a dried state, the different parts of animal bodies intended for similar uses, that the various links of the chain of perfection are readily followed and may be clearly understood.

This collection of anatomical facts is arranged according to

the subjects they are intended to illustrate, which are placed in the following order: *First*, Parts constructed for motion. *Secondly*, Parts essential to animals respecting their own internal economy. *Thirdly*, Parts superadded for purposes connected with external objects. *Fourthly*, Parts for the propagation of the species and maintenance or support of the young.

Mr. Hunter was a very healthy man for the first forty years of his life; and, if we except an inflammation of his lungs in the year 1759, occasioned most probably by his attention to anatomical pursuits, he had no complaint of any consequence during that period. In the spring of 1769, in his forty-first year, he had a regular fit of the gout, which returned the three following springs, but not the fourth; and in the spring of 1773, having met with something which very forcibly affected his mind, he was attacked at ten o'clock in the forenoon with a pain in the stomach, attended with all the symptoms of *angina pectoris*. In the life of him prefixed to his *Treatise on the Blood, Inflammation, and Gun-Shot Wounds*, the reader will find one of the most complete histories of that disease upon record. Suffice it, in this place, to say, that for twenty years he was subject to frequent and severe attacks of it, which however did not, till a short time before his death, either impair his judgment or render him incapable of performing operations in surgery. "In autumn 1790 (says Mr. Home), and in the spring and autumn 1791, he had more severe attacks than during the other periods of the year, but of not more than a few hours' duration: in the beginning of October 1792, one, at which I was present, was so violent that I thought he would have died. On October the 16th, 1793, when in his usual state of health, he went to St. George's Hospital, and meeting with some things which irritated his mind, and not being perfectly master of the circumstances, he withheld his sentiments; in which state of restraint he went into the next room, and turning round to Dr. Robertson, one of the physicians of the hospital, he gave a deep groan and dropt down dead; being then in his sixty-fifth year, the same age at which his brother, Dr. Hunter, had died."

It is a curious circumstance, that the first attack of these complaints was produced by an affection of the mind, and every future return of any consequence arose from the same cause; and although bodily exercise, or distention of the stomach, brought on slighter affections, it still required the mind to be affected to render them severe; and as his mind was irritated by tritles, these produced the most violent effects on the disease. His coachman being beyond his time, or a servant not attending to his directions, brought on the spasms, while a real misfortune produced no effect.

Mr. Hunter was of a short stature, uncommonly strong and active, very compactly made, and capable of great bodily exertion. His countenance was animated, open, and in the latter part of his life deeply impressed with thoughtfulness. When his print was shewn to Lavoisier, he said, "That man thinks for himself." In his youth he was cheerful in his disposition, and entered into youthful follies like others of the same age; but wine never agreed with his stomach; so that after some time he left it off altogether, and for the last twenty years drank nothing but water.

His temper was very warm and impatient, readily provoked, and, when irritated, not easily soothed. His disposition was candid, and free from reserve, even to a fault. He hated deceit; and as he was above every kind of artifice, he detested it in others, and too openly avowed his sentiments. His mind was uncommonly active; it was naturally formed for investi-

gation, and that turn displayed itself on the most trivial occasions, and always with mathematical exactness. What is curious, it fatigued him to be long in a mixed company which did not admit of connected conversation; more particularly during the last ten years of his life.

He required less relaxation than most other men; seldom sleeping more than four hours in the night, but almost always nearly an hour after dinner; this, probably, arose from the natural turn of his mind being so much adapted to his own occupations, that they were in reality his amusement, and therefore did not fatigue.

Though he spoke too freely, and often harshly, of other practitioners; in private practice he was liberal, scrupulously honest in saying what was really his opinion of the case, and ready upon all occasions to acknowledge his ignorance, whenever anything presented itself which he could not comprehend.

HUS, or HUSSO, a town of Turkey in Europe, in Moldavia, the see of a Greek bishop. Here Peter the Great made peace with the Turks. It is situate on the Pruth, 70 miles S.W. of Bender. Long. 28. 34. E. Lat. 46. 35. N.

HUSBANDRY (*Encycl.*). An improvement in the culture of turnips, by the use of the drill lately invented by Mr. Jackson, is spoken of under the article TURNIP in this SUPPLEMENT.

HUSSINGABAD, a town of Hindoostan, in the province of Malwa, but on the S. side of the Nerbudda, and the frontiers of Nagpore, the eastern division of the Mahratta empire. It is 140 miles N.W. of Nagpore. Long. 77. 54. E. Lat. 22. 42. N.

HUTANY, a town of the Deccan of Hindoostan, in the country of Visapour, 30 miles S.W. of Visapour. Long. 75. 6. E. Lat. 17. 5. N.

HUTTWIEL, a town of Switzerland, in the canton of Bern, 16 miles N.E. of Bern, and 22. N.W. of Lucern.

HYDRABAD, the capital of Golconda, in the Deccan of Hindoostan, seated on a river that falls into the Krishna, 352 miles N. by E. of Madras. Long. 78. 51. E. Lat. 17. 12. N.

HYDRABAD, a fort of Hindoostan Proper, in the province of Sindy, and the residence of a Mahometan prince, who is tributary to the king of Candahar. It is situate on the Indus, not far above the head of the Delta, and in the neighbourhood of Nusserpour. Long. 69. 30. E. Lat. 25. 29. N.

HYDROPHIANÆ, in natural history: a genus of semipellucid gems, composed of crystal and earth; the latter ingredient being in large proportion, and mixed imperfectly, as in the chalcedony; and giving a general cloudiness or mistiness to the stone; but of such an imperfect and irregular admixture, as not to be capable of a polish like the chalcedony; and appearing of a dusky and foul surface till thrown into water, in which they become lucid and in some degree transparent, either in part or totally; also changing their colour, which returns to them on their being taken out of the water. To this genus belongs the oculus belli of authors, or whitish grey hydropheanes variegated with yellow, and with a black central nucleus; and the oculus mundi, or lapis mutabilis, which is likewise a whitish grey kind without veins.

HYKES, a species of blankets, commonly used by the inhabitants of Barbary. They consist of a light woollen cloth, woven by women, who conduct every thread with their fingers, and without the aid of a shuttle. This manufacture appears to be a coarse kind of shawl, and is the more remarkable, as each of such hykes is from five to six yards in length, and breadth: it forms the whole apparel of the wretched natives, and serves them as a covering for their beds during the night.

I. J.

JAFFIERABAD, a town of the Decan of Hindoostan, in the country of Berar, 40 miles N.N.E. of Aurungabad, and 60. S. of Burhampour. Long. 76. 25. E. Lat. 20. 22. N.

JAGRSBURG, a town of Germany, in the principality of Hesse Darmstadt, 13 miles S.S.W. of Darmstadt.

JALALABAD, a town of Hindoostan Proper, in the country of Cabul, situate on the Kameh, 60 miles E.S.E. of Cabul.

JALLINDAR, a town of Hindoostan Proper, capital of a district of the same name, in the country of Lahore. It is 30 miles E. of Lahore. Long. 74. 10. E. Lat. 30. 50. N.

JALONITZA, a town of Turkey in Europe, in Walachia, on a river of the same name, 95 miles S.W. of Ismail.

JALOUR, a town of Hindoostan Proper, in the county of Agimere, 65 miles W.N.W. of Cheitore. Long. 73. 40. E. Lat. 25. 15. N.

JAMES'S POWDER (*Enceyl.*). To the receipts already given for making this valuable preparation, we have to add that of Mr. Chenevix, for preparing it by precipitation, by which it may be had at a cheaper rate. In his paper read at the Royal Society, this ingenious chemist gives the following account of his discovery :

"After the observations and experiments made by Dr. Pearson, to investigate the nature of Dr. James's Powder, and presented by him to this Society, very little remained to be effected or desired, towards a further knowledge of the subject. But those very experiments served to suggest, that the mode of preparation was far from being the best that the present improved state of chemical knowledge might afford ; and that, in all probability, a less defective composition might result from a process more conformable to some improvements, which of late have been advantageously applied to pharmaceutical chemistry.

"It may be laid down as a general principle, that, in delicate experiments, whether analytical or synthetical, fire (that potent and once believed to be universal agent) is too precarious in its means, and too uncertain in its application, to be employed with full and constant success. And, if it is still resorted to, the advantage of promptness, and a remnant of ancient custom, are the principal reasons. But, where other methods can be devised to effect the same combinations (and the humid way offers many), every person conversant in chemical knowledge will allow the benefit of adopting them. The recent improvement in the mode of preparing calomel, is a striking example of such salutary corrections being successfully introduced.

"A few observations upon the formula according to which Dr. James's Powder, or the *Pulvis Antimonialis*, is prepared, and upon some properties of antimony, will place this assertion in a more prominent point of view.

"In order to prepare this powder, we are told to take

equal weights of bone or hartshorn shavings and crude antimony, and calcine them together, at a high temperature : in other words, to take phosphate of lime, which already contains a great excess of lime, and add to it an oxide of antimony. In this process, it has been supposed, that the phosphoric acid of the bone or hartshorn will saturate, not only the lime with which it was originally combined, but, in addition to it, a new portion of metallic oxide, and a new portion of lime. For, what little sulphuric acid might, during the process, have been formed by the combustion of the sulphur of the crude antimony, is dissipated, at a much lower temperature than that to which the powder is exposed.

"Every oxide of antimony with which we are acquainted, is volatile at a high degree of heat ; it would therefore be hazardous to assert, that it is possible to preserve always the same proportion of antimony, whatever care may be employed in directing the operation ; and a dissimilarity in the chemical result must necessarily be attended with uncertainty in the medical application.

"To this property may be added another, no less conducive to error. That portion of oxide of antimony which is not volatilized, becomes, in a great measure, insoluble in all the acids. What the effect of the gastric juice may be, upon a substance which resists the action even of nitro-muriatic acid, is not my purpose to determine. It is sufficient for me to say, that, as the quantity of insoluble matter, in a given quantity of Dr. James's Powder, prepared at different times, may vary, the effect of any dose also may differ, according to the proportions of soluble and insoluble matter.

"I look upon it as a fortunate circumstance, that those experiments and observations which I mentioned in the beginning of this paper, existed as a standard to which I might refer my own attempts, and by which I might estimate their validity. Dr. Pearson has proved (as by my own experiments I have found), that in Dr. James's Powder about 28 per cent. resisted the action of every acid. In examining some of the *Pulvis Antimonialis* of the London Pharmacopœia, I found the average quantity of insoluble matter to be about 44 per cent. This proportion, however, was liable to considerable variation *.

"The powder here treated of is denominated, by Dr. Pearson, a triple salt, or real ternary combination of a double basis (lime and antimony), with phosphoric acid. What I have mentioned, with regard to the quantity of acid contained in bone or hartshorn, as being too small to saturate a new portion of these bases, may throw some doubts upon the possibility of any such combination in the present case. But I have made some more direct experiments, which tend to prove, that no such combination does exist.

"I took some white oxide of antimony (formerly called Algoroth Powder), precipitated by water from muriate of antimony, and heated it for a long time with phosphoric acid,

* I find, from the information of several medical gentlemen, that the *Pulvis Antimonialis* is generally considered as stronger than Dr. James's Powder. This seems rather extraordinary, when we consider that the quantity of insoluble matter is greater in the former than in the latter ; and would almost lead us to suspect it to be the active part of the medicine."

I decanted the liquor, and washed the powder that remained. No antimony could be found in the liquor; nor could any traces of phosphoric acid be detected in the residuary oxide of antimony. I then took a solution of muriate of antimony, and divided it into two equal parts: into one, I poured distilled water; and, into the other, a solution of phosphate of soda. In each liquor, a copious precipitate was formed; which precipitates, after being well washed, were dried. The weight of both was the same; whereas it is evident that, had any phosphoric acid been combined with the oxide, there would have been an augmentation of weight in that which was precipitated by the solution of phosphate of soda. This precipitate likewise, upon examination, gave no traces of phosphoric acid. From these experiments it appears, that there exists no combination, which can be denominated a phosphate of antimony.

"To attempt an explanation of the real nature of the powder here spoken of, I had recourse to some experiments of Mons. Berthollet. By detonating sulphuret of antimony and nitrate of potash in a crucible, he obtained a mass, which he reduced to powder, and washed. The liquor gave, upon evaporation, a crystallized salt, which M. Berthollet terms an *antimoniate of potash*. I never could succeed in any attempt to form a similar combination between the above white oxide of antimony and potash, owing, I believe, to the small quantity of oxygen contained therein, compared with that which is combined with the oxide obtained by detonation. I cannot therefore say, that the powder in question is, in any degree, what M. Berthollet would call an *antimoniate of lime*.

"But be the state, whether of mixture or of combination, what it may, my purpose is to endeavour to produce a substance, which, from its more certain mode of preparation, may be more equal and constant in its effects.

"Dissolve, together or separately, in the least possible portion of muriatic acid, equal parts of the fore-mentioned white oxide of antimony and of phosphate of lime*. Pour this solution gradually into distilled water, previously alkalinized by a sufficient quantity of ammonia. A white and abundant precipitate will take place, which, well washed and dried, is the substitute I propose for Dr. James's Powder.

"The theory of this precipitation is so clear and simple, that it does not require any comment. It may be useful, however, to those who wish to make this preparation, to remark, that it is absolutely necessary that the solution of phosphate of lime and of oxide of antimony, in muriatic acid, should, after being well mixed, be poured into the *alkaline liquor*, in order to obtain a precipitate homogeneous throughout the operation. For, should the alkaline liquor be poured into the *acid solution*, the water of the former would act upon the entire mass of oxide of antimony, while the alkali would precipitate the phosphate of lime only as it saturated the acid which held that salt in solution: thus, the precipitate would contain more antimony in the beginning; and, towards the end, the phosphate of lime would be predominant. For the same reason too, a pure alkali is pre-

ferable to its carbonate; for the carbonic acid disengaged, would retain in solution a portion of phosphate of lime.

"Whether this composition be a chemical combination or a mixture, I will not take upon me to determine; but, for the reasons above mentioned, in speaking of Dr. James's Powder, I believe it to be merely a very intimate mixture. At all events, it must be more homogeneous than any that can be prepared in the dry way. It is entirely soluble in every acid that can dissolve either phosphate of lime or oxide of antimony separately; and to have it constantly and uniformly the same, no further address in preparing it is required, than to avoid the errors I have mentioned.

"As, after some medical trials of the powder, it was suggested to me, that it might be more advantageous to render it somewhat stronger, I prepared another portion, by taking two parts of oxide of antimony and but one of phosphate of lime, and precipitating as above described. The medicinal power was then considerably increased.

"Dr. James's Powder is a medicine which has been so long in use, and is so deservedly ranked among the most valuable we possess, that every attempt to render the process for preparing it more simple and more certain, must be allowed to be of some importance. But, whatever reason there was to think, by arguing upon its chemical properties, that I had really succeeded in improving its medicinal virtues, it still remained to be proved, by actual experiment, that the hoped-for success was not merely conjectural. To ascertain this, I gave some of my powder to Dr. Crichton, Dr. Babington, and Mr. Abernethy; gentlemen whose extensive practice and acknowledged skill sufficiently enabled them to judge of its medical properties. They all concur in opinion, that, in its general effects, it agrees with Dr. James's Powder and the *Pulvis Antimonialis*; but, that it is more mild, and consequently may be given in larger quantities, seldom producing nausea or vomiting, in doses of less than eight or ten grains."

JAMSTO, a town of Sweden, in the province of Blekingen, 32 miles W. of Carlscrona.

JANVILLE, a town of France, in the department of Eure and Loire, 20 miles S.E. of Chartres. Long. 1. 47. E. Lat. 48. 12. N.

JAO-TCHOU-FOU, a city of China, in the province of Kiang-si, seated on the river Po, which, at a small distance, enters the lake Po-yang. It commands seven cities of the third class.

JAPARA, a sea-port on the N. coast of the island of Java, with a good harbour. It was the capital of a considerable kingdom, till the Dutch made themselves masters of it; and now they have a colony here, and a considerable trade. It is 253 miles E. by S. of Batavia. Long. 110. 45. E. Lat. 6. 20. S.

JARISBERG, a town of Norway, capital of a district abounding in mines, in the diocese of Aggerhuys, five miles N. of Tomfburg. Long. 10. 10. E. Lat. 58. 55. N.

JAULNAIS, a town of France, in the department of Vienne, six miles N. of Poitiers. Long. 0. 23. E. Lat. 46. 41. N.

* In order to procure the phosphate of lime, I dissolved in muriatic acid a quantity of calcined bone, and precipitated by ammonia in its state of greatest causticity. By this means, the excess of muriatic acid, which held in solution the phosphate of lime, is saturated, and the phosphate is precipitated; but no muriate of lime is decomposed, if the ammonia is quite free from carbonic acid. This is the most direct method of obtaining phosphate of lime pure. This salt is not decomposed, as some have asserted, by muriatic acid, but merely dissolved by it. I have been induced to state fully these particulars, because, from the beneficial effects of this salt in the treatment of rachitis, as proposed by M. Bonhomme (*Annales de Chimie*, vol. xviii. p. 113), it may become of general use. The oxide of antimony I obtained by precipitating, by water, the common butter of antimony of the shops.

ICE-BOAT. See *Ice-Boat, Supp.*

ICHTERHAUSEN, a town of Upper Saxony, in the principality of Gotha, 12 miles E.S.E. of Gotha. Long. 11. 1. E. Lat. 51. 48. N.

ICKWORTH, a town in Suffolk, with a market on Friday. Here are the ruins of an ancient priory, and several Roman coins have been dug up. It is 23 miles N.W. of Ipswich, and 74 N.N.E. of London. Long. 1. 0. E. Lat. 52. 22. N.

IDA, MOUNT. See *CANDIA*.

IDA, a mountain of Turkey in Asia, in Natolia Proper, famous, in ancient fable, for the judgment of Paris, and for being the resort of the gods during the Trojan war.

IDANHA-LA-NOVA, a town of Portugal, in the province of Beira, 3 miles S. W. of Old Idanha. Long. 6. 16. W. Lat. 39. 37. N.

IDANHA-LA-VELLA, a town of Portugal, in the province of Beira. The French took it by assault in 1704. It is seated on the river Ponsul, 25 miles N.E. of Castel Branco, and 20 N.W. of Alcantara. Long. 6. 14. W. Lat. 39. 39. N.

IDRIA, a town of Italy, in Friuli, and in the county of Goritz, with a castle. It belongs to the house of Austria, and there are rich quicksilver mines in the town itself. It is 17 miles N.E. of Goritz, and 25 N. of Trieste. Long. 13. 52. E. Lat. 46. 20. N.

IDSTEIN, a town of Germany, in Wetervaria, which is the residence of a branch of the house of Nassau, to whom it belongs. It is 12 miles N.E. of Mentz. Long. 8. 23. E. Lat. 50. 2. N.

JEAN, St. a town of France, in the department of Moselle and late province of Lorraine. It is seated on the river Sare, 12 miles W. of Deux-Ponts, and 8 N.W. of Sarguemine. Long. 7. 12. E. Lat. 49. 16. N.

JEAN-D'ANGELY, a town of France, in the department of Lower Charente and late province of Saintonge, with a late Benedictine abbey. It was taken from the Huguenots, in 1621, by Lewis XIII. who demolished the fortifications. It is famous for its brandy, and is seated on the river Boutonne, on which are two powder-mills; 15 miles N.E. of Saintes, and 32 S.E. of Rochelle. Long. 0. 20. W. Lat. 45. 50. N.

JEAN-DE-LONE, St. a town of France, in the department of Côte d'Or, and late province of Burgundy, seated on the river Saône, 15 miles S.E. of Dijon, and 155 S.E. of Paris. Long. 5. 19. E. Lat. 47. 8. N.

JEAN-DE-LUZ, St. a town of France, in the department of the Lower Pyrenées, and late province of Basques, the last next Spain, with a harbour. This little town owes its opulence to the cod and whale fishery. It is seated on a small river, near the sea, 10 miles N.E. of Fontarabia, 12 miles S.W. of Bayonne, and 315 S. by W. of Paris. Long. 1. 40. E. Lat. 43. 23. N.

JEAN-DE-MAURIENNE, a town of Savoy, capital of the county of Maurienne, in a valley of the same name, with a bishop's see. It is seated on the river Arc, 15 miles S. by W. of Montier, and 25 N.E. of Grenoble. Long. 6. 20. E. Lat. 45. 17. N.

JEAN-PIED-DE-PORT, St. a considerable town of France, in the department of the Lower Pyrenées, and late province of Lower Navarre. It is seated on the river Nive, and defended by a good citadel, upon an eminence, at the entrance of those passages, or defiles, in the Pyrenées, which, in this country, are called *Ports*. It is 20 miles S.E. of Bayonne, and 30 N.E. of Pampeluna. Long. 1. 33. E. Lat. 43. 12. N.

JED, a river of Roxburghshire, in Scotland, which joins the Teviot, a little below Jedburgh, at a place where the

Marquis of Lothian has an elegant seat, called Mount Teviot; and near this, on the W. side of the river, are the beautiful ruins of an abbey, founded by King David; a part of which ancient pile still serves for a parish church. On the banks of this river, are also several large caverns, which were the strong-holds, or hiding places, of ancient border warriors.

JEGUN, a town of France, in the department of Gers, eight miles N.N.W. of Auch, and 13 S. of Condom. Long. 0. 21. E. Lat. 43. 45. N.

JENA, a strong town of Upper Saxony, in Thuringia, with a university. It is seated on the Sala, 10 miles S.E. of Weimar, and 25 S.E. of Erfurt. Long. 12. 4. E. Lat. 51. 2. N.

JENITZ, a town of Upper Saxony, in the principality of Anhalt Dessau, situate on the Muldau, two miles N.E. of Dessau.

JENITZA, a town of Turkey in Europe, in Macedonia, situate on a lake which communicates with the gulf of Salonichi, by a canal 12 miles long. It is 24 miles W.N.W. of Salonichi.

JENO, a town of Upper Hungary, 20 miles S. of Great Waradin, and 48 N.E. of Segedin. Long. 21. 5. E. Lat. 46. 40. N.

JEREMIE, a town, jurisdiction, and cape, on the southern peninsula of the island of St. Domingo. The town is situate on an eminence, in a fertile soil, particularly excellent for the culture of coffee, five miles W. of St. Domingo. Long. 70. 14. W. Lat. 18. 18. N.

JERICHO, an ancient and famous town of Palestine, built by the Jebusites. It is now called Herubi by the Arabs, and contains only a few wretched huts, where some beggarly Arabs reside. It is five miles W. of the river Jordan, and 20 E. by N. of Jerusalem. Long. 35. 50. E. Lat. 31. 58. N.

JERICHO, a town of Lower Saxony, which gives name to a circle or division of the duchy of Magdeburg. It is situate on the Elbe, 32 miles N.N.E. of Magdeburg.

JERMAH, a town of the kingdom of Fezzan. It is distinguished by the numerous herds of sheep and goats, that are seen around it; by the various and abundant produce of the adjacent fields; and by the numerous and majestic ruins, that exhibit to the inhabitants of its clay-built cottages, inscriptions of which they know not the meaning, and vestiges of greatness to which they are perfectly indifferent. Jermah is 60 miles S.E. of Mourzook. Long. 17. 17. E. Lat. 27. 5. N.

ILAK, or JALAK, a town of Nubia, on the Nile, supposed to fume to be the ancient Meroe. Long. 34. 30. E. Lat. 18. 48. N.

ILLE, a town of France, in the department of the Eastern Pyrenées, 10 miles S.E. of Perpignan. Long. 3. 5. E. Lat. 42. 35. N.

ILLER, a river of Germany, which rises in Tirol, runs N. through Suabia, passing by Kempten, Memmingen, and Kirchberg, and falls into the Danube, at Ulm.

ILLESCAS, a town of Spain, in New Castile, 15 miles S.S.W. of Madrid, and 15 N.N.E. of Toledo.

ILLOCK, a strong town of Slavonia, seated on the Danube, 15 miles from Peterwaradin, and 55 N.W. of Belgrade. Long. 20. 6. E. Lat. 45. 36. N.

ILM, or STADT-ILM, a town of Upper Saxony, in the county of Schwartzburg-Rudolstadt, 14 miles S. of Erfurt.

ILMEN, a lake of Russia, in the government of Novogorod, about forty-eight miles long, and twelve to eighteen wide; Novogorod is situated near it. Long. 34. 0. E. Lat. 58. 0. N.

ILMINSTER, a town in Somersetshire, with a market on Saturday; seated in a dirty bottom, among hills, 26 miles S.W. of Wells, and 137 W. by S. of London. Long. 2. 54. W. Lat. 50. 55. N.

ILSLEY, or **EAST ILSLEY**, a town of England, in the county of Berks, with a weekly market on Wednesday: 14 miles N.W. of Reading, and 53 W. of London. Long. 1. 12. W. Lat. 51. 32. N.

ILST, or **YLSST**, a town in the state of Friesland, defended by a ditch filled with the waters of the river Weymer: 12 miles N.E. Staveren, and five S.E. Bolsward.

ILSTROP, a town of Sweden, in the province of West Gothland: 27 miles S.S.E. of Gotheborg. Long. 11. 51. E. Lat. 57. 23. N.

ILTEN, a town of Germany, in the circle of Lower Saxony, and principality of Lunenburg: sixteen miles S.S.W. of Zell.

ILTZHOFEN, a town of Germany, in the circle of Swabia, in the territory of Halle: eight miles N.E. of Halle.

IMBRO, an island in the Grecian Archipelago, mountainous and woody, with plenty of game: it is about 20 miles in circumference, and contains five villages, two of which are defended by castles. Long. 25. 44. E. Ferro. Lat. 40. 10. N.

IMENSTADT, a town of Suabia, 20 miles E. of Lindau. Long. 10. 20. E. Lat. 47. 35. N.

IMMENHAUSEN, a town of Germany, in the principality of Hesse Cassel, eight miles N.N.W. of Cassel, and 16 N.E. of Naumburg.

IMMENSTADT, a town of Suabia, in the county of Konigsberg, situate on a small river, which soon after falls into the Iller, 12 miles S. of Kempten, and 14 S.E. of Iny.

INDAPOUR, a sea-port on the S.W. coast of the island of Sumatra. Long. 100. 50. E. Lat. 1. 30. S.

INDEN HOTUN, a town of Chinese Tartary, the capital of the Manchevo Tartars, where they began to establish their empire over China. It is 420 miles E.N.E. of Pekin. Long. 124. 36. E. Lat. 41. 45. N.

INDIGO (*Encycl.*). The following is an extract of a Memoir on the Cultivation of the Indigo-plant, and the preparation of Indigo, read by Citizen Brulley, at a public meeting of the Lyceum of Arts, in Paris.

"Indigo," says he, "is known to be a precipitated fecula, dried and reduced into a solid mass, light, brittle, and of a very deep azure colour. This substance is of great utility in the arts. A great consumption is made of it in dyeing, painting, bleaching, and other processes of different manufactures.

"The vegetable which produces this colouring fecula is termed the indigo-plant, *indigo-fera*. It is of the genus of the polypetal plants, of the family of the leguminous, and has much resemblance with the *Galegas*.

"There are twenty-seven species of indigo-plants. To enumerate their differences and describe their botanical characters would be superfluous. It will be sufficient to direct our attention to the most interesting species, namely, that which yields the best indigo. It is termed *indigo-franc*, *indigo-fero anil*. It is indigenous in America; and is cultivated with success in the Southern parts of this country, and in the Antilles. In these islands is found a variety of the best species of indigo, which grows to twice the height of the indigo-franc. It is termed the wild indigo-plant or maron.

"It is to be remarked, that in the French colonies in the Antilles, where fine indigo is prepared, the seed of the indigo-franc is purposely mixed with that of the indigo-maron, in order to obtain a more considerable and better product. The purposes for which this mixture is made, as well as all the operations belonging to the cultivation of the indigo-plant,

are related in a detailed memoir that has been laid before the Lyceum of Arts. For the present we shall confine ourselves to giving an account of an essential improvement in the preparation of indigo.

"It will undoubtedly be heard with astonishment, that though indigo has been manufactured during the space of nearly a century, its preparation still consists in such imperfect approximations, that, even with the best manufacturer, generally ten, fifteen, and even to the number of twenty-five tubs fail, out of a hundred which he undertakes. Sometimes even, either owing to want of experience or the contrarieties of temperature, a much larger number of tubs fail, and ruin the proprietor, who reckons upon large profits: hence in part arises the high price of indigo.

"But should the proprietor of indigo-plants be secured, by means of a certain process, against the danger of losing the fruits of his expence and labour, he would then be able to sell his indigo at a cheaper rate. This would be a great advantage to the arts and manufactures, and consequently to the commerce of France.

"This great advantage France will at some future period be able to enjoy, and she will owe it to the labours and intelligence of one of the colonial proprietors of St. Domingo, who is at present in France, and one of the free associates of the Lyceum of Arts, I mean Citizen Nazon. Judicious observations and a long course of experience have convinced him that it is possible to ensure the success of all the tubs of indigo.

"In order to obtain this colouring substance, the indigo-plant is cut when it has arrived at its maturity. The whole is put to macerate in a basin of brick-work, which is termed the tub (*cure*). Its dimensions are generally twelve feet.

"To bring the maceration to its ultimate point, requires from fifteen to thirty and even thirty-six hours, more or less, according to the temperature of the atmosphere at the time when the operation is performed; it is also necessary to take into consideration the quality of the indigo-plant, the nature of the soil that has produced it, and that of the water in which it is immersed.

"The first indication from which it is judged that the maceration begins to approach its ultimate point, is the sinking of the scum, which elevates itself in the space of about half a foot, which has been left empty in the tub, including the plants. When this scum has become a kind of crust of a copper-blue colour, the moment is concluded to be near at hand, at which the plants will be sufficiently macerated. However this indication is insufficient and often even fallacious. There is another upon which greater reliance is placed: it consists in drawing off a small quantity of the water by means of a cock placed at the lower part of the tub. It is received into a silver cup, and it is observed whether the fecula tends to precipitate itself to the bottom of the cup: when this is the case, it is concluded that the plants have attained that degree of maceration which is requisite for obtaining the indigo from them.

"Such was the process most generally practised; but it too often gave rise to error. To avoid this we have a sure means, which consists in accurately observing the water contained in the cup: five or six minutes after it has been poured into it, it forms round the sides of the cup a ring or edge of fecula, which at first is of a green colour and afterwards becomes blue. As long as the maceration has not yet been carried to the proper pitch, this ring detaches itself, with difficulty from the sides of the cup. But at last it is seen to precipitate and concentrate itself at the bottom of the vessel, always towards the centre, under the water, which has become limpid, though with a yellowish tinge.

"When these appearances are observed, they infallibly indicate the success of this first operation. The water is then drawn off into a second basin or tub, placed beneath the first. This second tub is termed *batterie*, as its use is for beating the water still charged with the fecula. In order that it may separate quickly, it is agitated. This operation is performed either by the labour of the hands, or by means of a mill. It is of essential consequence not to agitate it for too great a length of time: excessive agitation mixes anew the fecula with the water, from which it does not separate any more, and the tub fails. Instead of indigo, we obtain nothing but muddy water.

"This latter inconvenience may easily be obviated by a little attention. When we have discovered that the fecula is sufficiently united, we draw off the water from the *batterie* into a third and smaller basin, which is termed the *diablotin*. We then find the bottom of the *batterie* covered with a very liquid blue paste; this is received into bags of coarse linen cloth, of the form of inverted cones, which suffer the watery part to run off. These bags are afterwards emptied of their contents upon tables in the drying rooms, where this blue paste is kneaded, and after it has acquired a denser consistence, it is spread out and cut into small squares, in order that it may dry the sooner. The manufacture of the indigo is now completed, and it is soon after sufficiently dry to be introduced into commerce.

"I omit the details contained in a longer memoir, of which I confine myself to giving an extract. What was of importance to be made known, is that there exists a certain process, by following which one may be secure against failure in the manufacture of indigo.

"Experience has shewn that this process has never failed of complete success; of this, more than 1500 tubs of indigo

manufactured in different parts of St. Domingo, have furnished the proofs."

INDUSTRY. "The following extract from an account of a Society, for the promotion of industry, in the county of Essex, by John Conyers, esq. appears in the Reports of the Society for bettering the Condition of the Poor, &c.

In November, 1794, a meeting was held at Epping in Essex, to take into consideration a proposal for the promotion of industry in that neighbourhood*. An association was formed of fourteen parishes, the parochial subscription being agreed to be one per cent. on their rates, and that of individuals not more than five shillings each: This, with a few benefactions, produced in 1795, the sum of 154l. which was purposed to be set apart as a fund† for giving annual presents of clothing to those children who should produce the best specimens of industry; and sums of money, not exceeding 10l. each, for any such young person on their going to apprenticeship, or service, or being married, according to the number of annual prizes such young persons should have obtained; and also rewards in money to poor persons who had brought up four or more children to the age of fourteen years without parish relief, and to overseers who should distinguish themselves in the execution of their office, and in the employment of the poor. The society at the same time took measures for having work-rooms and teachers provided in the different parishes, and spinning wheels and a supply of work for the poor at their own houses; and also for ensuring to them that they should be paid by their parishes the full price‡ of their work; which, though making a difference of only three pence or four pence in the pound, and being a very trifling expence to the parish, was, nevertheless, to the individual who received it, a very powerful reward and encouragement.

* The plan alluded to "was founded on one of the wisest and most humane laws, which this country has to boast of; and which was passed in the forty-third year of Queen Elizabeth's reign, for the maintenance and employment of the poor. The object of this act was; not merely to relieve the *indigent*, but to prevent *indigence* itself. It was calculated not only to guard against poverty and distress, but against vice and immorality also. It regarded the mental, as well as the corporeal welfare of those whom it professed to protect. He could not avoid observing the superiority of the act just mentioned, over some of the acts which have been since passed for the regulation of the poor; acts which permitted parishes to *farm their poor to governors of workhouses* (whose interest it was to make as great a profit of them as possible), and to *affix badges to the clothes of beggars*. These regulations had indeed made it painful to indigent persons of any sensibility to apply for relief, which the infirmities and calamities, incident to human nature, rendered necessary for them; but neither of these measures had reduced, or was likely to reduce, the number of the poor, or to correct the profligacy of their manners."

† The reader is referred for further particulars, to a printed account of the institution, published for the benefit of the Society, and sold by Cadell and Davies in the Strand.

‡ The poor, who might otherwise be inclined to spin yarn, labour under great discouragement, arising from the manner in which they are paid for their work when finished. The shop-keeper of whom they get their yarn, professes to pay them at the rate of a penny per hank; but, when the work is returned to him, he deducts three pence or four pence (or in cases when the trade has been slack, five pence) from every pound of wool spun. This is considered as the woolstapler's profit. Thus an indifferent spinner, who makes but twelve or perhaps ten hanks of a pound of yarn, gets but eight pence or six pence for her work. But this is not the only discouragement. The shop-keeper makes a favour of supplying her with yarn, and will not supply her with any, unless she will consent, not only to take out in shop goods the amount of what she earns by spinning, but will engage to purchase of him alone such necessaries for her family as his shop will furnish. By these means she is precluded from laying out her money at any other shop, where she thinks she could get articles of a better quality, or at a cheaper rate; and is obliged to submit to any imposition, which a grasping shop-keeper may lay upon her.—The committee of industry in Essex, considering their fund as insufficient for the purpose of relieving the poor from this oppression, by paying them the full price of their work, has recommended the plan to parishes. In that of Chipping Ongar, by the attention of the Rev. Mr. Herringham and some of the principal inhabitants of the parish, this plan has been carried into execution, and has produced a very good effect. The parish procures a flock of wool from a worsted maker: this is deposited at the workhouse; and the poor, upon application to the person who has the management of this business, obtain from him a ticket; which being taken to the mistress of the workhouse, she delivers the wool, and files the ticket. The work, when finished, is carried to the person who gave the ticket, and he immediately makes a payment in money, deducting (for the present) four pence for every pound of work. This is done merely to prevent carelessness in spinning, or frauds in reeling; and the groats so deducted are withheld, till the whole flock of wool is returned to the manufacturer, where every spinner's

At a meeting of the society on the 31st of December, 1795, there were 52 children candidates for prizes, as spinners and knitters; and 21 parents, who had brought up four or more children in lawful wedlock without parish relief. The parents received donations, not exceeding two guineas each, varied according to the number of their children, and other circumstances: and 31 of the children received presents, in clothing, not exceeding twenty shillings each, according to their different merits. They also received, with the premiums, certificates of good behaviour, which they consider as marks of distinction, and of which they will feel the benefit through life.—In the ensuing year, an equal number of parents received donations, on account of the families they had brought up; and clothing, to the amount of 30*l.* 15*s.* was given to 37 children, who had then produced the specimens of industry, in spinning, knitting, and plain needle-work.—In the present year (Jan. 1798), donations of clothing have been made to 61 industrious children to the amount of 51*l.* 15*s.*; and to parents, the sum of 23*l.* 12*s.* 6*d.* on account of the families which they have brought up.

This establishment, formed on the same plan as that of the Rev. Mr. Bowyer in Lincolnshire, and rendered successful by the great attention given to it by the trustees of the different districts, requires very little comment. It is obvious that its operation, by the most pleasing and acceptable means, those of *encouragement and attention*, must be to increase the industry and good habits of the poor in the neighbourhood, and greatly to improve the rising generation. The donations may appear small to those who have not sufficiently attended to the circumstances of the labouring poor, to learn that the very trifling rewards, given with *kindness*, in a *disinterested and honourable* way, and unincumbered with any *humiliating condition*, will do wonders in exciting the industry and economy of the cottager; and in attaching him, by every tie of gratitude and affection, to those who feel sufficiently the obligation of *their own duty*, to become the friends and benefactors of the poor.—We cannot omit taking this opportunity to observe, that every measure of this kind should be so framed and conducted, that the motives may not merely escape the *guilt of being interested*, but be exempt from the *discredit of being suspected*.

In April, 1796, a meeting of the inhabitants of Lewisham was called, for the purpose of setting up a school of industry, for the children of that parish. The subscribers came to a resolution to prepare accommodations for the reception of 60 children, and the house was opened on the 30th of May, 1796.

The children are admitted on the recommendation of subscribers, and by order of the committee. In summer the school is open from six o'clock in the morning to six at night, and in winter during the hours of daylight; but the children have usually finished their task by two o'clock; they then go away, unless, which is the case with some of them, they prefer to work additional hours on their own account. They

receive two meals a-day, a breakfast and a dinner; one hour being allowed at dinner, and half an hour at breakfast. They are employed in spinning, winding, and knitting; and one boy in weaving. The present weaver is an active boy, not ten years of age; his predecessor had been employed but a very little time, before he had an offer of a permanent engagement at a cotton mill. In rotation they all receive lessons in reading. The children's weekly maintenance is estimated at *1*s.* 6*d.** per head; and where they earn more in any week (as some do 6*d.* a-week, and some *1*s.**) they are paid, and carry home the overplus. One little boy (who came from the work-house with but a bad character, but who now possesses a very good one) earns not less than an extra shilling a-week; he has during the last month, put into the master's hands, in trust for him, the sum of 5*s.* In the case of the parish children, who are entirely maintained at the parish expence, there is, as yet, no certain allowance; but they are rewarded according to their industry and good behaviour. It is however in contemplation to make them a certain allowance; probably a sixth of their weekly earnings.

Spinning wheels are lent, and materials are furnished at home, for any of the adult inhabitants of the parish, who wish employment; and they are paid for their work upon delivery. A suit of clothes, made of the cloth and camblet of their own manufacture, is yearly given to each of the children, who attend the school, as a reward for their good behaviour, and to enable them to appear decently and regularly at church on Sundays.

In the infancy of a manufacture, there is necessarily a loss from the waste of raw materials. In the present instance it must be admitted, that very little profit accrued from the labour of the children, during the first six months: but for the next half-year, the profit was gradually increasing; and it advanced so much, that at the end of the year, on the 30th of May, 1797, the net profit of the manufactory had amounted to 55*l.*—That profit may be fairly stated at *100*l.** a-year in future. The school of industry now supplies the parish work-house with most of their articles of clothing: besides which, a stock of knitted stockings, and of camblets and worsted, is kept in the warehouse, to be sold by wholesale and retail. The demand for them has been gradually increasing; and the inhabitants have found their advantage in the purchase of them.

The weekly expence of the family, upon an average, is 3*d.* a-head per day; including the * 20 parish children, and the master and mistress and their two children, who have their three meals a-day, and lodge in the house. For each of the parish children the establishment is allowed the sum of 3*s.* a-week; which is near 50*l.* a-year less than the expence of merely feeding them in the work-house, during the preceding year.

The following is a pretty correct estimate of the expences and receipts of the establishment.

work is ticked with her name.—Upon receiving the approbation of the manufacturer as to the work, the spinners are paid their groats; and far from complaining of their being withheld in the first instance, they express a satisfaction at having “a lump of money” as they call it, to lay out in clothing. The account is kept as follows:

Names.	Work issued.	When issued.	When returned.	No. of barks.	Money paid.	Groats due.
M. Westwood.	3 lb.	Mar. 15, 1798.	Mar. 19.	3 ⁰	2 <i>s.</i> 0 <i>d.</i>	3
Ann Smith.	4 lb.	Mar. 16, 1798.	Mar. 21.	4 ⁸	2 <i>s.</i> 8 <i>d.</i>	4

* This number occasionally varies; there have been 23 in the school at a time: but the number will probably be much less.

PAYMENTS.

Maintenance of the family, clothing, &c.	250	0
Wages of master and mistress; 10s. per week. <i>He is extremely well acquainted with every process in the woollen manufacture</i>	26	0
School mistress; who teaches the children to read	3	0
Rent of the house, and the wooden building behind, <i>It was a blacksmith's shop, but is now the school and work-room</i>	13	10
Insurance	1	0
Mr. Hall, the manager, who does not live in the house, but attends occasionally. <i>He purchases the provisions and materials for the work, and provides a sale for the articles of manufacture</i>	30	0
Incidents, gratuity to the secretary, &c.	26	10
	350	0

RECEIPTS.

Parish rents appropriated to the institution	60	0
Allowance for 20 parish children, at 3s. a-week each	156	0
Profits of manufactory per annum; supposed	100	0
	316	0
Deficiency in the infancy of the establishment, to be made good by subscription	34	0
	£. 350	0

There are 48 persons, including the master and mistress and their two children, who breakfast and dine regularly in the house. The table of diet, and quantities allowed for them, which are quite as much as they wish, are as follows: Monday. Breakfast. Rice milk; made of 4 lb. of rice, 1 lb. of flour, 1 lb. of sugar, and 4 quarts of milk. Dinner. 20 lb. of beef, and a peck of potatoes, with 17 lb. of bread.

Tuesday. Breakfast. Broth and 13 lb. of bread. Dinner. Boiled rice; consisting of 15 lb. of rice, 1½ lb. of sugar, and 3 quarts of milk.

Wednesday. Same as Monday.

Thursday. Same as Tuesday.

Friday. Breakfast. Gruel, made of 2 quarts of oatmeal, with the allowance of 1 lb. of butter, 11 lb. of bread, and ½ lb. of salt.

Dinner. Beef-stew; consisting of 22 lb. of flints of beef, and a peck of potatoes, with 17 lb. of bread.

Saturday. Same as Tuesday and Thursday.

The workhouse children and the master's family (in all 24) have, for their Sunday breakfast, gruel, made of one quart of oatmeal, with the allowance of half a pound of butter 8 lb. 10 oz. of bread, and 4 oz. of salt; for dinner, 12 lb. of beef, half a peck of potatoes, 5 lb. 5 oz. of bread, 8 oz. of salt, and 3 quarts of beer; for supper on Sunday, 6 lb. 8 oz. of bread, ¾ lb. of cheese, and 2 quarts of beer, and the same supper on the other days of the week, with a little additional allowance of bread, of which they seem to require more on week-days than on Sunday. The price of the beef is 3s. a stone, or 4½d. per pound; of the 2 flints of beef (weight per average, including bone, 22 lb.) 2s. 6d.; of potatoes 20d. a bushel; of their bread, which is good seconds, 7½d. the quarter loaf, or rather more than 1½d. a pound.

By the preceding bill of fare it will appear, that the cheap article of rice now forms a very considerable proportion of the children's diet. The use of it has been gradually increased, partly in consequence of their having acquired a greater fondness for it than for other food, and partly from the observation of its nutritive and wholesome qualities. Its average increase, on boiling in mere water, has been found to be fourfold: with

the addition of milk, it is much more.—The good health which the children have uniformly enjoyed has been remarkable: several of them who were weak and sickly at their admission, have since become healthy and vigorous; to which their new habits of cleanliness and regularity, and the exercise of spinning by hand-wheels in an airy apartment, as well as their diet, which is nutritious and plentiful, may probably have conducted. The improvement in their morals and behaviour has been equally satisfactory to the wives of the promoters of the institution. It is found that, in proportion as the children become skilful and useful, their parents and friends, learning their value, become desirous of withdrawing them, because they can employ them to more advantage. This has already been the case of many, and generally has happened in the course of six months after they have been received into the school; as the habits of order and industry, which the children acquire there, render them so desirable as apprentices, that, though there has been a difficulty heretofore in finding situations in private families for any parish children, because *they came out of a workhouse*, yet they are now sought for, and the parish is relieved from the expence of their maintenance at a much earlier age, than if they had been kept in the workhouse.

One other very great advantage resulting from this establishment, and from its necessary connection with the poor of the parish, is, that the gentlemen who have interested themselves in its success, have thereby been induced to take a very active part in the management of the poor; and one of them, Robert Saunders, esq. is now serving the office of overseer for his second year. It will be obvious that a greater benefit to the poor, and a considerable saving to the parish, must be the consequences of such an institution. The poor are more happy, and better taken care of, than they were before; and the saving, from the new system, will hardly be less than 500s. a-year.

By the preceding account it will appear, how much may, at a very small expence, be effected by a judicious and spirited adoption of one of the measures directed by the statute 43d Elizabeth. It is needless to observe upon the effects which this establishment has necessarily produced on the morals, the cleanliness, and the health of the children; who, being now habituated to industry, instructed in reading, and accustomed to a regular attendance on divine service, are bred up in the knowledge and practice of obedience and reverence to their Creator, and of that utility, which he has enjoined as a duty to their fellow-creatures.

Besides the advantage of separating the parish children from the contagion of those dissolute and profligate characters, which are to be found in all workhouses, the maintaining of them at a less expence, and the educating of them in the habits of industry and virtue (circumstances which apply to the parish children removed from the workhouse to the school of industry), it should be observed, that a very great relief is also given to the other poor of the parish, by easing the parents of the burthen of maintaining so many of their children, and by giving the mothers profitable employment at home; a relief that, by improving the circumstances of the cottager, has a just and honourable tendency to reduce the poor's rates.—Establishments, like that at Lewistham, have also the merit of correcting the little pilfering habits of the infant poor, the source of so many vices and crimes in society; and of preserving them from idleness and bad example, and training them in virtuous and industrious habits, so as to make them blessings to their parents, and useful and valuable members of society."

For the benefit of the adult poor, a society was instituted at Wendover, by the Rev. Joseph Smith, who, in the ac-

count of the steps taken to establish it, says, "I confined my endeavours at the commencement, to inducing, in all my poorer neighbours, a habit of saving some part of their earnings, during that period of the year when they could best spare it, against a time when they would most want it. To the poor, therefore, both male and female, and of all ages, I proposed that part of the plan only; as the means of laying up, from the excess of the most productive part of the year, that which might procure them comfort and relief at the season the least productive, and the most expensive; and, in order to make it generally known, I employed the schoolboys at the writing school in the parish, to copy out proposals, for a weekly contribution of money during the summer months, to be repaid them with a considerable increase, the addition of one-third at least, at the end of the year. Certain gentlemen were named to "receive at their houses weekly sums, of 2d, 3d, 6d, or more, and deposit the same in a box provided for that purpose, and keep an exact account of the same in a book. It is proposed that Sunday morning be the time of making the payments; because, among the other duties of that day, the labourer can then best spare time to look forward for the future comfort of his family; and because they who have attended their duty at church, after having paid in their weekly six-pence to accumulate for their families, will feel the less inclination to spend another six-pence idly at the ale-house. At Christmas the distribution will be made; that is to say, for every three shillings paid in, not less than four shillings shall be returned; and so in proportion. Further attention and consideration will be paid to those who have made their payments regularly, and who have been regular in their duties at church. Any person may receive back his or her own money at any time before Christmas; but without any addition thereto. It is not intended that this act of prudence in the poor should preclude them from parish relief, in case of sickness, or in case of want of work, during severe weather; but it is meant to enable them to purchase a warm garment, half a load of wood, or any other domestic comfort they may want at the most inclement season. The donations and friendly communications of any of the parishioners to this undertaking, are thankfully received."

Copies of this paper were placed on the church doors, and distributed in the parish. The boys also, who had received a trifling gratuity for making the copies, contributed very much to make the terms known to their parents and connections. "We gave notice of receiving contributions," says Mr. Smith, "on the first Sunday in May.—The labourers have embraced the offer held out to them, in a manner extremely gratifying; the society already consisting of near sixty subscribing labourers, who bring their subscriptions very regularly after morning service; none less than six pence, very many of them a shilling."

The above may be deserving of attention in those country parishes, which, like Wendover, are not capable of receiving the entire benefit of the plan adopted in the bishopric of Durham. It is certainly of great importance, to induce habits of frugality and foresight, among the poor. These good qualities are rarely unaccompanied by the other virtues; and when they are wanting, there can be little hope of strict moral or religious character among men, who are to subsist on the produce of their daily labour.

There is a peculiar advantage in the Wendover society, that neither time, nor money, is expended in ale-house meetings. There are no incidental charges to exhaust the common purse. There is a sure and certain benefit to the members; and there exists no expense to diminish the amount of it. Friendly societies, though very deserving of encouragement, are not always equal and certain in their effects.

If not conducted properly, they may degenerate into drunken meetings; they may be disgraced by fraud, be directed by a party, and become the instruments of sedition. From these inconveniences the society at Wendover is exempt. Their one entertainment will be only an annual addition given to their family dinner at home, on Christmas-day.

A great advantage of this and of some other similar establishments (besides that important one of uniting persons together for a common and useful purpose) is, that they contribute to make the rich and the poor more known to, and more connected with, each other; and to give those who are desirous of making a proper use of their property, an opportunity of appreciating correctly the character and situation of most of the cottagers in their neighbourhood.

The establishment of this society will, it is to be hoped, prove of much greater advantage to the members, than the mere amount of the addition to their own savings; and will be the cause of their beginning the new year not only happily, but wisely. We understand they derive permanent good effects already from their frugality and prudence; Mr. Smith having established the society on a more durable footing, and with additional improvement and benefit to the members.

INFECTION (*Encycl.*). Under the article **CONTAGION**, we have spoken fully on this subject; and have under **FEVER** in this **SUPPLEMENT**, inserted some useful cautions for the security of those who are necessarily exposed to danger from this cause. The following paper on the means of purifying infectious air, &c. is extracted from a work of Citizen Guyton de Morveau, by Citizen Deyeux, and published in the *Annales de Chimie*.

"Amongst the important discoveries, which we owe to chemistry (says the latter writer), those chiefly deserve our attention, which, at the same time that they present us with facts valuable in a scientific point of view, afford also results from which great advantages may accrue to society in general. It is then, chiefly, that the utility of chemistry ceases to be a problem, and that we are compelled to acknowledge the just title, which this science has to be ranked amongst those, the study of which ought most assiduously to be cultivated.

"The work, of which I am about to give an extract, we owe to a distinguished man of learning, a profound chemist, who, having meditated for a long time upon various important phenomena, that had presented themselves to him under a multitude of circumstances, conceived that he might make use of the knowledge which he had acquired, in order to combat one of those scourges which desolate the human race, and against which all the art of medicine has hitherto proved insufficient.

"Having once conceived this idea, he had a difficult task to accomplish. Citizen Guyton, however, has surmounted all the obstacles that stood in his way, and, by his courage, his patience, and perseverance, has obtained such satisfactory results, that he thought he ought no longer to withhold from the public the fruits of his labours.

"His work is divided into six parts. In the first, the author gives an historical sketch of the experiments which he made in the year 1773, with the muriatic acid employed in fumigations.

"Already, at this period, he says, attempts had been made to disinfect the air tainted by putrid miasmata; but, as all the substances that had been employed for this purpose had not produced the effects that were expected from them, I imagined, after long reflection upon the subject, that I ought to turn my attention to the muriatic acid; as the great expansibility of its vapours led me to suspect, that they might be proper for seizing upon the ammoniac, which I then supposed to accompany all the odorous putrid miasmata, and for

compelling it to quit them, and leave them to subside by their own gravity.

"It was necessary to ascertain the powers of the remedy, which theory seemed to point out, by the test of experiment: Citizen Guyton, therefore, availed himself of a circumstance, which he thought it the more necessary for him to make use of, as it afforded him an opportunity of making an experiment upon a large scale, and such as he stood in need of, in order to obtain results concerning the nature of which no doubt could remain.

"In the course of the winter of 1773, the burying-vaults of the principal church at Dijon being found to be entirely full, it was ordered, that they should be cleared. Some precautions that had been taken, with a view to prevent the exhalation of the putrid vapours, which, it was presumed, must arise during this operation, having proved unsuccessful, the infection soon became so insupportable, that it was necessary to abandon the church. In the mean time, the putrid effluvia diffused themselves among the neighbouring houses, and then gave rise to a contagious fever.

"It was then that it was thought proper to consult Citizen Guyton, who, after having informed himself of all the precautions that had been used, proposed fumigations with muriatic acid.

"His advice was adopted; and the effects were so speedy and decided, that, four days after, the church was re-opened, and all the ecclesiastical offices were re-established in it, without danger, and even without apprehension.

"Similar fumigations were afterwards practised in the dungeons of the prisons of Dijon, in which a contagious fever had produced such terrible effects, that the greater part of the prisoners perished.

"Though the infection was of the most virulent nature, it was at last so completely destroyed, that a student of surgery requested leave to sleep in one of the dungeons that had been disinfected.

"Success so decided, naturally produced a great deal of confidence in the remedy. We find, therefore, that when the *Conseil de Sante & Vieq d'Azyr* were consulted upon the means of stopping the progress of a contagion that had appeared in the military hospitals, and in the stables where a great number of cattle were kept, they did not hesitate to prescribe fumigations with muriatic acid, as the most certain remedy to which they could have recourse.

"A circumstance, which certainly ought to excite surprise, is, that the persons, to whom the care of executing these fumigations was intrusted, neglected to give sufficient publicity to results so satisfactory as those which it is known they obtained.

"This neglect, as Citizen Guyton very justly remarks, is the more unpardonable, as it has tended to retard the adoption of a process, which, in many cases, would have proved invaluable, as, by means of it, many thousands of persons might have escaped the effects of contagions, to which they have fallen sacrifices, on account of the insufficiency of the means that were employed against them.

"The muriatic is not, it appears, the only acid which has been considered capable of depriving the air of its contagious quality. This we find from the account which the author gives, in the second part of his treatise, of experiments made in foreign countries with fumigations of different mineral acids.

"One of the oldest works relative to this subject, which fell into the hands of Citizen Guyton, is entitled *Rapport des Experiences faites en Angleterre, par Ordre de l'Admirauté, à bord du Vaisseau d'Hôpital, l'Union*.

"The Lords of the Admiralty having requested Dr. Smith

to direct means for putting a stop to the contagion that had appeared on board the *Union*, he advised Mr. Menzies, surgeon to the navy, to try fumigations with nitric acid. These fumigations were made with great care, and were attended with such success, that, from the day on which they were begun to be employed, the mortality ceased, and the greater part of the accidents occasioned by the contagion disappeared.

"Some time after, the same means were employed for destroying the contagion on board of the *Ratsevan*, and the *Revel* frigate, in which a malignant fever had also broke out.

"The success which Mr. Menzies obtained in these three instances left no doubt in his mind of the utility of the process which he had employed, and of the necessity of having recourse to it, whenever it should be necessary to purify the air of putrid miasmata.

"The same opinion was also adopted by Dr. Smith; for he concludes the report, in which the above-mentioned facts are related, with saying, That the experiments of Mr. Menzies, clearly establish two facts; in the first place, that the nitric acid has the power of destroying contagion; secondly, that it may be employed without producing troublesome effects upon the persons who respire it. He considers this discovery as being applicable to every kind of contagion, and even to that of the plague. Considered in this last point of view, he thinks it ought to interest every nation, &c.

"The beneficial effects of the nitric acid, seem to be as decidedly established as those of the muriatic; however, as Mr. Menzies very properly observes, the use of the nitric acid is only exempt from inconvenience, as long as we are able to reduce it into vapour, without its being converted into nitrous acid; for, otherwise, it would occasion accidents, which it would be difficult to remedy.

"Mr. Cruikshanks appears also to have employed acid fumigations; however, it is evident that he has given the preference to the oxygenated muriatic acid gas.

"The process which he employs for obtaining it is very simple: it consists in mixing accurately two parts of common salt, and one part of the black oxyd of manganese. After having diluted this mixture with a small quantity of water, concentrated sulphuric acid is gradually added to it. Immediately a large extrication of vapours takes place, which unite with the putrid effluvia in such a manner, that the air, in the place where the experiment is made, is soon found to be purified.

"In Spain, the fumigations with simple muriatic acid, reduced to the state of vapour, are generally adopted; and they are there considered to be so little capable of producing accidents, that they are performed even in chambers actually inhabited.

"Finally, it appears, that similar fumigations have frequently been practised in France, and that whenever they have been properly conducted, they have been attended with success.

"In the third part of his treatise, the author makes some reflections on the effects of acid fumigations, and examines the different opinions that have been advanced, in order to explain their mode of operation.

"The principal problem to be resolved in seeking the means of purifying a mass of infected air, was to find out agents that possessed the power of destroying the contagious miasmata, and particularly the putrid smell that always indicates their presence. It has been shewn, in the two first parts of this work, that some of the mineral acids had produced this two-fold effect; but it was useful to enquire, whether these acids acted in the same manner, and whether the results

which they presented were equally satisfactory. It was necessary also to ascertain, whether their operation ought to be attributed to oxygen; whether ammoniac formed an essential part of the putrid effluvia; whether they were always accompanied with carbonic acid gas; and, finally, whether the vegetable acids might not be employed with advantage.

"The solution of all these questions could not fail to throw a great deal of light upon the causes and immediate effects of contagion; the author, therefore, thought it an object that particularly demanded his attention. For this purpose, he instituted a course of experiments, both with a view to investigate the nature of the putrid miasmata, and to ascertain the mode of operation of the agents with which they are brought into contact.

"The infected air upon which he performed his experiments, was obtained from slices of raw beef, which he had expressly placed in a situation to putrify. This air, which possessed all the properties that were required, had scarcely been mixed with lime-water, when it immediately appeared that this was decomposed. The same circumstance took place with the solutions of the nitrates of silver and mercury; but, notwithstanding this decomposition, the fetid smell continued to be perceived as before.

"Slips of paper, stained with fernambour, the petals of mallows, curcuma, and a solution of copper, were suspended in vessels filled with the putrid air. After having remained there for the space of twenty-four hours, the colours appeared somewhat fainter, but they had undergone no change that indicated the presence of ammoniac.

"Several metallic oxids, such as that of zinc, the black oxyd of manganese, the brown oxyd of lead, &c. having been left for several days in contact with the same putrid gas, exhibited no change of colour, and had produced no disengagement of ammoniac.

"From the results of these, and several other similar experiments, the author draws the following inferences: 1. That air impregnated with putrid effluvia contains more carbonic acid than the ordinary air of the atmosphere. 2. That the effects of putrid air are entirely independent of the presence of carbonic acid; since, after the separation of this acid, the air still retains its putrid smell. 3. That putrid air does not contain ammoniac in a free state, as it does not change the colours of stained paper that is placed in it.

"These points being ascertained, Citizen Guyton subjected a certain quantity of putrid air to the test of the eudiometer; not so much with a view to determine its degree of salubrity, as to ascertain in what proportion oxygen gas was contained in it.

"The result of this second set of experiments soon proved, that the putrid air contained very nearly as much oxygen gas as the ordinary air of the atmosphere; and that, consequently, the deleterious effects of the putrid air ought not to be attributed to the deficiency of oxygen gas.

"The nature of the effluvia that rendered the air fetid, still remained to be investigated. In order to obtain a perfect knowledge of their nature, one must have been able to analyse these effluvia; but, unfortunately, the chemical means were found inadequate to the purpose.

"All that could be presumed was, that these putrid effluvia, being compound substances, must, like all other compound bodies, be susceptible of decomposition, whenever we present to them agents possessing greater affinity with one or more of their elements than these elements have with each other.

"Here also experiments were necessary, in order to ascertain in how far this idea might be founded. We shall soon

see how useful the results of those which Citizen Guyton has instituted for this purpose have been to him, and what advantages he has derived from them, in order to fix once for all the opinions that ought to be adopted, with respect to the choice of the means to be employed for disinfecting air vitiated by putrid miasmata.

"Convinced that the atmospheric air ought to be considered as serving merely as a vehicle to the putrid effluvia, the author brought fetid air into contact with various odorous vapours, such as are extricated during the combustion of benzoin, aromatic plants, &c. He afterwards strongly agitated another quantity of these putrid effluvia with the solutions of myrrh, benzoin, and balsam of Peru in alcohol. The result of all these trials was not satisfactory, for the putrid smell still continued to be perceptible.

"The same happened also with the pyro-lignous acid. Neither was the result more favourable, when he tried the detonation of gunpowder, at several times, in large vessels filled with putrid air; he only remarked, in this case, that a displacement of the mass of infected air was produced, but its qualities were not corrected.

"The result was not the same with the acetic acid; its action was speedy; for the putrid smell very soon ceased to be perceptible. He also tried the sulphuric and sulphureous acid. The first produced no change; the second was observed to have diminished the smell, but not to have removed it entirely.

"Besides the experiments which I have quoted, the author has attempted a great many more, which I shall pass over, as they proved altogether abortive; but there are some upon which I shall dwell, on account of their importance; I mean those that were made with the nitric, the simple muriatic, and the oxygenated muriatic acids.

"The greatest difficulty which Citizen Guyton had at first to surmount in this new kind of experiments, was to obtain the vapours of nitric acid free from nitrous gas; however, having at length, after a number of trials, obtained them such as he wanted, he immediately brought them into contact with the infected air. Upon afterwards examining this air, it did not appear to retain the smallest trace of a fetid odour.

"In order to establish the inference by a comparison of the results in circumstances perfectly similar, he afterwards subjected the muriatic acid to precisely the same experiments. In this case also the fetid smell was completely destroyed.

"Finally, the oxygenated muriatic acid acted in so decided a manner upon the putrid air, that from the moment when it was mixed with it, the putrid smell ceased to be perceptible.

"When we reflect upon the experiments that have been recorded, it is easy to see, that, if their results have not all been equally satisfactory, they may at least serve to point out the agents in which we may place some confidence, and enable us to choose those whose power of destroying putridity appears the most decided.

"The only means of determining our choice of such agents would, undoubtedly, be to compare the effects produced by the different agents that were employed in the above-mentioned experiments.

"Those produced by the use of perfumes, vinegar, the detonation of gunpowder, the pyro-lignous acid, the sulphurous and sulphuric acids, &c. were, as has been seen, either none at all, or tardy, or of little efficacy. The acetic and nitric acids have appeared to act in a very decided manner; but the difficulty of obtaining them in that state, in which it is

necessary they should be, in order to produce such favourable effects, is a considerable objection against their use.

"The same is not the case with the simple muriatic acid; the facility with which it is reduced into vapour, the great expansibility of this gas, and above all, the promptitude of its operation upon the putrid miasmata, shew of how great importance it is not to neglect its use.

"However, adds the author, I have the satisfaction of announcing, that this is not yet the most powerful means with which the progress of chemistry has furnished us for resisting contagion. The oxygenated muriatic acid is, beyond all contradiction, the most certain specific, and the most ready preservative which we can employ against it.

"It seems that, after having entered into the discussion of all the subjects in question, Citizen Guyton might have presented the public with the general conclusion of his treatise: however, he thought it still incumbent upon him to examine the influence which oxygen might exert of itself in the process of disinfection, and to enquire whether all kinds of contagious miasmata were equally subject to the operation of the same agents.

"Since chemistry has made us acquainted with the particular nature and properties of oxygen, it was soon found that it possesses a great disposition to combine with various substances, and particularly animal matter. The constant observations that have been made upon this subject have led to the supposition, that oxygen might be employed as a medicine.

"In fact, it is certain that medicines act only by inducing changes in the body, that tend to attenuate the morbid matter, and re-establish the order and regularity of the animal functions; it must also be allowed, that oxygen, as it possesses such properties, must be a real medicinal substance, and that, in order that it may act with efficacy, it is only necessary to employ it in a state of appropriation that may ensure its success.

"This fact is at present so well demonstrated, that several physicians of the highest reputation are inclined to admit of only two species of medicines, namely, the *super-oxygenating* and the *disoxygenating*; the action of which they explain by saying, that they *burn* or *unburn* (*brûlent* on *débrûlent*) the bodies with which they are brought into contact; meaning, that they furnish them with the oxygen which they want, or deprive them of that which they possess in too large a proportion.

"The expression of *burning*, employed in order to account for the manner in which medicines operate, as forced as it may appear, will be acknowledged to be strictly just, when we consider that, besides the combustions that take place with rapidity and an extrication of heat, there are also others which go on slowly, but the effects of which are perfectly similar to those of the former.

"Both in the one and the other, it is always the oxygen which tends to combine itself, and which, according to its greater or less degree of affinity with the body with which it unites, entirely changes the form of this body, its weight, its taste, and its colour, and at last imparts to it properties which it did not possess before.

"According to this explanation, it is easy to see that the alterations which animal substances incessantly undergo are, in fact, the effects of combustions, slow indeed, but which may, in some degree, be accelerated by presenting these same substances with a large quantity of oxygen at once, or placing them in contact with bodies, which, containing a large quantity of this principle, may easily yield to them a portion of it.

"It was a similar theory, which led, almost naturally, to

the medicinal use of oxygenated fats, nitric acid, oxygenated muriatic acid, the super-oxygenated muriate of pot-ash, and various other oxygenated substances, the sure effects of which afford the means of combating a variety of maladies, to the progress of which medicine had before no remedy to oppose, or could only cure with a great deal of difficulty.

"Since, therefore, it is impossible to deny the power which oxygen incessantly exercises upon animal substances, it must also be admitted, that the putrid effluvia that exhale from these same substances must also be subject to the action of this agent, and that, by combining with it, they must necessarily acquire new properties.

"In order to explain more at large his ideas with respect to this subject, the author has thought proper to treat of the oxygenating substances, and particularly the oxygenated muriatic acid, considered only as preservatives against contagion.

"It is a fact universally admitted, that among persons the most exposed to the influence of contagious maladies, there are some upon whom they produce no bad effects. Great pains have been taken, and always in vain, to explain the cause of so singular a circumstance. But, says Citizen Guyton, what need is there to have recourse to abstract theories, or even to enquire at all into the causes of a change of properties that does not exist, when the resistance, which some persons shew towards the morbid matter, may be explained in a simple and purely chemical manner, from its analogy with one of those general phenomena which are daily exemplified before our eyes in an infinite variety of operations?

"Let us take an example, he adds. We know with what facility the sulphuric acid attacks aluminous earth. This earth, however, is susceptible of a state of aggregation, in which it resists all combination, without there being the smallest ground to suspect that it has undergone any alteration in its nature. Might it not also be the same with the human body? and might we not assert that a certain state of health is connected with a state of aggregation, that resists that combination of the contagious miasmata with the body, which would take place if the force of aggregation were different?

"Moreover, this explanation seems to accord with facts, which various observations that are constantly made have enabled us to collect. It is known that the best means of guarding one's self against the impression of contagious miasmata, when we cannot remove ourselves out of the infectious atmosphere, is to support, and even augment, the vital powers: now, as the oxygenating substances possess this property in the highest degree, it is evident what great advantage may result from their use, and how much those especially deserve the preference, which, like the oxygenated muriatic acid, may easily be reduced into the state of gas.

"Carried thus, by respiration, into the nasal and pulmonary cavities, disseminated in the ambient atmosphere, or introduced, by respiration, into the stomach, acting finally upon the whole surface of the body, they operate as a stimulant, which augments the activity of the organs, excites their sensibility, and soon puts a stop to the effects of the miasmata, which, in general, act only by debilitating.

"Under this point of view, Citizen Guyton has considered the mode of operation of the oxygenating substances. This efficacy appeared to him to be so well demonstrated by theory and experience, that he presumes that those who reflect upon the subject will no longer fear the appearance of contagion, as they will be sure of having the means of guarding themselves against it.

"One grand question, however, still remained to be decided. It was necessary to ascertain, whether the anti-con-

tagious agents that were proposed as capable of producing such salutary effects, were applicable to all the different kinds of contagion.

"The author admits, without hesitation, that it would be contradictory to all evidence to suppose that all the maladies which a sick person can communicate to a healthy one, have the same matter for their cause.

"However, admitting the distinction that has been justly established between the maladies that proceed from certain effluvia suspended in the atmosphere, and those which are only contracted from the immediate contact of a matter sometimes also invisible, but more fixed; it must also be allowed, upon the authority of unequivocal observations, that the first are those which prevail the most frequently, against which it is the most difficult to guard one's self, and against which, consequently, the necessity of preservatives and anti-contagious remedies is the most urgent. To this class belong the fevers of hospitals, jails, and ships, and that which occurs in the vicinity of marshes; in a word, all those malignant fevers which owe their origin to putrid exhalations.

"As to the maladies of the second class, that can only be contracted by immediate contact; it is also admitted that they originate from the presence of some virus, which assuredly is not a simple substance, but rather a compound body, which must be subject to the condition which obtains in all its products, namely, that of undergoing combustion, whenever it is brought into contact with oxygen. Hence it appears, that we have already reason to presume that the virus of diseases must experience great changes from the action of the oxygenating substances, and that consequently their properties must necessarily be altered.

"To substantiate this conclusion, the author adduces the following facts. The variolous virus is certainly one of those, the specific contagion of which is the most distinctly characterized; however, it is certain, according to the experiments of Mr. Cruikshank, that a portion of this virus, mixed with oxygenated muriatic acid, produced no effect, when it was attempted to inoculate with it; whilst another portion, with which none of the acid had been mixed, communicated the variolous contagion.

"It is also known, from practical observations, that the syphilitic virus is destroyed by oxygenated mercurial remedies, and that it produces no infection; whilst the matter taken from the same ulcer, without such admixture, produces a chancre, and other venereal symptoms.

"The hydrophobia, which has hitherto been considered as incurable when the malady makes a rapid progress, may, however, be attacked with success, by touching the wound that has been made by the rabid animal, with powerful oxygenating substances, before the local nervous irritation has produced the rabid fever.

"Finally, the pŕŕic virus may also be destroyed by the oxygenating remedies; the effects of which, in these cases, are so well known, as to have no manner of doubt respecting the subject.

"It cannot indeed be denied, that it has not been demonstrated with the same degree of evidence, that the oxygenating remedies are capable of acting with equal efficacy upon the virus of the plague, as experiments have not yet been made upon this subject; but, if it be permitted us to draw conclusions from mere probabilities, we may assert, that this virus, being undoubtedly a compound substance, must undergo, by the action of oxygen, a combustion which, whilst it changes its nature, must also change its deleterious properties.

"From what has preceded it will be seen, that the author has done all in his power to make known those means of disin-

fection which appeared to him capable of producing such important effects; but, in order to enable his readers to judge for themselves of the utility of those processes, which, before those which he has pointed out, were in some degree of reputation, he has compared them together, and assigned to each that rank in the scale of utility to which it is entitled.

"From this comparison, which is comprised in the third part of the work, it appears:

1. "That cold water, lime, resinous substances, the kindling of fires, the burning of simple and aromatic vinegar by throwing it upon red-hot coals, the detonation of gunpowder, &c. ought not to be considered as real preservatives and anti-contagious remedies, as they do not possess the power of decomposing the putrid miasmata.

2. "That ordinary vinegar possesses, indeed, the power of decomposing the miasmata; but that this power does not exert itself in a perceptible manner, unless the infected substances are immersed in this acid, or are capable of being washed with large quantities of it.

3. "That radical vinegar, or acetic acid, produces effects sufficiently rapid; but that the difficulty of obtaining it in large quantities, at a moderate expence, will frequently be an objection against its use.

4. "That the sulphuric acid, on account of its great fixity, is not capable of contributing to the disinfection of the air.

5. "That the nitric acid is very capable of destroying the putrid miasmata, but that the use of this remedy is still attended with some inconvenience, owing to the impracticability of entirely depriving it of nitrous gas, the action of which is always prejudicial to the health of those who respire it.

6. "That the muriatic acid, on account of the prodigious expansibility of its vapours, which enables them to reach every part of the substance upon which we wish to operate, affords us very great advantages.

7. "Finally, that the oxygenated muriatic acid justly deserves the preference over all the other remedies, not only on account of the promptitude and facility with which it is everywhere diffused, but also because its action is always certain, and it immediately destroys all the putrid miasmata, that are either floating in the atmosphere, or fixed upon bodies.

"I think I have said sufficient to enable the reader to form an idea of the work which Citizen Guyton has presented to the public. I shall only add, that it would be difficult to treat a subject, like that which forms the argument of this work, in a more methodical, perspicuous, and, above all, in a more interesting manner.

"All the facts which the author has adduced, are substantiated by vouchers that cannot leave the smallest doubt of their authenticity; all the experiments which he has recorded have been performed with care and accuracy; and the inferences which he has drawn from their results are just, and little subject to objection; finally, it appears to me, from all these reasons, that the work of Citizen Guyton ought to be gratefully welcomed by all those who, alarmed at the ravages unfortunately too frequently produced by contagious diseases, have ardently wished that means might be discovered for putting an end to the devastations occasioned by these scourges of the human race.

"What is still to be wished is, that the work of Citizen Guyton may obtain all that publicity which it merits; and that particularly physicians, and in general all whose professional duty it is to watch over the health of their fellow-citizens, may receive such a conviction of the efficacy of the means here proposed, as no longer to hesitate in recommending them to be put in practice. The success with which

they would be attended would soon afford sufficient motives of encouragement; and, convinced then of the utility of Citizen Guyton's method, they would unite with all the friends to humanity in paying him that tribute of gratitude which his labours have deserved."

INGELMUNSTER, or **ENGELMUNSTER**, a village of Flanders, where is a castle, which was often made a garrison in the religious wars of the sixteenth century. It is situate near the river Mandel, five miles N. of Courtray.

INGLING, a town of France, in the department of Moselle, six miles E. of Thionville. Long. 6. 22. E. Lat. 46. 22. N.

INGRANDE, a town of France, in the department of Mayne and Loire, situate on the Loire, 15 miles W.S.W. of Angers. Long. o. 25. W. Lat. 47. 23. N.

INK (*Encycl.*). M. Ribaucourt, in the "*Annales de Chimie*," directs eight ounces of Aleppo galls, and four ounces of logwood, to be boiled in twelve pounds of water, till the quantity is reduced to one half; when the liquor should be strained through a linen or hair sieve into a proper vessel. Four ounces of sulphate of iron (green vitriol), three ounces of gum-arabic, one ounce of sulphate of copper (blue vitriol), and a similar quantity of sugar-candy, are now to be added: the liquid should be frequently shaken, to facilitate the solution of the salts. As soon as these ingredients are perfectly dissolved, the composition is suffered to subside for twenty-four hours; when the ink may be decanted from the gross sediment, and preserved for use in glass or stone bottles, well stoppered.

This ink exhibits a purplish-black colour in the bottles; but the writing performed with it, is said to be of a beautiful black cast, which it retains, unaltered, for a considerable length of time. Each quart of the preparation contains:

	oz.	drs.	grs.
Of Galls	-	-	2 5 20
Green vitriol	-	-	1 2 40
Logwood	-	-	1 2 40
Gum	-	-	1 0 0
Blue vitriol	-	-	0 2 40
Sugar-candy	-	-	0 2 40

M. Ribaucourt is of opinion, that ink thus prepared, may be preserved several years in a state of perfection, without depositing either galls or iron.

INOCULATION (*Encycl.*). See Cow-Fox, *Supp.*

INNICHEN, a town of Germany, in the Tyrol, situate on the Drave, 29 miles E. of Brixen. Long. 12. 17. E. Lat. 46. 48. N.

INSECTS (*Encycl.*). Dr. Darwin is of opinion, that the most ingenious, as well as the most effectual, method of preventing the depredations of insects, consists in artificially propagating the larvæ of the aphidivorous fly, of which we have given a representation in pl. 33, and which has been observed by naturalists to deposit its eggs where the aphids abound.

As soon as the larvæ are produced, they devour the aphides around them, seizing the latter in their mouth, as delineated in the plate, and extracting their juices. We have not been able to ascertain their exact duration in a caterpillar state, but believe that in about a fortnight they contract, and attach themselves to some solid matter, by means of a little gluten which is discharged from their mouth; and are thus converted into *chrysalides* or *nymphe*, as above represented. In this state, the insect continues 10 or 11 days, when it bursts its cell, and gives a perfect fly, of which likewise a delineation is given at a.

If these insects could be collected, carefully preserved during the winter season, and properly disposed on nectarine and peach-trees, early in the spring, Dr. Darwin thinks it is

probable that the depredations of the blite might be counteracted, "by the natural means of devouring one insect by another; as the serpent of Moses devoured those of the magicians."

A kind of bellows has been invented by Mr. Green, of her majesty's flower-garden, Kew, for the purpose of destroying the red spider, and other noxious insects in hot-houses and plineries, with the fumes of burning tobacco. The same noxious vermin may likewise be exterminated by burning (when the hot-house is shut) matches moistened with a spirituous tincture of asa-fetida, and rolled in a powder consisting of equal parts of sulphur and Scotch snuff. It will also be of service to wash the frames of hot-houses, &c. with four ounces of sublimate, dissolved in two gallons of water; but this operation should be performed with the utmost caution, on account of the corrosive properties of the mercury.

In the *Annales de Chimie*, M. Tatin gives an account of a compound which he has successfully used for exterminating insects. He directs 1½ of a lb. of the best black soap, a similar quantity of flowers of sulphur, 2 lbs. of any kind of mushrooms, and 15 gallons of rain or river water, to be employed. The fluid is to be divided into two equal parts, one of which is put into a barrel, together with the soap and mushrooms, after the latter have been somewhat bruised. The other half is to be boiled in a kettle with the sulphur inclosed in a bag, and fixed to the bottom of the vessel, by means of a stone or other weight.

These ingredients are to be boiled 20 minutes, during which the sulphur should be well agitated with a stick, that the water may be the better impregnated. When the liquid is taken from the fire, it is to be poured into the barrel, and stirred daily, till the mixture become in a high degree fetid: for, the older and stronger the composition is, the more speedy and powerful will be its effects. The liquor is to be sprinkled on the plants infested with insects; great numbers of which it destroys on the first application: it will, however, be necessary to repeat the asperision, in order to exterminate ants, or other vermin that breed beneath the soil; and, for this purpose, from two to eight pints are required, according to the depth and extent of their nests.

Although insects are very injurious to vegetation, yet Dr. Darwin is of opinion that they may be rendered extensively useful as a manure. Hence, in the summer months, he recommends heaps of dung to be supplied with water, for promoting the propagation and nourishment of myriads of vermin; which, when suffered to decay on the soil, would greatly contribute to its fertility.

In a recent publication, entitled, "*Illustratio Iconographica Insectorum*," &c. Mr. Fabricius has described several new insects, which he saw in the different collections at Paris. His descriptions, however, being not always sufficient for determining the species he had in view, the great difficulties hence arising can only be removed by good figures of the originals, signed by his hand; by which means these objects will, as it were, be multiplied and perpetuated, and which, if once destroyed, may perhaps not be found again. It is therefore incumbent upon us to do proper justice to the zeal and merit of Cit. Coquebert, author of the work we are here announcing, which consists in representing by figures, coloured after his own drawings, the insects observed in the Paris cabinets, and described by Mr. Fabricius; in adding the description and synonymous terms of that naturalist; and in publishing other new species, or those that are less known. The celebrated artists, Cit. Maleuvre for engraving, and Didot the elder for the typographical part, have assisted in this interesting work; and seconded the pencil of a man, who knows how necessary it is to observe and study nature, before he at-

tempts to copy her. The 10 first plates contain about 120 figures, a great number of which present the insects in detail. He begins with those that are particularly subject to be destroyed, belonging at the same time to less numerous classes than others, viz. the *Synitotes*, *Pezotes*, and *Rynogotes* of Fabricius. North America, Cayenne, the Barbary states, and the south of France, are the principal countries from which the species he has figured are brought. The new genera of Delphax, Oryflus, and Plocus, are there figured, with an accurate representation of their organs of manducation, in which he has been much assisted by Cit. Latraille, to whom the plate is entirely owing of the little known genus Plocus, which on account of their minuteness and fugacity, had hitherto escaped the observation of naturalists. Some anatomical observations, new synonymous terms, and other remarks, give an additional value to this work; and we are convinced that it will meet with the most favourable reception by every naturalist and amateur.

INSTERBURG, a town of Prussian Lithuania, containing about 3000 inhabitants. Corn and beer are the principal articles of trade. It is 44 miles E. of Konigsburg. Long. 21. 40. E. Lat. 54. 40. N.

INSTITUTE, the French name for a national school or academy in Paris, having, if we may credit its own reports, and those of its founders, high claims to superiority and distinction. When royalty was abolished in France, it would have been inconsistent to continue the titles Royal Academy of Sciences, Royal Academy of Inscriptions, &c.; but instead of merely abolishing the word royal, and substituting national in its stead, it was thought a prudent measure to abolish the seven academies themselves, or rather to melt them all down into one great academy; to which was given the appellation of the *National Institute*. This academy, founded on a decree of the new constitution, was opened on the 7th of December, 1795, when Benezec, the then minister for the home department, attended, and the following decree of foundation was read:

"The Academy of Arts and Sciences belongs to the whole republic, and Paris is its place of residence. Its employment is to aim at bringing all arts and sciences to the utmost perfection of which they are capable. It is to notice every new attempt, and all new discoveries, and to keep up a correspondence with all foreign literary societies. And by the particular orders of the Executive Directory, its first studies are to be directed to those subjects which more immediately tend to the reputation and advantage of the French republic."

The academy, which is not yet completely formed, is to consist of 288 members, half of whom are to reside in Paris, the other half in the departments; and to them is to be added a certain number of foreigners, as honorary members, confined at present to twenty-four.

The academy is divided into three classes, each class into sections, each section to contain twelve members; viz. 1st class. Mathematics and natural philosophy. This class is divided into ten sections. 1. Mathematics. 2. Mechanical arts. 3. Astronomy. 4. Experimental philosophy. 5. Chemistry. 6. Natural history. 7. Botany. 8. Anatomy and animal history. 9. Medicine and surgery. 10. Animal economy, and the veterinary science. 2d class. Morality and politics. This class consists of six sections. 1. Analysis of sensations and ideas. 2. Morals. 3. Legislation. 4. Political economy. 5. History. 6. Geography. 3d class. Literature and the fine arts. This class consists of eight sections. 1. Universal grammar. 2. Ancient languages. 3. Poetry. 4. Antiquities. 5. Painting. 6. Sculpture. 7. Architecture. 8. Music.

For each class a particular room in the Louvre is appropriated. No one can be a member of two classes at the same time, but a member of one class may be present at the meet-

ings of any other. Each class is to give to the public, yearly, an account of its transactions.

Four times a-year there are public meetings. On these occasions, the three classes meet together. At the end of each year, they give a circumstantial account to the legislative body of the progress made in that year in the arts and sciences. The prizes given yearly by each class are publicly notified at certain times. The sums requisite for the support of the institution are decreed yearly by the legislative body, upon a requisition made by the government.

The first forty-eight members were chosen by the Executive Directory, to whom the choice of the remaining members was confined. To the members, resident in Paris, is reserved the choice both of the department and foreign members. On a vacancy in any class, three candidates are named by the class for the choice of the body at large.

Each class is to have, at its place of meeting, a collection of the products, both of nature and art, and a library, according to its particular wants. The regulations of the institution, with respect to the times of meetings, and its emplacements, are to be drawn up by the body at large, and laid before the legislative assembly. The hall in which the body at large holds its meeting, forms part of the west wing of the Old Louvre, at present called the Museum. It formerly went by the appellation of the Hall of Antiques (*Salle des Antiques*); and as long as the kings of France inhabited this part of the palace, was occupied by their guards, from which circumstance it obtained the name of the *Hall des Cent Suisses*. It was likewise appropriated to banquets and entertainments, given by the court on gala days; and it was to this place that Henry IV. was conveyed, on his assassination by Ravallac. It was built at the same time with the rest of this part of the Louvre, about the year 1528, after the designs of Pierre Lescot, abbot of Clagny. It is 144 feet in length, and 40 in breadth, and holds from 1000 to 1200 persons. In order to adapt it to its new destination, the floor has been sunk, which gives a greater air of lightness to the roof. In the centre stands a double table, in the form of a horse-shoe, supported by sphinxes, at which the members of the Institute take their seats. This table is surrounded by two tiers of benches, which are raised for the accommodation of spectators, who have likewise seats provided for them in the vast embrasures of the windows, and at each extremity of the hall.

Whether science will be essentially advanced by this innovation, time must determine; but candour compels us to acknowledge, that thus far the proceedings of the National Institute have been abundantly interesting.

INSTRUCTION, NATIONAL, a novel establishment of the French republicans, proposed with a view of making the rising generation in France all that its founders can wish, in politics, in morals, and with regard to religion; and thus give permanency to the new order of things. When Christianity was abolished in France, it was impossible to continue the universities and other seminaries which were founded by Christians, and obliged by their constitution to teach, whether pure or not, the doctrines of Christianity. They were accordingly all swept away, and a new system of education planned, which was to be carried on in what they call

The Primary Schools.

The Central Schools.

The School of Health.

The School of Oriental Languages.

The Polytechnic School.

The National Institute.

The Jury of Public Instruction.

The Commission of Public Instruction.

The Legislative Committee of Instruction. And various

other national establishments for the improvement of particular sciences.

The first degree of public instruction is to be met with in the *Ecoles Primaires*, established by a decree of the convention of the second *Pluviose*, in the second year of the republic. Every district is furnished with one of these schools; the professors or masters in which are paid from the national treasury; and to which every head of a family, without exception, is compelled by law to send its children for instruction. The subjects taught in these primary or elementary schools are divided into nine classes:

1st, Instructions connected with the physical and moral situation of children, prior to their entering into these schools. 2^d, Similar instructions as a guide to teachers in the national schools. 3^d, The arts of reading and writing. 4th, The elements of French grammar. 5th, Elements of arithmetic and geometry, with the theory of the new menuration. 6th, The elements of geography. 7th, Explanations of the principal phenomena and productions of nature. 8th, Elements of agriculture. 9th, Elements of republican morals.

Next to the primary schools in rank and consequence are the *Ecoles Centrales*, which were established by a decree of the Convention of the seventh *Ventose* in the third year. They are situated in the capital of every department, bearing the proportion of one central school to 300,000 inhabitants. In these schools the republican youths are taught the sciences, and their application in real life. In each of them are professors for the following branches: 1. For mathematics. 2. Experimental philosophy and chemistry. 3. Natural history. 4. Agriculture and commerce. 5. Logic and metaphysics. 6. Political economy and legislation. 7. The philosophical history of nations. 8. The art of healing. 9. Arts and manufactures. 10. Universal grammar. 11. The belles lettres. 12. The ancient languages. 13. The modern languages. 14. The fine arts.

Each central school is furnished with an extensive public library—a botanic garden—a cabinet of natural history—an apparatus for experimental philosophy—and a collection of machines and models connected with the arts and manufactures.

The professors of each school hold, every month, a public sitting, in which conferences are held relative to subjects connected with the improvement of letters, the sciences, and the arts, which are the most beneficial to society.

The object in the establishment of the primary and central schools was, the general instruction of all classes of the citizens; and it being incompatible with the perfect completion of that important purpose, to expect from them the propagation of particular branches of science, it became necessary to establish other literary and scientific academies. Accordingly, the French government have founded,

1st, Schools of health (*les écoles de santé*), in Paris, Strasbourg, and Montpellier, where medicine and surgery are studied; which schools are affirmed, by those who find nothing wrong in France, to be the most perfect of their kind, as well as new and unparalleled models for such institutions.

2^d, Two schools for *Oriental languages*, in the national library, and in the college of France.

3^d, The *Polytechnic* school in Paris, or central school for the direction of public works. This establishment is very generally admired, and considered as a model for imitation. It contains more than 400 young persons, previously educated in the mathematics, and the majority of them intended for engineers in various lines; and they labour under the immediate direction of their tutors nine hours every day. It occupies the principal part of the *Palais de Bourbon* in Paris,

and is furnished with a large collection of instruments and models. The journal of the Polytechnic school, which is published by the booksellers Regent and Bertrand at Paris, is a perfectly original work, and admirably calculated to convey useful information.

Of the National Institute a sufficient account has been given in the preceding article. We proceed therefore to the jury of public instruction (*Le Jury Central d'Instruction*), of which the principal business is to superintend the primary and central schools. It appoints the professors in the schools, and examines into their conduct. Like the legislative body, it is renewed by at third every half-year. When they have chosen a professor for a central school, they submit their choice to the department; and, in case of disapprobation, they make another appointment. To this jury of public instruction the professors in the central schools are amenable for all misconduct connected with their offices; it may expel them, but all its decisions must be submitted for confirmation to the tribunal of the department.

There is also established at Paris a supreme council, called *The Commission of Public Instruction*, to which is entrusted the whole executive department. The preservation of the national monuments, of public libraries, museums, cabinets, and valuable collections; the superintendence of all the schools and the modes of instruction; all new inventions and scientific discoveries; the regulation of weights and measures, national statistics, and political economy; are all placed under the authority of this supreme commission. For the commodious and regular execution of so many complicated branches of business, there is a large office, called *Le Secrétariat*, which is divided into three departments. 1. For the regulation of the different kinds of instruction; of the modes of education in the schools; and for the choice of elementary books. 2. For weights and measures; inventions and discoveries; libraries and bibliography; museums, works of art, and literary rewards and encouragements. 3. For theatres, national feasts, republican institutions, and the erection of monuments.

As all public establishments require the superintendence and occasional correction of the legislature, in addition to that of their own immediate executive authority, it has been deemed necessary to appoint a permanent committee of instruction in the legislative body, to provide such sums as may be necessary for the preservation and improvement of this system of instruction. This legislative committee are invested with due authority for these purposes. Their objects are precisely the same as those of the commission of public instruction above described, only with this difference, that the latter superintends the execution of existing laws, whilst the former receives and improves them, or proposes new ones. This committee is divided into three departments, as is the commission, with exactly the same arrangement of their respective labours. The committee being charged with the enactment of all new laws, its members, with a view to obtain accurately all the requisite information relative to the numerous branches of the arts, have procured from the legislative body the appointment of a *commission temporaire des arts* to be annexed to them, and to meet in the same house with them; which temporary commission is divided into sixteen classes: viz. 1. For Zoology; 2. Botany; 3. Mineralogy; 4. Physics; 5. Chemistry; 6. Anatomy; 7. Machinery; 8. Geography; 9. Artillery and Fortification; 10. Medals and antiquities; 11. Bibliography; 12. Painting; 13. Architecture; 14. Sculpture; 15. Bridges and causeways; and, 16. Musical Instruments.

The improvements of the national literary and scientific establishments are numerous and important.

1st, By a decree of the convention of the 11th *Prairial*, in

the second year, it was enacted, that means should be adopted by which every possible advantage might be derived from the botanic gardens of the republic, in Turkey and other foreign countries. This politic decree clearly tended to render France, in the language of the reporter, *L'abregé de tous les climats, et l'entrepôt de l'Europe*—"The epitome of every climate, and the magazine of Europe." Those plants which thrive between the tropics may be cultivated in the south of France; and those which are the produce of northern climates, may be cultivated in the northern departments; by which means, France will be in possession of all foreign plants and drugs, without the exportation of specie.

2d, The National Bibliography was decreed in the sitting of the 22d *Germinal*, in the second year. It consists of a complete catalogue of books of all descriptions, the property of the nation; it was then ascertained, that the republic possessed more than ten millions of books. The titles of them were to be adjusted by actual comparisons; the manuscripts to be registered separately; anonymous productions were to be arranged according to their subjects; and those of known authors in the alphabetical order of the names. The several editions to be classed according to their dates: and what may be deemed more important, this French National Bibliography will contain a dictionary of anonymous books, as well as those published under fictitious names, a desideratum in the republic of letters.

3d, The annihilation of all *patois*, or dialects, decreed in the 16th *Prairial*, in the second year. Notwithstanding the universality of the French language, and that it was exclusively spoken in the majority of the inland departments, yet there existed thirty various dialects in France. It is more astonishing that Rozier had remarked, that between one neighbouring village and another, there was so considerable a difference in the dialect, that the inhabitants could not understand each other; and the vinestock had thirty different names. The naturalist, Villars, has flated that in the nomenclature of vegetables, in the departments, he had only met with an hundred which had a common appellation.

4th, The establishment of the *Conservatoire des Arts et Métiers*, was decreed in the sitting of the 8th of *Vendémiaire*, in the third year. This consists of a spacious hall, in the form of an amphitheatre, and contains the instruments and the models of machinery connected with the arts, and a description of their uses, with every book relating to them. Annexed to this establishment are three expositors and a draughtsman, who explain to the students the use of each instrument, and who register every new discovery, which is presented to the *Bureau de Consultation*, to the Lyceum of Arts, the *ci-devant* Academy of Sciences, or to the Board of Commerce.

5th, The establishment of the Board of Longitude was decreed in the sitting of the 7th of *Messidor*, third year. It was certainly a disgrace under the monarchy, that an astronomical and nautical establishment, which had already proved so beneficial to Great Britain, should not have been adopted in France. In consequence of this decree, the French board is now as complete as the English. It consists of ten members, and has under its jurisdiction the national observatory at Paris, and all the astronomical instruments belonging to the republic. It corresponds with foreign astronomers; delivers public lectures on astronomy and navigation; and its proceedings are annually recited in a public sitting.

6th, The general school of the Oriental languages was established by a decree of the 10th of *Germinal*, in the fourth year. This school adjoins to the national library, and all the books and manuscripts relative to Oriental literature are deposited in it.

7th, The National Museum of Antiquities was decreed in the sitting of 20th of *Prairial*, fourth year. A school of this description was successfully established at Vienna, by Eckel; at Gottingen, by Heyne; at Leipsick, by Emeit; and even at Strasburgh, by the celebrated Obelin: Paris was, however, without one. This national archeology, or science of antiquity, is divided into nine different classes: inscriptions, characters, statues, *bas-reliefs*, sculptures, paintings, mosaics, medals, civil, religious, and military instruments. This extensive establishment is under the direction of two principal professors; *le Conservateur Professeur*, and *le Conservateur Bibliothécaire*. The province of the former is to deliver public lectures on the several branches of antiquities, to teach the theory of medals and engravings, the history of the arts among the ancients, &c. The duties of the latter are merely of a bibliographical nature.

8th, The new modelling of the Grand National Library, was decreed in the sitting of the 25th *Vendémiaire*, in the fourth year. By virtue of this decree, the place of librarian in chief was suppressed, and the whole establishment placed under a *conservatoire* of eight members; of whom two were appointed for the superintendence of printed books; two for manuscripts; two for antiquities; and two for engravings. From these a temporary director is annually chosen, who superintends the whole, acts occasionally as president of this assembly, and maintains a regular correspondence with the constituted authorities relative to the concerns of the library.

9th, The augmentation of the Museum of Natural History, formerly called *Le Jardin Royal des Plantes*. This establishment was decreed the 15th *Brumaire*, third year, upon a report of Thibadeau, in the name of the committee of Public Instruction. Besides the addition of large rooms, and various other buildings, there are new collections of natural curiosities and productions; and the library is much increased. It is open to the public three times a-week. At stated periods all the naturalists in Paris deliver courses of lectures in the various branches of natural history. The museum is said to have received greater improvements from this augmentation than from all the labours of Buffon, or from its foundation, since the time of Tournesot.

10th, The *Ecole des Mines*, was established in the *Hôtel des Monnaies*, and has for its direction the naturalist Le Sage. This institution is unrivalled in Europe; and the collection of mineralogical curiosities surpasses whatever can be conceived.

11th, The Society of Natural History in Paris, deservedly classes among those which have rendered the greatest services to the cause of science since the revolution. A lecture of public instruction is held every ten days, which is generally given by one of the members, and which is open to all the lovers of natural history. Premiums are proposed for dissertations; one of which, by the late C. Herman, jun. (whose early decease was a great loss to the republic of letters), on the *apterous* class of insects, may be said to constitute an epocha in the annals of natural history. The society has published a volume of memoirs, in folio, entitled, "*Transactions of the Society of Natural History*." It has likewise erected a statue to the great Linnæus, in the national garden of plants; and, at the period when every public instruction was suspended, gave lectures on the different branches of science belonging to its department. Several intelligent and skilful navigators, among others those sent in search of the unfortunate La Pérouse, as well as those which accompanied Buonaparte on his expedition to Egypt, were members of this society.

This account of the present state of public instruction, the sciences, the arts, and the progress of national literature, in

France, has been taken from a miscellany, the principal writers of which call it a *sublime* system; and seem to consider the increase of the national library, the improvement of the botanic gardens, and the discoveries that have been made by the different schools or institutes, as furnishing a demonstration that the republican government is more favourable to the advancement of science, than the monarchical, whether absolute or limited. But it should not be forgotten, that this system is yet in its infancy; and that in prosecuting new schemes, all men, and more especially Frenchmen, are actuated by an enthusiasm which gradually cools as their pursuits become familiar. We therefore rather wish than expect that the progress of science in that country will be more rapid than it was under the monarchy.

That something may be learned from this system to improve the modes of education in other countries it would be illiberal and uncanid to doubt; but its almost total neglect of what is most valuable in education, the *culture of the heart*, and, above all, the silence observed with regard to *RELIGION*, which is the only *BASIS of private happiness and public welfare*, are defects too glaring to pass unobserved by the most inconsiderate reader.

INSTITUTION, ROYAL, a new establishment in London, set on foot for the distinct purpose of applying science to the common purposes of life.

In January, 1799, a committee was appointed by the Society for bettering the Condition of the Poor, &c. to confer with Count Rumford on the formation of an institution; which, besides having a general view to the benefit of arts and manufactures, and to the advancement of taste and science, in this country, should specifically direct itself to the improvement of the *means of industry and of domestic comfort among the poor*. Though the society has had reason to flatter itself that considerable benefit had been diffused among the general mass of the people by its labours, yet difficulties have impeded the progress of any considerable melioration in the *diet and domestic habits* of the poor; and there appeared very little prospect of those difficulties being removed, until a *centre of action* could be fixed, to which persons might apply for examples,—for models,—and for engravings, accompanied by printed instructions; without being any longer compelled implicitly to rely on the talents, the docility, and the conscientious moderation, of the different tradesmen, who might be employed to make and sell them.

It appeared very evident that an establishment of this nature, if on a scale calculated to be extensively useful, must embrace too great a variety of objects, and be far too interesting and too important, to be annexed to the society for the poor, or to any other existing society. The committee therefore was of opinion that, after they obtained from Count Rumford the original sketch or outline of the plan, and had engaged him to take an active and leading part in the conduct and execution of it (their own members giving their individual support to the measure), nothing further remained to be done on the part of the society.

The models and inventions, in which the poor are most immediately concerned, will be those which may promote economy in food and fuel, and tend to correct and purify the air in cottages, and also in workhouses, hospitals, manufactories, and in all public buildings; and which may furnish means and instruments of industry, on a cheap and simple construction; so as to afford the cottager and his family thriving and healthful occupation at home during bad weather, or at times when proper employment is not to be obtained abroad. The supply of such means and instruments of industry has been long, and anxiously, desired by the friends of the poor. Many heavy and solitary hours might then be occupied with

pleasing employment; and the cottager would thereby be enabled to educate his children in those *regular and even habits of industry and attention*, which, when securely and permanently acquired, will afford them support and satisfaction through life.

The dissemination of these improvements and inventions is extremely wanted by the poor. Nothing can be more comfortable than their present system of diet in many parts of England: nothing more wasteful than their application of fuel for warming and tempering the air in their cottages; that being an article, the too general want of which is the source of those petty pilfering habits among the poor, which often lead to atrocious crimes. The affixing and encouraging the domestic economy and management of the cottager, and the promotion of his comfort so as to give him more benefit and enjoyment from the means of life which his situation in society affords him, and the improvement of the general system of those public buildings with which the poor are concerned, will be among the most useful and important objects of the models to be exhibited at the institution. These will consist of improved fire-places and kitchens, and of flues and *lourers* for supplying rooms either with tepid or fresh air; so as to produce a considerable saving in the quantity of food and fuel consumed, either in cottages, or in public establishments; and materially to increase the health and well-being of those of our fellow-subjects, whose employment or situation obliges or induces them to continue the greater part of their time in close and crowded rooms.

But we shall better succeed in conveying an adequate idea of the plan of this admirable undertaking, by the following extracts from the *Prospectus*, and from a subsequent *Report* of its progress, published by order of the managers, dated May 25, 1801. The former of these will shew its beginning, the latter its progress, and the eagerness of the public to embrace a proposal so manifestly calculated for the benefit and the prosperity of the country at large.

“The pre-eminence of any people in civilization ought ever to be estimated by the state of industry and mechanical improvement among them. This is proved by an immediate reference to the experience of all ages and countries, where successful exertions having given courage to the spirit of invention, the sciences have flourished; and, according to the increase of the moral and physical powers of man, improvements have been made, which, in an earlier state of society, would have been deemed altogether visionary. Printing, navigation, and the useful and extended powers of the steam-engine—inventions, the practical excellence of which we all know and acknowledge, and the future effects of which can scarcely yet be conjectured—offer irresistible proofs of this; and it is to remove those causes which yet impede the progress towards perfection of those and other arts material to the accommodation of man, that the Royal Institution is set on foot.

“The slowness with which improvements of every kind are adopted, especially such as are calculated to be of general utility, is very remarkable. Besides the prejudices of individuals, and the power of habit, which attaches them to what has the sanction of universal practice, the supporters of this undertaking have to contend with many other circumstances equally unfavourable to the introduction of improvements. Some persons overlook them through mere indolence; some are disgusted with the very proposal of any thing new, and are ashamed and mortified that they should be deemed ignorant of what they long had supposed themselves perfect masters; some, who even submit to be instructed, work too awkwardly with tools to which they have been unaccustomed, not to tire of their business, their teacher, and his doctrines,

before they arrive at the object of their pursuit. But another cause, which occasions little attention to be paid to those who propose improvements, is a supicion of interested motives, which, indeed, is often but too well founded. Thus the most meritorious exertions to promote the public prosperity are either received with indifference, or viewed with suspicion: and many, even of those who are convinced of the excellence of what is proposed, are deterred by motives of jealousy, or envy, from promoting its success.

"These are the chief causes which prevent the reception of valuable inventions already known, and of such as the ingenious might otherwise bring forward to public notice. But another serious obstacle arises from that sub-division of labour which naturally takes place where active industry and the security of property are established; and from which happens, that almost every man becomes confined to some appropriate occupation, seldom knowing, or caring, what may be the processes to which the material of his trade may be subjected, before or after his art has been exercised on it; and still less aware of what is done in other trades or manufactures. The attention of these individuals is wholly engaged in the acquisition of wealth; and hence it is, and from a natural fear of pecuniary risk, that the generality of manufacturers possess neither the knowledge, the inclination, nor the spirit, to make improvements.

"Among the various classes of civil society, one which performs a great and very essential part of the general work is the class of philosophers, who have devoted themselves to the labour of observing, comparing, and inventing, and who engage in the development of truth by those remote analogies which escape the vulgar mind. But though invention and discovery are peculiarly their province, it may justly be doubted whether their moral and intellectual habits are calculated to produce useful practicable improvements. This kind of knowledge, indeed, no less than the stimulus of interest, and the capital of the manufacturer, are with them altogether wanting; while the latter, on his part, stands no less in need of the general information and accurate reasoning of the man of science. The great object, therefore, is to benefit the community by bringing to a salutary point of union the talents and means of both these descriptions of men.

"Three direct methods suggest themselves for the removal, or diminution, of the difficulties stated above: 1st, To give premiums to inventors, which is already done by the society for the encouragement of arts, &c. 2dly, To grant temporary monopolies, which is done by the grant of patents. 3dly, To diffuse the knowledge, and facilitate the introduction of useful mechanical inventions and improvements, which is proposed to be done by the Royal Institution.

"In the house [purchased in 1799, in Albemarle-street, London, by the managers] it is intended to exhibit to the public the completest working models, or contrivances of the full size, of all such new and valuable inventions as are capable of being applied to the common purposes of life. By this arrangement, those who adopt them may readily determine, if any failure happen in their experiments, whether the mistakes of workmen, the management of servants, or the principle of the invention, have been the cause. Such a repository must also be of infinite use to artificers in furnishing models, and must enable every enquirer to obtain a thorough acquaintance with the nature and principles of what he wishes to imitate. Whatever is visible and tangible addresses itself more forcibly to the understanding than can be conveyed by any graphic or written description: it is not, however, intended to neglect the aid of the latter; and, accordingly, detailed accounts or descriptions, accompanied with suitable drawings, will also be exhibited by way of illustration.

"Arrangements will also be made, and correspondencies established, for obtaining a knowledge of new inventions, both at home and abroad. Visitations of manufactories, and examinations of various processes in the arts, are likewise intended; and to the growing mass of instruction, which may arise from these sources, the managers will add a library of all the best publications on the subjects for which this institution is established.

"For teaching the application of science to the useful purposes of life, a temporary lecture-room is fitted up for philosophical lectures and experiments; a complete laboratory and philosophical apparatus, with the necessary instruments, will be provided; and men of the first eminence in science engaged to officiate in this essential department. The machines and models will afford a perpetual source of instruction; and the lectures will be particularly useful to elucidate and apply those general principles which are only in part discernible in particular structures. The first principles of mechanics will be exhibited and explained in the simplest engines, called the mechanical powers; and, as connected with these, the practical operations of various arts will be regarded, and the mutual connection between the theory of mechanics, and the experimental knowledge of the materials. Under general mechanics will be shewn the advantages we derive from those happy expedients by which the labour of man is abridged in husbandry, and the various operations of art.

"Chemistry, with the aid of a laboratory and complete apparatus for the several processes, will be taught in the same simple and perspicuous manner; and this elementary knowledge, so indispensable to the intelligent manufacturer, will be connected with the great operations of the arts and of trade.

"From the vast field of individual operations or separate manufactories, the enquirer will be led to other works of more general consideration, which include not only the objects of mechanics and chemistry strictly taken, but likewise those of commercial operation and political economy. Under this class of objects will be found the structure of roads and forms of vehicles; the establishment of canals; the improvement of rivers, harbours, and coasts; the art of war, and various objects connected with it. In the course of these enquiries, the exhibition of working models will particularly display the powers of hydraulic machines, and that striking useful apparatus the steam-engine.

"But, above all, we shall find our contemplations urged to the phenomena of light and heat, those great powers which give life and energy to the universe! powers which, by the wonderful process of combustion, are placed under our command indeed, but of the advantages of which we do not half avail ourselves."

Having thus given, as much as at large as our limits will allow, an account of the rise of this truly grand public undertaking, we shall here add a few particulars from the last report, with a view of shewing its present state.

"The Institution," says the report, "is now placed on a most respectable foundation; and although none of the details of this great and extensive establishment are quite completed, yet enough has already been done to shew that it must soon become extremely interesting, and very useful; and that it will long remain, — an ornament to the metropolis, — and a proud monument of the energy — wealth — and liberality — of the private individuals of the British nation.

"In the infancy of the establishment, before the Institution had acquired a visible form, and adequate support, it was natural to expect that some doubts would be entertained, even by the most sanguine, of the possibility of completing so great a public undertaking, by the mere voluntary exertions of private individuals."

tions of individuals; but all grounds for such doubts are now happily removed. The permanent existence of the Institution,—and even as a *body politic and corporate*,—has been secured by the authority of a *Royal Charter*; and the establishment has been taken under the immediate patronage of *his Majesty*.

"The lists of the proprietors and subscribers to the institution contain the names of many of the most illustrious characters in this country; and the money subscribed to carry the proposed plans into execution amounts already to a sum almost incredibly great—to 23,200*l.*; and this, exclusive of 7000*l.* generously offered by a small number of the proprietors (but which will not be wanted); for enabling the managers to defray the expences of erecting the new buildings.

"Upon settling the accounts, and calling in, and paying off, all debts outstanding against the Institution, up to the first day of the present month, it was found, that a sum amounting to above 10,800*l.* then remained at the disposal of the managers; which sum will, no doubt, be quite sufficient, not only to defray all the expences of finishing and furnishing the buildings of the Institution, in all their numerous and extensive details, but also for fitting up all the workshops; and providing them with tools, and a stock of materials for work.

"The house and premises, which have been purchased for the Institution, are extensive; the ground covered by the principal edifice having originally been allotted for building four houses for private families; and no situation could have been found, in this metropolis, more convenient, or better adapted to all the purposes of this public establishment.

"Professors and lecturers in natural philosophy, chemistry, and mechanics, have been engaged; and lectures are now given, daily, in two spacious lecture rooms; the one capable of containing 300, the other 600, persons.

"A spacious and most complete chemical laboratory has been built, and is now furnishing with all the implements and apparatus necessary for carrying on, upon a large scale, all the various processes of practical chemistry; and chemical analysis; and for making new and interesting experiments. A director of the laboratory has been appointed, and also a chemical operator; and the managers are now in treaty with a very ingenious German chemist, whom they hope to engage, as an assistant in the laboratory, and who will devote his whole time to the business of it.

"The workshops of the Institution, where models, &c. of new and useful inventions will be constructed, and sold at reasonable prices, to such proprietors and subscribers as may apply for them, are quite finished; and are now furnishing with the most complete sets of tools that can be procured.

"A master of the workshops has been engaged, who is himself a working mathematical instrument maker and model maker; and will have the care of all the philosophical apparatus belonging to the Institution, and keep it constantly in repair and ready for use. He will reside in the house, and superintend and direct all the workmen who are employed in the workshops;—he will likewise superintend and instruct all such ingenious and well-behaved young men as may, at the recommendation of proprietors, be admitted into the workshops of the Institution, to receive instruction, and to complete their education in any one or more of the mechanic arts.

"The following workmen are already engaged for the workshops of the Institution, viz. A mathematical instrument maker.—A model maker.—A cabinet maker.—A carpenter.—A worker in brass and copper.—A tin-plate worker; and

an iron-plate worker. To these will soon be added bricklayers and stone-masons; who will be instructed, and enabled to instruct others, in setting new-invented fire-grates, roasters, ovens, boilers, &c.

"A complete kitchen, for a small family,—with a small roaster, on the most simple construction—a cottage fire-place grate—and a small boiler with steamers,—has been put up in the housekeeper's room; and may be examined by all those who frequent the house of the Institution.

"The principal kitchen will contain roasters, ovens, boilers, steamers, &c. on the newest and most approved construction; and, in order that the proper method of managing them may be seen, they will be kept in daily use, and persons will attend to them.

"In order that the proprietors and subscribers may be enabled to judge, from actual experiment, of the merit of any new method of cooking, or of any new dish that may be proposed, a *dining-room* has been built, and will soon be ready for use, at the house of the Institution, in which the managers will, occasionally, order *experimental dinners*, to which the proprietors and subscribers will be invited, in as far as the accommodations will admit; the expence of such dinners to be defrayed by those who partake of them."

To render the house of the Institution more pleasant, an additional room has been set apart for their private and exclusive use:—This has been called the *conversational room*; and to render it still more useful and agreeable, it will be furnished with a collection of good maps; and, as soon as some necessary previous arrangements (which are now actually making) shall be finished, those who frequent this room will be furnished, at the most reasonable prices, from the housekeeper's room below, with soups of various kinds—tea, coffee, chocolate, and other refreshments. Besides these, other accommodations for the proprietors and subscribers are provided, as the opportunity of writing letters; and a general and two-penny post for their conveyance.

"A complete Printing Office, with a press, types, and every other instrument and implement necessary in printing, has been established at the house of the Institution; and a Printer is engaged, and has for some time past been constantly employed in printing for the Institution. It is expected that the printing of the journals of the Institution, which in a few months will begin to appear at regular intervals, probably once a week, will give full employment to this press: for as these journals will contain not only an account of all that is doing at the Royal Institution, and in the country at large, to introduce new and useful inventions and improvements, but will also contain selections from all the newest foreign scientific journals, and other scientific publications, which will all be regularly taken in at the Royal Institution, there is no doubt but that the Journals of the Royal Institution of Great Britain will become one of the most interesting and most useful periodical works that has ever appeared in any country; and, consequently, that they will be much sought after, and much read.

"The reports of the various committees, for specific scientific investigations (which will soon be appointed by the managers), will, no doubt, furnish much interesting matter for the Journals of the Institution."

All the principal scientific periodical publications, foreign and domestic, the transactions of learned societies, &c. are regularly taken in, and laid on the table in the reading-room the moment they arrive.—All the daily English newspapers are taken in, in like manner, and perused, in a separate apartment, by the subscribers.

In a second reading-room, which is spacious and airy, are elegant book-cases, and library tables; and, as it is furnished

with double windows, and thin white window blinds, it is uncommonly quiet and pleasant as a reading-room, though it is situated on the ground floor, and near the street. The carriages which pass are scarcely heard through the double windows; and as the blinds prevent its being overlooked from without, it has an air of stillness and retirement which is very striking, and very pleasant to those who frequent it.

Many valuable books have been presented to the library of the Institution, and it was not till all the book-cases in the room were filled by these generous contributions, that new book-cases were provided. All books proper to appear in a public library, those only excepted which are professedly on political questions, are received by the managers, and their thanks are returned for them.

As the Royal Institution was specially designed for promoting *mechanical* improvement, and exciting and encouraging *practical* ingenuity and *useful industry*, the investigation of all subjects lying within the provinces of either of the *three learned professions* are justly avoided; consequently, all discussion relative to *religion, law, and medicine*, is declined.

One of the most interesting details of the Institution still remains to be mentioned:—It is the *repository*. The measures necessary for forming it have not been neglected, but, from its nature, it cannot be finished, nor indeed can it be begun, till the establishment is quite complete in all its other essential parts. Models of mechanical inventions and contrivances, in order to their being really useful, must be so made as to serve for imitation, consequently they must be constructed with the greatest care; and they cannot be made in the Royal Institution till those shops are fitted up, and furnished with the best tools, and the best workmen. These workshops will soon be completed, and properly manned; in the mean time, a spacious and elegant room, 44 feet long, and 32 feet wide, with the ceiling supported by two rows of columns, has been built for the repository, and in less than one month will be perfectly finished, and ready for the reception of the machines and instruments which it may be judged proper to exhibit to public inspection.

As soon as some addition to the buildings shall be completed, it is intended to accommodate a certain number of young men, of different mechanical professions, who, at the recommendation of proprietors, will be taken into the house to be instructed. These will be boarded and lodged in the house, and be employed in the workshops;—and for their improvement in drawing—practical geometry—and mathematics,—an evening school, under the direction of the clerk of the works, will be established in the house.

“As most of the young men who will be admitted into this seminary will probably come from distant parts of the country, and will return home, after a residence of three or four months at the Institution, carrying with them a perfect knowledge of such new and useful inventions, applicable to the common purposes of life, as may be deserving of being generally known and adopted, it is easy to foresee that this arrangement will be of great and extensive public utility. It is, perhaps, that part of the establishment precisely which will be the most interesting, and which will contribute the most powerfully to the attainment of the principal object of the Institution: “*The diffusing the knowledge, and facilitating the general introduction of useful mechanical inventions and improvements.*”

The funds of the Institution arise, 1st, from 60 guineas paid by each *hereditary subscriber*, who is named a *proprietor*; 2d, from 15 guineas paid by each *life-subscriber*; 3d, from three guineas paid by each annual subscriber; 4th, from particular donations and legacies.

A proprietor has an *hereditary transferable share* in the

house and all the property belonging to it, has a vote in the election of managers and visitors, and two transferable tickets of admission to the establishment and lectures. A *life-subscriber* has a ticket of admission for life, not transferable. An annual subscriber is entitled to a similar ticket during the continuance of his subscription. The three classes are alike open to ladies and gentlemen, and every class of subscribers has the privilege in common of having copies of models or drawings made (at their own expence) from those belonging to the Institution.

The lectures are, 1st, a course of *experimental philosophy*, comprehending the principles of astronomy, electricity, magnetism, mechanics, hydrostatics, pneumatics, and optics. In this course all abstract and mathematical reasoning are avoided, and the whole calculated at once to instruct and amuse. 2d, A course of *chemistry*, in which the principles of the science and the modern discoveries are illustrated by experiments, and its application to the arts and manufactures, &c. shewn. 3d, An evening course, calculated for persons mechanically and scientifically engaged, in which the foregoing subjects are minutely and *technically* treated.

“The number of the proprietors of the Institution (1802) amounts to 325;—the life-subscribers to 268;—and the annual subscribers to 527;—making in the whole 1120 persons, who have already come forward in support of this great public undertaking.—This number is undoubtedly very great, but the lists of the members of the Royal Institution will appear doubly respectable when the many distinguished names which dignify them are taken into consideration. But if so many persons of great abilities,—high rank,—and most respectable character,—could be found to come forward and support an undertaking, not only unfinished, but new in its kind, and of the success of which doubts might well be entertained, we may safely look forward with confidence to a period, not far distant, when the Royal Institution of Great Britain, completed in all its details, and in full activity, will become so interesting, that every person of liberality and discernment, who takes pleasure in contemplating the progress of human improvement, will be desirous of belonging to it, and willing to assist in promoting its permanent prosperity.”

INTERLACHEN, a town of Switzerland, capital of a bailiwick of the same name, in the canton of Bern. It is seated between the lakes of Brienz and Thun, 28 miles S.S.W. of Lucern, and 32 S.E. of Bern.

INTERFERING, in farriery, a local disease incident to horses. It arises from various causes; and though this malady is sometimes constitutional in the animal, yet it is more frequently occasioned by an improper method of shoeing; in consequence of which the horse moves his hind feet so closely together, that hard scabs are gradually formed by their continual friction, and the disorder at length is attended with halting or lameness.

According to Professor Bradley, *interfering* may be cured by a compound made of three parts of fresh sheeps' dung, and one part of rye or wheat flour, well dried.—These ingredients should be formed into a cake, then baked in an oven, and applied warm to the part affected, which will thus speedily heal; or, it may be anointed with a mixture of turpentine, and verdigrease finely pulverized, by the use of which the scabs in general shortly disappear.

INVERESK, a village in Edinburghshire, situate on the E. side of the mouth of the Esk, on the Frith of Forth. In 1783, the subterraneous remains of a Roman hot bath were discovered here.

INVERBURY, a borough in Aberdeenshire, situate on the fertile banks of the Don, just above its confluence with the river called Urie Water. It is 15 miles N.W. of Aberdeen.

JOACHIMSTHAL, a town of Bohemia, celebrated for its silver mines, which are the best in the kingdom. It is 52 miles S.E. of Dresden.

JOCKGRIM, a town of France, in the department of Lower Rhine, situated on an eminence, near the Rhine, nine miles S.E. of Landau. Long. 8. 16. E. Lat. 49. 13. N.

JOHANNESBURG, a town of Eastern Prussia, with a citadel, seated on the river Pech; near the lake Spirding, 95 miles S.E. of Königsberg. Long. 22. 39. E. Lat. 53. 16. N.

JOHN, Sr. one of the Philippine islands, E. of Mindanao. Long. 126. 32. E. Lat. 9. 30. N.

JOHN, St. a river of New Brunswick, which, running from N. to S. enters the bay of Fundy, at the city of St. John's.

JOHN, St. a city of New Brunswick, situate at the mouth of the river St. John, in the bay of Fundy. Long. 65. 15. W. Lat. 45. 12. N.

JOHN, St. a town on the E. side of the island of Newfoundland. It has a good harbour, entirely landlocked, and defended by several forts, in one of which the governor of the island resides. —Long. 52. 21. W. Lat. 47. 32. N.

JOHN, St. the capital of Antigua. It is one of the most regular towns in the West Indies, and has the most commodious harbour in the Leeward Islands. Long. 62. 4. W. Lat. 17. 4. N.

JOHNQUERA, a town of Spain, in Catalonia, seated at the foot of the Pyrenæes, 20 miles S. of Perpignan.

JOHORE, **JOR**, or **INOR**, a town of the kingdom of Malacca. It was destroyed by the Portuguese in 1603, but has been rebuilt, and is in the possession of the Dutch. Long. 93. 55. E. Lat. 1. 15. N.

JONESBOROUGH, a town of Tennessee, capital of the district of Washington, seated near the foot of the Iron mountains, 80 miles E. by N. of Knoxville. Long. 82. 46. W. Lat. 36. 8. N.

JONKIÖPING, a town of Sweden, capital of the province of Smoland, and seat of the parliament, or superior court of justice for Gothland. The houses are chiefly of wood, covered with turf or moss; no thatching being used, as both too dear and too dangerous in case of fire. In order to keep out the rain, large layers of birch bark are spread over the timber-work of the roof, under the covering of turf or moss. These turf roofs make a singular appearance, many of them producing herbage, which is occasionally cut for the use of the cattle; and a few are ornamented with flowers. The town is seated on the S. end of the lake Wetter, with a strong citadel, 50 miles N.W. of Calmar. Long. 14. 46. E. Lat. 57. 12. N.

JORDAN, a river of Palestine, which rises in Mount Libanus, and runs from N. to S. forming two lakes, the one formerly called the Sea of Galilee, or the lake of Tiberias, and the other, the Dead Sea.

JOSEPH (II.) Emperor of Germany. The genius of this emperor was active and prompt, but vehement and impetuous, and embracing too many objects at the same time. He was superficial in all his acquisitions, and though anxious to learn every thing, he mastered nothing. He possessed magnanimity, and, in despite of detraction, his heart was open to the impressions of sensibility; and if he often refused to assist the suffering individual, it was because he wished to reserve the means of exercising his beneficence in favour of the unfortunate in general. Never was he really inexorable but towards those who transgressed the laws, and even then the public good was the motive of his severity; his actions were rather the result of principle than inclination. He has been reproached with aggravating punishments, and modifying

decisions to the caprice of his own arbitrary will. Without meaning to justify him in this particular, we may allege the uprightness of his intentions, which designed to intimidate by example, and to prevent lenient or corrupt judges from securing the guilty from punishment; and, above all, his profound ignorance in points of jurisprudence, which continually led him to mistake the bounds of his own power. To the same cause we must attribute his enterprises against the property and the privileges of the citizens; of which there can not be a stronger proof than the surprise he testified on many occasions, when the clamours of the public, and the opposition he met with, convinced him of the discontent of his subjects.

Few princes have been inflamed by a stronger passion for the good of their people, and none have been occupied with more activity and zeal about the means which he esteemed proper to promote it. This pursuit was so predominant, that it absorbed all others; and he was so devoted to the weighty cares of government, that every instant of his life he was the monarch, and had scarcely time to know that he was a man; thence it was, that he had none of the weaknesses which so often dishonour princes, and oppress their subjects. He was a prey to no ruinous whim, to no mistress who exhaust the state, and consign its employments to unworthy hands. Simple in his manners, and inimical to luxury of any kind, he erected no palaces whose foundation rested upon the shattered fabric of the poor man's cottage. How then, it may be asked, did it happen, that though possessed of these rare virtues and qualities, his reign should be marked with a series of calamities? The fact, it will be said, is not astonishing when we recollect that he was generally superficial, was cursory in all his observations, drew false consequences from every thing he saw, and built upon them a plan of reformation which was as defective as the principles upon which it was founded. This is, indeed, the opinion of many of his judges, but cannot be adopted by such as will take the trouble of discriminating between what he did, and what he wished to do. It is true that the education of the emperor left his natural genius destitute of cultivation, and that wandering at hazard, and destitute of principles to guide it, he must have been often deceived; but these defects, it must be acknowledged, were, to a certain point, corrected by nature, in bestowing on him an accuracy of judgment, and a facility of conception: he readily discovered the abuses which were consecrated by the prescription of custom; he knew the abilities and the necessities of the state, and the means to be employed to raise it to the degree of prosperity and power of which it was capable. If he failed in his endeavours, we should be wrong to conclude that his views were ill directed, or that his theory was incorrect; but a variety of prejudices, fatal to his happiness and to our own, led him astray in the execution. The most excessive partiality cannot refuse to his designs the tribute of admiration which they justly merit.—They were such as required a man of superior powers to form, and to dare to accomplish them. They were intended to unite in the same political form of government the various provinces of the monarchy; to incorporate into one people, twenty nations, differing in their laws, customs, and languages; to purify their morality and religion, by determining invariably the principles on which both were to be practised and preached; to increase useful knowledge, by multiplying and improving the public schools; to encourage commerce, by exciting and protecting the national industry; to ensure the progress of agriculture, by ameliorating the lot of the husbandman; to unite to the state, by means of toleration, citizens who had been alienated from it by their religious opinions; in a word, to make of the monarchy one consistent whole, the parts of

which being well connected, should render it powerful and happy at home, respected and formidable abroad.

Such was his design, which certainly was in itself at once great and judicious. The obstacles which might offer themselves in the execution were not of a nature to resist the effort of a dextrous hand to prevent, or at least to remove them; and it is not to be doubted that an absolute prince, who had united to the power of rendering himself formidable, the talent of making himself beloved; who had associated to his enterprises men whose capacity and probity might have fixed the public esteem; would have succeeded in surmounting them, with the aid of time and the wisdom of his measures. Unfortunately no monarch was ever less capable of employing those means. Vexatious by constitution, he was still more so by his mode of reasoning; persuaded that if he did not precipitate the reforms which he projected, he would not have time to complete them, the most violent measures were ever those which he preferred. In vain was it represented to him, that this was the most improper method to produce the effect which he promised himself; his self-confidence confirmed him in his obstinacy, and made him despise these prudent counsels. To this fault was joined his extreme mistrust, which induced him to discover in those whose rank attached them to his person, or whose office destined them to share with him the charge of the government, so many secret enemies of the good cause which he espoused; who were seeking their own fortunes, and disposed to sacrifice the interests of the public to their private emolument. This supposition, as false in its principle as dangerous in its consequences, alienated the affections of his subjects, and raised a barrier between the prince and those whose abilities might have corrected his own ideas. We cannot then wonder at the invincible perseverance with which he pursued any ruinous or chimerical project, notwithstanding it might be opposed by the united voice of the whole kingdom. Convinced that the more he sought to promote the general good, the more obstacles private interest would raise against him; he almost always judged of the excellence of his designs, by the degree of resistance which he experienced to their execution. Another consequence of this principle was, that not being able to confide, without danger, to any one the care of fulfilling his wishes, he was forced to undertake it himself; and by being at once the proprietor and the agent, he must do every thing in order to its being well done. From this complicated delusion it followed, that he deprived himself of the means of concluding any thing; and that, by continually destroying what he began, he could never raise the fabric which was to supply the place of that he had overthrown. His mind, oppressed by the weight and multiplicity of business, was lost in the labyrinth he had created, and forgetting to-day the decrees which had been yesterday published, he was perpetually contradicting himself. The number of opposite edicts of his reign prove the fact, and added contempt and ridicule to the discontent which his administration inspired, in despite of the best intentions. In the design of correcting abuses, he successively directed his endeavours against all the orders of his subjects: beginning with the clergy, whom he rendered contemptible without amending, he passed to the commercial class, whom he crushed under the weight of prohibitory laws; and from them to the nobility, whom he completely ruined, under pretence of relieving the husbandman, who found no redress from his changing, misplacing, and perverting every thing. He affected to despise what he called prejudice, and violated without scruple the most sacred contracts which subsisted between prince and people. So many violent acts, whose motive may render them excusable in the eyes of God, but not in those of men, and especially of those who were the victims of them,

Vol. X.

drew upon him so general a hatred, that it would be difficult to ascertain the extremities which might have followed, if that power who watches over the preservation of the monarchy, had not terminated its evils, by removing its author. The emperor died, but his expiring regrets could not reconcile him to a people oppressed by vexations of every kind, by a ruinous war, and by the loss of the finest province of the monarchy. May this instructive example of Joseph II. bring conviction to the minds of princes, of the difficulty of governing with propriety, though with the advantage of the most brilliant qualities of the heart and understanding; of the essential necessity of repressing their pride, and gaining the affections of their subjects; and if there should arise any of his successors who might be tempted to tread in his steps, let him recall to mind his wretched fate, and, by avoiding rash innovations, permit the state to experience that repose which is so necessary to its well-being.

JOSELIN, a town of France, in the department of Morbihan, 25 miles N.E. of Vannes. Long. 2. 23. W. Lat. 48. 0. N.

JOURE, a town of France, in the department of Seine and Marne, with a late magnificent Benedictine abbey, 10 miles S.E. of Meux, and 35 E. of Paris.

JOYEUSE, a town of France, in the department of Ardeche, seated on the Baune, 27 miles S.W. of Privas.

IPHOFEN, a town of Germany, in the bishopric of Wurzburg, 15 miles E.S.E. of Wurzburg.

IPS, a town of Germany, in the archduchy of Austria, situate near the confluence of the Ips and Danube, 48 miles W. of Vienna. Long. 15. 11. E. Lat. 48. 13. N.

IPSALA, a town of Turkey in Europe, with a Greek archbishop's see. Near it are mines of alum. It is seated on the Larissa, 20 miles S.W. of Trajanopoli, and 118 W. of Constantinople. Long. 26. 10. E. Lat. 40. 57. N.

IPSERA, a small island in the Archipelago, in the form of a heart, 15 miles N.W. of the island of Scio. To the W. is another small island, called Anti-Ipsera.

IPSHEIM, a town of Germany, in the principality of Culmbach, 17 miles N.N.W. of Anspach.

IRAC-ARABIA, or **BABYLONIAN-IRAC** (the ancient Chaldaea), a province of Turkey in Asia; bounded on the W. by the desert of Arabia, on the N. by Curdistan and Diarbeck, on the E. by Irac-Agemi and Kufistan, and on the S. by the gulph of Persia. It is watered by the Euphrates and Tigris; and is almost all under the dominion of the Turks. Bagdad is the capital.

IRAC-AGEMI, or **PERSIAN-IRAC**, a province of Persia; bounded on the West by Irac-Arabia and Kufistan, on the North by Aderbeizan and Ghilan, on the East by Coushestan, and on the South by Faristan. Ispahan is the capital.

IREBY, a town in Cumberland, with a market on Thursday. Many Roman antiquities have been dug up here. It is seated in a valley, at the source of the river Eilan, 10 miles N.E. of Cockermouth, and 299 N.N.W. of London. Long. 3. 18. W. Lat. 54. 50. N.

IREKEN, **JERKIN**, or **YARKAN**, a rich and populous town of Tartary, the capital of Bocharia, with a castle. It is the staple town of all the trade carried on between India and the North part of Asia. The Kalmucks are masters of it; and never disturb any one on account of their religion. It is eight miles N. of Cathgur. Long. 73. 25. E. Lat. 41. 40. N.

IRJAH, a town of Hindoostan Proper, in the country of Cabul, 46 miles S.E. of Cabul. Long. 69. 8. E. Lat. 33. 50. N.

IRKUTSK, the largest and least populous government of 9 Q.

Russia, comprising all the E. part of Siberia, from the Northern Ocean to the frontiers of Chinese Tartary, and from the boundaries of the government of Tobolsk to the Eastern Ocean. This large territory was gradually conquered and appropriated by the Russians in their desultory excursions from Tobolsk. It is divided into the four provinces of Irkutsk, Nertskhuk, Yakutsk, and Okotsk.

IRKUTSK, a town of Russia, capital of a government of the same name, and the see of a Greek bishop. It is situate on the lake Baikal, and is a place of considerable commerce, the caravans which trade to China passing through it. Long. 104. 58. E. Lat. 52. 4. N.

IRON-ACTON, a village in Gloucestershire, at the conflux of the Staure and Laden, which form the river Frome, three miles from Bristol. Much iron has formerly been dug up, and many iron works and great heaps of cinders are to be seen here.

IRRIGATION (*Encycl.*). The principal object in irrigating the soil, is a proper supply of water; and, if that fluid abound with mud, the land will be more permanently improved, than by conducting a clear spring over its surface: hence it is certain, that if the liquor collected in farm-yards, the washings of different sinks, ditches, and the drains of the contiguous fields, could be conveyed into the common stream, the water would acquire a more fertilizing property.

But, in order to manage this important branch of rural economy with success, it will be requisite previously to ascertain, whether the stream will admit of a temporary weir or dam being constructed across it; whether the water can be raised to such a height as to overflow a particular spot, without injuring the contiguous land; and whether it can be drawn off with the same facility as it is conducted on the soil. If these objects can be attained, the process of irrigation may be undertaken in the following manner:

When the descent cannot be determined with tolerable precision by the eye, an accurate level of the ground must be taken, and the most elevated part compared with the height of the stream to be employed. The instrument used for this purpose, is called a *water-level*; and, as the common machines are but imperfectly adapted to the purpose, we have given in Pl. 33, the representation of a simple implement for taking levels, contrived by Dr. James Anderson; as it has been recommended to the notice of the public, by the Board of Agriculture.

It consists of two legs of common deal, A and B, about twelve feet in length, which are joined together at the top, and connected below by a cross bar, as delineated in the plate. From the angle at the top, a plummet, C, is suspended by a small cord; which, when a mark is made in the middle of the connecting bar, and the two legs are perfectly straight, will strike such mark, so that the level may be easily ascertained.

In the practical use of this instrument, Dr. Anderson directs a wooden pin, on which one of the legs of the frame may rest, to be driven into the ground at the level of the water, where the irrigation is intended to commence. The other leg is then to be brought round, till it touch the ground, on a level with the top of such pin, when another is to be driven in. After the level has in this manner been perfectly adjusted, the last-mentioned pin is to be employed as a rest for one foot, and the other turned about, till the level is found in the same manner. Thus, the precise direction which the stream should take will at once be discovered, without any trouble, or incurring any additional expence by digging through heights or filling up cavities.

The level being taken as directed, a wide ditch is to be cut as near to the dam as possible, that the water may be

conveyed to the highest part of the meadow; the sides and banks of the ditch being uniformly kept at an equal height, and elevated about three inches above the surface. Where the meadow is extensive, and the soil uneven, it will be necessary to have three works or dams in different directions, each of which should be five feet in width, if the meadow contain fifteen acres; and the highest part be the most distant from the stream. A ditch, ten feet wide, and three in depth, will, in general, be fully adequate to overflow ten acres of land; and if there be three works or dams in a meadow, and *flood-hatches*, or flood-gates, be placed at the mouth of each, when the water is not sufficient to irrigate the whole soil at once, it may be performed at three different periods; by taking out one of the hatches or gates for the space of ten days, at the expiration of which it is to be let down; and the other two taken up alternately for a similar period: thus each division will receive a proper share of water in its turn, and derive from it equal benefit.

Where the fall of the meadow renders it practicable, the bottom of the first work should be made as deep as the bed of the river; because the water, in proportion to its depth, will carry a larger or smaller quantity of mud with it, and consequently fertilize the soil in a more or less effectual manner. Small ditches, or troughs, ought likewise to be cut from the works at right angles, about 12 yards apart from each other; and their breadth should be adequate to the distance to which the water is to be conveyed: thus a trough two feet in width, and one foot deep, will irrigate a surface twelve yards wide, and forty feet in length.

It will, however, be requisite to provide the ditches with occasional flood-gates or sluices, especially when the water is rapid, in order to keep it sufficiently high to flow through the perforations in the gates, or over the sides. Between every second trough, a drain is to be cut at equal distances in a parallel direction, and of a proper depth for receiving all the water which overflows the adjacent lands, and conducting it to the principal drain with such rapidity, as to keep the whole stream in constant motion. For, if it be suffered to stagnate, it will be productive of the worst consequences; as the turf would become rotten, the soil be soaked without being ameliorated, and the land produce only coarse grass, rushes, or other aquatic weeds.

Where the meadows are cold, flat, and swampy, the width of the bed, that is, of the intermediate space between the trough and drain, ought never to exceed six yards. In such cases, the land cannot be too much intersected, especially when there is an abundant supply of water. The fall of the bed in every meadow ought to be in the proportion of one inch to each foot; for a rapid current always contributes to produce fine and sweet herbage; but the water ought never to flow more than two inches, nor less than one inch deep, except during the summer months.

Such is the method of irrigation practised in Gloucestershire, and likewise, with very few variations, in the counties of Wilts, Dorset, Cambridge, Hants, &c. Its advantages, indeed, are so important that, we trust, no rational agriculturist will hesitate to adopt the practice of floating land, throughout Britain, in every situation where a command of water can be obtained.—Common meadows are not only enriched, but those of a swampy nature are consolidated by means of the mud conveyed on them. They are also protected from the effects of frost by the flowing water, or by the ice when it is frozen; hence the roots of grass remain unaffected by the cold, and excellent crops are thus produced so early, as to be of intimate service for spring food, before the natural grass appears.

By irrigation, good pasturage may be procured in the be-

ginning of March; and, if the season be mild, much earlier. This crop is particularly excellent for feeding such cattle as have been *hardly* wintered, and so great are the benefits attending the flooding of lands, that the farmers of Gloucestershire are enabled to commence the making of cheese, at least *one month* earlier than those who do not possess the same opportunity. The utility of watering land is still further evinced by this circumstance, that from the great forwardness of grass, the feeding between the months of March and May, is worth one guinea per acre; in June one acre will yield two tons of hay; and the *after-grass* may always be estimated at twenty shillings; whether the summer be wet or dry.—The expence of irrigation is computed at from 3l. to 6l. per acre.

Land may be floated at any period of the year. In the months of December and January, the chief care consists in keeping the soil sheltered by the water from the severity of frosty nights. It will, however, be necessary to expose the surface to the air every ten days, or fortnight, during the winter, by laying it as dry as possible for a few days; and to discontinue the flooding, whenever the land is covered with a sheet of ice.

In February, greater attention is required; for, if the water be suffered to flow over the meadow for several days in succession, a white scum will be generated, which is very pernicious to the grass; and, if the water be drawn off, and the land exposed to a severe frosty night, without being previously dried for a whole day, the greater part of the tender plants will be totally destroyed.

In the beginning of March, the grass on well-flooded meadows will, in general, be so forward as to furnish abundant pasturage; when the water should be drained for the space of a week, that the soil may become firm, before heavy cattle be allowed to graze on such land: these, however, if the season be cold, ought to be supplied with a little hay every night, during the first week.

In the month of April, the grass may be eaten down closely; but no cattle should be turned in later; as otherwise the crop of hay will be much impaired, the grass become soft or woolly, and consequently its value be considerably diminished.

In the beginning of May, the water is again thrown over the soil for a few days, in order to moisten it; but the practice ought on no account to be continued during the summer; for it has an unfavourable effect on the *after-math*; and produces in sheep feed on it, the disorder called the *rot*.

Many other advantages arise from irrigation, which have been stated in our original article; and those readers who are desirous to acquire further information relative to this interesting branch of rural economy, may also consult Mr. G. Boswell's *Treatise on Watering Meadows*, &c. in which the necessary implements, and terms employed in irrigation, are explained and illustrated with engravings; as likewise Mr. Wright's *Art of Flooding Land*, &c. where the subject is periphrastically treated, and objections are ably answered.

IRRITABILITY (*Encycl.*). We have already stated this term to denote that essential property of animals, in consequence of which their fibres, on being touched, contract or become short, in a greater or less degree.

Chemists have lately endeavoured to shew, that not only animal, but *vegetable irritability* originates from the *oxygen* which is inhaled by the lungs, or respired by the leaves, or absorbed by the roots. And as respiration is every minute requisite to the support of animal life, Dr. Darwin conjectures that something immediately necessary to their existence, is acquired by the lungs of animals from the atmosphere, rather than from the food they digest; and that this nameless some-

thing, perhaps oxygen, is mixed with the blood, and again separated from it by the spinal marrow, after having undergone certain changes in the course of its circulation, or secretion. In a similar manner, he considers it as probable that the spirit of vegetation may be derived from that source, namely, the uncombined oxygen of the air, which is respired by the upper surfaces of the leaves, and not from that which is absorbed by roots, in a more combined state: further, that this oxygen is again separated from the juices by the *sejforium*, or brain, of each individual bud, after having undergone some change in its passage through the secretory vessels.

A long-continued, unusual, or unnatural stimulation of vegetable fibres, by an increase of heat, exhausts the spirit of vegetation: hence a slighter degree of cold, will destroy such fibres; because, after having been excited for a considerable time by a more powerful stimulus, they will cease to act on the application of one that is weaker, so that in consequence of hot days, tender plants are more liable to perish from the coldness of the night. For this reason, gardeners in the more northern climates, shelter both the flowers of apriots and the tender vegetables, during the spring-frosts, from the meridian sun, as well as from the destructive cold of the night, which is generally the most intense about one hour before sun-rise.

In the hot days of the month of June, 1798, Dr. Darwin twice observed several rows of garden-beans to become quite sickly; and some of them even died, in consequence of being irrigated for one or two hours with water from an adjoining canal. This circumstance he attributes to the sudden application of cold, after the plants had been greatly enfeebled, and deprived of their irritability by the excessive heat of the season, rather than to the too copious watering of the dry soil. Some vegetables, however, such as strawberries, onions, &c. which were equally exhausted, are less liable to be thus injured, and even receive benefit from occasional irrigation in dry and sultry weather.

On the contrary, the spirit of vegetation acquires additional vigour, if plants have been exposed for a considerable time to a less than usual degree of heat; but, if they be suddenly removed from a cold to a warm place, they will experience a similar fate with those hapless persons, to whose frozen limbs sudden heat was imprudently applied: thus, too great increase of action occasions inflammation, which is generally succeeded by mortification and death. This fact has been ascertained and confirmed by the experiments of M. Van Ullar, who kept two species of the spurge, or wartwort, namely, the *Euphorbia Pepsus*, and *Ejula*, L. secluded from the light and heat, with a view to render them more irritable: on exposing these plants afterwards to a meridian sun, they became gangrenous, and in a short time decayed.

The increased, or diminished, degree of irritability in plants, is by Dr. Darwin attributed to their previous habits, with respect to the stimulus of greater or less heat. Thus, the periods at which vegetables thrive in the spring, appear to be greatly influenced by their acquired habits, as well as by their present sensibility to heat: hence potatoes will germinate in a much cooler temperature during the spring than in autumn; hence also, the vernal months are the most favourable to the process of making good malt; because the barley will then sprout with a less degree of heat than at any other season.

The irritability of plants has been discovered to be greater in the morning than at noon, and less in the evening than at mid-day; though it is considerably augmented during cool and rainy weather. In a similar manner, the limbs of animals acquire a greater sensibility of heat, after having been exposed to the cold; thus, the hands, after immersing

them for a short time in snow, glow with warmth on entering the house;—and the late celebrated Spallanzani observed several animals and insects, that conceal themselves under ground in a torpid state during the winter, and enjoy the genial warmth of the spring, again to disappear at a season when the heat of the atmosphere was much higher than on their first emerging from their subterraneous abode.

From these considerations, Dr. Darwin infers, that such plants as are sheltered in a warm room, during the winter, ought to be occasionally exposed to a cooler atmosphere, in order to increase their irritability; otherwise their growth in the succeeding spring will be much retarded. For the same reason, the continual vicissitudes of the air and weather are essentially necessary to mankind; as the frequent changes of heat and cold have an obvious tendency to preserve or restore their irritability, and consequently the activity of the system. Hence not only the health and energy of men are more conspicuous in our variable climate, but their longevity is comparatively greater than on those tropical continents, which experience both a more considerable degree of heat, and a more steady atmosphere.

ISERLOHN, or **LOHN**, a town of Westphalia, with considerable manufactures in iron and tin, and of ribbands, velvets, silks, and stuffs. It is 32 miles N.E. of Cologne. Long. 7. 19. E. Lat. 51. 2. N.

ISMANING, a town of Bavaria, which gives name to a county, now united by purchase to the bishopric of Freisingen. It is situate on the Isar, eight miles N.N.E. of Munich, and 9 S.S.W. of Freisingen.

ISMID, or **IS-NIKMID**, a town of Turkey in Asia, supposed to have been the ancient Nicomedia, the capital of Bithynia. It is situate on a gulf or bay of the sea of Marmora, 45 miles E.S.E. of Constantinople. Long. 29. 47. E. Lat. 40. 37. N.

ISMID, a town of Turkey in Asia, in Caramania, 24 miles E.S.E. of Cogni.

ISPERLICK, a town of Turkey, in Europe, in Servia, 24 miles N.N.E. of Nissa. Long. 22. 40. E. Lat. 43. 32. N.

ISSELBURG, a town of Westphalia, in the duchy of Cleves, 14 miles E.N.E. of Cleves.

ISSELSTEIN, a town of the United Provinces in Utrecht, capital of a small territory, which formerly belonged to William III. king of England. It is situate on the Idel, 5 miles S. of Utrecht, and 21 S. of Amsterdam.

ISSIGEAC, a town of France, in the department of Puy de Dome, situate on the Couze, near the Allier, 15 miles S.S.W. of Clermont.

IS-SUR-TILLE, a town of France, in the department of Cote d'Or. In its vicinity are quarries of a white stone, which is not affected by the frost. It is seated on the Ignon, near the Tille, 12 miles N. of Dijon.

ITCHEN, or **ALKE**, a river in Hants, which rises near Alresford, in the centre of the county, and watering Winchester, enters the bay of Southampton, at the town of that name.

JUAN DE FUCA STRAITS OF, a large bay or gulf of the N. Pacific Ocean, on the W. coast of N. America. The entrance is in Long. 124. 55. W. Lat. 48. 25. N.

IVANITZ, a town of Croatia, on the river Lonja, 42 miles N.E. of Carlstadt. Long. 16. 14. E. Lat. 46. 5. N.

JUBO, a kingdom of Africa, on the coast of Ajan, with a capital of the same name, subject to the Portuguese. Long. 43. 20. E. Lat. 0. 50. N.

IVINGHO, a town in Buckinghamshire, with a market on Friday, 6 miles S.W. of Dunstable, and 32 N.W. of London. Long. 0. 35. W. Lat. 51. 54. N.

JULFAR, a town of Arabia, in the province of Oman, situate on a bay of the Persian Gulf, 100 miles N.W. of Oman. Long. 56. 14. E. Lat. 25. 55. N.

JUMELLA, a town of Spain, in the province of Murcia, 22 miles S.W. of Murcia.

JUNAGUR, a town of Hindoostan Proper, in the country of Guzerat, 170 miles S.W. of Amedabad. Long. 69. 58. E. Lat. 21. 45. N.

JUNGNAU, a town of Suabia, capital of a lordship of the same name, belonging to the princes of Furstenberg. It is 40 miles S. of Stuttgart. Long. 9. 12. E. Lat. 46. 40. N.

JUNKSEILAN, a fertile island in the India Ocean, near the S.W. coast of Siam, 63 miles long, and from 10 to 20 broad. The principal town, of the same name, is situate on the N. part of the island, and has a harbour capable of receiving vessels of a moderate size. Long. 98. 30. E. Lat. 8. 40. N.

JUSSEY, a town of France, in the department of Upper Saone, situate on the Amance, 15 miles N.W. of Vesoul, and 22 E. of Langres. Long. 5. 48. E. Lat. 47. 49. N.

JUSTINGEN, a town of Suabia, the capital of a lordship purchased in 1751, by the Duke of Wirtemberg. It gives a feat and voice in the diets of the empire. It is 32 miles S.E. of Stuttgart.

JUTERBOCK, a town of Upper Saxony, situate on the Angerbach, 18 miles N.E. of Wittenberg, and 24 S. of Potsdam. Long. 12. 52. E. Lat. 52. 1. N.

K.

K AFFUNGEN, a town and monastery of Germany, in Hesse, near Cassel. Long. 9. 30. E. Lat. 51. 15. N.

KAIRVAN, a city of Tunis, capital of a government of the same name. It is the second city in the kingdom for trade and population; is celebrated for the most magnificent mosque in Barbary; and is 20 miles W. of Sufa. Long 10. 25. E. Lat. 35. 40. N.

KAISARICH, or **KAISARIJAH**, a town of Turkey in Asia, in Caramania, the capital of a sangiacat. It was the ancient Cæsarea of Cappadocia. It is situate at the foot of a mountain always covered with snow; and is five miles in circumference, surrounded with walls, and defended by a castle. It is populous, and divided into 180 quarters, in each of which there is a mosque or chapel. The principal trade is in Morocco leather. It is 150 miles NE. of Cogni, and 250 E.S.E. of Constantinople.

KALAAH, a town of Persia, in Chilan, with a considerable manufacture of silk. Long. 58. 45. E. Lat. 36. 23. N.

KALIMBURG, a town of Denmark, in the isle of Zealand, the capital of a considerable bailiwick. Long. 11. 11. E. Lat. 55. 47. N.

KALRI, a town of Suabia, in the duchy of Wirtemberg, with a castle. Long. 9. 45. E. Lat. 48. 38. N.

KA-KAS, a tribe of the Mogul Tartars, in Chinese Tartary. They inhabit the country N. of the Mogul Tartars, properly so called, which stretches as far as the kingdom of the Eleuthes; and is near 300 leagues in extent from E. to W. They live in tents, on the banks of their numerous rivers. They adore a lama of the second order, who is held in such veneration that bonzes from China, Hindoostan, Pegu, &c. come to pay their devotions at his residence in then Pira.

KALMUNZ, a town of Bavaria, in the principality of Neuburg, situate at the confluence of the Vitz and Nab, 12 miles N.N.W. of Ratibon.

KALTENBRUNN, a town of Westphalia, in the principality of Sulzbach, 12 miles N.E. of Sulzbach.

KAMNITZ, a town of Bohemia, in the circle of Leitimetz, with a manufacture of stockings, which forms its principal trade. It is 21 miles N.N.E. of Leitimetz, and 30 S.E. of Dresden.

KANDEGHERE, a town of the peninsula of Hindoostan, in the Carnatic. In 1599 it was the capital of a kingdom, called Nartings, the residence of a Hindoo king, whose dominions extended over Tanjore and Madura; and in 1640, a descendant of that prince, who reigned here, permitted the English to form a settlement at Madras. It is 70 miles N.W. of Madras. Long. 79. 24. E. Lat. 13. 46. N.

KANG-HY, Emperor of China, and of both the Tartaries. He was son of Chun-Tchi, founder of the present reigning dynasty, called Tai Tsing. He ascended the throne in the year of our Lord 1662, and reigned sixty-one years. His will, which is translated and enriched with notes by Joseph de Grammont, missionary at Pekin, presents many curious facts and observations relative to the history, religion, laws, and manners of China. It runs in these words:

"From the foundation of the empire to the present time, every sovereign has paid religious respect to Heaven, and imitated the examples of his ancestors.

"According to this law, which is the basis of every good government, the principal duty of an emperor is to maintain order, peace, and plenty in his dominions; to watch, without intermission, for the purpose of averting from his subjects every thing which can tend to disturb their tranquillity and ease; to treat foreigners with kindness; to maintain a reciprocal commerce with other nations; and to enjoy with them the riches contained within the four seas*. Happy the prince whose conduct is regulated by this sacred duty.

"For me, I have attained the ninetyeth year of my age, and the sixty-first of my reign; I do not attribute my long life and reign to my feeble virtue, I owe this double blessing solely to the protection of Heaven and Earth †, to the benignity of that Spirit who governs all generations ‡, and to the singular merits of my ancestors §.

* As this small tract contains many things not well known to the majority of readers, it has been thought proper to elucidate it with notes. Chinese geographers represent the earth square, and surrounded on every side with water. The square continent is the empire of China only, which they call the middle kingdom *Tchou Kao*, because they suppose the other kingdoms to be nothing more than small islands dispersed among the four seas, which answer to the four sides of their land. They are now a little more enlightened on this subject, but their maps are unaltered.

† According to the Chinese, the heavens and earth joined together, *Tien-ty*, designate the Ruler of the universe.

‡ The Chinese superstition places genii and spirits every-where; fire, thunder, mountains, rivers, roads, houses, all places, and almost all beings, have their tutelary spirits; the spirit here alluded to is that of the earth.

§ The Chinese of distinguished birth, or dignity, are of opinion, that the *Cbang-ty*, or supreme Lord of heaven, confides to their ancestors the care of their whole family. Following this vain and presumptuous idea, when a Chinese is desirous of obtaining some signal blessing, he addresses his prayer to one of his ancestors; and the greater the merits of the ancestor, the more his descendant thinks himself secure of prosperity.

"I have perused, with attention, the history of the monarchy, from the reign of its founder, Hoang-ty*, to this time; four thousand three hundred and fifty-one years are elapsed. Of the three hundred and one emperors who have filled the throne, during these forty-three centuries, not one has had so long a reign as myself: I did not expect so long a career; when I attained my twentieth year, I did not expect to live till thirty, but never dared to flatter myself that I should reach forty. How distinguished, then, how favoured am I by Heaven, in being permitted to live to the age of ninety!"

"We read in the *Cbu King*†, that long life, riches, and strength of body, joined with peace of mind, love of virtue, and an easy death in an extreme old age, are the principal sources of human happiness. From this it may be inferred, that very few men are perfectly happy, for the last source of happiness is rarely conjoined with all the preceding: I know not, nor can I foresee, when the end of my days will arrive; but, at my present advanced age, I consider myself as having attained the summit of happiness. Lord of a mighty empire, I possess all that is envied by the four seas encircling China; at the head of a family, my sons and grandsons, who amount to fifty in number, give me assurance of long and brilliant posterity: moreover, wars and commotions have utterly ceased throughout my states; from one end of my empire to the other, my subjects, submissive and faithful, enjoy the most profound peace.

"When I reflect on the events of my reign, I see no probability that my tranquillity should be interrupted; and if this day were appointed to be my last, I think my mind would maintain the most perfect composure. Every one knows the cabals, the factions, and intrigues, and the system of plunder which preyed on the state when Heaven chose me as governor. I do not presume to arrogate to myself

the merit of those singular events which have so happily changed the face of affairs, and which fixed me on a tottering throne; but it affords me the purest consolation to see order, peace, plenty, and subordination now generally prevalent throughout the whole of my extensive empire.

"This glorious revolution, I own, cost me immense labour and pains; imitating the emperors of the three first dynasties‡, I keep a vigilant eye on all quarters of the empire. The parties and revolts which arose on all sides, at every moment rent my heart, engaged all my attention, kept me in perpetual uneasiness, and permitted me to take no repose night or day. What oppositions have I not submitted to! What griefs have I not concealed, and what obstacles have I not surmounted!

"When I reflect on the embarrassments and corporeal labours I have endured, I cease to wonder that the emperors of preceding dynasties did not reign longer. No, it was not intemperance and voluptuousness, as some inconsiderate historians, whose pleasure consists in censuring even the most irreproachable sovereigns, have pretended; it is not, I say, intemperance and voluptuousness which have abridged their days; but the immense weight of public affairs, the uninterrupted series of cares and solitudes, the short periods of their domination must be imputed: they have sunk under the weight of empire, like *Tchu-ke Leang*||, who terminated his career of glory exhausted with fatigues and labours. Oh, how few ministers of state endeavour to imitate this great man!

"A minister who assumes the management of affairs, can renounce it when he will; the engagement by which he is attached to his prince, only retains him while his zeal for the service continues; as soon as he is disgusted he dismisses himself from his employ, retires from court, and returns to his family; where, liberated from all cares and inquietudes,

* It is certain that Tou-hy and Chin-noug are looked upon by the Chinese as the first emperors who governed China, but they do not know the era and duration of their reign. Hoang-ty afterwards restored the peace of the empire, established ministers, and regulated the form of government. It is not surprising that he should be considered the founder of the empire.

† The *Cbu King* is one of the six sacred books of the Chinese; it includes the foundation of their ancient history, the principles of government of their first emperors, and their precepts of morality.

‡ To the sources of happiness here enumerated, the *Cbu King* opposes six sources of misery: 1st, a short and vicious life; 2d, poverty; 3d, disease; 4th, grief; 5th, weakness; 6th, cruelty.

§ The three first dynasties, or families, who governed the empire were distinguished by the appellatives of Hia, Chang, and Tcheou.

The first, Hia, founded by Yu the Great, began 2200 years before the Christian era, and in the space of 441 years, produced seventeen emperors.

The second, Chang, acknowledges Tching-tang for its founder; it began 1765 years before the Christian era, and produced twenty-eight emperors, who reigned 644 years.

The third, Tcheou, founded by Vu Vang 1121 years before Christ, reigned 875 years, and gave birth to thirty-five emperors. The reader is not to imagine that all these princes were models worthy to be followed: several in each dynasty were known only by their debauchery, cruelty, injustice, and impiety. The most celebrated in history are Ty-Kie, of the first, and Chen Sin, of the second dynasty, who deserve to be considered as the Neros of China: but Yu the Great, Chao Kang, Tchu, of the first; Ven-Vang, Tching-Tang, Tai-Kia, Vai-Jiu, &c. of the second; and Vu-Vang, Tching-Thang, &c. of the third dynasties, were emperors so distinguished for their wisdom, equity, moderation, love of their people, and zeal for the public good, that all wise emperors make a merit and glory of imitating their actions and virtues.

|| Tchu-Ke Leang rendered himself famous under the two last emperors of the dynasty of Han, about the year of Christ 220. His inviolable fidelity to his sovereigns, his constant application to business, his superior talents for government, raised him to the first dignities of the empire; but that which principally distinguished him in those times of trouble and disorder was his great bravery and ability in the conducting of armies. The greatest generals were afraid even of his shadow. He died in arms in the cause of his sovereign. The fall of the dynasty of Han speedily followed the death of this great man, who was its only support.

he finds consolation in the embraces of his offspring, and after spending an easy, mild, and agreeable life, he sinks quietly into the grave.

"How different the lot of an emperor! When once he has assumed the helm of affairs, whatever difficulties may attend the conduct of them, he is forbid to delegate his trust into other hands; the rest of his life is then only a web of troubles, uneasiness, and labour.

"Those who read the histories of Chün and Yu, will see with admiration that those two emperors * never for an instant abandoned the reins of empire, that they themselves entered into all the affairs of all their subjects, for them alone they lived, and both died exhausted with labour and fatigue, and far distant from their court and their families; the one at Zian-ow, the other at Hoi-Ki-Kien. Let any one consult the Y-King, that sacred book, where good and evil, virtue and vice, are exhibited without disguise, and painted in appropriate colours; he will find no trait of reproach on the imperial character. In fact, to be without a place of rest, to exert, and even exhaust his strength, is the lot of an emperor. But among all those who have govern-

ed the empire prudently, I dare pronounce that no one will be found whose reign has been so replete with troubles as my own.

"Neither jealousy, love of glory, nor ambition, placed my family on the throne of China. In consequence of the misunderstanding which prevailed between the Ming† family and mine, my father justly declared war against him; and the troubles† which then desolated China, rendered it an easy conquest. My father was even advised by his ministers and generals not to let pass so favourable an opportunity of making himself feared and respected by his neighbours; but, considering it contrary to the decrees of Heaven to dispossess a family who had been legally in possession of the throne for near 300 years, he resisted every solicitation, and could never resolve to adopt so violent a measure. Meanwhile the troubles of the empire daily increased. The Y-Tching was master of Pekin; the emperor T'iong-Tching hung himself through despair. All the empire in alarm and consternation then turned their eyes towards my father, and implored his aid against the tyranny of the usurper. Touched with the woes of the nation

* Yao-Chün and Yu have always been considered by the Chinese as the most perfect models for sovereigns; fathers of their people, their only aim was to render them happy and virtuous. Their reign may, with reason, be regarded as the reign of clemency, justice, prudence, and all the social virtues. The emperor Chün ascended the throne 2277 years before the christian era. After a reign of fifty years, he died at Hsün-ou, in the province of Kuang si, aged 110 years.

Before he attained the throne and acquired the love and esteem of his people by those virtues which make great kings, the emperor Yu had already entitled himself to their eternal gratitude by the important services he had rendered the state. The renewal and amelioration of agriculture, the liberty and facility of trade in all the provinces, but especially the draining of the waters with which all the low lands of the empire were overflowed, a work worthy of ancient Rome, were the immortal fruits of the indefatigable application and superior genius of this great prince. He began his reign in the year 2217 before Christ, and, after ten years, terminated his illustrious career at Hoi-Ki-Kien, a city of the third order, dependent on Chus-hü-tu, in the province of Tche Kiang.

† The dynasty of Ming was that which immediately preceded the reigning family, called Tai-T'ing. It was founded by Ming-tait-son, in the year of Christ 1384. It produced sixteen emperors in the space of 276 years. The misunderstanding between the two families originated solely in the haughtiness and contempt manifested by the last emperors of the Ming family, or rather by their eunuchs and mandarins, towards the Tartar princes. These misunderstandings occasioned frequent wars.

‡ China was then in a most critical situation. The Se-Schum, the Hu-Kuang, the Kiang-Si, the Ho-Nan, the Chen-Si, all these fine provinces were a prey to different parties of rebels, every chief of whom pretended to the empire; violence, murder, and plunder, were generally prevalent. Of all the chiefs of parties, Li-T'ie-T'ching was the most powerful and most to be dreaded: while the others by fire and sword destroyed cities and countries, and fought only to enrich themselves by the spoils of the great and of the poor, he, less ferocious and more cunning, still retained some vestiges of humanity; and if he despoiled individuals in high stations, he employed the booty in relieving the miseries of the people. By this artful conduct, he increased his party to such a degree, that his troops were equal to those of the emperor, not only in courage and discipline, but in numbers. Seeing himself at the head of such a fine army, after making himself master of the Ho-Nan and the Chen-Si, he did not hesitate to assume the title of emperor, and advance towards the capital. He knew that place, defended by a garrison of 60,000 men, to be impregnable; but informed of the misunderstanding which prevailed between the eunuchs and the military officers, and of the disposition of a great party which had been formed in his favour by means of his emissaries, he was secure that the gates would be opened to him. In fact, in three days after his arrival, he entered the city at the head of 300,000 men. The emperor T'iong Tching, who had bestowed all his confidence on the eunuchs, was entirely ignorant of all that was passing without. He thought his enemies were still at a great distance, when two eunuchs came to him from Li-T'ie Tching, announcing his arrival, and demanding the crown. By this distressing proposition, T'iong-Tching perceived he was betrayed. He wished to leave his palace without delay, accompanied by his guards, but no one had the courage to follow him. The unhappy prince, thus deserted, and feeling that he was now without resource, put his family affairs in the best order he could, and yielding implicitly to the dictates of his despair, retired into his garden, where he hung himself on the branch of a tree by his girdle. A few hours afterwards, the rebel entered the palace, and caused himself to be again proclaimed emperor.

While this revolution took place in the capital, prince V-Geer was commanding the Chinese troops in the Lea-Tong. Hardly had he learned the state of things, when, resolved to avenge his sovereignty, he immediately made peace with the Tartars, and called in their aid to expel the rebel, and give peace to the empire. Li-T'ie-Tching could not long hold out against the valour of the Chinese and Tartar troops united. After a few battles, in which he constantly had the disadvantage, he at length took to flight, and retired to the Chen-Si, with the wrecks of his army, where, after a time, he fell in a battle with the prince V-San-Quei.

which were already at their greatest height, my father yielded to the wishes of the people. He entered China, exterminated the rebel and all his party, and by the acclamations of the grandees and people was saluted and acknowledged emperor.

"His first care was to display his esteem for the emperor T'iong-T'ching, by decreeing that all due funeral obsequies should be performed, according to the customs of the empire.

"If we ascend further, to the preceding dynasties, we shall perceive that Han-Kao-T'fou*, founder of the dynasty of Han, was only a simple commissary of a district: that Ming-Tai-T'iu, founder of the dynasty of Ming, once served as footman in a monastery of bonzes†: that towards the end of the dynasty of Yuen‡, general T'ching-Yen-Leang, at the head of a considerable army, obtained the imperial dignity, which was soon snatched from him by the founder of the Ming family.

"My race is descended from the kings of Eastern Tartary; they took possession of the empire by virtue of a particular dispensation of Heaven, and the consent of the nation.

"In times of disorder and anarchy, when every department of a state is in confusion, he who by his prudence, his authority, or his superior talents, succeeds in restoring order and peace, always becomes master, and legitimate possessor of the supreme authority: this fact is proved by history. No man by his own single exertions can raise himself to sovereignty, for sceptres and crowns are given by Heaven. He on whom the choice falls has nothing to fear from man; if Heaven defines him to a long and peaceful reign, the united efforts of all mankind cannot impede or abridge its course.

"From my earliest youth I have studied the writing of

the ancients and moderns; and I am not unacquainted with their useful, curious, and instructive sentiments on every subject. In the vigour of my days, I could bend a bow of one hundred and fifty pounds weight, and shoot an arrow of thirteen handfuls long§. The leading of armies and conduct of battles and sieges are arts in which I am perfectly versed.

"Yet, although I am a great man of war, bred in the tumult and din of arms, no man can reproach me with having at any time violated the laws of justice and humanity. I never in my life put an individual to death unjustly: if I ordered the destruction of the three kings||, and the extermination of the family of Mo-pe¶, these sacrifices were required for the interest and welfare of the state.

"As to the imperial treasure, I have always considered it as the blood and sweat of the people; and accordingly I have never used it but for the support of my armies in the time of war, and the subsistence of the poor in times of dearth: I never made a superfluous or useless expenditure of it.

"Let any one enter the different palaces** in which I reside during my progress, he will find nothing rich or curious in the furniture or the ornaments. Ten or twenty thousand taels a year suffice for the expenditure incident to each palace. The repairs of the dykes cost the nation annually upwards of three millions of taels; thus for the maintenance of all my palaces, not a hundredth part of the money is expended which it costs to repair the dykes.

"Have I not reason, then, to feel perfectly at ease respecting the judgement of posterity?

"Formerly Leang-Vu-Ty by his valour obtained the diadem. At the age of fourscore he was dethroned by his vassal Hsu-King, who caused him to be shut up between

* Han-Kao-T'fou, before he attained the empire, was known by the name of Lien Pang. At first, he was a mere adventurer, who, from being a simple commissary of a district, put himself at the head of a troop of abandoned characters. His natural and persuasive eloquence, his moderation, his courage, and skill, by degrees formed for him a considerable faction, by which he was enabled to declare war against his sovereign, and to deprive him of the empire. He ascended the throne 205 years before the christian era. The history of China speaks in high terms of praise of his reign, which lasted twelve years. The dynasty of Han, founded by him, produced, in 426 years, twenty-five emperors.

† Ming-Tai-T'iu, before he was emperor, was known by the name of T'chiu, afterwards Hung-Vu: while he was yet a servant in a monastery of bonzes, he enrolled himself in a numerous troop of outlaws, and soon became their chief. By his valour and intrepidity, he succeeded in wresting the crown from the Mongol race, and in expelling them from the empire.

‡ The dynasty of Yuen, or of Eastern Tartars, known by the name of Mongols, was founded by Chit-Su, in the year after Christ 1280. In the space of 89 years it gave nine emperors. In the reign of the last, named Chun-Sy, a prince entirely taken up with trifles and frivolities, among the rebels who contended for the empire, T'ching-Yeu Leang was the most powerful. He had already caused himself to be proclaimed emperor, but soon afterwards lost his crown and his life in a sea fight with Tehu, or Ming-Tai-T'iu.

§ By a handful must be understood the breadth of four fingers. Thus, an arrow of thirteen handfuls long, is equal to thirteen times the breadth of four fingers. The Tartars, who are all extremely expert at archery, assert that to shoot an arrow of that length from a bow of 150 pounds weight, requires an extraordinary degree of force.

|| These three kings were the kings of Yun-Nan, Kung-Tong, and Fou-Kien. The past conduct of these three monarchs, their power, both in itself and in relation to that of Canton, its good understanding and trade with the Dutch, gave umbrage to the Manchou Tartars, then recently established in China.

** The text is supposed to refer to some West Tartar families.

¶ The emperors never leave the capital, unless it be to go to Cheu-Si-Chantong, Kiang-Nau, Leaotong, or Ge-Ho (a palace of pleasure, seven days' journey from Peking). On all the roads leading to these different places there are imperial palaces, called King-Kung, at the distance of about five or six leagues from each other. These King Kung are in number about 80 or 90. It is very remarkable, that they are all built in places so remote from habitation, that the emperor and his family can alone find accommodation; his suite, amounting often to 50,000 men, are obliged to lodge under tents.

four walls and starved to death*. The emperor Soui-Ven-Ty† also got possession of the crown without resistance, owing to a singular trait of feebleness in Tchong-Tching-Kung; yet he did not perceive that his son Yang-Ty would wrest from him his throne and life.

"These two emperors should, by timely precautions, have guarded against the ambition and the wickedness of these miscreants. An attentive observer speedily discerns plots, however studiously concealed.

"As for me, I know my subjects, and that they are all well affected towards me. Among the princes, the grandees, the ministers, and mandarins; among the soldiers and the lower order of people; even among the Mongol princes; there is not an individual who does not wish me well, and sincerely pray for a prolongation of my life and reigns.

"Old as I am, and approaching the utmost limit of life, I feel, nevertheless, that my mind and my heart are perfectly at rest; I even experience a delicious pleasure when I reflect that the sons and grandsons of the princes Y-Ting-Vang and Jao-Yu-Vang, my uncles, are still in full life and health.

"Oh, all you who compose my family, do not grieve at my return! So you live long in happiness and unanimity, I am content, and die with pleasure.

"Yong-Ting-Vang§, my fourth son, resembles me in many respects. He has all the talents requisite for government: I command him, after my death, to take possession of the empire; let a mourning of seven-and-twenty days, according to the prescribed forms be observed; and let my will be published at court and in the provinces."

KANT (Immanuel), regius professor of logic, metaphysics, and moral philosophy, in the university of Königsberg, in Prussia. This distinguished philosopher was born

on the 22d of April, 1722, of reputable parents, but who were unable to afford him a classical education, at their own expence: he was, therefore, at an early age placed in an excellent public seminary; which is supported partly by voluntary contributions, and partly by the alms or little pecuniary presents given by housekeepers to the boys; who, dressed in blue cloaks, on certain days in the week, chaunt their hymns or other songs of devotion in the public streets, before every respectable house; and are accompanied by one of their ushers. From the eleemosynary money, thus collected by deputations consisting of from twenty to thirty scholars in each, they are clad, fed, and instructed; whence the whole institution is called the *Pauper-house*.

These introductory circumstances will, perhaps, serve to explain several of the peculiarities and eccentricities in the character of this illustrious man; who, by his rigid manners, as well as by his stoical precepts, has alike excited the attention and admiration of his unbiassed contemporaries.—The writer of these lines would not have ventured to engage in such an arduous task, had he not, at an early age, been a pupil of Kant; a companion of his leisure hours; and, though too young to penetrate into the depth of his abstruse researches, an attentive observer of the actions occurring within the sphere of this extraordinary genius. Besides, he has attended several courses of the professor's lectures, between the years 1778 and 1781, when he quitted the *alma mater* of Königsberg, being then in the nineteenth year of his age: during this period he studied, under Kant, logic, metaphysics, the philosophical law of nature, geographical natural history, and maxims of education (*pädagogicum*); each of which branches was taught in a distinct course of lectures.

In tracing the gradual development of a mind that has given the world ample proofs of transcendent abilities,

* Leang-Vu-Ty, before he was emperor, was known by the name of Siao-Yuen. His virtues, political and military, had raised him to the dignity of prime-minister. Cloaking his ambition under various pretences, he succeeded in depriving two of his sovereigns of their life and crown. Having attained the throne, he governed with extreme judgment, application, and activity. At length, being infatuated with the reveries of the bonzes, he retired to a monastery, and almost entirely abandoned the reins of government. Murmurs were raised on every side. Heu-King, prince of Ho-Nan, immediately came at the head of an army, and took possession of the imperial city of Nan-King. The emperor was brought into his presence; struck with his venerable age, and firm, tranquil countenance, the rebel durst not take his life on the spot, but condemned him to be starved in prison. In spite of the endeavours and ambitious projects of Heu-King, the crown descended to a son of Leang-Vu-Ty: the dynasty of Leang, founded by him in the year of our Lord 502, reigned 54 years, and gave four emperors.

† Soui-Ven-Ty, before he was emperor, was a powerful prince in the north, known by the name of Yang-Kien. Being informed that the emperor Tchong-Tching-Kung, of the dynasty of Schin, had rendered himself odious to his subjects by his infamous and criminal debaucheries, he put himself at the head of a numerous army, and traversed the southern part of China, and, without resistance, entered the imperial city of Nan-King. On his arrival, the cowardly and voluptuous Tchong-Tching-Kung disappeared; and, for fear of falling into the hands of the enemy, went and threw himself into a well. Yang-Kien remained in peaceable possession of the empire. In the fifteenth year of his reign, he resolved to name a successor, and fixed upon his eldest son, a prince without any abilities. Yang-Ty, his second son, enraged at this preference, and inflamed with a lust of dominion, opened his way to the throne by the death of his father and brother. Sui-Ven-Ty founded, A.D. 590, the dynasty of Sui, which, in 28 years, had three emperors.

‡ In the language of the Tartars, to die, and to return, are synonymous. Thus, to express that a man is dead, they say, *petere he*, he is returned.

§ Yong-Ting-Vang, when he ascended the throne, took the name of Yong-Tching—he did not falsify the advantageous opinion entertained of him by Kang-Hy. During his government, he constantly displayed great vigilance, application, and firmness. The only spot on his annals is his inhumanity towards four of his brothers, some princes of the blood, and an entire family of christian princes. The Chinese historians will not impute as a crime his having driven from the empire all the missionaries who had been admitted by his father; but the Christians of Europe will not be equally indulgent. After a reign of 13 years, this prince left the throne to his son, by whom it is filled at this day.

|| This mourning of twenty-seven days is kept by the princes in the interior of the palace. The public mourning lasts 200 days.

many difficulties present themselves to the biographer, who is not less actuated by truth than personal regard towards a man, from whose oral and written instructions he has derived the first lessons of prudence and wisdom. Although the data in the life of Kant are but few, from which the discerning reader might discover the links of a great and almost boundless chain, yet there will be found some characteristics, marking the peculiar propensities of the juvenile philosopher.—When Kant commenced his literary career, both at the school before mentioned, and at the university of Königsberg (namely, between the years 1734 and 1744, and for some time after that period), it was customary to invite the fathers of the College of Jesuits to all public disputations, which were then held in the university every *semestre*, or half-yearly, in what is termed the *Auditorium Maximum*. In these polemical discussions, wit and sophistry rivalled each other: and he who could most pertinaciously adhere to the *forms* of his syllogisms, however sophistical the arguments, generally carried away the palm from the disputants. The students of the university, as well as those of the different schools advanced in learning, together with the most respectable inhabitants of the city, had free access to these literary tournaments. Our Kant, being naturally of an inquisitive disposition, and possessing acute powers of perception, devoted himself to the study of mathematics, in combination with natural and experimental philosophy. Animated by the high reputation which his countrymen Leibnitz, Wolf, Bernoulli, and others, had acquired both at home and abroad, after having repeatedly tried his powers of reasoning on abstruse subjects of divinity, which afforded him little satisfaction, he soon relinquished the idea of qualifying himself to perform the duties and ceremonies of that sacred profession, and turned his attention exclusively to the investigation of the different theories and proofs advanced by other philosophers “on the living or moving powers of bodies.” His first treatise on this subject appeared at Königsberg in 1745, 8vo. pp. 220, in the German language, with two plates. In this juvenile production, which is modestly entitled *Reflections*, he successfully combats the hypotheses of Leibnitz and Descartes; the former of whom had introduced the simple proposition, “that the mere velocity of bodies, even such as are in actual motion, serves as a rule for ascertaining their power;” and the latter had erroneously adopted the *square of velocities* in such computation. At this time, Kant was in the twenty-second year of his age, and supported himself at the university, chiefly by repeating the philosophical lectures of different professors, whom he also attended, to the more wealthy and less able students. Thus, he obtained considerable celebrity, both as a private tutor and as a very promising mathematician and naturalist, who was not born implicitly to adopt the erroneous notions of his predecessors. This feature of his character is sufficiently evident from the following motto, which he borrowed from Seneca, and prefixed to his first essay; *Nihil magis prestantum est, quam ne pecorum ritu sequamur antecessitum gregem, pergentes, non qua eundum est, sed qua iur.*

Although Kant did not, for many years, derive great emolument from either his writings or his instructions, yet his frugality, which nearly bordered on parsimony, enabled him to live at his native college with credit and respect, without any public salary or appointment. During this interval, he closely pursued his favourite study, the philosophy of natural history, and occasionally indulged in metaphysical speculations. His leisure hours were employed in the acquisition of modern languages, especially the French and English, which latter he acquired without a

teacher, principally with a view to examine the merits of Locke, Berkeley, Reid, Hume and Beattie; whose different philosophical works were deservingly, and still are highly, esteemed on the Continent. After investigating the principles of these excellent writers, and finding himself disappointed in his researches after a consistent analysis of the powers and faculties of the human mind, or what is commonly termed a system of metaphysics, he suspended his enquiries on this important subject for a series of years; delivered semestrial, or half-yearly, courses of lectures on pure and practical mathematics; and amused himself with the more pleasing contemplation of the planetary bodies and their revolutions. Thus, after an interval of nine years, he published his General History of Nature, or Theory of the Celestial Bodies, founded on Newtonian Principles; dedicated to the late Frederic the Great of Prussia: of which a new and improved edition (by the author) lately appeared in Germany.—In the same year, 1755, he completed the following Latin treatises; in which he gave the first specimens of his philosophical and critical talents: *Principiorum metaphysicorum nova elucidatio*; and *Dissertatio de principis primis cognitionis humane*; both 4to. Regiomonti. These were succeeded by his *Monadologia physica*; 4to. 1756.—Soon after their appearance, Kant presented the world with an ingenious and elaborate History of the most remarkable Events produced by the Earthquake which convulsed an extensive Part of the Globe, towards the Close of the Year 1755; 4to. Königsberg, 1756.—Next, in the order of time, are his New Theory of Motion and Rest, illustrated with Experiments on this Subject in Natural Philosophy, 8vo. 1758:—Reflections upon Opticism, 4to. 1759:—An Outline of a Course of Lectures on Physical Geography; with an Attempt to solve the Problem, Whether Westerly Winds are, for this Reason, accompanied with Moisture in Prussia; because they blow over an extensive Sea, 4to. Königsberg, 1759:—Demonstration of the Sophistical Subtlety contained in the four Syllogistic Figures, 8vo. 1762:—An Attempt towards introducing the Proposition of Negative Magnitudes into Philosophy, 8vo. 1763:—Enquiries into the Periplicity of the Principles relative to Natural Religion and Morals; or, an Essay on the Evidence required in Metaphysical Sciences; being an Answer to the Prize Question proposed by the Royal Academy of Sciences at Berlin, for the Year 1763:—On the only possible Method of proving the Existence of the Deity, 8vo. Königsberg, 1763:—Observations on the Effect of the Beautiful and the Sublime, 8vo. Königsberg, 1764:—Dreams of a Ghost-seer (Fœnic), illustrated by Dreams in Metaphysics, 8vo. 1766:—Remarks serving to explain the Theory of Winds, 4to. 1765.—These eleven treatises, last mentioned, are printed in the German language.

After a period of five years, Kant produced the outline of what is now called the *Critical System*; the principles of which are contained in the following work: *De mundi sensibilis atque intelligibilis forma et principiis*, 4to. Regiomonti, 1770.—The memorable occasion on which this abstruse enquiry was written, deserves to be stated. By the statutes of the university of Königsberg, every new professor, when raised to the academical chair, is obliged to publish and defend an inaugural dissertation, before he is admitted to exercise his public functions, or to become a member of the senate. It is further worthy of remark, that the new theory herein developed, though ingeniously opposed by three of the most expert disputants of the university, was ably defended by Marcus Herz, a gentleman of the Jewish nation, who then studied medicine and philosophy at Königsberg, and has since given many strong

proofs of his proficiency by several publications, which, by the Germans, are considered as *classical*: he is at present one of the first physicians at Berlin, aulic councillor, and a member of the Supreme College of Health.

In consequence of this elaborate and profound elementary work, the name of Kant refounded in the universities of Germany, especially those of the protestant persuasion; and the strenuous advocates or followers of Aristotle, Descartes, Leibnitz, Wolf, Baumgarten, and other authors, began to feel the instability of their systems, and to apprehend a general reform in philosophy. At the same time a general alarm spread through the German schools; where dogmatism on the one hand, and scepticism on the other, had long prevailed, to the great detriment and disgrace of learning. Kant, from this period, pursued his critical labours with redoubled vigour; entered into a philosophical correspondence with several of the first literary characters of the age, particularly with Lambert, then president of the Royal Academy of Sciences at Berlin; and whose endeavours not only tended to accomplish the same great object, but who had, in his Cosmological Letters, proposed theories which perfectly coincided with those of Kant, previously published in his General History of Nature.—We have the letters interchanged by these two great men before us, forming part of the second volume of Immanuel Kant's Miscellaneous Works, edited by Prof. Tieftrunk, of Halle, in three large volumes, 8vo. 1799, third edition. It clearly appears from their mutual communications, that both were led to pursue the same path of philosophising; with this difference only, that Lambert considered *time* and *space*, or rather the phenomena which take place in time and space, as *real* objects of perception; whereas Kant maintains, that they are merely *two essential forms of the mind*. Thus, *time* is the necessary condition of all intuitive perceptions, and the idea we have of it serves to ascertain the impressions received by the *internal* senses; such as the imagination, memory, reflection, &c. On the contrary, *space* is the characteristic of all external perceptions, being determined by the medium of the external senses, and chiefly by those of touch, vision, and hearing. No thinking person will deny the truth and accuracy of this distinction; for the necessity and importance of such division cannot be questioned, unless by those who are decided enemies to all innovation, or blind adherents to Aristotle and the school-men.

Although the Latin treatise, last mentioned, contained the elements of a comprehensive system, yet, as many new and abstruse propositions were not illustrated by examples, the whole theory remained for about *eleven* years in a manner confined to the university of Königsberg; where it was publicly taught and exemplified by Kant, in his logical and metaphysical courses. During this period the author employed himself almost exclusively in the elucidation of the *Critical System*; and we meet with no other publication between the years 1770 and 1781, than a short essay, On the different Races of Man, in 1775.—When the philosophers of Germany had nearly forgotten the bold attempt made by Kant, in his Inaugural Dissertation, he unexpectedly roused them from their dogmatical slumber. The Critique of Pure Reason at length appeared in 1781; a work which promised a total and beneficial reform in every philosophical department. For a long time, however, after its publication, it had been unaccountably neglected, or, at least, misunderstood. This was surely not in consequence of the difficulties with which the study of it, as well as of every metaphysical subject, is necessarily attended; but of a certain indifference to philosophy, and of a confirmed taste for shallow and popu-

lar discussions, which Kant directly opposed. But, as soon as the work was more studied and investigated, and had found several successful commentators, a revolution in philosophy immediately commenced. It soon met with numerous admirers and friends; and even its opponents could not withhold their admiration from this masterly production. They saw themselves every-where driven from their strong holds, and obliged to erect new fortifications for the defence of those philosophical tenets, which they wished to maintain. Nay, many of the enemies of this system became its friends; and the invaluable part of it, which treats of morals, met with an almost universal approbation. All the different branches of philosophy were examined with greater ardour; and new sources of knowledge, which formerly had scarcely been conceived, were now exposed to view. The limits of this science were more accurately defined, and the laudable researches after stable and simple principles, and after a rigid method, gave to philosophical enquiries a certainty, and an interest, of which they had hitherto been destitute. Long before this period, doubts had arisen in reflecting minds, concerning the systems of Leibnitz, Wolf, and Locke; but these had never been unfolded with sufficient clearness, nor had a better theory been substituted for that which was to be relinquished. Here all systems were examined with a critical acumen, and a solid foundation was laid for a new one. This new philosophy in a short time found friends and adherents, even among ranks of people who had not devoted themselves to science, or least of all, to metaphysics. It excited in Germany a sound philosophic spirit of enquiry, of which the present age was scarcely deemed capable. It contains such an immense store of new ideas and views, that, hitherto, only a small part of these materials can be considered as digested; and even, in a distant age, new branches of knowledge may shoot forth from it.

The work itself is arranged with a systematic spirit, and written with a noble philosophic impartiality. The style is somewhat obscure; the construction and arrangement of the periods, in many places, are ungraceful, heavy, and overloaded; but a reader who has a tolerable understanding, and an interest for truth, is sufficiently recompensed by the originality of thought, and by the new and striking images with which it abounds. The celebrated author discovers all the talents requisite to a reformer of philosophy, especially in our age;—not merely an admirable acuteness, and a rare talent of making *himself* the object of his reflection, but also a knowledge in mathematics and natural philosophy, of which he had formerly given proofs; a nice sensibility of the beautiful and sublime; and, in general, a cultivated manly taste; a thorough acquaintance with the different systems of philosophy that prevailed before his time; and a refinement of feeling which is truly honourable.

Such is the character given of this profound work, by one of the first German critics, the Rev. Dr. Stäudlin, professor of divinity at Göttingen, in his classical work entitled, *On the Spirit and History of Scepticism*, in two vols, 8vo. 1794. And, in order to convince the northern compilers of the *Encyclopædia Britannica*, that in their supplement they have inserted an erroneous and illiberal account of the Critical Philosophy, we shall previously observe, that the Kantian system ought to be examined on the strength or stability of those principles on which it is founded; that it is unjust and absurd to compare its individual parts with those of other philosophical theories; and that such contracted minds as are incapable of reasoning in the abstract, of distinguishing the perceptions of sense from

Intuitive operations of reason, or of conceiving the wide difference between experimental knowledge, and that derived from operations of the understanding, or of the judging faculty—such persons are not qualified either to understand or to criticise metaphysical propositions. Hence, we may easily account for the numerous and dissonant opinions which have, during the last twenty years, appeared in Germany, and other countries, respecting the merits or demerits of the Critical System. We admit that the philosophy of Kant, in all its details, requires a long and painful study; that his language is sometimes obscure, his phraseology is often inverted, and his reasonings are subtle; but we deny, that such study is unproductive of real advantage: on the contrary, we are firmly persuaded, that enquiries into the source and limits of human knowledge, are highly beneficial to the dearest interests of mankind; but, at the same time, we allow that such speculative disquisitions are not adapted to the imbecility either of youth, or of old age. What appears to one person “a wonderful jargon,” may, nevertheless, be perfectly intelligible to another, who commiserates the self-sufficiency of the Scottish editor when he, in the plural number, requests the reader “to reflect that it is not ours.” On this occasion, we shall quote Baumgarten; who, speaking of Aristotle and other acroasmatic writers, expresses himself in the following appropriate words: “Et revera habent hoc inter alia commodi, quod

Ignavum, fucos pecus, a præsepiis arcent, profanumque vulgus vel tacentes doceant, esse non nihil in scientiis, quod non quisvis a furno redux, vel lacu noverit, quamprimum ipsi libuerit, Philosophum agere.”

It would be superfluous, in this place, to enter into the motives which induced the Scotch compilers of their *Encyclopædia* (SUPP.), to give an unjust and unfavourable account of Kant's system; but we have good reason to think that, by their own confession, they were the most incompetent judges of the subject; as they neither understood the German language, nor the outline which Mr. Nitch published in the year 1796, entitled *A general and introductory View of Professor Kant's Principles concerning Man, the World, and the Deity*, submitted to the Consideration of the Learned.—There also appeared another View, by Dr. Willich, under the title of *Elements of Critical Philosophy*, containing a concise Account of its Origin and Tendency; a View of all the Works published by its Founder, Professor Immanuel Kant; and a Glossary for the Explanation of Terms and Phrases, 8vo. 1793.—From these two publications, we conceive an *unprejudiced* reader might derive a tolerably correct idea of the Critical System, provided he be not an utter stranger to metaphysical reasoning: in the former he will find a distinct analysis of the first principles, on which the new philosophy is founded; and to the latter is prefixed a concise history of its origin, together with an account of the most celebrated theories which prevailed in Germany, previously to the publication of Kant's *Critique of Pure Reason*. It cannot, however, be denied, that the title of this work, as well as the nomenclature which its author has adopted, is unintelligible to those who pertinaciously scoff at every new term, or mode of explanation, different from that which they have been taught to employ by their schoolmaster. Thus, the northern editor (who pretends to have received his account of the Critical Philosophy from an illustrious Frenchman, but we believe from the notorious alarmist Barruel) does not appear to understand Kant's division of human knowledge into *two* distinct sources, namely, that *à priori*, which is purely intellectual, being neither derived from, nor confirmed by, experience; and that *à posteriori*, for which we are indebted to our senses, or, in

other words, to external perceptions. Now, it is not very difficult to conceive that, by the constitution of the human mind, we possess a certain faculty of comparing, combining, and reflecting on subjects which lie far beyond the circle of experience: such, for instance, are the ideas of a Supreme Intelligence and its divine attributes; of immortality; of conscious rectitude in our actions; of the principles of equity and justice, both as to ourselves and others: nay, it includes all those subjective operations of the mind, which are performed in an uniform manner by all mankind, and to which the fanatic or lunatic only forms an exception. In illustration of this fact, we appeal to every reader of common sense, whether he requires any previous experience to decide, that *safety* is in general preferable to *danger*; that *reward* is always more desirable than *punishment*; and that *patient search* after truth is a more praise-worthy quality in intellectual beings, than either premature deduction, obstinate adherence to exploded doctrines, or that self-sufficient mode of reasoning, which is peculiar to the contracted mind of the pedant, or the illiberal enthusiast. Hence Kant's distinction between experimental and pure intellectual knowledge widely differs from the obscure notions of Aristotle; who indeed speaks of *general forms*, or *formal causes*, in the mind, but he does not consider them distinctly with a view to ascertain the true source of human knowledge. It is, however, not an easy matter to persuade those who are seized with a mixture of political and religious frenzy, and to convince them that abstract reasoning in metaphysics should never be extended to, or confounded with, the established tenets of church and state: such infuriated persons, in all ages and countries, flee through magnifying glasses; which shew sedition, atheism, and anarchy, where none of these consequences are apprehended by the calm observer. Hence they are utterly unqualified to write upon any other system of philosophy except that which is consonant with their narrow minds, and by which their grovelling or interested views are more immediately supported. But, when party spirit, together with that fashionable mania of a revolutionary age, which has convulsed the social circles of Europe during the last fifteen years, have again subsided, the name of Kant, together with his sound critical doctrines, will be duly revered.—In justice, therefore, to one of his commentators, it ought to be observed, that the Scotch reviewer of this philosophy, after sophistically pointing out the “futility of the system, of which (according to him) the fundamental principles are not new;” after endeavouring to shew “the improper use of terms with its consequences; groundless or false assertions, bad logic, &c.,” is anxious to persuade the world that the “*transcendental philosophy* of Kant inverts the order of nature, and is as little calculated to promote the progress of science as the syllogistic system of Aristotle, which was likewise built on *categories* or *general forms*.” That such assertion is egregiously false, will be allowed by every novice, who has only learnt to distinguish between abstract reasoning and demonstration *in concreto*; between the manner of acquiring experimental or physical knowledge, and that of studying or teaching the principles of metaphysical science;—provided the latter, in the present state of things, deserve that denomination. Without adhering to Kant's definitions of *knowledge à priori*, and *knowledge à posteriori*, the Scottish critics continually confound the former with the latter; though they could not fail to understand, that our ideas *à priori* are produced *with* experience, but they are not produced *by* it, or do not proceed from it: as, therefore, they are constitutional in the human mind (though *not innate*), being only the forms of the mind, they are distinguished by two marks,

namely, by their being *universal* and *necessary*, so that the contrary of such ideas is impossible. Hence twice two is four, &c. among all nations; and in all ages of mankind. In short, we meet with a furd of paradoxical and contradictory assertions in the reviews of those very men; who, for want of understanding his propositions, chiefly deal in absurd invectives and declamations against Kant. Such conduct, however, is highly injurious to the progress of true science, and stamps disgrace on the publications in which it is recorded. Those readers who are inclined to doubt the truth of this accusation, may easily convince themselves of the justice of our remarks, by referring to the Supplement to the Enc. Brit. vol. II.; where, in the 357th page, No. 20. the critical philosophy of Kant is strangely compared with the inductive reasoning of Bacon; a man whose talents we all revere, but whose excellent doctrine of induction is applicable chiefly to physical, and not to metaphysical, demonstrations: further, in the next paragraph, the reviewer boldly asserts, that "the distinction between knowledge *a priori*, and knowledge *a posteriori*, is as old as speculation itself; and the mode in which Kant illustrates that distinction, differs not from the illustrations of Aristotle on the same subject."—After grossly comparing the general forms of the human mind to the form of the statue in the rough block of marble; a comparison which the Stagyrte, or some of his talkative disciples, may probably have made 2000 years ago;—and after inaptly contrasting Kant's general forms of general ideas, with those of Plato; then again confounding this proposition with the probable meaning of Aristotle, "that particular sensations give occasion to the intellect to form general ideas;"—the Caledonian editor sagaciously observes, that "his (namely Kant's) doctrine on this subject differs not essentially from that of Locke and Reid, and many other eminent metaphysicians of modern times." Thus, it will be evident that the object of the Scottish critics was to perplex the reader with a variety of heterogeneous notions, and to leave him in doubt and confusion.

Whether we have contributed in some degree to the elucidation of the *critical system*, by the preceding remarks and illustrations, must be decided by the unbiassed reader; but, we trust, our good intentions will not be questioned. We are convinced, that such system leads neither to atheism, nor to immortality: on the contrary, the most able philosophers of France and Germany have not only studied the works of Kant, but have declared his doctrines, from the pulpit, to be consonant with both moral and religious duties. Hence, we shall proceed to enumerate the different publications which he produced in the German language, since the year 1781, or the memorable era of the elementary book before criticised.—*Prolegomena*; or, introductory Observations applicable to every future System of Metaphysics that may deserve the Name of a Science; 8vo. pp. 222; Riga, 1783. This is a concise and perspicuous abstract of the preceding *Critique* in an analytical method, which the author has here adopted, with a view to return by the same path on which he had before advanced synthetically.—*Reflections upon the Foundation of the Powers and Methods which Reason is entitled to employ in judging of its Stability*; 8vo. Königsberg, 1784.—*Ideas for an Universal History, in a Cosmopolitical View; and Reply to the Question, What is Illumination of Mind?* These two Essays were originally inserted in the Berlin Monthly Magazine for November and December, 1784.—*Fundamental Principles of the Metaphysics of Morals*, 8vo. Riga, 1785; (2d edit. 1792).—*On the Volcanoes in the Moon*; *ibid.* for March, 1785.—*On the Injustice of printing spurious Edi-*

tions of Books; *ibid.* for May, 1785.—*Definition of the Idea connected with the Expression, a Race of Men*; Berlin Monthly Magazine for November, 1785.—*On the probable Origin of Human History*; *ibid.* for January, 1786.—*What's understood by the Expression, to become familiar with the Origin of our Thoughts?* *ibid.* for October, 1786.—*Metaphysical Principles of Natural Philosophy*, 8vo. Riga, 1785; (2d edit. 1787, pp. 182).—*Some Remarks on Mr. Jacob's Examination of a Work written by M. Mendelssohn, and entitled Morning Hours*, published in 1786, and reprinted in Kant's Miscellaneous Works; vol. III. pp. 89 to 93.—*Fundamental Principles of the Critique of Taste*, 8vo. Riga, 1787.—*A Treatise concerning the use of Theological Principles in Philosophy*; published in the *German Mercury* for January and February, 1788.—*Critique of Practical Reason*; 8vo. Riga, 1788; (2d edit. 1792).—*On the Failure of all Philosophical Attempts made by Leibnitz, in his work entitled Theodicea*; Berlin Monthly Magazine for September, 1791.—*On the Radical Evil in Human Nature*; *ibid.* for April, 1792.—*On the common-place Assertion, that a Thing may be true in Theory, but is not applicable to Practice*; *ibid.* for September, 1793.—*Religion considered within the Limits of mere Reason*; Königsberg, 1793; (2d edit. enlarged, pp. 340, 1794).—*Some Observations respecting the Influence of the Moon on the Weather*; Berlin, Monthly Magazine for May, 1794.—The following treatises having partly appeared in different periodical collections, and partly in distinct publications, we shall merely translate their titles:—*On the End or Termination of all Things*; 1795.—*Epistle to Sömmering, respecting the Organ of the Soul*; 1796.—*On the Peculiarity of the haughty Tone lately raised in Philosophical Discussions*; 1796.—*Proposals for deciding a Mathematical Dispute which had arisen from Misunderstanding*; 1796.—*Annunciation of the approaching Conclusion of a Treaty for perpetual Peace in Philosophy*; 1796.—*On the supposed Right of speaking Falsehood from philanthropic Motives*; 1797.—*Declaration on Mr. Schlettwein's literary Challenge directed to Kant*; on the 11th of May, 1797.—*On the Art of Book-making*; in two Letters addressed to M. Frederic Nicolai, the Author and Publisher; 1797.—*On the Power of the Mind to overcome morbid Sensations by mere Reflection*; in Reply to the Aulic Councillor and Professor Hufeland; 1797.—*Answer to the reiterated Question, Whether the Human Race is in a progressive State of Improvement?* 1798.—*Contest between the Faculties*; namely, 1. between the Theological and Philosophical Faculties; 2. between the Juridical and Philosophical Faculties; and 3. between the Medical and Philosophical Faculties; 1798.

Beside these smaller tracts, Professor Kant has published various other performances, which are not contained in the collection of his miscellaneous works above quoted; and have been separately printed. Of this class are, his Project for a perpetual Peace; a Philosophical Attempt; 8vo. pp. 104; Königsberg, 1795; and which has also been translated into French and English.—*Metaphysical Elements of Jurisprudence*; 8vo. pp. 299; Königsberg, 1797.—*Metaphysical Elements of Ethics, or Doctrinal Virtue (Zugendlehre)*; 8vo. Königsberg, 1797.—As the tendency of the last-mentioned work has been maliciously misrepresented by the Scottish editor, or his associates, as leading "naturally to atheism," we think it our duty to add a few words on the subject. Kant is said to make the following strange observation: "As it would be absurd to swear that God exists, it is still a question to be determined, whether an oath would be possible (or rather *admissible*) if it were made thus: *I swear on the supposition that God*

exists." The true meaning of the author, however, is not *supposition*; because the German word *voraussetzung*, when used in a philosophical sense, signifies previous *admission*, or taking it for granted that, &c. In this sense, Kant's *formula juramenti* is perfectly reconcilable; because a person who does not admit the existence of the Deity, should on no account be allowed to swear; for, if he be suffered to payal himself of an oath, it will be an abuse of that sacred invocation, and consequently his promise will not be binding. Hence Kant justly remarks that "all *sincere oaths*, taken with reflection, have very probably been taken in no other sense."—We do not profess to defend the accuracy of Kant's phraseology; but only to shew in what manner the hyper-critic may distort the most solid and harmless reasoning, partly by abruptly selecting such passages as may serve the base purpose of perverting the sense of the whole inference; partly by translating words so as to change their signification: for the German term above quoted, is never used in an *objective* sense, in which it would be literally *supposition*; on the contrary, it is always employed *subjectively*, and expresses neither more nor less than what we have before advanced. Thus, we believe it to be alike unjust and illiberal to bestow such invectives as "mire of atheism—detestable doctrines," &c. on the writings of a man who is respected by distant nations, not only for his profound erudition; but also for the purity of his manners through a long and active life of seventy-eight years. Had he been guilty of the least immoral transaction—had he espoused the cause of democracy, atheism, or any other junto of fanatics—his numerous friends and admirers would no doubt have been reproached with his errors by inimical enthusiasts; especially by those alarmists who have lately amused the public with Proofs of Conspiracies, and Memoirs of Jacobinism, which the writers themselves believed only during their political fits, and while they were deprived of their senses.

Let these observations suffice for the defence of the Critical System, which will probably stand long after its adversaries, and their scurrilous refutations, have been consigned to oblivion. We shall conclude with giving a short sketch of the author's peculiar habits and conduct through life.

Kant is of a middle stature, rather thin, though well formed, and of sufficient bone. His head is uncommonly large; the front elevated, his eye lively, bespeaking great acuteness and penetration; but the face is disproportionately small to the size of his head. In his countenance there is an air of dignity mingled with complacency; and, when smiling, the grave philosopher appears to be lost in the cheerful aspect of the philanthropist. His private character perfectly corresponds with this external description: the writer of these pages well remembers the affable and courteous manner in which Kant received him, when he applied for his immatriculation as *Civis academicus*, on the 7th of March, 1778, before he had completed the fiftieth year of his age; and on which occasion Kant presided as Dean of the Philosophical Faculty. In the following year, the professor was elected *Rektor Magnificus*, being the highest dignity in the academical senate, with which he has, since that period, been repeatedly invested; a new president being chosen every six months. During a residence of nearly four years at Königsberg, he found Kant uniformly beloved and respected both by the students and other professors. If this great man were not parsimonious in his domestic economy, and poignant in his satire among his best friends, he would form an exception to all mankind: for the strict morality and stoicism, which he inculcates by his precepts as well as by his example, are universally admired. Kant is no ad-

miration of the fair sex, and has ever lived in celibacy. It is, however, remarkable, that he is peculiarly attached to English company, and scarcely visits any houses in his native city, excepting those of Green, Hay, Motherby, Barkley, and other English merchants; with most of whom he has been in habits of friendship during the last thirty or forty years of his life; and almost every evening amuses himself with a social game of whist, or ombre. His remarks are, on all occasions, sparing, but sometimes pointedly acute; and his wit, especially when directed to females, is often wounding. During the last three or four years, we understand, he has resigned his academical chair, and lives more retired than usual; his health is nevertheless good; as his mode of life is exemplarily regular. He retires to rest at nine o'clock in the winter, and ten o'clock in the summer; rising at five o'clock in the former, and four o'clock in the latter season. Daily exercise on foot, serenity of mind, temperance in eating and drinking, constant employment, and cheerful company, have prolonged the life of Kant to the 79th year of his age: though his body is weak, the powers of his mind are still unimpaired; and the whole of his moral conduct is the best refutation of the foul and absurd tendency, which ignorant or malevolent men have falsely ascribed to the principles of the *Critical Philosophy*.

KAO-TCHEOU-FOU, a city of China, in the province of Quang-tong. In its vicinity is found a kind of marble, that represents, naturally, rivers, mountains, landscapes, and trees: it is cut into slabs, and made into tables, &c. Kao-tcheou-fou has one city of the second class, and five of the third, under its jurisdiction.

KATABA, a town of Arabia, in Yemen, defended by a citadel. It is situate in a fertile country, near a river which runs into the sea at Aden, 75 miles N. of Aden. Long. 44. 39. E. Lat. 13. 54. N.

KAYSERSECH, a town of Germany, in the electorate of Treves, 12 miles W. of Coblenz, and 36 N.E. of Treves. Long. 6. 48. E. Lat. 50. 21. N.

KEMNAT, a town of Germany, in Bavaria, 26 miles N. of Amberg. Long. 11. 58. E. Lat. 49. 49. N.

KENTALIFFE MOUNT, a ridge of mountains, in the S. part of Thibet, bordering on Hindoostan Proper. On the W. side of this ridge are the two heads of the Ganges, and from its E. side issues the Burrampooter.

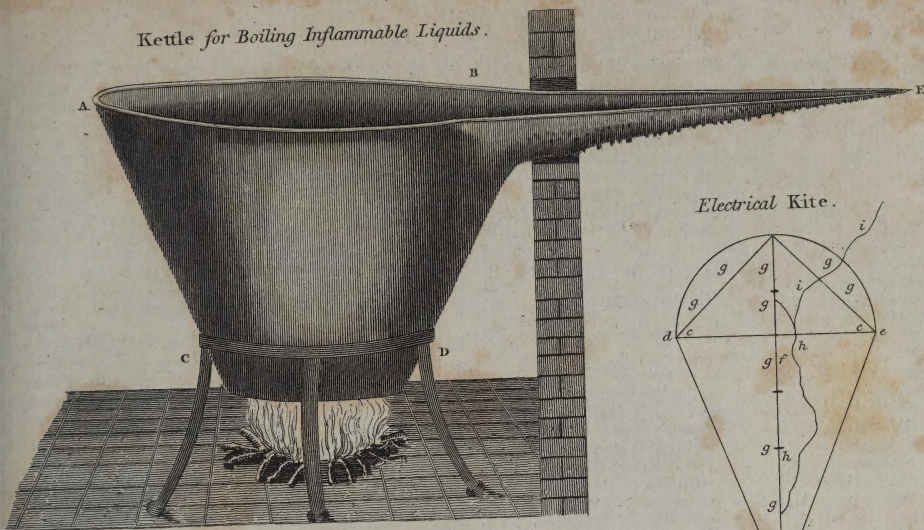
KENTZINGEN, a town of Suabia, in the Brisgau, seated on the river Elz, 13 miles N.W. of Friburg.

KERKUK, a town of Kurdistan, the capital of a government and residence of a pacha. It is surrounded with walls, and defended by a castle; 95 miles E. of Mosul, and 120 S.E. of Betlis.

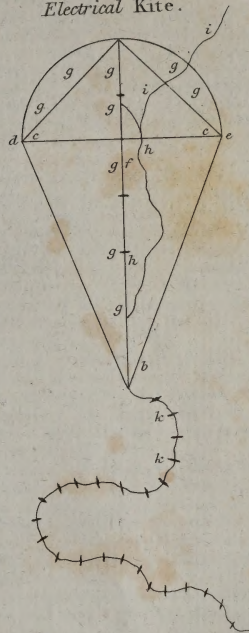
KETTLE, a vessel of copper, tin, iron, or other metal, calculated for boiling, melting, or cooking different articles in, over a common fire. The following description of a kettle for boiling inflammable fluids, by Mr. T. P. Smith, appears in the Transactions of the American Philosophical Society. "When we consider," says Mr. Smith, "the many unhappy accidents that occur from vessels containing inflammable fluids boiling over and setting fire to the buildings in which manufactories of them are carried on, it must strike us as a matter of importance to form a vessel which should be so constructed as to prevent any of those accidents, and yet of so simple a form as to render it fit for general use. Impressed with these ideas, I take the liberty of offering for your approbation the following plan:

"Let A B C D (Plate 34) represent a large kettle, B E, a spout running out to the distance of three or four feet, commencing at B, four or five inches from the brim of the kettle, and the termination of it E, just as high as the

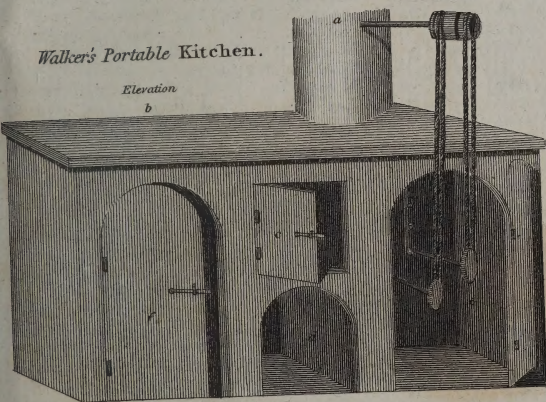
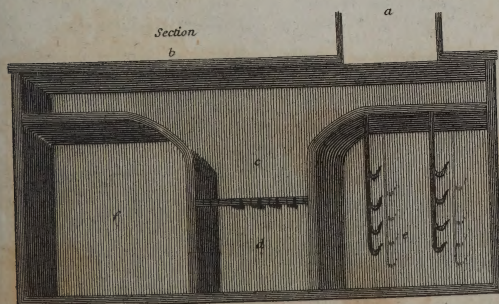
Kettle for Boiling Inflammable Liquids.



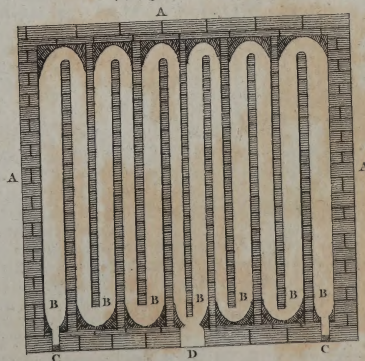
Electrical Kite.



Walker's Portable Kitchen.

Elevation
bSection
b

Mr. Coppinger's Malt Kiln.



brim A. Let the bottom of this spout be covered with wet sponges or rags. Now suppose the kettle to be filled up to B with any fluid, then as soon as it commenced boiling it would rise in the kettle, and in rising but a small perpendicular height would pass a considerable distance up the spout B E: here the liquor would soon cool, and of consequence fall back into the kettle, and the whole subside to its original height. This would occur as often as the fluid rose above B, as the evaporation from the wet sponges or rags would keep B E constantly cool.

"It would perhaps be best to pass the spout through the side of the building into the open air, as thereby the evaporation would be increased, and consequently the spout kept at a lower temperature; in this case it might be covered.

"In case of the fluid to be boiled possessing a very strong elective attraction to caloric or the matter of heat, the spout might be extended to the width of the diameter of the kettle, or a projecting shelf might be formed all round it, lined below with wet sponges or rags.

"In conformity to the will of the society, I procured a vessel of the form here proposed. I first tried the experiment with water, it boiled very rapidly, but every time the water rose into the spout it immediately subsided, although the spout had for some time been directly exposed to the heat of one of Lewis's furnaces: I afterwards attempted it with oil; but before the oil boiled the folding of the vessel, which was made of tin, melted."

KEUSCHBERG, or KIABE, a town of the electorate of Saxony, in Milnia, remarkable for a victory obtained by Henry the Fowler over the Huns, in 933. It is six miles S.E. of Merzbürg.

KIA-KING-FOU a city of China, in the province of Tche-kiang remarkable for its streets ornamented by beautiful piazzas, that shelter passengers from the sun and rain. Seven cities of the third class are dependent upon it.

KIANGARI, a town of Turkey in Asia, chief place of a sangiacat, in Natolia. It is defended by a castle, on a rock; and is 256 miles E.S.E. of Constantinople. Long. 34. 19. E. Lat. 39. 54. N.

KIEMA, a promontory of Switzerland, on the W. shore of the lake of Zug. It is remarkable, that the ground belongs to the canton of Lucern, the timber to that of Zug, and the leaves to that of Schweitz.

KIEN-NING-FOU, a city of China, in the province of Fo-kién. At the time of the conquest of China by the Tartars, it sustained two sieges, in the last of which it was taken, and all the inhabitants were put to the sword. It was afterwards re-established by the same Tartars that destroyed it, and has eight cities of the third class under its jurisdiction. It is 260 miles S.E. of Nanking.

KILCALMONIL, a town of Scotland, in Argyshire, and in the peninsula of Kintire, 17 miles N. of Campbellton.

KILGARREN, a town of Pembrokehire, with a market on Wednesday. It had formerly a castle, now in ruins; and near it is a remarkable falcon-leap, where that fish is caught in great abundance. Above this place, are large works for fabricating tin plates. It is seated on the Tyvy, 30 miles N. of Pembroke, and 227 W.N.W. of London. Long. 4. 40. W. Lat. 54. 4. N.

KILHAM, a town in the east riding of Yorkshire, with a market on Saturday, 36 miles N.E. of York, and 200 N. of London. Long. 0. 16. W. Lat. 54. 5. N.

KILIA, a fortified town of Turkey in Europe, in Bessa-

rabia; seated on an island, at the mouth of the Danube. It was taken by the Russians in 1790, but restored at the subsequent peace. It is 86 miles S.W. of Bialogrod, and 290 N.E. of Constantinople. Long. 28. 46. E. Lat. 45. 22. N.

KILLANY BAY, a bay of Ireland, on the east coast of the island of Arranmore, in the county of Galway. Long. 9. 36. W. Lat. 52. 44. N.

KILLBEGGAN, a borough of Ireland, in the county of Westmeath, 14 miles E. of Aithlone, and 42 W. of Dublin. Long. 7. 55. W. Lat. 53. 23. N.

KILLFENORA, a town of Ireland, in the county of Clare, and see of a bishop, founded in the twelfth century, united to Killaloe in 1752. It is 12 miles N.W. of Ennis.

KILLINAULE, a town of Ireland, in the county of Tipperary, 14 miles N. of Clonmell. Long. 7. 26. W. Lat. 52. 27. N.

KILN-DRYING, a process by which vegetable substances, such as hops, grain, &c. are deprived of their moisture and rendered fit for keeping, heat being applied to them in a kiln properly constructed for the purpose. The important practice of kiln-drying corn in wet weather, first attempted by Mr. John Palmer, of Maxtock, near Colehill, in Warwickshire, is described, in the following terms, in the Transactions of the Society for the encouragement of Arts, Manufactures, and Commerce, who presented their silver medal to Mr. Palmer for his ingenuity.

"The weather proving extremely rainy," says Mr. Palmer, "and my corn then standing, taking much damage, I determined upon cutting it wet, and thrashing it immediately, and then drying it on a kiln: in consequence of this, I collected as many men as were sufficient for the purpose, and employed them as follows, viz.

"I caused a part of my men to cut the corn in the common method with sickles, and bind it into sheaves. A second part I employed to load it on waggons, and carry it to the barn; and as many as could work in the barn, to thrash it. The next morning I winnowed it, and carried it to a malt-kiln to be dried; which operation was always completed in less than twenty-four hours.

"As it is impossible for me to send you two sheaves of the corn harvested as above described, I have sent you the produce of two sheaves and upwards, which I declare to be a fair sample of the produce of four acres and upwards.

"A timber stove or a hop-kiln, will answer the purpose of drying corn equally well; or the malt-kiln (Pl. 34).

The Expence per Acre was as under stated:

Reaping and carrying to the barn	-	-	£. s. d.
Thrashing and winnowing	-	-	0 12 0
Kiln-drying	-	-	0 5 0
			£. 1 9 0

"N.B. Only a part of the above sum should be charged to my new method of harvesting corn, viz. the extra expence, which is as follows:

"Five shillings per acre for drying, and four shillings for the extra trouble of thrashing it.

"After the wheat above mentioned was thrashed in the common method of flails, and dried, I so far completed a machine for thrashing, that I thrashed a very considerable quantity of wheat, and ten acres of barley, with it, carried from the field in November; and it was dried in the manner described in my claim. I did not however state this to the Society, because I had taken out a patent, dated the 6th day

of December, 1799, for my thrashing machine; and was that day going to London to give in my specification, dated the 4th of January, 1800.

"Part of the straw of the four acres, described in my claim, was used for thatch immediately after it was thrashed; and part stacked in small narrow ridges, for litter for my fold-yard.

"The grain was very well separated from the straw by the flails; but that thrashed by the machine was completely cleaved, though in a very wet state. This would not be the case with the common machines of the North.

"The quantity of wheat upon an acre was about 21 bushels, which is nearly as much as there would have been if it had been dried by fine weather. When the advantage of getting in an acre of wheat per day, in seasons like the last, is properly considered, and making it immediately useful, at the small additional expence of 9s. per acre, there can be but little doubt respecting its utility; for probably these men could not be employed at any other work."

The above was accompanied with three certificates, which testify that Mr. Palmer did harvest four acres of wheat and upwards in the year 1799; that his plan is likely to be of general advantage; and that his thrashing machine is in high repute, and answers every end purposed.

KIMPOLUNG, a town of Turkey in Europe, in Moldavia, on the river Moldava, 92 miles N.E. of Colofwar.

KIN, a town of Persia, in the province of Segestan, situate at the foot of a chain of mountains, near the lake Zare, 320 miles E. of Isfahan.

KINDASSA, a town of Hindoostan Proper, in the country of Molwa, 172 miles E.N.E. of Oagein. Long. 78. 42. E. Lat. 24. 15. N.

KINE POX, another name for the Cow-pox. See Cow-Pox, *Supp.*

KINGSTEIN, a strong fortress of Norway. See **Fædericstad**.

KING TE-TCHING, a town of China, in the province of Kiang-si and district of Jao-tcheou-fou. It is famous for its beautiful porcelain, is computed to contain a million of inhabitants, and extends a league and a half along the banks of a river, which here forms a kind of harbour, about a league in circumference.

KINROSS-SHIRE, a county of Scotland, surrounded by the shires of Perth and Fife. It is about 30 miles in circuit, its length and breadth being nearly equal; and sends one member to parliament, alternately with the county of Clackmannan.

KINTAIL, a peninsula in Ross-shire, between Loch Garron and Loch Duich. It forms the S.W. corner of the county.

KIN-TCHEOU FOU, a city of China, in the province of Hou-quang. Its district contains two cities of the second, and 11 of the third class.

KIN-TCHING, the capital of the island of Lieou-kiou, in the China Sea, and of all the islands under that appellation. The king's palace, reckoned to be four leagues in circumference, is built on a neighbouring mountain. Kin-tching is seated in Cheonli, the south part of the island. Long. 127. 30. E. Lat. 26. 2. N.

KIO FEOU, a city of China, in the province of Chang-tong and district of Yen-tcheou-fou. It is celebrated as the birth-place of Confucius, several monuments to whose memory are still to be seen here.

KIRCHBACH, a town of Germany, in the duchy of Stiria, 34 miles S.E. of Graz.

KIRCHBERG, a town of Germany, in the circle of Upper Rhine, and county of Sponheim, 22 miles W.N.W.

of Creutznach, and 41 W. of Meatz. Long. 6. 58. E. Lat. 49. 59. N.

KIRSBERG, a town of Suabia, capital of a territory of the same name, subject to the house of Austria. It is seated on the Danube, nine miles S. of Ulm. Long. 10. 12. E. Lat. 48. 16. N.

KIRCHHAYN, a town of Germany, in the principality of Hesse Cassel, situate on the Werra, 35 miles S.S.W. of Cassel.

KIRCHHEIM, a town of Suabia, capital of a lordship, 18 miles S.W. of Augsburg, and 25 E.S.E. of Ulm.

KIRCHHEIM FOLAND, a town of Germany, in the circle of Upper Rhine, and principality of Weiburg, 16 miles W. of Worms, and 28 N.W. of Mannheim. Long. 7. 49. E. Lat. 49. 39. N.

KIRDORF, a town of Germany, in the principality of Upper Hesse, 11 miles E. of Murgurg.

KIRIN, one of the three departments of E. Chinese Tartary, bounded on the S. by the river Saghalien, on the E. by the sea of Japan, on the S. by Corea, and on the W. by Leaotong. This country, which is extremely cold, from the number of forests by which it is covered, is scarcely inhabited. It contains only two or three ill-built cities, surrounded by mud walls. The valuable plant ginseng grows here; and the emperor sends hither the criminals banished by the laws.

KIRIN, the capital of the province of Kirin, in E. Chinese Tartary, situate on the river Songari, which is here called Kirin. It is the residence of a Manchew general, who is invested with the authority of a viceroy.

KIRKPATRICK, a town in Dumbartonshire, lying E. of Dumbarton. It is said to be the birth-place of the tutelary saint of Ireland. The vestiges of the Roman wall built by Antoninus, extend from the firth of Clyde at this place, to the firth of Forth. It is called, by the country people, Graham's Dike.

KIRN a town of Germany, in the circle of Upper Rhine, situate on the Nahe, 17 miles W. of Creutznach. Long. 7. 6. E. Lat. 49. 50. N.

KIRSHEHR, a town of Turkey in Asia, capital of a district, in Nardlia. It was formerly a considerable city, and called Diocæsarea. Salt is made in the neighbourhood. It is 84 miles N.E. of Cogni. Long. 34. 15. E. Lat. 39. 10. N.

KIRSOVA, a town of Turkey in Europe, in Bulgaria, on the Danube, 76 miles S.W. of Ismail. Long. 28. 4. E. Lat. 44. 47. N.

KISHENAGUR, a town of Hindoostan Proper, in Bengal, 45 miles N. of Calcutta, and 50 S. of Moorshedabad.

KISMISH, a fertile island at the entrance of the gulf of Persia, 50 miles long and five broad. It is well inhabited, and has been remarkable for its pearl fishery. Its E. end is 12 miles S. of Gombroon.

KISSINGEN, a town of Germany, in the bishopric of Wurzburg, in the environs of which are some medicinal and salt springs. It is 24 miles N. of Wurzburg. Long. 10. 3. E. Lat. 50. 5. N.

KISTNA, a river of Hindoostan, which rises on the E. side of the Gaus, forms the boundary between the Deccan and the peninsula, and falls into the bay of Bengal, S. of Masulipatam.

KISTNAGHERI, a town and fortress of the peninsula of Hindoostan, in Mysore. This town was attacked by the British troops under Colonel Maxwell, in 1789; he carried the lower fort and suburb, without much difficulty; but the garrison in the upper fort made so desperate a resistance,

that, after two hours' vigorous assault, he found it necessary to desist from the attempt. It is 54 miles S.E. of Bangalore, and 66 W.S.W. of Arcot.

KITCHEN (*Encycl.*). Under that article we gave some account of the kitchen fitted up at the Foundling, under the direction of Count Rumford, which at that period might be considered as an experiment. The matron of that charity, however, has since drawn up the following particulars, which have been published by the Society for bettering the Condition of the Poor, &c. These may have the effect of shewing how far the trial has succeeded.

"The kitchen (says the writer) has now had a fair trial, having been in constant use for above a twelvemonth. The saving to the hospital in fuel is very considerable, being about twenty-five chaldrons of coals a year. The quantity annually consumed has been hitherto 35 chaldrons; at present it is only 10. There were two cooks in the old kitchen, and they had a severe and hot service: one cook, in the present kitchen, has a very easy one; and the food, particularly the roast beef, is better dressed than formerly.

"There are difficulties which attend the use of all new and valuable inventions at first. In this kitchen they were very few, and they were soon obviated; and the cook now manages her new kitchen, with much more ease and satisfaction to herself, than she did her old one. The kitchen (the size of the room being 17 feet by 21), contains a large iron boiler divided into two parts, one of 82, and the other of 41 gallons; at the further end of which, and just above it, is a steam-box; which, with the waste steam of the boiler, and without any addition of fuel, is capable of dressing 200lb. weight of potatoes. This double boiler and box will dress a dinner for above 400 persons. They are both served by one small fire, which does not consume, for a day's dinner, more than a peck of coals and a peck of cinders, the price of the peck of coals (reckoning them as dear as 2*l.* 12*s.* a chaldron) being four pence; the cinders are saved from the consumption of the former day. On the other side of the room, there are two lesser boilers, one of them divided into two parts; and in the centre of the wall, opposite the windows, is the roasting machine*, which is five feet deep, two feet wide, and fifteen inches high. In this, on the roast-meat days, the dinner, being 112lb. of beef for the officers and children, is now dressed in four hours and a half, with a peck of coals and a peck of cinders; (see *ROASTER, Supp.*) Sixteen months have passed since this roaster has been in constant use for dressing large dinners; I have just had the flue of the chimney cleaned: the dust which was taken out (and that not more than a peck), was

a mixture of small ashes and soot; but more of the former than the latter. Indeed there did not appear to be any real soot found among it. This can only be accounted for by the circumstance, of all the smoke being actually consumed and used in heating the roaster, instead of being discharged, as is usual, out of the chimney, to assist in increasing and darkening the atmosphere of London. The dampers mentioned by Count Rumford, in page 153 of his sixth Essay, were put up before the kitchen was finished, and have been of great use. I think the new kitchen does not require so much repair as the old one. The iron bars, at the bottom, are not burnt out near so soon as they used to be in the first place under the old boilers. They generally wanted repairing once in six weeks; there are four fire-places in the new kitchen, and in 16 months they have wanted only six new bars."

These boilers would be very useful in all parish work-houses. They would cause a very considerable saving of fuel, and almost as much of food; the waste by evaporation, being, in general, much more than can be supposed, without an actual experiment made. In the usual mode of boiling, the waste by steam is about one-fifth. That this vapour carries with it a considerable part of the food and nourishment, may be easily ascertained by any one, who passes by any of the kitchens in London, where much soup is made; he will find the atmosphere around loaded with the waste of a great deal of valuable nourishment. There is another advantage belonging to these boilers, which is, that by means of the double rim, which is impervious to steam, they not only preclude waste in the food, but prevent its being contaminated by smoke; an inconvenience, to which the kitchens and cookery of the poor are peculiarly subject.

The double rim is filled by water, into which the projection of the cover of the boiler defends, so as absolutely to preclude any communication with the outward air or smoke.—The benefit of this double rim may be obtained without an entire new boiler, by making the double rim of lead, folded round the mouth of the old copper, and fitting the cover to it. The expence is about a guinea for a common sized copper. It answered very well, when tried in the poor-house at Auckland.—The double rim would be very useful also in smaller boilers, especially if intended for soup. Mr. Hopkins of Greek street, Soho, afterwards made one of ten quarts, for a village soup shop at Langley in Buckinghamshire.

Of the cautions in the use of Count Rumford's kitchens, one of the most necessary, and the most difficult to procure attention to, relates to the quantity of coal to be used†, If,

* "Enquiries having been made respecting the dimensions of the iron-work and flues of the roaster and boilers, I add this note.—The roaster is 60 inches deep, 26½ wide, and 16 high: the grate, which is under the roaster and supplies it with heat, is 22 inches long, 10 inches wide, and 14½ high; the ash-hole under the grate is 23 inches high; and the doors of this and of the other grates and ash-holes are each 10 inches wide, and 7½ high. The two pipes, for forcing hot air into the roaster, are two inches and three quarters diameter. The lower flue of the roaster is 15 inches high, and four and a half wide, and winds partly under it; and the upper flue is also four inches and a half wide, spreading in a semicircle over the top of the roaster.—The larger boiler is 60 inches long, by 36 wide, and 10 inches high: the grate under it is 24 inches long, 14½ wide, and 14 inches high; and the ash-hole under the grate 18 inches high. The lower flue is six inches square, winding partly under the boiler; the upper one eight inches high, and 5½ wide.—Of the lesser oblong boiler the length is 36 inches, the width 24, and the height 18 inches: of the grate under it, the length is 17 inches, the width 10, and the height 14 inches; the ash-hole is 14 inches high. The size of the steam-box, which is supplied by the waste steam of the large boiler, is 44 inches long, 24 wide, and 18 high; the false cullender bottom being placed five inches above the bottom of the box."

† "The necessity of limiting the quantity of fuel (says the worthy editor of the Reports) to be used, cannot be too strongly or too frequently enforced; and it should be observed, that large coal is not so proper to mix with the cinders,

instead of the peck of coals, which is all that is necessary for one of these boilers, the cook follows her acquired instinct, and lays on twice the quantity, or more, the operation, instead of receiving benefit, is prejudiced, and the roaster very much injured by the waste of coals. Where coals are used without limitation, there is very little chance of these boilers or roasters answering.

Three roasters, after the model of that at the Foundling, have been put up at Christ's hospital; and now, when (instead of nine bushels of coals, formerly used on roasting days) they are limited to something less than one bushel, being about a tiche of the former consumption, this quantity answers very well dressing 560 lb. weight, the allowance of their roast-meat days.

In those cases where public bodies may be induced to adopt Count Rumford's kitchen, it is presumed that they may think proper to refer to the account of the Foundling kitchen; for which see our original article *KITCHEN*.

The following is the specification of a patent granted to Mr. Walker, of Rathbone Place, Mary-le-bone, for a portable kitchen, for dressing and cooking victuals. It is dated May 12, 1801.

"The whole is to be made of cast or wrought iron, with a fire place in the centre, inclosed with a door, ash-hole under, a closet on each side, one of which will serve for the purpose of baking, &c. the other to contain two spits, racks, &c. complete, the top to be used for the purpose of a broiling plate heated by the same fire, the smoke conveyed through an iron funnel, in which is fixed a smoke-jack to turn the spits."

No further verbal description is given, but the reader is referred to the drawings, for which see Pl. 34. where *a* is a funnel for smoke; *b*, the top which can be used as a boiling plate; *c*, a place for fire; *d*, the ash-hole; *e*, a closet to roast meat in or broil; *f*, a hot closet or oven.

KITCHEN-GARDEN (*Encycl.*) Under the article *GARDENING*, we have spoken fully on the different requisites for a kitchen-garden. We wish, nevertheless, further to observe, that the most important points in this, as well as every other branch of horticulture, consists in digging and manuring the land well; and, above all, in the proper watering of gardens, for which the implements commonly employed appear indeed to be very inadequate. The filling, and carrying, of these vessels to the spot where they are to be used too, are attended with great labour and loss of time. To remedy these inconveniences, different machines have been invented: one of the most ingenious and useful, is that contrived by M. Sylvestre, and of which an accurate representation is given in Pl. 35.

It consists simply of a cask, capable of holding a sufficient quantity of water, for the purpose of irrigating the garden. The hinder part of this vessel is furnished with a cock that communicates with the watering pipes, and the cask is supported on a strong frame, with one or two wheels, calculated for walks about eighteen inches wide. The carriage may be drawn by a mule or an ass, and requires a person to guide the animal, to support the vessel when it is liable to be overturned, and to open and shut the cock as often as is necessary. Thus, one man will be able to water a considerable space of ground in a short time, and to sprinkle that fertilizing fluid in an equable and regular manner.

KITE, a well-known ingenious paper machine, originally contrived to serve as a toy for children, but which has lately been applied to the more useful purpose of conducting the electric matter of the atmosphere from the clouds.

Different electrical kites have been constructed by Cavallo, and other philosophers; and, though such contrivances are not very difficult, yet there are some fixed principles, which ought to be observed in manufacturing electrical kites to a certain degree of perfection. To accomplish this object, we have given a representation of it in Pl. 34. The following are the necessary rules, given in a treatise published in German, by the late Professor Lichtenberg, of Göttingen, and copied into the Domestic Encyclopædia.

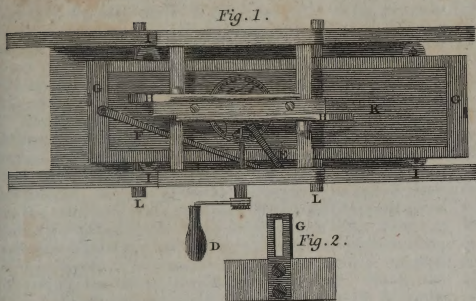
The body of the kite consists of a long slender lath, *a, b*, and a wooden bow, *d, a, e*. The former must be made of slender dry deal, properly planed, about five feet in length, one inch in breadth, and half an inch thick, so that it may neither be too heavy, nor too light to resist strong gusts of wind.

The bow *d, a, e*, is formed of a round hoop, that may be taken from a dry cask; or it may consist of split cane or whalebone, rendered perfectly smooth, and of equal thickness. Particular attention, however, is requisite to adapt it to the proper size; for if too weak, it will not be sufficiently elastic to expand the cord *c, c*. The dimensions of the bow must likewise be carefully adjusted to those of the lath *a, b*; and as the utility of the machine in a great measure depends on the accuracy of such proportions, we shall briefly state the rules by which they may be easily ascertained.

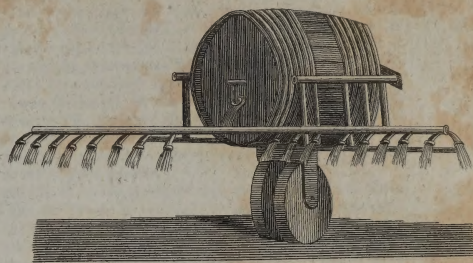
The two ends of the bow are first to be contracted by means of the cord, which ought to be properly stretched. The middle of the bow must be exactly fixed to the lath *a, b*, so that one inch only of the latter project; and the place which is intersected by the string *c, c*, should be accurately marked. The lath, from this mark to its extremity *b*, ought

as coal-dust that will hardly burn on a common fire. In every instance, that has come to my knowledge, of these kitchens not having succeeded, the failure has been owing to the improper waste of fuel. The operation of the fire is so much increased by the manner in which the grates and flues of these boilers and roasters are arranged, that the use of the same quantity of fuel in them, as in a common boiler, will very soon destroy all the iron-work, by the intenseness of the heat. In one instance, where a Rumford boiler of fifty gallons had not answered, but was quite worn out at the end of five months, my first enquiry respected the quantity of coal used; and, by the answer, I found that there had been six times as much coal applied there, as is used in the Foundling kitchen for a boiler of more than twice that size. The wonder then was that the apparatus had lasted so long; but, upon examining it, this was explained; I found a hole broken between the flues, and that the stones (that are taken out to clean the flues), had not been properly put in again. By these means much of the heat had escaped; but enough had remained, to destroy entirely several sets of bars in the grates, and to burn out the bottom of the boiler.—Many similar instances might be quoted, to shew the necessity of keeping strictly to the quantity of coals; which, for either the roaster or boiler at the Foundling, is a peck of coal-dust, mixed with a peck of cinders; and with this little quantity of fuel, there is warm water kept in the boiler the whole day, merely by the heat that remains after the dinner has been dressed."

M. Jee's Improved Mangle.



M. Silvestre's Irrigator for Kitchen-Gardens.



D. F. Anderson's Milk-House.

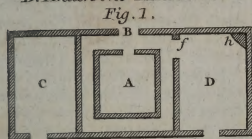


Fig. 2.

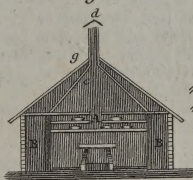
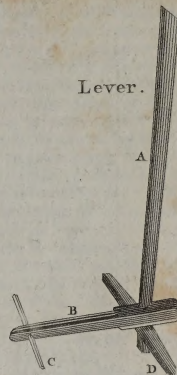


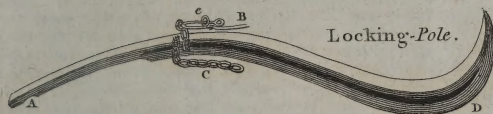
Fig. 3.



Lever.



Locking-Pole.



M. Rustall's Family Mill & Bolter.

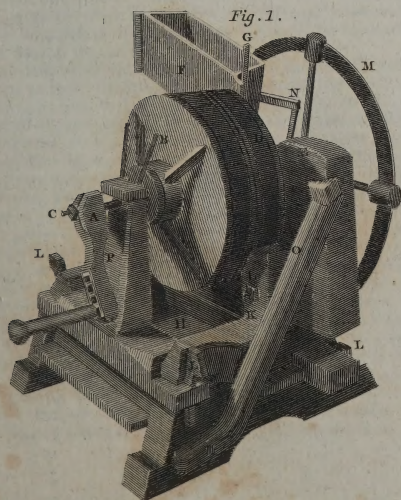


Fig. 3.



Fig. 2.

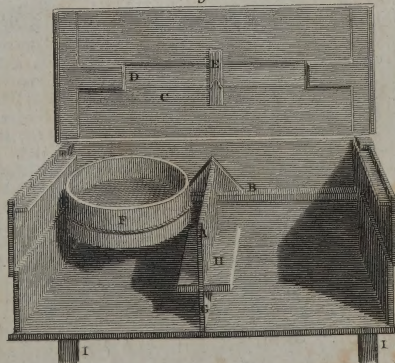


Fig. 4.



to extend somewhat further than double the length of its upper part.

Having found the proportion between the length of the lath, and the semi-circle of the bow, every thing depends upon the proper joining of these two essential parts. Hence a superficial excavation should be made at about an inch from the extremity of the lath *a*, and a similar cut in the centre of the bow; both are then to be brought into contact, and fastened with strong thread or silk.

The extremities of the hoop should now be made exactly of equal length; when one end is to be tied with thin packthread to the bow at *d*, about half an inch from the point; and, after having made small excavations into the lath *f*, on all its sides, one arm of the hoop *d* ought to be drawn close to the transverse piece; the packthread twisted several times round *f*; and at length tied to the other arm at *e*. Now the two sides from *d* to *f*, and from *f* to *e*, ought to be measured; if they happen to be unequal, the difference may be adjusted by pulling the thread towards the shorter side. Next, the thread is to be extended from *e* towards *a*, where it should be turned round several times; and thence conducted to *d*, the place in which it is fastened, so that it will form the angle *d, a, e*, as represented in the figure.—A small incision must further be made in the part of the lath marked *b*, to which the thread is extended in the direction from *d* to *b*, and thence again to *e*, where it is ultimately secured.

Thus the skeleton of the kite will be arranged; and it now remains to ascertain its equilibrium, which may be effected in the following manner: the end of the lath projecting at *a*, should first be rounded by the knife, and placed on a table, when the opposite end *b* is to be poised on the tip of the finger. If both sides of the bow are in perfect equilibrium, the skeleton is then complete; but, if either of them incline to one side, the want of symmetry may be remedied by cutting or shaving off the preponderating side of the lath, so as to reduce it to an equipoise. The frame, thus finished, is to be covered either with silk stuff, or thin paper previously oiled, that it may resist the effects of moisture; and to prevent folds either in the silk or paper cover, they should be wetted before they are applied, and afterwards dried in a cool place. In order to secure the whole covering to the frame, narrow slips of silk or paper should be passed across the lath, and over the packthread in all the parts marked *g*; and, when the whole is perfectly dry, its equilibrium must again be adjusted, by putting such additional pieces on the light side, as may be requisite to restore the balance.

In constructing electrical kites, it is of the utmost consequence to apply the strings *h, h*, below the body of the machine to its proper place: when the latter is five feet long, the cord ought to be eleven, one end of which should be passed through the two holes of the lath; namely, one in the direction of the uppermost slip marked *g, g*, and the other through the central part of the bow: then two similar holes must be perforated through the lath where the lowermost slip is denoted at *g*, that is, at a little distance from each other; and, after properly drawing out the string, so as to form an obtuse angle over the body of the kite, it ought to be well secured behind, and afterwards tied with a knot, exactly in the middle, to make both parts of equal length. Another difficulty must arise from the uncertainty of determining the exact point of the cord last mentioned, at which the main string governing the kite should be applied. Hence the following general rule requires attention; namely, that according to the impetuosity of the wind, the principal string must be fastened higher towards the head of the kite, with a view to facilitate its rising; and, on the contrary, lower towards the middle, in less blowing weather. The most advisable method will be, to

tie the leading cord at a few inches only from the upper hole, and to ascertain its exact situation by experience.

The tail of the kite, *k, k*, now remains to be fixed, and is perhaps the most critical part of the whole machine. If it be too short, the latter instantly descends; and, if it be too long, its weight prevents the kite from rising. The most effectual way to avoid both extremes, will be to make the tail seven times the length of the frame: fine packthread should be chosen for this purpose, and double or triple folded slips of paper, two or three inches long, ought to be tied into the pendant string, at short intervals; when the latter is to be affixed to the body of the kite at *b*.

With respect to the flying of this machine, an open place and a fine day should be selected, when a gentle breeze agitates the air: after launching it against the wind, the person who holds the string ought to advance speedily to the distance of thirty or forty yards; and gradually to relax the whole clue, according as the rising is more or less rapid. In order to adapt kites to the attraction of lightning from the clouds, a thin metallic point is to be affixed to the highest end *a*, and connected with the string of the machine by means of a thin wire: in this application, however, the greatest caution is necessary; and those who amuse themselves with experiments of such precarious nature, ought by no means to make the first attempt during thunder-storms, but only when the sky is serene: nor should any person affix a metallic point, or wind the wire round the string, or even moisten it, unless he be perfectly acquainted with the principles on which their joint action depends. Hence, smaller kites which do not ascend too high, must be first employed, till we become better acquainted with the rules of flying, and of fastening the machinery: thus, every danger may be obviated, and this apparently puerile contrivance, be rendered subservient to a very useful purpose. See the articles LIGHTNING and ELECTRICITY.

KITTERY, a town of the United States, in the district of Maine. It is famous for ship-building, and seated on the E. side of the mouth of Piscataqua River.

KITZINGEN, a town of Franconia, on the Maine. It is large and handsome, and owes its rise to a noble convent of Benedictines, founded in the year 745, by Duke Pepin. It is 10 miles E.S.E. of Wurtzburgh, and 34 N.N.W. of Ansbach. Long. 10. 4. E. Lat. 49. 40. N.

KIUTAJA, or **CUTAJA**, a town of Turkey in Asia, the residence of the beglerbeg of Notoja. Near it are some warm baths, much esteemed in several disorders. It is situate at the foot of a mountain, near the river Purlak, 136 miles S.E. of Constantinople. Long. 30. 44. E. Lat. 39. 12. N.

KIZBUHL, a town of Germany, in the Tyrol, on the river Acha, 36 miles E. of Ispruck. Long. 12. 27. E. Lat. 47. 25. N.

KLATTAU, a town of Bohemia, built in the year 775, and surrounded with walls in the year 1000. There are some silver mines in the neighbourhood. It is 46 miles S.W. of Prague. Long. 14. 6. E. Lat. 50. 30. N.

KLETTENBERG, a town of Switzerland, seated on the Aar, three miles from Waldschut. The spiritual jurisdiction belongs to the Bishop of Constance; and the sovereignty to the cantons. Long. 8. 12. E. Lat. 47. 35. N.

KLUNDERT, a strong fortress of the United Provinces, in Holland, near the arm of the sea, called Hollands Diep. It was taken by the French, in 1793, after a gallant resistance; but they were obliged to evacuate it soon after. It is nine miles S.E. of Williamstadt.

KNITTELFELDT, a town of the duchy of Stiria, on the river Muehr, 78 miles S. W. of Vienna. Long. 14. 57. E. Lat. 47. 29. N.

KNOXVILLE, a town of the United States, capital of the district of Hamilton and the whole state of Tennessee. It is seated on the river Holston, 494 miles W.S.W. of Richmond, in Virginia. Long. 84. 8. W. Lat. 35. 58. N.

KOANG-FIN-LOU, a city of China, in the province of Kiang-si. Its jurisdiction contains seven cities of the third class.

KOBI, called by the Chinese **CHAMO**, a vast desert of Chinese Tartary, which occupies almost all the south extremity of the country of the Kalkas. It is more than 100 leagues from E. to W. and almost as much from N. to S.

KOEI-TCHEOU-FOU, a commercial city of China, in the province Setchuen. Its district contains one city of the second class, and nine of the third.

KOEI-YANG, the capital of the province of Koei-tcheou, in China. The remains of temples and palaces still announce its former magnificence. It is 420 miles N.W. of Canton.

KOLA, a town of the Russian government of Archangel, capital of Russian Lapland. It has a good harbour on the river Kola, near a bay of the same name in the Frözen Ocean. Long. 32. 26. E. Lat. 68. 34. N.

KOLYVAN, a government of the Russian empire, comprehending a part of Western Siberia, and formerly included in the government of Tobolsk. Its capital, of the same name, is seated on the Oby, near the mouth of the Berda, and was known, before the institution of this government, under the name of Berdikoi Ostrog. This country has very productive silver mines, which have been called the Potosi of Russia. They lie between the Oby and Irtys, near the mountains which form the frontiers of Siberia, and separate that country from Chinese Tartary.

KOM, a large and populous town of Persia, in the province of Irac, with a celebrated mosque, an asylum for debtors, who are protected and supported. It is 150 miles N. of Ispahan. Long. 51. 14. E. Lat. 34. 20. N.

KONGSWINGER, a town of Norway, on the frontiers of Sweden. It is seated near the river Glomme, at the foot of a steep rock, on which stands an impregnable citadel; at last Charles XII. who reconnoitred it, thought it prudent to decline attempting a siege.

KONG-TCHANG-FOU, a city of China, in the province of Chen-si. It is surrounded by inaccessible mountains, where a tomb is seen, which the Chinese pretend to be that of Fo-hi. Its district contains three cities of the second, and seven of the third class. It is 700 miles S.W. of Peking.

KONIGSBERG, a town of Franconia, belonging to the House of Saxe-Weimar, three miles N.E. of Schweinfurt. Long. 10. 44. E. Lat. 50. 5. N.

KONIGSBERG, a town of Upper Saxony, in the marquisate of Brandenburg, 47 miles S. of Stetin. Long. 14. 40. E. Lat. 52. 50. N.

KONIGSEGG, an ancient castle of Suabia, in a principality of the same name, eight miles N.W. of Ravensburg.

KONIGSGRATZ, a town of Bohemia, with a bishop's see, seated on the Elbe, 35 miles S.W. of Glatz, and 115 N. by W. of Vienna. Long. 16. 8. E. Lat. 50. 6. N.

KONIGSHOFEN, a strong town of Franconia, with a bishop's see, 25 miles N.N.W. of Bamberg. Long. 10. 46. E. Lat. 50. 24. N.

KONIGSTEIN, a town of Upper Saxony, in the territory of Milnia, with an impregnable fort. It is a place of confinement for state prisoners, and is seated on the Elbe, ten miles S.E. of Pyrna, and ten S.W. of Dresden. Long. 13. 43. E. Lat. 51. 2. N.

KONIGSTEIN, a town of Germany, in the archbishopric

of Mentz, with a strong fort, twelve miles N.E. of Mentz. It surrendered to the French in 1796. Long. 8. 25. W. Lat. 50. 5. N.

KONIGSTUTER, a town of Germany, in the territory of Bratwisk Wolfenbuttel, with a celebrated abbey. Long. 11. 7. E. Lat. 52. 25. N.

KONITZ, a town Western Prussia, ten miles N.W. of Culm, and fifty S.W. of Dantzic. Long. 18. 16. E. Lat. 53. 36. N.

KOOCH, a town of Hindoostan Proper, in the country of Agra, sixty miles E. of Gwalior, and ninety-five S.S.E. of Agra.

KOONJOOR, a town of the Decan of Hindoostan, in the province of Orissa, eighty-six miles N.N.W. of Cattack, and 163 W.S.W. of Calcutta.

KOPYS, a fortified town of Lithuania, seated on the Dnieper, eighteen miles N. of Mohilef. Long. 31. 2. E. Lat. 54. 32. N.

KOKSAW, or **KOSOL**, a town of Denmark, in the Isle of Zealand, with a fort, forty-five miles W. by S. of Copenhagen. Long. 11. 10. E. Lat. 55. 29. N.

KOSAL, or **KOSTA**, a fortified town of Silesia, near the river Oder, seventeen miles N. of Ratibon. Long. 17. 54. E. Lat. 50. 26. N.

KOSTROM, a town of Russia, capital of a government, to which it gives name. It is situate on the Volga, surrounded by a strong wall, 168 miles N.E. of Moscow, and 380 E.S.E. of Peterburgh. Long. 41. 14. E. Lat. 57. 30. N.

KOSTROM, a government of the Russian empire, formerly included in that of Moscow. It is divided into the provinces of Kostrom and Unzha. The capital of the former is Kostrom, seated at the mouth of the Volga; the capital of the second is Makarief, situate on the Unzha.

KOTTA, a town of Hindoostan Proper, in the country of Malwa, seated on the Jesul, 100 miles S.E. of Agimere, and 215 S. of Delhi. Long. 76. 20. E. Lat. 25. 15. N.

KOUET-TE-FOU, a city of China, in the province of Ho-nan. The inhabitants are remarkably mild, and treat strangers with uncommon hospitality. It is seated between two large rivers, 312 miles S. of Peking. Long. 115. 29. E. Lat. 34. 30. N.

KOUS, or **Coss**, a town of Egypt, on the east bank of the Nile, once a place of great wealth and trade, being the staple of commerce between the Nile and the Red Sea. It is eighteen miles S. of Dendera, and forty-five N.N.E. of Ene.

KOWNO, a town of Lithuania, seated on the Wilna and Niemen, 40 miles W. of Wilna. Long. 24. 12. E. Lat. 54. 56. N.

KRAANENBERG, a town of Westphalia, in the duchy of Cleves, seated on the declivity of a hill, between Negenen and Cleves. Its name, which signifies Crane-hill, is derived from the number of cranes that used to assemble round the castle, when the adjacent plain was a marsh. It is celebrated for an image of the Virgin, pretended to be miraculous.

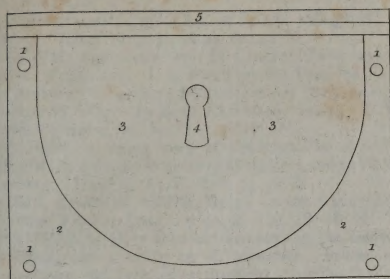
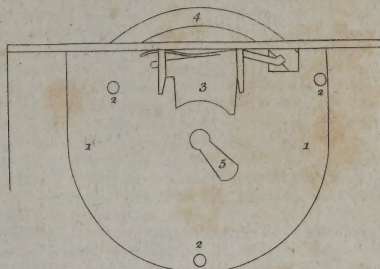
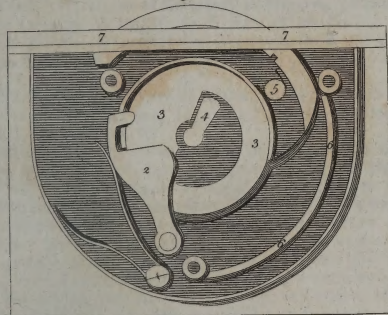
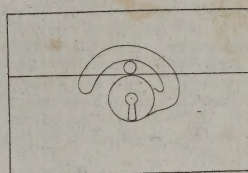
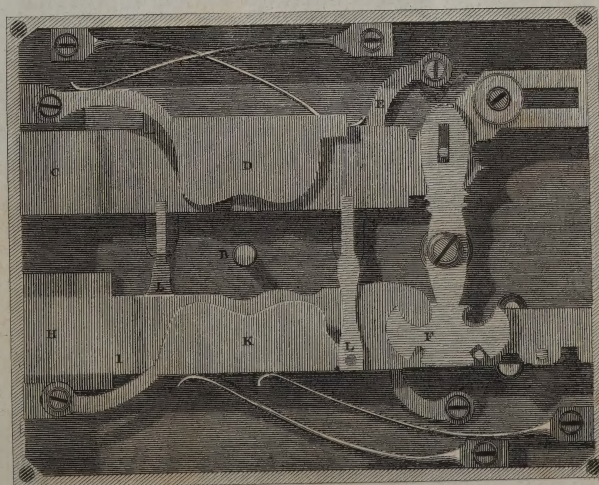
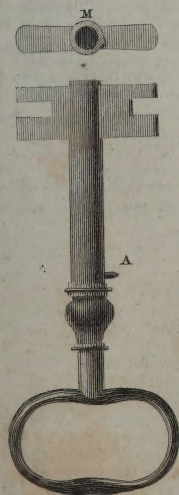
KRAINBURG, a town of Bavaria, seated on the Inn, 35 miles E. of Munich.

KRAINBURG, a town of Germany, in the duchy of Carniola, seated on the Save, 18 miles N.W. of Laubach. Long. 14. 5. E. Lat. 56. 15. N.

KRAINOWITZ, a town of Upper Silesia, between Ratibor and Troppaw. Long. 17. 49. E. Lat. 50. 7. N.

KRAINSRAW, a town of Poland, in the province of Red Ruffia and palatinat of Chelm, 110 miles S.E. of Warsaw. Long. 23. 0. E. Lat. 51. 15. N.

KRANICHFELD, a town of Upper Saxony, in the princi-

*M. Hølemberg's Patent Lock.**Fig. 1.**Fig. 2.**Fig. 3.**Fig. 4.**M. Arkwright's double bolted Lock.*

pality of Altenburg, 12 miles S.E. of Erfurt, and 48 W. of Altenburg. Long. 11. 4. E. Lat. 50. 43. N.

KREKITH, a corporate town in Carnarvonshire, with a market on Wednesday. It is seated on the Irish Sea, near Traeth Amawr Bay, where a castle formerly stood, now in ruins. It is 13 miles S. by E. of Carnarvon, and 237 N.W. of London. Long. 4. 18. W. Lat. 52. 57. N.

KREMPEN, a strong town of Denmark, in Holstein, with a castle. It is five miles north of Gluckstadt, and 30 N.W. of Hamburg. Long. 9. 15. E. Lat. 53. 58. N.

KREMS, a town of Austria, seated on the Danube, 35 miles west of Vienna. Long. 15. 40. E. Lat. 48. 18. N.

KREUTZENACH, a town of Germany, in the circle of Lower Rhine, with a castle, on an eminence. It was once an imperial city, and is seated on the Nahe, 20 miles S.W. of Mentz.

KRUMLAW, a town of Germany, in Moravia, 50 miles S.W. of Olmutz. Long. 16. 49. E. Lat. 48. 46. N.

KRUTZOW, a strong town of Lithuania, seated on the Soz, 30 miles S.W. of Mozeislav. Long. 32. 4. E. Lat. 54. 30. N.

KRYLOW, a strong town of Poland, in the palatinate of Kiof, seated on the Dnieper, 140 miles S.E. of Kiof. Long. 33. 30. E. Lat. 48. 50. N.

KUBESHA, a strong town of Asia, in the country of the Lelguis, situate on a hill, between high mountains. Its inhabitants call themselves Franki (Franks, a name common in the east to all Europeans), and relate, that their ancestors were brought hither by some accident, the particulars of which are forgotten. The common conjecture is, that they were cast away upon the coast; but others say, that the Greeks and the Genoese carried on, during several centuries, a considerable trade, not only on the Black Sea, but on the Caspian, and were acquainted with the mines contained in these mountains, from which they drew, by their trade with the inhabitants, great quantities of silver, copper, and other metals. In order to work these upon the spot, they sent hither a number of workmen, to establish manufactures. The subsequent invasion of the Arabs, Turks, and Moguls, during which the mines were filled up, and the manufactures abandoned, prevented the strangers from effecting their return; so that they continued here, and formed a republic. What renders this account the more probable is, that they are still excellent artificers, and make very good fire arms, fabres, coats of mail, and several articles in gold and silver, for exportation. They have, likewise, for their own defence, small copper cannons, of three pounds calibre, cast by themselves. They coin Turkish and Persian silver money, and even rubles, which readily pass current, because they are of the full weight and value. In their valleys, they have pasture and arable land, as well as gardens; but they purchase the greater part of their corn, trusting chiefly for support to the sale of their manufactures,

which are much admired in Turkey, Persia, and the Crimea. They are generally in good circumstances, and are a quiet inoffensive people, but high spirited and independent. Their town is considered as a neutral spot, where the neighbouring princes can deposit their treasure with safety. They elect yearly twelve magistrates, to whom they pay unlimited obedience; and, as all the inhabitants are on a footing of the most perfect equality, each individual is sure to have, in his turn, a share in the government. In 1725, their magistrates acknowledged the sovereignty of Russia, but without paying any tribute. Long. 67. 59. E. Lat. 42. 30. N.

KUFSTEIN, a strong town of Germany, in the Tyrol, with a castle, on a rock. It is seated on the Inn, 46 miles S. by E. of Munich. Long. 12. 5. E. Lat. 47. 26. N.

KUHLSCHEIM, or KULTZHEIM, a town of Germany in the electorate of Mentz, 32 miles E.N.E. of Heidelberg.

KUNERSDORF, or CUNNERSDORF, a town of Upper Saxony, in the Middle Marche of Brandenburg, near which the King of Prussia was defeated by the Russians, in 1759. It is three miles E.N.E. of Francfort on the Oder.

KUR, a river of Persia, which rises in mount Caucasus, and passing by Teflis, falls into the Caspian Sea.

KURSK, a government of the Russian empire, formerly part of that of Bielgorod. Its capital, of the same name, is seated on the Tukur, which falls into the Seine or Sem.

KUSISTAN, or CHUSTAN, a province of Persia, bounded on the north and east by Irac-Agemi, on the south by Faristan, and on the west by Irac-Arabia. Sufter is the capital.

KUTTENBERG, a town of Bohemia, seated near a mountain, remarkable for its silver mines, 35 miles S.E. of Prague. Long. 15. 37. E. Lat. 49. 56. N.

KUTTORE, a country of Asia, between the N.E. part of Cabul, and the N.W. of Cashmere. The Mahometans call it Caferistan, or the Land of Infidels. It has a town and fortrefs of the same name, 100 miles N.E. of Cabul, and 280 N.W. of Lahore. Long. 70. 17. E. Lat. 35. 27. N.

KUYNDER, or FORT KUYNDER, a sea-port and fortrefs of the United Provinces, in Friesland, situate on the west side of the river Kuynder, at its entrance into the Zuyder Zee, 23 miles south of Lewarden. Long. 5. 24. E. Lat. 52. 50. N.

KYLBURG, a town of Germany, in the electorate of Treves, seated on the Kyll, 16 miles N.W. of Treves. Long. 6. 17. E. Lat. 50. 1. N.

KYNETON, a town in Herefordshire, with a good trade in narrow cloth, and a market on Wednesday. It is 15 miles N.W. of Hereford, and 149 W.N.W. of London. Long. 2. 50. W. Lat. 52. 12. N.

KYNETON, a village in Somersetshire, N.E. of Somerton. It is naturally paved, for half a mile, with one smooth rock, which looks like ice.

L

L A A, **LAAB**, or **LAHAB**, a town of Germany, in Austria, seated on the river Teva, twenty-seven miles N. W. of Vienna. Long. 16. 9. E. Lat. 48. 48. N.

LABADIA, a strong town of Italy, in the peninsula of Rovigo, subject to the Venetians. It is seated on the river Adige, twenty miles N. W. of Ferrara. Long. 11. 54. E. Lat. 45. 39. N.

LABIA, a town of Turkey in Europe, in Servia, sixty-two miles S. W. of Nissa.

LABOUR (*Encycl.*). The price of labour has at all times varied; and, as the poorer classes feel with additional rigour every evil arising from the pressure of the times, different expedients have been devised, with a view to alleviate their burthens, supply their wants, and render them more comfortable.

From these investigations, it appears that, in the middle of the 14th century, the usual price of labour was 2d. per day; and wheat was sold at from 3s. 4d. to 4s. per quarter.

In the middle of the 15th century, the pay of a labourer per day was 3d.; and wheat cost from 5s. to 5s. 6d. per quarter.

In the earlier part of the 16th century the price of labour rose to 3½d. and that of a quarter of wheat to 7s. 6d. About the middle of the 17th century, the pay of a labourer, upon an average, was (in Essex) 13d.; and corn had risen to 40s. per quarter.

Toward the latter end of the 18th century, the daily pay of a labourer was from 14d. to 18d. in the country, and from 2s. to 2s. 6d. in the metropolis; while the price of wheat was 48s. per quarter.—We forbear to state the average pay of labour during the late exorbitant prices of grain, and every other article of food; when all proportion between merit and reward appeared to have been suspended.

The payment of daily wages, however, serves but imperfectly to ascertain the real price of labour, as a considerable portion of work is performed by the piece; so that a labourer in general earns from 3d. to 6d. per day more than by the common pay. For, without this, or some similar method, the reward of labour would be inadequate to the maintenance of those numerous persons who possess no other means of providing for their infirm wives, or helpless children. And we conceive, that if their wages could be so regulated as to rise and fall with the price of wheat, considerable benefit would thus result to society.

The rapid increase of poor-rates throughout the kingdom can be attributed only to the low and insufficient recompence of labour, in consequence of which the poor are obliged to resort to the parish for relief. Indeed, when the average price of wheat for the last ten years is considered, we presume not to exceed the limits of moderation in saying, that no country labourer, in the full possession of his health and strength, ought to be paid less than the value of a half-peck loaf per day, according to the price of wheat, and a proportionable sum by piece-work. In populous towns, however, an addition of twenty per cent. should be allowed, if vegetables and butchers' meat are sold at the present unreasonable prices.

The curious and philanthropic reader, who feels an interest

in this popular enquiry, will be fully gratified by a perusal of Mr. Davies's "Cate of Labourers in Husbandry stated and considered, &c." and Sir F. M. Eden's "State of the Poor, &c." in which the situation of the labouring classes is clearly developed.

By the 2d and 3d Edw. VI. c. 15, all labourers who combine or conspire together concerning their work or wages, incur a penalty of 10l. for the first offence, which sum is doubled in case of repetition; and if the money be not paid, they are to be set in the pillory. Justices of the peace, and the stewards of courts leet, &c. are likewise empowered by the 4th Edw. IV. c. 1, to hear and determine all complaints relative to the non-payment of labourers' wages; which, by the stat. 5 Eliz. c. 4, are to be annually settled for every county by the sheriffs and justices of the peace, in every Easter session, and in corporations, by the chief magistrates, under certain penalties in case of neglect. And such assize, when made, is ordered by the 1 Jac. I. c. 6. to be proclaimed.

Besides these laws in behalf of the labouring classes, others have been enacted for the benefit of the employer. Thus, by the stat. 4 Eliz. all persons who are fit for labour are compellable to serve by the day during the season of making hay and the corn-harvest; but those labourers who have obtained proper testimonials, are permitted to go into other counties. It is further provided, that such labourers, from the middle of March to the middle of September, ought to work from five o'clock in the morning till seven or eight at night, being allowed two hours for breakfast and dinner, and half an hour for repose during the three hottest months; in the other six months of the year they are obliged to work from twilight to twilight, excepting one hour and a half for breakfast and dinner, on the penalty of forfeiting one penny (at present it should be two pence) for every hour's absence.

An excellent mode of encouraging labour amongst the poor, is the distribution of bounties on their earnings. The following account of a plan for allowing the poor a bounty on their work, by Thomas Hall, esq. is published by the Society for bettering the Condition of the Poor.

"In my neighbourhood, in Hampshire," says Mr. Hall, "there has been for near twenty years back, a bounty allowed the poor on their work; which has been found to produce very good effects in the increase of industry. In this way the sum of 3s. a-week, thus dispensed by the overseers in the aid and encouragement of the industry of a family of six persons, has, as a bounty on work, eventually produced them the comfortable income of 9s. a-week; whereas, in the common mode, 3s. a-week would have gone but a very little way to their maintenance. By the advice of a manufacturer, the bounty is now proportioned to each shilling earned; so as to apply to the quality of the work, as well as to the quantity."

OBSERVATIONS.—It is presumed that in this manner great part of the able-bodied poor might be supported at half the expence that is now incurred on their account; and that better order and regularity would be kept up among them, and the national stock of industry increased. The plan is simple and easy in its execution; and the meanest cottage may, by the bounty proposed, become a working house for

one family, so long as it is wanted.—We cannot help making an observation, connected with this subject, as it relates to industry and the encouragement of it, that if parish certificates were granted for a limited period, as for two or more years, there would be eight or ten granted under such a limitation for one that is granted in the present mode; and thereby the number of industrious people in the nation would be much increased, it being found that certificated labourers are in general more active and industrious than settled inhabitants, resident in their own parishes. See the articles, CHARITY, HOUSE OF INDUSTRY, POOR, &c.

LABOURD, a late territory of France, part of that of Basques. It abounds in fruit, and the inhabitants are said to be the first that went to fish for whales. It is now included in the department of the Lower Pyrénées.

LACK, or **BISCHOF'S-LACK**, a town of Germany, in Carinthia. Here is a great deal of iron, steel, quicksilver, and corn; and a large quantity of linen is sent hence to Fiume and Trieste. It is 26 miles west by north of Laubach, and 35 north of Triest. Long. 14. 7. E. Lat. 46. 31. N.

LADOGA, a lake in Russia, between the gulf of Finland and the lake of Onega. It is 150 miles long and 90 broad, and esteemed to be the largest lake in Europe. Among the fish with which it abounds are seals. It is full of quicksands, which, being moved from place to place by the frequent storms, cause several shelves which often prove fatal to the flat-bottomed vessels of the Russians. This induced Peter the Great to cut a canal 67 miles in length, from the S.W. extremity of this lake to the river Neva, by which it has a communication with the gulf of Finland.

LAGNASCO, a town of Piedmont, 24 miles south of Turin.

LAHN, a river of Germany which rises in Hesse Cassel, and flowing by Marburg, Wetzlar, and Nassau, falls into the Rhine, above Coblenz.

LAHORE, a province of Hindoostan Proper, bounded on the west by Candahar, on the north by Cashmere, on the east by Sirinagur and Delhi, and on the south by Moultan. It is often called Panjab, or the country of Five Rivers. It is very extensive and remarkably fertile; affording, in addition to all the necessities of life, wine, sugar, and cotton wood. In the tract between the Indus and the Chelun are salt-mines, wonderfully productive, and affording fragments of rock salt, hard enough to be formed into vessels, &c.

LAHR, a town of Westphalia, in the bishopric of Munster, 12 miles N.W. of Munster.

LAHR, a town of Germany, in the principality of Nassau-Saarbrück Ufingen, 18 miles S.S.E. of Straßburg, and 19 N. of Friburg.

LAIRNO, a town of Naples in Calabria Citeriore, near a river of the same name. Long. 16. 11. E. Lat. 31. 25. N.

LAJOON, a town of Persia, in the province of Mezanander, near the coast of the Caspian Sea, 20 miles E. of Resht.

LAITCHEOU-FOU, a city of China, in the province of Chang-tong, with a convenient harbour on the Yellow Sea. Its jurisdiction contains two cities of the first, and five of the third class.

LALAND, a small island of Denmark, in the Baltic, lying south of Zealand, from which it is separated by a narrow channel. It is fertile in corn, with which it supplies Copenhagen. Naxkow is the capital.

LALANG, an island near the north coast of the island of Sumatra, in the straits of Malacca. Long. 99. 20. E. Lat. 1. 45. N.

LAMA (*Encycl.*). The following curious account of the ceremonies employed at the burning of the body of a deceased

Lama, among the Calmuc Tartars, which never before appeared in English, was written by Mr. Nitschmann, who attended Professor Pallas, of Peterburgh, during his travels through the Russian empire, as draftsman; and who made a drawing on the spot, from which the engraving (see Pl. 36.), representing the chief part of the scene, was executed.

In the year 1772, the chief lama of the Derbet horde of the Calmucs, on the Wolga, named Abagai, died at his residence not far from Sarepta, in the ninety-fourth year of his age, after a tedious illness. When this event was made known, all the *Labuns*, or *Gellongs*, that is, priests, then present, assembled to deliberate how they should dispose of the body, according to the rules prescribed in their sacred books; and an account of this remarkable death was immediately transmitted to the prince of the horde, Zebek Ubuchfi, and to his ministers. He was visited also by all the priests, who requested that he would order the one next in rank to the deceased to repair to his late residence, for the purpose of carrying into execution the command of the sacred books. This office fell to the lot of Samptan, or Dajantshi lama, who had received the latter title of honour on account of his having lived in a monastery, or hermitage, till he had attained to that rank. Early in the morning, next day, he set out for Sarepta with a numerous train of priests, as the intended successor of the deceased lama.

As on such occasions each priest receives a considerable part of the property left by the deceased lama, the number assembled was exceedingly great; so that, in the course of a day and a half, above seventy gellongs, and many others of inferior rank, were collected. For those of the highest rank a sufficient number of horses, partly saddled and partly unsaddled, were provided and distributed among them according to their dignity. There was also plenty of sheep and other animals, intended to be killed for food. The Dajantshi lama then called the priests together to regulate the funeral ceremonies. For that purpose the sacred books, which had till that period been kept closely shut up, were produced; and after all the circumstances attending the lama's death, together with the time, had been compared with the rules in these books, it was concluded that the body should be burnt.

The place appointed by the new lama for performing the ceremony was the Moo-Chammur, or summit of a sandy hill, near Sarepta; from which the hut of the deceased, where strict guard was kept to prevent any one from approaching it, was distant only a few hundred paces. The foundation of a furnace was then accurately measured out by the lama himself; and the earth was dug up with great care and solemnity by the gellongs and priests; for no person of any other condition durst put a hand to the work. During this labour the lama, accompanied by the most distinguished of the priests, returned to the habitation of the deceased, where they sat down in a circle, and prayed from books with great earnestness and fervour. While they were thus employed, the deceased was stripped of his usual clothing, and his yellow ornaments, *jamou chubzsums*, were put upon the body; together with a yellow lacerated five-pointed crown, called *col-mala-chai*. His throne, on which he had breathed his last, with a devout benevolent aspect, sitting cross-legged, with his hands folded, was raised up, and after his wide yellow drefs had been spread out around it, he was suffered to remain in that state. The entrance of the habitation was covered by a particular kind of curtain, and guards were placed on each side to prevent the common people from looking in when the priests entered or went out.

In the mean time the prayers were continued at intervals; and, on a certain signal being given, the people assembled without were suffered to go in one by one, uncovered, in or-

der that they might pay their last respects to the deceased, by kneeling and touching his yellow robe with their foreheads. As the number collected was, however, too great, the new lama at length went out, and bestowed his benediction on all those within his reach, by laying his *rosary (chen)* on their heads; but as the throng around him increased more and more, he distributed a general benediction among the whole multitude, by waving the rosary, after which he returned to pray with deep sighing and sobbing. Such of the people as had not obtained the lama's benediction, showed their respect and veneration by walking round the hut of their deceased, and as it were deified lama; and counting their beads amidst continual sighs, while they repeated by way of prayer, the monosyllables *om ma ni pat me chang*; and every now and then, in going round, threw themselves down, with their faces towards the earth, before the door of the hut.

After some time two singular figures, made of dough, were brought out from the hut, on wooden trenchers, and borne towards the place defined for the furnace. They had each two legs and two arms; but, in other respects, they bore a greater resemblance to devils than to men.

While prayers were performing in the hut of the deceased, the rest of the priests sat together in circles, dispersed here and there, filled with conformation, and viewing attentively what was going on. A deputation, appointed by the new lama, made a distribution to the priests, according to their rank, of the cattle and other property left by the deceased; and, by command of the prince, six hundred rubles, in ready money, were collected from the horde, to defray the expence of the funeral, and to be divided among the priests.

The four sides of the foundation, dug for the furnace, in which the body was to be burnt, were directed towards the four cardinal points. On the north, south, and east sides, large fire holes were dug, and covered towards the side of the furnace with earth, that the wood might lie under the covering, and not within the furnace itself, to prevent any of the ashes of the wood from being mixed with the ashes of the body. The bottom was then constructed of tiles, which had been conveyed on horseback by gellongs from the distance of some versts; and, instead of lime, clay was employed to cement them. When the furnace was raised about a foot above the earth, a large iron tripod, made for the purpose, was fixed in the middle of it, and one of the gellongs immediately placed himself in the furnace, cross-legged, on the tripod, in order to try whether it would answer the intended purpose. A kind of hut was then erected around the furnace with poles, which were covered up to the top with pieces of old felt. This hut was about eighteen or twenty feet in height; and at the top was a large opening, to afford a passage to the flame and the smoke.

All the priests who were present, after viewing the furnace, went in procession, accompanied by the new lama, to the habitation of the deceased, where the fifteen priests who were to officiate put on the dresses peculiar to their office. This dress consisted, first, of a sort of shirt, called *bishkan mujak*, which the priests use instead of breeches and stockings. It is worn next the skin, and is gathered in plaits, and fastened round the middle by means of a broad girdle. Over this was put the *shih-tsi chubzusun*, which is a short red shirt without sleeves, and open at the breast; also the *gikh mujak*, a piece of red cloth placed around the body in folds above the first short *mujak*, and fastened by means of a red sash; the second *mujak* must hang down almost to the heels. The chief lama alone had a *jumohn chubzusun*, or red shirt, with short sleeves, which was fastened by means of a broad yellow girdle. In the last place all of them had a *tychogh chubzusun*, or large

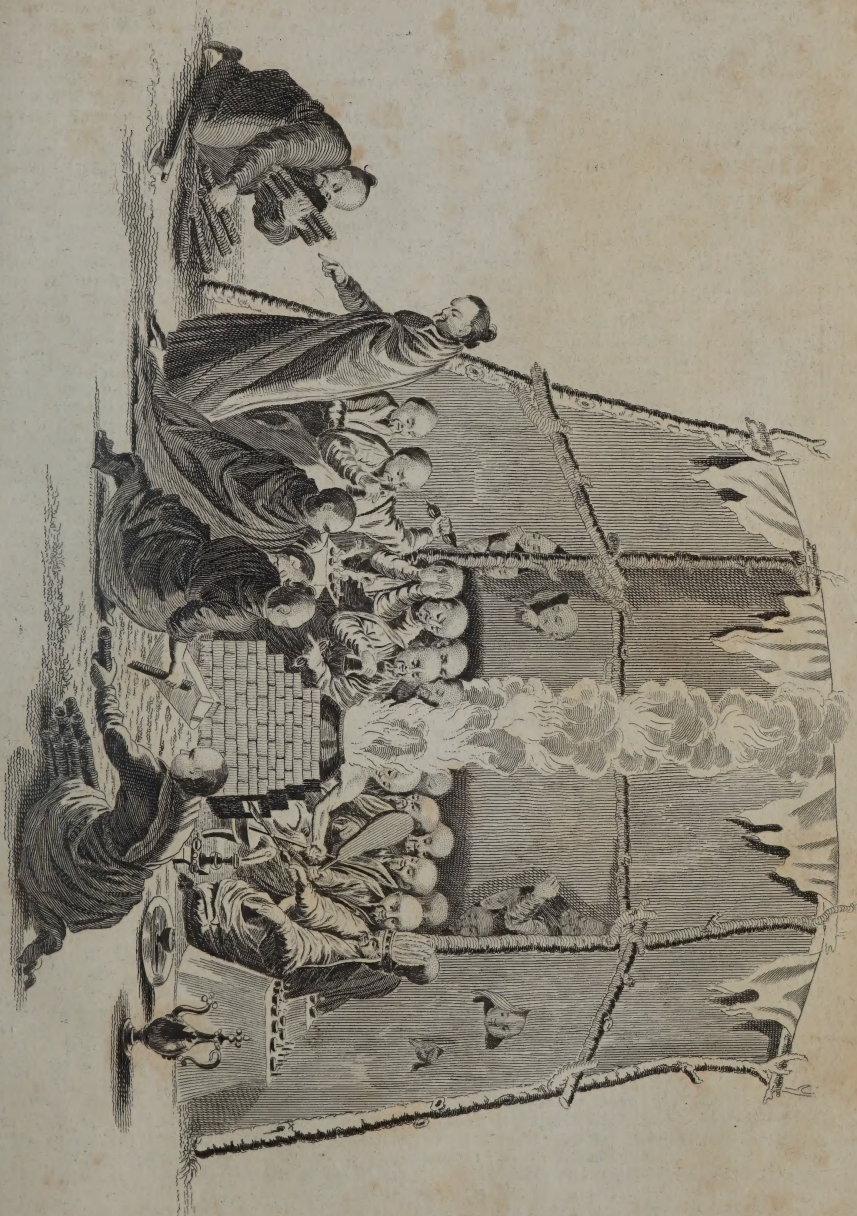
square piece of silk, which, except a border two spans in breadth, consisted of red and yellow patches, four inches square, disposed chequer-wise. Some, however, had this piece of silk entirely yellow. It was thrown over the shoulders, so as to reach the ground behind; and the two corners of it before were fastened over each other on the breast. The arms, head, and legs, during the ceremony, were bare; and each had wound his rosary around his arm; all which gave them a very terrible appearance.

After they had put on their dress, a certain kind of vessel, called *ordu churachik*, was brought forth, and put into the hands of the *Bakshi*, or instructing priest, who walked next to the lama; and who, instead of the variegated piece of silk, had one entirely red. Another small metal vessel, of costly workmanship, containing sacred water, mixed with spices and sugar, and ornamented at top with a very beautiful peacock's feather, was delivered to the lama, and borne by him at the head of the procession. Eight of the gellongs, dressed as above described, supported the bier, and the other five had in their hand each a bell. The habitation of the deceased was torn open behind with the utmost expedition, and the body, after the large yellow silk cloth suspended from its shoulders had been thrown entirely over it, and the high-spiked crown had been put on its head, was taken out, and placed, in a sitting posture, on a bier made for the purpose. The bier was borne by the eight gellongs, and the procession moved towards the furnace in the following order: first, the lama, then the *bakshi* after him the dead body, then the five gellongs with their bells, and, in the last place, the remainder of the music and the people. During the procession the lama, every now and then, dipped the peacock's feather in the sacred water, and sprinkled it every-where around him.

The instruments of music, besides the bells, were three long copper trumpets, which emitted, at most, two or three bass notes, and which followed behind. They were full three yards in length, and therefore were suspended by rings to two poles, and, in that manner, carried by two men. There were also four drums suspended from a pole; and two musicians, with brass cymbals, which were beat in the same manner as the Turkish.

The people, who had assembled in crowds on all sides, were kept off by priests appointed for that purpose, and armed with strong cudgels. As soon as the procession reached the furnace, the musicians placed themselves in a semicircle before the entrance of the hut, and made a loud noise with their instruments. The body of the deceased lama was then carried with great speed into the hut, and placed on the tripod, after the crown and yellow covering had been taken from it. Both these articles were afterwards conveyed back, with the same procession and music, to the habitation of the new lama. The next operation was to complete the construction of the furnace, which was done with great privacy. Two pieces of iron were put round the neck of the deceased, projecting so far on each side, that the ends of them could be built into the wall. These served to keep the body upright in the midst of the fire. The top of the furnace was arched in a sloping manner over the head of the dead body; and on the west side, where there were no fire-holes, a square opening was left at top, through which, while the body was in a state of combustion, tallow and other inflammable substances were poured. The wood destined for fuel was all cut exactly of the length of the fire-holes, and a great quantity of butter, incense and resin, was intermixed with it. Near the furnace was placed a kettle, in which the butter was melted with the other ingredients; and on both sides of the furnace there were small altars, covered, as usual, with sacred vessels and lamps. A

Burying the dead body of a Lama.





magnificent throne was prepared on the west side for the officiating lama; and, when every thing was ready, the lama put on the yellow wrapper of the deceased, placed his crown on his head, and seated himself on the throne. The gellongs, who had laid aside their sacerdotal habits, and assumed their usual dress, sat down in a circle around him. Each had a bell in his left hand, and a book lying before him, on his knees; and on a signal given by the lama, the small lamps on the altar, and the wood in the three fire-holes of the furnace, were immediately lighted. The two figures of dough already mentioned appeared also on one of the altars. The fire was lighted about seven o'clock in the evening, amidst prayers, singing, and the noise of bells and musical instruments, which was sometimes interrupted by conversation between the lama and the bakichi, respecting some passages of the sacred books. The priests who kept guard were, in the mean time, strictly forbidden to suffer any person to peep in through the holes in the tent. Wood was continually thrust into the fire-holes; and the lama, by means of a ladle with a long handle, furnished at the fore part with small spouts, poured some of the grease which stood near him through the aperture upon the body; by which means the fire was so strengthened, that the flames rose in a continued column to the height of eighteen or twenty feet above the furnace. It was found necessary, therefore, to enlarge the aperture in the top of the tent, to prevent it from being destroyed. The gellongs also, were soon obliged to stand so far back, that every thing which took place within the tent, or hut, could be plainly seen. At certain times the lama threw the bark of trees, daubed over with resin, and pieces of consecrated white silk, into the top of the furnace; and as he was exposed to great heat by standing so near it to pour the fat over the body, a screen was held constantly before his face by one of the gellongs, which secured him from the flames, but permitted him to see the aperture in the top of the furnace. The prayers offered up in the Tangut language, while the body was burning, became always longer, and were uttered with a louder tone of voice. They were intermixed with the ringing of bells, the clapping of hands, snapping of fingers, thrusting the fingers through each other, and then drawing them back, great contortion of the eyes and face, and various movements of the head.

This formidable fire was kept up for three hours, after which the furnace was suffered to stand some hours to cool. One can scarcely believe with what strength the fire was maintained by the air which passed through the furnace; and the different aromatic substances which were thrown into it prevented any disagreeable effect from the smoke, or the smell of the body. Next morning, when the furnace had cooled, it was opened with great secrecy, under cover of the tent, and the body, shrivelled like a mummy, being taken out, was divided in portions among the priests. Some of the poor people also, who were able to force their way through the crowd, obtained small bits of the little which was left. This burnt substance of the lama's body (*lamain-djinder*) is considered by the superstitious people, as a sacred medicine; and it may therefore be said, that the lama is gradually consumed by his own worshippers.

This mode of burning the body produces scarcely any ashes, as the skin, flesh, and bones, are so baked, by continually pouring fat over it, that the whole mass has the appearance of a cinder, and is equally friable. The few ashes, however, which remain, are carefully scraped, together with the ashes in the fire-holes, and are preserved by the priests. After the furnace was opened, it was entirely raised to the foundation, and not a single stone of it left. All the materials were carried in a cart to the other side of the Wolga,

where the horde at that time resided. All the four corners of the spot where the furnace had stood, high flags (*moni*) were erected; and at the end of some weeks, when the horde returned to the district of Sarepta, a small stone chapel was constructed in the middle of the four flags, and filled in the inside with inscriptions, images, rags of old clothes, and the like, and surrounded by a ditch. This formed the conclusion of the whole ceremony.

LAMBALE, a town of France, in the department of the North Coast. It is the chief town of the late duchy of Penthièvre, and gave the title of princeps to the unfortunate lady who was massacred at Paris, in 1792, for her inviolable attachment to her unhappy mistress, the late queen of France. Lambale has a good trade in cattle, linen, and parchment, and is 37 miles N.W. of Rennes. Long. 2. 21. W. Lat. 48. 27. N.

LAMBESC, a town of France, in the department of the Mouths of the Rhone, nine miles N. of Aix. Long. 5. 31. E. Lat. 43. 40. N.

LAMBETH, a village in Surrey, on the Thames, opposite Westminster. Here the Archbishop of Canterbury has an ancient palace. By the vast increase of buildings, Lambeth is now joined to the metropolis, in a direction to each of the three bridges. Here is a manufacture of artificial stone, which answers every purpose of stone carving, and extends, not only to statues from the finest models, but to every kind of architectural ornaments. Here likewise are extensive works for vinegar and home-made wine, a patent shot manufactory, and numerous timber yards, supplied with almost incredible stores of foreign timber.

LAMBORN, a town in Berks, with a market on Friday; seated on a river of the same name, seven miles N. by W. of Hungerford, and 68 W. of London. Long. 1. 26. W. Lat. 51. 30. N.

LAMEGO, a town of Portugal, in Beira, with a bishop's see, and a strong citadel. It contains two cathedral churches, an hospital, four convents, and about 4500 inhabitants. In this town the states assembled to confirm the election of Alfonso Henriquez, the first king of Portugal, and enacted the fundamental laws, now forgotten. It is 50 miles N. of Lisbon. Long. 7. 30. W. Lat. 41. 12. N.

LAMLASH, a town of Scotland, on the east coast of the isle of Arran, situate on a bay to which it gives name, and which, Mr. Pennant says, forms the safest harbour in the universe, with depth of water for the largest ships.

LAMMERMUIR, a mountainous ridge in Scotland, which divides the county of Berwick from that of Haddington for above twenty miles. These mountains are bleak and barren, affording but scanty pasture for sheep. Scoura Hill is the most elevated of this ridge.

LAMO, a kingdom and island of Africa, on the coast of Melinda, between the island of Pate and Cape Formosa. Its capital, of the same name, is well fortified. The king and government being Mahometans, are frequently at war with the rest of the inhabitants, who are pagans. In 1580, the king of this island, being accused by the Portuguese of having betrayed the governor of the coast, was seized with four of his subjects, in his own capital, and carried to Pate, where they were publicly executed, in the presence of the king of that island, and of several kings of the neighbouring islands; ever since which, Lamo has been tributary to the Portuguese.

LAMPEDOSA, a desert island on the coast of Tunis, 12 miles in circumference. It is 50 miles from Tunis, and 112 from Malta; and has a good harbour, where ships water. Long. 11. 0. E. Lat. 36. 10. N.

LAMPASAC, an ancient town of Natolia, with a Greek

archbishop's fee. It is now an inconsiderable place, seated on the sea of Marmora, six miles from the Dardanelles. Long. 27. 20. E. Lat. 40. 12. N.

LAMPSPRINGE, a town of Lower Saxony, in the bishopric of Hildersheim, situate at the source of a small river, called Laine, 17 miles south of Hildersheim.

LANCASTER, a town of Pennsylvania, 41 miles long and 40 broad. In 1790, it contained 36,147 inhabitants.

LANCASTER, the capital of a county of the same name, in Pennsylvania. Besides its churches, and other public buildings, it contains a college founded in 1787, and named Franklin college, after the late Dr. Franklin. It is a place of considerable trade, seated on the Conestogo Creek, near the river Susquehanna, 66 miles W. by N. of Philadelphia. Long. 76. 17. W. Lat. 40. 2. N.

LAND (*Encycl.*) The following account of "*A Method of gaining Land from the Sea*," by the Rev. Henry Bate Dudley, of Bradwell Lodge, in the parish of Tillingham, is inserted in the Transactions of the Society for the Encouragement of Arts, Manufactures, and Commerce; who conferred on the ingenious and enterprising writer their gold medal.

"A tract of land," says Mr. Dudley, "which I inclosed on the same line of coast within this parish about eleven years ago, being already under a profitable course of tillage, I was induced to undertake the present inclosure as a lessee of the collegiate estate of St. Paul's. The front line of embankment against the sea is nearly one mile in length, and, with the returning banks on each wing to the old wall, forms an inclosure of contents, as expressed in the certificate already in your possession. The whole of the embankment is composed of earth alone, borrowed from the irregular salting land in the front, called *chatts*, and taken at the limited distance of twelve feet from the base of the new work, to leave a sufficient foreland for its protection. I found, from experience, in my former embankment, that I had not given it a sufficient angular declension in front, for an easy ascent and descent of the waves. This error was therefore corrected in the last work. I began it on a base of thirty-two feet, and wrought it to the height of seven feet, leaving it a plane of five feet on the top, and making the land-side of the embankment as nearly perpendicular as the security of the base would allow.

"Within, on the land side, is cut a ditch, twelve feet wide, five feet deep, and four feet at bottom; the earth from which was thrown into the mound. My former sea-embankment, in Bradwell parish, had nearly given way to the great inundating tide of February, 1792, from this erection of new earth being made on the surface. To guard against similar danger in the present work, a spit-deep trench, six feet wide, was previously cut along the centre of the whole line, on which the mound was to rest; this, by admitting the new earth into an incorporative adhesion with the base soil, renders a future separation almost impossible. Before this, the main rills had been filled and rammed, to give these parts equal solidity with the rest.

"The whole operation was performed by a gang of twelve sea-wallers, with barrows and planks only, at 11. 10s. the marsh-rod, of twenty feet, and perfectly inclosed in seven months; but it must be observed, that the soil, composed of rich vegetable matter, is without one particle of stone or gravel, and cuts with iron-edged scoop-tools, so as to load the barrows with great facility. At each end of the front line is laid an out-fall gutter, or sluice, through the whole embankment, five feet in width, by three feet deep, clear in the run; and another of smaller dimensions in the centre, for discharging the land-waters freely to sea. The construction of these aqueducts is too well known to require further description here; probably, however, the little addition given to

those erected on this occasion may be found of some use. Observing it often happen, that, either from accident or design, the outward lid of the sea-slucices remained open, and admitted the tide to the great injury of the fresh waters within the marshes, I introduced here a light fly-lid within the centre of each sluice, which is out of reach, and yields to the slightest pressure of the water going out; but shuts closely against that of the tide, when it passes inward of the external flap. These sluices are laid upon as solid a foundation as can artificially be made on such soils, to prevent the crabs, and other sea-fish, from undermining them, which must otherwise be the case. The frame and flooring are of fir, which lies under water as durable as oak.

"The land thus inclosed is partitioned into four nearly equal parts, by new-cut ditches, twelve feet wide, five deep, and four at the bottom, which, with small intersecting rills, from various parts, give the whole a good drainage of its salts, on the fall of heavy rains: and, by a course recently made from a distant brook, each division of this land is now amply supplied with fresh water. Not less than 800 South-Down sheep, and from sixty to eighty horses, are almost constantly grazed, and even winter thereon remarkably well. The established opinion of the best farmers of the country was, that land, thus taken from the sea, would not grow corn under thirty years at least after their inclosure. But as no experiment had been made, by which this fact could be clearly ascertained, as soon as I had shut out the sea from a part of it, about six yards square were immediately dug, and sown with horse beans and oats, which, though the summer proved very dry, and consequently unfavourable, produced each a fair return of sound good corn; and the last harvest the same spot being sown with wheat, yielded an excellent crop. The next spring I mean to try it with barley and turnips. My first inclosed lands in this parish have produced two succeeding crops of fine oats, and are now growing to a very promising breadth of rape feed.

"It may here be remarked, that the lower oozy parts of the new inclosure, on which no vegetable ever grew before, begin to be coated with various grasses; and as the saline parts die away in other spots, for want of their natural moisture, fresh grasses replace them, so that the whole is now nearly covered with grazing plants of good quality, amongst which appear the different *clovers*, *trefoil*, and *rye-grass*, &c. Hence I conclude, but contrary to the general opinion, that though all these grew artificially from seed sown, it does not follow of necessity that they cannot be produced without. I think that the natural operation of the sun and air upon certain soils will alone effect it; and my experience in lands taken from the sea confirms very strongly this opinion."

The Rev. J. H. Wright, in a certificate, which accompanies the above account, alleges that the Rev. Henry Bate Dudley had completed an embankment, with all the sluices and other necessary works appertaining thereto, and had thereby effectually obtained 206 acres of land from the sea, which he had subdivided by twelve-foot ditches into four spacious marshes. For other means by which this important object may be effected, see **EMBANKMENT**, *Supp.*

LAND for Cottagers. The following extract from an account of the advantages of cottagers renting land, by the earl of Winchelsea, is published by the Society for bettering the Condition of the Poor.

"Upon my estate in the county of Rutland," says his lordship, "there are from seventy to eighty labourers, who keep from one to four cows each. I have always heard that they are hard-working industrious men. They manage their land well, and pay their rent very regularly. From what I have seen of them I am more and more confirmed in the opi-

nion I have long held, that nothing is so beneficial both to them and to the land owners, as their having land to be occupied either for the keeping of cows, or as gardens, according to circumstances.

"By means of these advantages the labourers and their families live better, and are consequently more fit to endure labour; they are more contented, and more attached to their situation, and acquire a sort of independence, which makes them set a higher value upon their character. In the neighbourhood in which I live, men so circumstanced are almost always considered as the most to be depended upon and trusted: the possessing of a little property certainly gives a spur to industry; as a proof of this, it has almost always happened to me, that when a labourer has obtained a cow, and land sufficient to maintain her, the first thing he has thought of has been, how he could save money enough to buy another; and I have almost always had applications for more land from those people so circumstanced. There are several labourers in my neighbourhood, who have got on in that manner, till they now keep two, three, and some four cows, and yet are

amongst the hardest working men in the country, and the best labourers.

"With regard to the profit they make of a cow, those who manage well might, as the prices of the market were two or three years ago, have cleared twenty pence a-week*, or 4*l.* 6*s.* 8*d.* per ann. by each cow; supposing the rent of the land, levies, expences of hay-making, &c. to cost them 4*l.* exclusive of house-rent. This clear profit, over and above rent, &c. may now be set at 2*s.* a-week, or 5*l.* a-year at least; so as to make the whole 9*l.* a-year, on a supposition that all the produce is sold. Whether, however, this calculation is too low, or how it is, I cannot say; but certainly those who have a cow, appear to be (in comparison with those who have none) much more than 2*s.* per week richer. It may probably be owing to the superior industry of those families.—I must observe, that they keep sheep during the winter upon their cow pasture, at the rate of two, and in some cases three, at 2*s.* 6*d.* each, for each cow-pasture. This is included in the above estimate of profit. The skim-milk is also valued. Some of them, where the land is not

* "The profit of a cow to a family of the description in question, is stated by Lord Winchelsea at only 1*s.* 8*d.* a-week; but the value of a cow, supposing her to give only six quarts of milk a-day (which must be allowed to be a low average, if the cow be properly kept), will be worth, at a penny a quart, 3*s.* 6*d.* a-week, or 9*l.* 2*s.* a-year; setting the profit of the calf against the loss sustained while the cow is dry. Three acres of land, of the quality of 30*s.* an acre, will in general keep a cow in good condition the whole year, by admitting about an acre to be parted off, for mowing in the summer, to furnish a little hay for the winter: to this rent must be added, for tithes and parochial rates, perhaps, 14*s.* more, making the whole charge 4*l.* 4*s.* which is not half the value of the produce; and if a further allowance be made for the labour attending the object, there will still be left at least 30 per cent profit; and in every other article of a cottager's consumption, he is obliged to purchase at 30 per cent loss. But, when it is considered that milk is the natural food for children, that it is of a nutritious quality, and that, where there is a cow, a pig is generally an appendant to her, the advantage is ineffimable!" Mr. Kent (who makes the foregoing remarks) has been for many years so impressed with the propriety and good policy of this plan, that he has never failed of giving it all the encouragement he possibly could; and flatters himself, that, in the different estates which he has had the regulation of, with the assistance of his partners, Messrs. Claridge and Pearce, they have been instrumental in establishing a great deal of real comfort; but no where upon so extensive a scale, as in the course of the last year, upon the great property of the Earl of Egremont in Yorkshire. His lordship, who is considered not only as one of the most liberal encouragers of all rational experiments in agriculture, but a steady friend to the working farmer and industrious labourer, gave them, on this occasion, *carte blanche*; and their feelings were highly gratified, in being able to accommodate a considerable number of men, of the description in question, with the means of supporting their families, in a much more comfortable manner, than they were before enabled to do. This seems to be the true and best exercise of power; and when it is further considered, that much good may often be done, merely by parting off a few acres from a large farm, or by breaking up one farm out of twenty, which may frequently be done, without injury to any person, it is rather a matter of surprise, that this thing is not oftener done than it is! But though the before-mentioned plan is confessedly good, it is very often defeated for want of capital in the cottager, which has induced him to recommend another scheme for keeping cows for them, in his opinion, preferable to the former, as it may have a more general tendency to improvement, and does not require any capital, nor is attended with any risk. The hint is taken from the western dairies. In most parts of Wiltshire and Dorsetshire, there are few farmers but what let off a dairy, upon the following plan:—The farmer finds, keeps, and renews a certain number of cows to a sub-tenant, at a fixed price, generally from five to six pounds a cow yearly, allowing the calf into the bargain. The management of the dairy is done by the sub-tenant.—Why should not every farmer, in a less degree, accommodate such of his labourers as have a family of children in the same way? There is no farmer, but has some land better adapted for cows than for any other stock; there is no farmer, but keeps two or three cows for his own family.—Why should he not keep one or two in addition for his labourers? The wife or daughter of the labourer would milk them, without being attended with any inconvenience. The farmer would run no risk, as the rent of the cow might be stopped out of the labourer's weekly pay. No loss could be sustained, as he could not make a better return from any other stock than this. The power of doing good in this way, without losing any thing by it, is offered to every farmer; and the great objection to cottagers keeping cows, namely, that of their injuring the farmers' fences by running in the lanes, is, by this mode of letting, done away. As to the allowance that should be made, we would propose that it should be 2*s.* a-week, the year round, besides the farmer's retaining the calf. This would certainly be better for a poor man, than even renting land; for, as was observed before, no money would be requisite in the first instance.—The milk of the cow would be more certain, by her being more regularly kept, and having greater scope and change of food; and no time in mowing and making hay for her, would be lost by the labourer. The public is indebted to Mr. Kent for a valuable work, entitled, "Hints to Gentlemen of landed Property," in which, above twenty years ago, he pointed out the disadvantages to which cottagers are subject in the purchase of all the necessary articles of life, the want of proper habitations for them, and the expediency, not to say necessity, of gentlemen of fortune paying more attention to the situation of the labourers, who work on their estates.—See p. 228 of Mr. Kent's book to the end.

good, do not pay so much. I put down 4*l.* supposing the land * tolerably good; and it is certainly more advantageous to them to occupy good land at a high rent, than poor land at a low one. They all agree, that two cows are more than twice as profitable as one; particularly where the suckling of calves is the system pursued. The generality of the people near me suckle calves; some make butter, and a few make cheese; some buy the supernumerary lambs of the farmers, and rear them by hand; and where they have more than one or two cow-gates, stock with sheep at the rate, in summer, of three for a cow-gait. Those who have families, and only one cow, generally make butter for the sake of having skim-milk for their children, which is an article rarely to be obtained by the poor. When a labourer has the offer of a cow-gait, and land for winter provision, and has not money enough to purchase a cow, he generally applies to his employer, who will, in all probability, advance him some money; and the inhabitants of the parish, if the man has a good character, frequently subscribe to set him up, from charitable motives, and from a persuasion that by this means his family will never want relief from the parish: and this is so much the case, that when a labourer dies, and his son takes his land and stock, he in some cases maintains the widow †. I know of several instances of labourers' widows, now past work, who are maintained by their sons, but could not otherwise have lived without parish relief.

“When a poor man's cow dies, it is certainly a great distress; and sometimes the owner is obliged to ask assistance to replace her. Somehow or other, they always contrive to get one; as I scarcely ever knew a cow-gait given up for

want of ability to obtain a cow, except in the case of old and infirm women, who are left without children: for they cannot, without some assistance, live upon the profits of a cow, nor can they manage it properly. Should a case of this sort occur, the parish officers would act very unwisely in refusing assistance, as a very trifling allowance, together with the cow, would enable a woman to live; whereas, by refusing any assistance, they oblige the woman to part with her cow, and then the mistress have her whole subsistence from them.”

To what is here said on a subject which we have also urged under the articles *COTTAGER* and *Cow* (*Supp.*), the following observations are annexed.

“When a labourer is possessed of cattle, his children are taught early in life the necessity of taking care of them, and acquire some knowledge of their treatment; and, if he has a garden, they learn to dig and weed, and their time is employed in useful industry, by which means they are more likely to acquire honest and industrious habits, than those who are bred up in the poverty and laziness which we too often see; for I believe it is a certain fact, that extreme poverty begets idleness.”

“In the neighbourhood of large towns, and in countries where there is hardly any thing but arable land, the value of grass land is too great to allow of labourers renting it with advantage †; a garden, however, may be allotted to them in almost every situation, and will be found of infinite use to them. In countries, where it has never been the custom for labourers to keep cows, it may be difficult to introduce it; but where no gardens have been annexed to the cottages, it is sufficient to give the ground, and the labourer is sure to

* The quantity of land, which is let for the support of a cow in this county, varies much according to the goodness of the land. In one parish, the cow-pasture, which contains 114 acres, feeds during the summer 100 cows; in another it contains forty-two acres, and feeds seventeen cows; in another thirty-five acres, and feeds twenty-five cows. The price varies much; but, in general, the cottager can afford to pay as much as the farmer can, or, in my opinion, ought. In another parish there is no cow-pasture; but the cottagers have inclosed land, some having fields to themselves, others uniting, and grazing, and manuring two fields alternately: the rents in all these cases varying according to the quality of the land, the quantity assigned to them, and the time when they were first let. The cottagers, whose cows have the run of a cow-pasture, have small fields for hay: these also vary much in quantity and quality, and consequently in price. Where the quantity of land is more than is requisite for their cow, or cows, they keep sheep of their own, or let the pasture to a butcher. Where there is no meadow land, which is the case in one parish near me, they have fields of about six acres of ploughing ground, where they raise winter provision for the cow.—The rent of the new-built cottages is from 2*s.* to 3*s.* for the house, and 5*s.* for the garden, which is about a rood of land, and frequently not so much.

† In the parish of Burley, and the two adjoining parishes of Hambledon and Eggleton, where there are a great number of labourers who keep cows, the rate collected for the relief of the poor last year did not on an average amount to 6*d.* in the pound. No rents are better or more regularly paid on my estate, than those for the cottagers' land. There has not been, for several years back, any arrear of them.—In these parishes there are several labourers with very large families, and several aged persons past work, who must have had relief from the parish if they had not cows: they do not receive any parochial aid; the sums raised for the relief of the poor, in those parishes, being for those who, from various circumstances, are not possessed of cows. The lowness of the rates, in these instances, may therefore be fairly imputed to the custom of letting land to labourers.—With regard to the amount of the poor's rate, the best way to judge of the management of the poor, is to ascertain the number of inhabitants, and the annual sum raised for the poor: this will shew what proportion of these persons can maintain themselves, and what are paupers. The following is an account of the number of inhabitants, and of the sums raised for the poor, and also of the amount of the poor's rate per pound, in these three parishes, from Easter, 1796, to Easter, 1797.

	Number of inhabitants.	Sums raised for the poor.	Amount in the pound.
Burley	225	38 12 1	33 <i>d.</i>
Eggleton	144	15 11 5	43 <i>d.</i>
Hambledon	335	74 16 6	62 <i>d.</i>
	740	129 0 0	

‡ As land cultivated as a garden will produce a greater quantity of food for man than in any other way, and as four fifths of the labour bestowed upon their gardens will be done by the labourers at extra hours, and when they and their children would otherwise be unemployed, it may not be too much to say, that 100,000 acres, allotted to cottagers as garden ground, will give a produce equal to what 150,000 acres cultivated in the ordinary way would give; and that, without occupying more of the time they would otherwise give to the farmers who employ them, than the cultivation of 20,000 acres would require.

know what to do with it, and will reap an immediate benefit from it. Of this I have had experience in several places, particularly in two parishes near Newport Pagnell, Bucks, where there never had been any gardens annexed to the labourers' houses, and where, upon land being allotted to them, they all, without a single exception, have cultivated their gardens extremely well, and profess receiving the greatest benefit from them.

"Those very small spots of a few square yards, which we sometimes see near cottages, I can hardly call gardens: I think there should be as much as will produce all the garden stuff that the family consumes, and enough for a pig with the addition of a little meal. I think they ought to pay the same rent that a farmer would pay for the land, and no more. I am persuaded that it frequently happens, that a labourer lives in a house at 20s. or 30s. a-year, which he is unable to pay, to which, if a garden of a rood was added, for which he would have to pay 5s. or 10s. a-year more, that he would be enabled, by the profit he would derive from the garden, to pay the rent of the house, &c. with great advantage to himself.

"Whoever travels through the midland counties, and will take the trouble of enquiring, will generally receive for answer, that formerly there were a great many cottagers who kept cows, but that the land is now thrown to the farmers; and if he enquires still further, he will find, that, in those parishes, the poor's-rates * have increased in an amazing degree, more than according to the average rise throughout England. It is to be hoped, that as the quantity of land required for gardens is very small, it will not excite the jealousy of the farmers."

That exemplary, and truly benevolent prelate, the bishop of Durham, has also given an account of three cottagers keeping cows, and renting land in Rutlandshire.

"Among the cottagers," says the bishop, "on Lord Winchilsea's estate in the county of Rutland, which I have very lately visited, I have selected for the society three examples of the benefit of cottagers renting land. They are as follows:

1. "A day labourer, his wife, and eight small children.
2. "An old man of fourscore, and his wife of nearly the same age.
3. "The first and second of these families have each two cows, and the old single woman has one cow, with land to keep them on. They have each of them gardens. With this benefit, and that of his labour, the day labourer has bred up ten children, two of which are put out to service; and he is now maintaining himself, his wife, and his other eight children, without any call for parochial relief. The two old people cannot make any thing of their labour; but yet, with the benefit of their cow and garden, and the exertions which these call forth, and with a little occasional assistance that the old man and his wife receive from their son, and which the other old woman has from her younger neighbours, they all appear to enjoy much more comfort than old age in general possesses. They satisfied me that, but for the cow and the garden, they could not have subsisted without parochial relief.

"I have selected these three examples, from many similar ones on the same estate, in proof of the utility of the measures, which Lord Winchilsea has adopted for the benefit of his cottagers. There are two circumstances which I learnt upon enquiry, and which I think will shew that the benefit I have stated, was not local or partial, but diffused over his estate; one, that the rate collected for the relief of the poor, in his three parishes, is not so much, on an average, as an annual six-pence in the pound; the other, that his cottagers' rents (for their cottages and little closes of ground) are, of all his rents, the earliest and best paid; and that there has been no arrears of them for several years.

"There was an air of content and gratitude marked in the countenances, and expressed in the language of all the cottagers, that convinced me that what had been done for them by their landlord, had not only made them more happy, and improved their means of subsistence, but that it had produced very beneficial effects on the heart and the morals. The advantages, however, are not confined to the poor man and his family; they extend to the parish, and prevent its being burthened with a heavy poor's-rate; and to the community at large, on account of the children of the lower classes of the people being educated in habits of industry and good order; and having, at an early age, a spirit and energy infused into them by the examples of their parents; which teach them that their best and surest dependence, in future life, will be on their own exertions and good conduct for the maintenance and welfare of themselves and their families."

LANDAU, a town of Germany, in the circle of Upper Rhine, 12 miles N. of Waldeck, and 34 S.E. of Paderborn.

LANDAU, a town of Lower Bavaria, situate on the Isar, 32 miles W. of Passau. Long. 12. 41. E. Lat. 48. 32. N.

LANDERON, a town of Switzerland, in the principality of Neuchâtel. In 1707 this town refused to acknowledge the King of Prussia for sovereign, and was reduced by force of arms. It is situate at the S.W. extremity of the lake of Bienné, seven miles N.E. of Neuchâtel, and nine S.W. of Bienné.

LANDES, a department of France, including the late territory of Marlian. It takes its name from a district called Landes, extending along the coast of the bay of Biscay. It is a barren sandy country, covered with fern, pines, and the holm-tree, of the bark of which corks are made. Mount-de-Marian is the capital of this department, and Dax the episcopal see.

LANDRIANO, a town of Italy, in the Milanese, 11 miles S.S.E. of Milan.

LANDSBERG, a town of Bavaria, near the river Lech, 23 miles S. of Augsburg.

LAND'S-END, a promontory of Cornwall, the most westerly point of Great Britain, and a vast aggregate of moorstone. Long. 5. 40. W. Lat. 50. 6. N.

LANDSCHUT, a town of Silesia, in the duchy of Schweidnitz. It has a flourishing linen trade, and is seated on the Zelder, 12 miles W. of Schweidnitz.

LANDSCHUT, a town of Lower Bavaria, with a strong castle, on an adjacent hill. It is seated on the Isar, 35 miles N.E. of Munich. Long. 12. 10. E. Lat. 48. 30. N.

* In the Dillorn inclosure act, passed in 1781, there is a clause for securing to cottagers, in fee-simple, houses built by them upon the waste, with the gardens belonging to them, and also for securing to them an estate for one, two, or three lives, in the inclosures previously made by them on the waste, not exceeding two acres. This clause was suggested by a principal proprietor, Mr. Holliday of Lincoln's-Inn, from whom we learn, that the custom of joisting the cottager's cow is prevalent in that parish; and the rent is usually made up out of the extra wages during harvest. Mr. Holliday has declared that, during the sixteen years that have passed since the inclosure, there has been hardly any instance of a cottager, who kept a cow, standing in need of, or seeking relief from the parish.

LANDSCHUT, a town of Moravia, seated on the Morava, on the confines of Hungary and Austria.

LANERK, a borough in Lanerckshire, seated on the Clyde, 20 miles S.E. of Glasgow. Long. 3. 49. W. Lat. 55. 40. N.

LANGANICO, the ancient Olympia, a town of Turkey in Europe, situate on the small river Carbon, the ancient Alpheus. Here anciently the famous Olympian games were celebrated. It is 32 miles S.S.E. of Chiarenza, and 60 S.W. of Corinth.

LANGÉAC, a town of France, in the department of Cantal, seated near the Allier, among mountains, 17 miles E. of St. Flour. Long. 3. 35. E. Lat. 45. 5. N.

LANGENTHAL, a town of Switzerland, in the canton of Berne. Here are three great annual fairs, at which great quantities of linen, as also cattle, cheese, and grain, are sold. Near the town are some medicinal springs. It is 10 miles E. of Soleure, and 18 N.E. of Berne.

LANGOGNE, a town of France, in the department of Lozere, 21 miles N.E. of Mende, and 33. W. of Privas. Long. 3. 45. E. Lat. 44. 44. N.

LANGON, a town of France, in the department of Gironde. It is noted for excellent wine, and seated on the Garonne, 15 miles N. of Bazas. Long. 0. 10. W. Lat. 44. 33. N.

LANGPORT, a town in Somersetshire, with a market on Saturday. It is seated on a hill, by the river Parret, which is navigable for barges to Bridgewater. It is 10 miles S.E. of Bridgewater, and 128 W. by S. of London. Long. 3. 0. W. Lat. 51. 0. N.

LANGUAGE (*Encycl.*). It appears to be not without the most powerful reasons, that a general custom of a great part of Europe has devoted a considerable portion of the time allotted to education to the study of languages; for, besides the convenience and pleasure of being enabled to comprehend and appropriate, without difficulty, the ideas of writers of various nations in their original purity, it is impossible to learn a language without gaining a variety of other knowledge connected with that of words; without learning to make logical and metaphysical distinctions on the most substantial grounds; and without acquiring a taste for the beauties, and sensibility to the perfections, of the works of genius, which must necessarily be studied in order to attain a familiarity with that language. Unfortunately, indeed, men are too prone to mistake the means for the end, and to devote such a degree of attention to the form of expression, as is only due to the beauty or deformity of the sense; and that pedantry, which always accompanies a little mind, has been most conspicuously exhibited in verbal scholars. But there is a point of view in which every language may be considered, which renders it an object highly worthy the attention of a philosophical observer. The different character of each language, their general derivation, dependence, and connection; the progress of the primitive expression of an idea through different forms and modifications; the various metaphysical relations which are more or less openly expressed or implied in a sentence; and other historical and critical enquiries of this kind, still leave a wide field of research open to those who are disposed to cultivate it. Considerable progress has already been made by M. Court de Gebelin, Professor Buettner, Mr. Horne Tooke, and Professor Hunter; and two other gentlemen might be named who promise to add much to our knowledge of the affinity of languages in general; and it is to be hoped, that successive attempts will extend our views of the subject as far as our means of information will allow. A perfect language should be capable of expressing every possible idea, and combination of

ideas, accurately and concisely: but if we compare any existing language with this model, we shall find great imperfections in both these respects; but more particularly in point of conciseness; for imaccuracy is generally precluded by a disproportionate prolixity. The same test will apply to the delineation of a language by written characters; and here we have the greatest reason to complain, in most languages, of innumerable inaccuracies. No man of cool judgment would attempt to introduce a general philosophical language into common use; for when a country is once enlightened and civilized, its language, in all essential points, is unalterably fixed; and no literary authority is powerful enough to increase or diminish it, excepting technical terms, by a single word; as, on the other hand, it is equally vain for the pedantry of fashionable fools to endeavour to give currency, in elegant conversation, to such terms, for words they are not, as a quiz, a gig, a bore, and a row. But it may be worth while to attempt a comparative view of the degrees in which various languages approach to the standard of perfection in point of conciseness; and it is remarkable, that the English seems to be the least objectionable of all in this respect; unless perhaps the Hebrew, considered without points, may be reckoned more simple. For, in fact, the immense mass of concordances, declensions, conjugations, and inflections, with which the memory and patience of many a poor school-boy is overpowered, is entirely composed of so many pleonasm, which add nothing to the sense but an unnecessary repetition of an unimportant idea; although, like many other amiable weaknesses, they are admired as elegancies; especially, when by the capricious inventions of the poets, they are rendered, in some degree, subservient to perspicuity. "The scorching sun," in English, is equally expressive with the corresponding expression in Greek, Latin, Italian, or French, where the idea of the masculine gender is not only unnecessarily, but falsely added to each of two or more words; or, in German, where the feminine gender is, with equal impropriety, applied as often. In speaking of "a handsome girl," the idea of the female sex is repeated in most languages; in German that of neutrality is added, with the same impropriety as frequently occurs in Greek and Latin. But the German, by sometimes omitting, and sometimes repeating the ideas of gender and case implied in the termination, render their language exceedingly complicated; for when several adjectives come together, they sometimes add the form of case and gender to each; and sometimes make the first the only echo, leaving the remainder in a kind of indifferent state with respect to both. The conjugations of verbs, as far as they express person and number, add no new limitation to the sense; and the English auxiliaries define the time of an action with far more accuracy than the more complicated temporal terminations in other languages. Not but that the English have pleonasm in this respect too; "he give" would be as intelligible as "he gave;" and "you loves I," and "I loves you," inelegant as they appear, are yet more truly logical than the received expressions. But as it is impossible to accommodate actual language to rules perfectly analogous, all these defects must, in practice, be tolerated; although it is absolutely necessary to pay regard to them in every metaphysical analysis of the nature and construction of languages. The imperfections of written characters are productive of more serious inconvenience, as they greatly and unnecessarily increase to foreigners the difficulty of learning any modern language. The least imperfectly delineated language is, perhaps, the Italian; next the Spanish; then the German; the French; and, last of all, the English; which is more irregular in its orthoepy, than, perhaps, any other language that ever existed. There is reason to suppose that

the Greeks and Romans deviated but little from an uniform pronunciation of similar characters. The evil is, perhaps, too inveterate to admit a radical cure; not so much from any essential difficulty, as from the inconveniences of a change; but certainly some very considerable palliatives have lately been administered; and it is to be hoped, that when the formation of articulate sounds shall have been more attentively examined, it may be, in great measure, practicable to describe the found of every word with perfect accuracy.

Another superfluity in many languages is the use of a *sub-junctive mood*, which is conceived to signify a kind of contingency that still requires an auxiliary particle to define it. It is certain, that no rule has ever yet been laid down which will sufficiently limit every case of its application; and for a very obvious reason, that the best authors have never been perfectly consistent in their use of the moods. But it is presumed, that a rule may be given which approaches very nearly to the practice of correct writers; and which may, in every case, be followed with perfect safety and elegance. It is, to confider it simply as a future tense following a conditional particle. A few examples will make this rule more intelligible than a prolix explanation would do. 'If the Elbe "is," now open, we shall soon have the mails; and then, if there "be" any news from the army, I will send it you immediately.' If Catiline "was" generous, it was in order to serve his ambition.' 'If it "were" not certain that some men of good sense maintain the nineteenth century to have commenced, it would appear utterly incredible that to simple a question could admit of dispute,' &c.

LANJAN, or LANCHANG, a city, and the capital of the kingdom of Laos, at least of the southern part, to which it gives name. It is the usual residence of the king, whose palace is of vast extent. The houses of the grandees and persons of condition are lofty and elegant; but those of the inferior people are no better than huts. The priests alone have the privilege of building their houses and convents with brick and stone. Lanjan is situate on the W. side of the river Mecon, 400 miles N.N.W. of Cambodia. Long. 101. 38. E. Lat. 18. 30. N.

LANION, a town of France, in the department of the North Coast. Its trade consists in wine and hemp, and it has some mineral waters. The inhabitants of Lanion, Guingamp, and the environs, speak the Welsh language, which was probably brought hither by the Britons, who took refuge in these parts, in the fifth century. Lanion is 15 miles W. of Treguier.

LANNŌY, a town of France, in the department of the North, five miles S.E. of Lille.

LANSINBURGH, a town in the state of New York, formerly called the New City. It stands on the east side of Hudson's River, opposite the fourth branch of Mohawk River, nine miles N. of Albany.

LANZO, a town of Piedmont, on the river Stura, 12 miles N.W. of Turin. Long. 7. 28. E. Lat. 45. 9. N.

LAPELA, a town of Portugal, in Entre Douero e Minho, seated on the Minho, 13 miles E. of Valenço do Minho.

LAR, a town of Persia, in the province of Laristan, with a castle. It carries on a great trade in silk. Long. 52. 45. E. Lat. 27. 30. N.

LARACHA, a strong town in the kingdom of Fez, seated at the mouth of a river of the same name, with a good harbour. It was once in possession of the Spaniards, but the Moors took it from them. Long. 5. 59. W. Lat. 35. 40. S. LARGENTIÈRE, a town of France, in the department of Ardèche, 18 miles S.W. of Privas. Long. 5. 11. E. Lat. 44. 32. N.

LARGO, a town of Scotland, in Fifeshire, situate on the

north coast of the frith of Forth, in a large bay to which it gives name. It is six miles S. of Cupar.

LARISTAN, a province of Persia, which lies N. of the gulf of Persia. It abounds in oranges, lemons, and very large tamarinds. Lar is the capital.

LARNE, a town of Ireland, in the county of Antrim, situate at the mouth of a river of the same name, eight miles N. of Carrickfergus, and 16 N.E. of Antrim. Long. 5. 43. W. Lat. 54. 51. N.

LARNIO, a sea-port on the S. coast of Cyprus, the see of a Greek bishop, and the residence of several European consuls. It is 30 miles S.W. of Famagusta.

LARVIGEN, or LAURVIGEN, a sea-port of Norway, capital of a county to which it gives name. It is a place of considerable trade, and its iron-works are esteemed among the most valuable in Norway. It is 55 miles S.S.W. of Christiania. Long. 16. 15. E. Lat. 59. 3. N.

LASNEBOURG, a town of Savoy, in the county of Maurienne, on the Arc, at the foot of Mount Cenis, the passage of which is the principal import of the inhabitants. The fun is hidden from the inhabitants of this town by the mountain during two months of the year: 20 miles N.N.W. of Susa, and 23 miles E. of St. Jean-de-Maurienne.

LASSA, or LAHASSA, the capital of the country of Great Thibet, in Asia. It is not a large city; but the houses are of stone, and are spacious and lofty. About seven miles on the east side of the city, is the mountain of Putala, which contains on its summit the palace of the grand lama, the high-priest and sovereign of Thibet. Lassa is 24 miles N.E. of the crossing place of the river Sanpo, which is seven miles from the foot of Mount Kambala; and it is 850 miles N. by E. of Calcutta. Long. 91. 40. E. Lat. 30. 34. N.

LATACUNGA, a town of South America, and principal place of a jurisdiction of the same name, in the audience of Quito, containing 10,000 inhabitants. This town was destroyed by an earthquake in the year 1698, and great numbers of the inhabitants were buried in the ruins; 50 miles S. of Quito.

LATAKIA, formerly LAODICEA, an ancient and considerable town of Asia, in Syria, with a harbour, bishop's see, and beautiful remains of antiquity. It is become the most flourishing place on the coast, and is 75 miles S.W. of Aleppo, and 245 N. of Jerusalem. Long. 34. 30. E. Lat. 35. 40. N.

LATTON, a village in Essex, between Epping and Harlow. It had once a priory of Augustine monks, whose church, now used for a barn, stands about three miles S. of the parish church. Latton is about 21 miles N. by W. of London.

LAVAL, a considerable town of France, in the department of Maine and late province of the same name. It has been recently erected into a bishopric, suffragan to Rennes. The inhabitants are computed at 24,000. Linen of all kinds and qualities is manufactured here; and the neighbouring quarries produce green marble, or black, veined with white. It has two castles, and is seated on the river Maine, 15 miles S. of the town of that name, and 40 W. of Mans. Long. 6. 42. W. Lat. 48. 7. N.

LAVAMUND, or LAVANT MANDE, a town of Germany, in Carinthia, with a castle, and a bishop's see. It belongs to the archbishop of Salzburg, and is seated on the river Drave, 40 miles E. of Clagenfurt. Long. 15. 18. E. Lat. 46. 44. N.

LAVAU, a town of France, in the department of Tarn and late province of Languedoc. Before the revolution it was a bishop's see; and it is seated on the river Agout, 20 miles N.E. of Toulouse. Long. 1. 52. E. Lat. 43. 40. N.

LAUBACH, a handsome and strong town of Germany, in Carniola, with a bishop's see, and a castle. It is seated on a

river of the same name, in which are the largest crawfish in Europe, 32 miles S. of Clagenfurt, and 155 S. by W. of Vienna. Long. 14. 25. E. Lat. 46. 24. N.

LAUDA, a town of Germany, in the bishopric of Wurtzburg, 18 miles S.W. of Wurtzburg. Long. 9. 45. E. Lat. 49. 28. N.

LAUDER, a borough of Scotland, in Berwickshire; a small town, but lately much improved. Near it, is Lauder Castle, 22 miles S. of Edinburgh. Long. 3. 5. W. Lat. 55. 39. N.

LAVELLO, an ancient town of the kingdom of Naples, with a bishop's see; 30 miles E. by N. of Naples. Long. 15. 55. E. Lat. 41. 5. N.

LAVELT, or LAELT, a village in the bishopric of Liege, near Maestricht, remarkable for a battle gained here by the French in 1747.

LAUENSTEIN, a town of Upper Saxony, on the margrave of Meissen, 18 miles S. of Dresden. Long. 13. 45. E. Lat. 51. 42. N.

LAUFEN, a town of Germany, in the duchy of Wirtemberg, seated on the Neckar, 10 miles S. of Hailbron. Long. 9. 25. E. Lat. 49. 3. N.

LAUFEN, a town of Switzerland, in the canton of Basle, seated near the river Birs, 12 miles S.W. of Basle.

LAUFEN, a village of Switzerland, in the canton of Zurich, three miles S. by W. of Schaufhausen. Here is a celebrated cataract of the Rhine; the perpendicular height of which is 50 or 60 feet, and the breadth 300.

LAUFFENBURG, a strong town of Suabia, and one of the four Forest-Towns, with a ruined castle. It belongs to the house of Austria, and is seated on a rock, on the Rhine, which divides it in two parts. Here is a small cataract, noted for the beauty of the scenery. It is 17 miles E. of Basil. Long. 8. 2. E. Lat. 47. 35. N.

LAUGHTON, a village in the W. riding of Yorkshire, on a high hill, six miles E.S.E. of Rotherham. It is noted for its church, whose tower and spire are not excelled by any Gothic piece of the kind; and it is seen, in some places, at the distance of 60 miles.

LAVIGNA, a town of Italy, in the territory of Genoa, at the mouth of a river of the same name, eight miles from Rapallo.

LAUINGEN, a town of Suabia, formerly imperial, but now subject to the duke of Neuburg. It is seated on the Danube, 32 miles N.W. of Augsburg. Long. 10. 25. E. Lat. 48. 38. N.

LAUNU, a town of Bohemia, near the river Eger, 27 miles N.W. of Prague. Long. 14. 20. E. Lat. 50. 21. N.

LAUREATE (*Encycl.*). Degrees in grammar, which included rhetoric and verification, having been anciently conferred in our universities, that circumstance has occasioned much confusion, and has led some writers too hastily to suppose that persons were invested with the office of poet laureat, who, in truth, had no claim to it. A wreath of laurel being presented to the new graduate on taking his degree, he was afterwards frequently styled *poeta laureatus*; and this scholastic laureation certainly gave rise to the appellation by which the

court poet was distinguished. The king's poet laureat, therefore, strictly speaking, is only a graduate rhetorician, employed in the service of the king.

On this subject, Fuller (in his *Worthies of England*, c. x. p. 27.) makes the following observation: "As for our English poets, some have assumed unto themselves the title of English poets, as John Kay, in his dedication of *The Siege of Rhodes* to King Edward the Fourth, subscribing himself his *humble poet laureat*. Others have, in compliment, given the title to such persons as were eminent in that faculty; and nothing is more usual than to see their pictures before their books, and statues on their tombs, ornamented accordingly. However, all this is done by civil courtesy, or common custom; no ceremonious creation in court or university."

So early as the thirteenth century, *Henry d'Avranches*, a Frenchman (*Henricus Abrincensis*), was entertained by our Henry III. as a poet attached to his court; and under the title of "Master Henry the versifier" received from that monarch an annual stipend, which seems to have been ten pounds a-year.

In the 36th year of the same king's reign (1252), forty shillings a-year and a pipe of wine were granted to *Richard*, the king's harper; which perhaps gave rise, at a subsequent period, to a similar bounty to the poet laureat.

Gulielmus Peregrinus, who composed a poem on the crusade of Richard I. appears to have been the royal poet of that time; and *Robert Baskon*, whom Ball calls *poeta Oxonii laureatus*, and whom Edward II. carried with him to the siege of Stirling-castle, to record his Scottish exploits in verse, may be considered as exercising the same office under that monarch. Of these versifiers, as they were then called, the compositions produced in their character of poets laureat were in Latin.

Chaucer, perhaps, in the time of Edward III. and Richard II. as a poet, and as receiving a royal pension, not without a due allowance of sack; and in the time of Henry IV. *Henry Scogan*, master of arts, who, if we may credit *Ben Jonson*, made disguises for the king's sons, and wrote in fine tinkling rhyme and *flowand wofe*; may with sufficient propriety be enrolled in the same tuneful and honourable band: yet neither these poets nor *Gower*, though two of them were afterwards enumerated in Dryden's patent, as having worn the laurel, were ever regularly and expressly appointed to this office; nor does the title of *poet laureat* occur earlier than the time of Edward IV., to whom *Jon Kay* (*Caius*), about the year 1470, dedicating a prose translation of a Latin history of the Siege of Rhodes, styles himself *hys humble poet laureate*. None of his poetry, however, either in Latin or English, is known to be extant.

Andrew Bernard, a Frenchman, and an Augustine monk, who was blind, was successively poet laureat and historiographer to Henry VII. and Henry VIII. and was living in 1522.

In 1489, *John Skelton* was laureated as a rhetorician at Oxford, and a few years afterwards was permitted to wear the laurel publicly at Cambridge. Previously to which he had been honoured by Henry VII. with a grant to wear either some peculiar dress, or some additional ornament on his ordi-

* Fuller (*Worthies*, ubi sup.) asserts, that till the time of his writing (about 1660), there was no regular appointment of a poet laureat. "There want not those," he observes, "who do confidently aver that there is always a laureat poet in England, and but one at a time; the laurel importing conquest and sovereignty; and so, by consequence, solennity in that faculty; and that there hath been a constant succession of them at court, who, beside their salary from the king, were yearly to have a tun of wine, as very essential to the heightening of fancy." This last is founded on what we find given to *Geoffrey Chaucer*, *Vigesimo secundo anno Richardi secundi, concessum Guillelmo Chaucer unum dolium vini per annum durante vita in porta civitatis London, per manus capitulis pincerna noster*. But Chaucer, besides his poetical accomplishments, did the king service both in war and peace, as soldier and ambassador, in reward whereof, this and many other boons were bestowed on him.

mary apparel. That he was poet laureat to Henry VIII. may be presumed from the titles of some of his works, but there is not sufficient proof of his ever having received an annual salary, which is a criterion for forming a conjecture, at least, concerning the possession of the office, for none of the persons who may be considered as filling the station before Dryden, except Andrew Bernard, are expressly denominated *poets laureate* in any authentic record.

Thomas Churchyard, a voluminous poetaster in the time of Queen Elizabeth, in consequence of having addressed many of the noblemen of her court for near 40 years, in such rhymes as he could spin, is called by one of his contemporaries *the old court poet*; this has given rise to a conjecture that he was peculiarly countenanced and patronised by the queen, and formally placed at the head of the poetical band of that time; but, undoubtedly, Elizabeth had no poet laureat till in February, 1590-1, she conferred on *Edmund Spenser* a pension of 50*l.* a-year; from which time to his death, in 1598-9, he may properly be considered as filling the office, though not expressly styled *Laureat* in his patent.

Samuel Daniel has been represented by Anthony Wood, and others, as the next successor to the laurel, but he never was thus honoured; for from the death of Spenser to the year 1616 the poetical throne was vacant, though in that period *Daniel*, *Jonson*, *Dekker*, and others, furnished the court with pageants and masques, and may, during that interval, be considered as *volunteer laureates*. About four months before the death of Shakspeare, January 1, 1615-16, King James granted to *Ben Jonson* a pension of one hundred marks a-year (66*l.* 13*s.* 4*d.*) during his life, "in consideration of his good and acceptable services past and future;" a grant which invested him with all the dignity and functions of poet laureat. This consideration, however, is common to many other crown grants not conferred on poets; nor did any patent expressly mention the duty and peculiar services expected from a poet laureat, before that of Charles I. to the same person; in which the character and functions of this office are, for the first time, specifically pointed out. On the 23*d* of April, 1630, that King, "in consideration of good and acceptable services done by the said Benjamin Jonson, and especially to encourage him to proceed in those services of his wit and pen which we have enjoined unto him, and which we expect from him," was pleased to augment his annuity of one hundred marks to one hundred pounds per annum, during life, payable from the preceding Christmas. Old Ben had not long before been struck with the palsy, on which account, perhaps, as well as to gratify his well-known propensity, his majesty, by the same instrument, granted him a tierce of Canary wine yearly, during his life, out of the royal cellars at Whitehall.

It has been generally supposed that Sir *William d'Avenant* succeeded to the bays immediately on Jonson's death, in August, 1637; but he then received no favour from the crown. About sixteen months afterwards, December 13, 1638, letters patent passed the great seal, granting an annuity of one hundred pounds a-year to the said William d'Avenant, during his majesty's pleasure. By this patent no Canary wine was given, nor is any mention made of the office of poet laureat, or the duties belonging to it.

In 1670, some time after the death of Sir William d'Avenant, Dryden was made poet laureat by letters patent, and held the office till he was compelled to forego it in consequence of the revolution.

On the 29*th* of August, 1689, he was succeeded by *Shadwell*.

Shadwell's successor was *Nahum Tate*, December 23*d*, 1692, with an annual pension of one hundred pounds, and a butt of Canary wine.

VOL. X.

On the death of Tate, 1716, the laurel was given to *Rewie*; who dying in December, 1718, the Rev. *Laurence Eustien* was, in the following year, invested with this office.

On the death of Eustien, September 27, 1730, *Colley Cibber* was appointed poet laureat. His reign extended to the end of the year 1757.

To him succeeded *William Whitehead*, who dying April 14, 1785, the Rev. *Thomas Warton* obtained the laurel, which he held for five years.

Shortly after his death, which happened May 21, 1790, *Henry James Pye*, esq. was appointed poet laureat, and now fills the poetical throne.

There is no grant in the chapel of the rolls, constituting Rowe poet laureat. The practice of conferring this office by a warrant signed and sealed by the lord chamberlain, nominating A. B. to the office, with the accustomed fees thereunto belonging, then commenced, and has prevailed from that time to the present.

LAURINGEN, a town of Germany, in the bishopric of Wurzburg, 24 miles N.W. of Bamberg, and 30 N.E. of Wurzburg. Long. 10. 21. E. Lat. 50. 5. N.

LAURVIG, a town of Norway, in the province of Aggarhuus, 55 miles S. of Christiania. Long. 10. 15. E. Lat. 59. 3. N.

LAUTERBRUNN, a village of Switzerland, six miles S. of Interlaken. It is seated in a valley of the same name, celebrated for its picturesque and romantic scenery. See **STAUBBACH**.

LAUTERBURG, a town of Western Prussia, in the palatinate of Culm, 50 miles N.E. of Thorn.

LAUTERBURG, a town of Germany, in the circle of Upper Rhine, but subject to the French. It is 10 miles S.E. of Weissenburg. Long. 8. 26. E. Lat. 48. 48. N.

LAUTERECK, a town of Germany, in the circle of Upper Rhine, and county of Veldenz, situate on the Glan, 24 miles N. of Deux Ponts, and 46 S. of Coblenz. Long. 7. 17. E. Lat. 49. 39. N.

LAUZERTE, a town of France, in the departments of Lot and Garonne, 15 miles N.E. of Marmande. Long. 9. 22. E. Lat. 44. 58. N.

LAWRENCE, *St.* the largest river of North America, proceeding from Lake Ontario, from which it runs 700 miles to the Atlantic. It is navigable for large ships of war, as far as Quebec, which is above 400 miles; but beyond Montreal, it is so full of shoals and rocks, that it will not admit large vessels without danger. It is here called the *Iroquois*.

LAXENBURG, a town of Austria, with a palace, where the princes of the house of Austria go for pleasure. It is seated on a small river, 10 miles S. of Vienna. Long. 16. 28. E. Lat. 48. 5. N.

LAYBACH, a town of Carniola, on a navigable river of the same name, 28 miles N.E. of Trieste. Long. 14. 32. E. Lat. 46. 12. N.

LAZZARONI, a peculiar description of the lowest class of people, that have, for a number of years, constituted a very singular, as well as a very considerable, part of the poor of Naples. Their origin, which is but little known, is said to be as follows: the romantic and enterprising Duke of Guise, who defended the city of Naples against the Spaniards for a long time with very inadequate forces, tells us, in the third book of his *Memoirs*, that two secret enemies of his, "*Genaro* and *Vincenzo*, cherished underneath the aversion the rascality had for the better sort of citizens, and civiler people, who, by reason of the insolencies suffered from them, justly hated them. The latter of these, by whom the greatest part of the Virgin's suburbs was inhabited, were called *black-cloaks*, and the ordinary sort of people took the name of *Lazares*, at

the beginning of the revolutions; as the revolvers in Flanders formerly had done that of *beggars*, those of Guienne that of *eatres*, those of Normandy of *barefoot*, and of Beaulieu and Soulogne of *wooden pattens*." The Lazzaroni's quondam opponents, the *black-coats*, and all the others, are now completely blotted out of the remembrance of men, but they still survive, and were never more conspicuous, nor of more importance, than in the present era, after the lapse of a century and half. Titles, similar to those above, in times of public disorder, have been assumed by combinations of the lower classes of society in almost every age, but have seldom long survived their existence who originally constituted those confederacies. Perhaps in another century the *Chouans* and the *fans culottes* will be as little talked of in the districts which gave them birth as are now the *barefoot* and the *wooden pattens*.

LEA, a river which rises near Luton in Bedfordshire, flows to Hertford and Ware, and dividing Essex from Hertfordshire and Middlesex, falls into the Thames below Blackwall. By this river large quantities of corn and malt are brought out of Hertfordshire to London.

LEAD (*Encycl.*). Though we have spoken fully on the nature, qualities, and chemical combinations of this metal, under the articles LEAD and CHEMISTRY, and also under ACETITE in this Supplement, the following extracts from a Memoir on the Preparation of Sugar, or Acetite of Lead, by Citizen Marchais, which was read before the Société Académique des Sciences, in France, seem to deserve notice in this place.

"Machy," says he, "the only French author who has given circumstantial details concerning this manufacture, has represented it as being so difficult in the execution, that its success cannot always be certain. Those who have written since this author, have either added nothing to our knowledge, or have at least not been able to determine what was good in the ancient processes, and what might be proper to be added to them; neither have they pointed out the grounds of the superiority of one process over the other, as they were unable to determine the theory of the operation in a clear manner, the evidence of which was supported by facts. Basil Valentin, and Isaac the Hollander, who are mentioned as the first who gave an account of the action of vinegar upon lead, and the salt thereby produced, required for that purpose much less science, and were obliged to make much fewer experiments than were afterwards required, in order to ascertain the uses of this salt in the arts, and especially in that of dyeing, in which it is of so great importance. At that time, in order to make chemical discoveries, it was sufficient to place substances in contact, and see whether they exerted any operation upon each other. From thence to the knowledge of the theory of this action, the road was much longer than that which had led to the first observation; thus almost all the explanations which chemistry gave of her operations, prior to the discoveries of the immortal Lavoisier, have rather retarded than accelerated the progress of the science. Every sound theory points out the route we are to take in a certain manner, but when the theory itself is erroneous, it leads us astray, and the arts receive no improvement. Local circumstances may render the error less perceptible, or cause it to disappear; but, when we do not well know what we are doing, which is almost as bad as not knowing it at all, we can never rectify our course, nor know whether or not it be the best which we could take, if perchance that should happen. What I have to say concerning the preparation of the sugar of lead is evident, is known, and yet it has never been said before; for the operation has remained obscure, uncertain, little productive in France,

whilst other nations know how to derive profit from it: this is what must have happened, as the facts will prove.

"It had been discovered that distilled vinegar was less concentrated than the same vinegar not distilled; because, in distillation, more water raises itself than acid, the latter concentrating itself in the alembic; but this portion cannot be employed, as it is only after having been distilled, that it becomes proper for preparing the acetite of lead. My first idea was, to combine the oxyd of lead with vinegar not distilled but, however, without any colour, as I attributed to its extractive part, the impossibility of obtaining a crystallisable product from the direct combination of the oxyd and the acid. The preparation known in pharmacy by the name of extract of lead, yields no crystals on condensation, but merely the appearance of an extract, such as is obtained from vegetables. I believed that I had found, in the oxygenated-muriatic acid gas, a means of destroying the colouring matter of the vinegar. It was white-wine vinegar that I used.

Experiment 1. "The apparatus which I employed is a known one; it is that which chemists use for obtaining the muriatic acid gas, suspended in water; instead of water I had put vinegar into it: this lost its colour, and became very white. I ought to remark that it no longer retained its peculiar odour; neither had it that of oxygenated muriatic acid; but it had acquired one peculiar to this combination, which no author has hitherto treated of. Into 18 ounces 5 drachms 60 grains of this liquor, I put three ounces of the white oxyd of lead; of this there was a little that was not dissolved, and a small part precipitated in a pulverulent form; this was muriate of lead. The liquor poured off, subjected to a very slow evaporation, and cooled in its sand bath, presented nothing to the eye but a brown extract, having the smell of mucous-saccharine matter when beginning to burn but no appearance of crystals was observed in it, after it had been kept cool for eight hours. I gently stirred it, inclining the vessel at the same time, in order to examine whether there might not be some crystals at the bottom; immediately the liquid was converted into a solid, and I had nothing more than a saline mass, irregularly crystallised and very brown. This was acetite of lead; but it ought to have been the acetite of commerce, with respect to the whiteness and regularity of the crystals; it was only the chemist who could discover in it the principles of the acetite of lead.

Experiment 2. "I endeavoured to bleach the vinegar, if I may be allowed the expression, by the admixture of oxygenated muriatic acid dissolved in water; the vinegar was deprived of its colour, but the state in which I found it was precisely the same as in the first experiment; I therefore judged it superfluous to employ it for dissolving the white oxyd of lead, as I could foresee the result from the former experiment.

Experiment 3. "Chemists having frequently employed the sulphurous acid for depriving vegetable substances of their colour, I disposed the apparatus used in Experiment 1, and distilled the sulphuric acid upon a combustible substance; (it was oil straw): a considerable disengagement of sulphurous acid took place; the vinegar became turbid, a very light precipitate was formed; but the colouring matter was not attacked: I therefore judged it useless to treat the white oxyd of lead with this acid.

Experiment 4. "I thought I ought to try, for the sake of comparison, the solution of the white oxyd of lead in strong red vinegar. A pound of this acid was able to dissolve an ounce, and some particles remained in the form of a brown powder. I tried in vain every expedient I could devise, in order to make this solution crystallise. I had only a blackish-brown extract, of the consistence of honey, but which exhibited

no appearance of crystals; distilled vinegar poured upon it very easily effected its complete solution; the solution was brown, and served me for some experiments foreign from the subject of this memoir.

"The experiments which I have just related had taught me that if the colouring matter was an impediment to the crystallisation, one ought not to attribute to it alone the more or less red appearance of the crystals of acetate of lead.

Experiment 5. "I put several pounds of the same vinegar into a distilling apparatus of glass. I divided the whole into four portions in the following order: $\frac{1}{2} + \frac{1}{2} + \frac{1}{2}$, so that there remained only $\frac{1}{2}$ in the distillatory vessel: the three first products presented no apparent diversity to the eye; they were equally limpid and colourless; the fourth was very high coloured, very acid, and when cooled, deposited crystals of tartarite of potash.

Experiment 6. "Eight ounces of the first fourth were combined with six drachms 44 grains of white oxyd of lead*; the solution took place under a continued effervescence; the pieces of oxyd did not assume a brown colour, as in experiments 1 and 4; the salt which I obtained was beautiful, very white and brilliant; I had 5 ounces 36 grains of it; the mother-water was somewhat coloured, and yielded 70 grains of a reddish salt. The portions of the vinegar, No. 2 and 3, on being subjected to the same operation, yielded a salt much inferior to that of No. 1, especially No. 3; the mother-water was in larger quantity and more coloured, as were also the crystals which were more irregular. The consideration of these three facts gave me reason to conclude, that the oil, which exists in considerable quantity in vinegar, was the real cause of the difficulty which had been found in obtaining the acetate of lead. Machy was not aware of this difficulty, though he was in the way to discover it; he relates that the manufacturers of Grenoble pour several ounces of alcohol into each of the vessels in which the crystallisation is performed. What I have just said may serve to demonstrate the utility of this precaution. Alcohol has a decided affinity on the one hand with the acetate of lead, and on the other with the oil furnished by the vinegar; it will therefore dissolve in preference the oily and red crystals, or even the oily part, so that what remains in the vessel will be more beautiful, and freed from that substance which impaired its whiteness. Machy, and those who have repeated it after him, are wrong, in asserting that the manufacturers use this alcohol in order to prevent evaporation from taking place, during the crystallisation of the salt: its direct object is to free it from that substance which would impair its whiteness. In order to demonstrate this theory with the most convincing evidence, it was necessary to take acetic acid that contained no oil, consequently not that which is obtained from wine; I therefore procured vinegar prepared from cyder.

Experiment 7. "I distilled it in glass vessels, and twice stopped the distillation, in order to filter the salt, which the liquor might contain, to crystallise; but not having perceived any crystallisation, I continued it to exsiccation; a small quantity of extractive matter remained, which could be re-dissolved by water. I dissolved the white oxyd of lead in the distilled acid; the liquid remained white and transparent, it crystallised completely, without any coloured mother-water, and the last crystals were no less beautiful than the first. Success, so complete and conformable to theory, proved to me, that the real superiority of the Dutch consists in their employing in the manufacture of this salt, vinegar exempt from oily particles; such as are the vinegars prepared from grain. It is known

that they manufacture these vinegars of very superior quality, and that they very carefully keep secret the details of this operation. I have been informed upon good authority, that at the time when the Dutch territory was covered by our troops, and when the influence of France, in that country, was at its greatest height, it was never possible to penetrate into these manufactories of vinegar, many of which even ceased for the time to work. The beautiful appearance of the sugar of lead which they sell us, depends therefore upon local circumstances; they naturally would employ the acid which they manufacture themselves, in preference to that for which they would have been obliged to procure the materials from abroad, as their soil produces no wine; our country, on the other hand, knows in general of no other vinegar than that produced from wine, which consequently has been employed, and all those inconveniences have resulted with which its use is naturally attended. It may perhaps be objected to me, that it is said in the works that have been quoted, that the Dutch come to buy up the hucks of grapes in the Artois and Bordelais territories; mysterious as they are in whatever they undertake, if the Dutch pretend that the use for which these hucks are destined is the manufacture of sugar of lead, I should be induced to believe the contrary; but, besides, might not the manufacture of white lead and that of verdigris consume these hucks? Do not the four stalks serve to develop an acid principle in fermentation. Besides, it is not said that the English, who likewise excel in the manufacture of the acetate of lead, come to our ports to buy these hucks; but it is certain that they make use of vinegar prepared from grain.

"I cannot conclude this memoir without remarking, that though I have used the term of white oxyd of lead, I have done so only in order to conform to the denomination generally adopted; but it is nevertheless certain that this is not a pure oxyd, but a carbonate of lead, and it consequently dissolves in vinegar in a larger proportion than the oxyds of lead, even than that which is termed litharge, which amongst all is the most of an oxyd. If a continued effervescence takes place during the solution, it is owing to the disengagement of the carbonic acid, which yields to a more powerful affinity; we must therefore conclude, that the acetic acid undergoes a decomposition in the fermentation, excited by the heat of the layers of dung, with which the pots in which this preparation is made are covered; but chemistry is at present familiarised to the changes which the vegetable acids undergo of the one into the other, so that the observation here presented coincides with those that have already been made."

LEADHILLS, a village in Lanerkshire, situate among the mountains of Clydesdale, and said to be the highest human habitation in Great Britain. Here reside many hundreds of miners, with their families. These miners, though, in a great measure, excluded from society by their habitation, pay great attention to the cultivation of the mind, and have provided a circulating library for the instruction and amusement of the little community belonging to the village.

LEAO-TONG, or **CHEN-YANG**, one of the three departments of East Chinese Tartary, or country of the Manchew Tartars, who hence entered and conquered China. It is bounded on the S. by the great wall of China and the gulf of Lea-tong; and is enclosed on the east, north, and west, by a palisade, constructed of stakes seven feet high, without either bank of earth or ditch. Chen-yang, or Mougden, is the capital.

LEATHER (*Encycl.*). To what has been already offered under that head, we are induced to add the following account

* To the quina of vinegar, 10 lb. 5 oz. 2 dr. 16 grs. of oxyd, a little more than one-tenth.

of a mode of manufacturing morocco leather, as practised at Fez.

The goat being stripped of his skin by doubling it over itself, and so drawing it off as one would pull off a stocking by the upper part, the hide, entire and covered with its hair, is thrown into water, in which it is left to soak during three days. It is then exposed to the air, and, when dry, coarsely stripped of the hair; after which it is plunged into flaked lime.

To clear the skins more thoroughly from the hair, they are powdered over with quick lime, which takes away even the smallest hairs. They are next washed in running water, and very carefully rinsed. They are suffered to remain in that water during the space of a night, then hanged up to drain in the open air. After this, they are laid in bran, in the proportion of a hundred and eighty skins to three hundred pounds of bran. They continue in the bran, being each day turned inside out, until they have acquired a considerable degree of pliability.

They are next washed again in running water, by trampling them with the feet; after which operation, they are thrown into a second bath prepared with white figs—about a hundred and ninety pounds of figs to a hundred and eighty skins. The figs render the water soapy. The skins remain in it four or five days, in which time they are frequently turned. And, during the period of their soaking in it, they are, on three successive days, sprinkled with *sal gemmæ* very finely powdered: after which, the water being suffered to drain from them, they are again sprinkled with *sal gemmæ*, and laid in a heap in a flat vessel, where the process of impregnating them with the salt is completed: The water is then squeezed out by wringing the skins; after which they are very pliant, and fit to receive the colour.

If red be the intended colour, half a pound of cochineal and three ounces of alum are employed for sixty skins. Finally, they are tanned by placing them in pits, where beds of tan are made, of about fifty pounds of tan for each skin. The skin is tanned so as to have the grain side within, and filled with the tanning water. After the expiration of eight days it is again turned, and again filled with the tanning water, which is suffered to remain in it six days. During the whole of this term, the skins are carefully stirred and shaken. They are then rinsed in running water, scraped with an iron instrument, opened up along the belly, and rendered pliant by the application of a little oil. They are dried in the sun, set to cool in the shade, slightly moistened with water, and finally scraped down to a proper thinness with three different instruments of iron.

When the red colour is too deep, it is weakened with a decoction of a plant called *razoul at achi*, which is the *mesembrianthemum annuum*. This liquor is used warm, a spoonful of it being poured on each skin.

If the hides are intended to be dyed yellow, they are prepared in the same manner as for the red, except that the operation of salting is not prolonged beyond the time of their soaking in the fig-water. And, besides, only twenty-five pounds of tan are, in this case, used for five dozen of skins. The yellow dye is made of powdered pomegranate-rind and alum.

An inferior red is produced from Brazil wood and alum. Instead of Brazil wood, the manufacturers frequently use the *fouah*, which is a species of *gallium* or *rubia* (*madder*) that is brought in great quantities from Morocco.

LEATHERHEAD, a town in Surrey, which had formerly a market. Here is a bridge of many arches over the river Mole. It is 18 miles S.W. of London.

LEATHES-WATER, called also **WYTHBURN**, or **THIRL-MERK-WATER**, a fine lake of Cumberland, which lies S. by E.

of Kefwick. It begins at the foot of Mount Helwellyn, which it skirts for the space of four miles, receiving numerous torrents that descend from the mountains. The singular beauty of this lake is its being almost intersected in the middle by two peninsulas, that are joined by a bridge. Its outlet joins the rapid river Greta, at New Bridge, and thus has a communication with the lake of Derwentwater.

LEAWAVA, a sea-port on the E. coast of the island of Ceylon, which yields a great deal of salt. Long. 83. 15. E. Lat. 6. 40. N.

LECASELLO, a town of Italy, in the state of Genoa, 23 miles N.E. of Genoa. Long. 8. 53. E. Lat. 44. 37. N.

LECCE, a city of Naples, in Otranto, with a bishop's see. It contains 18,000 inhabitants; is the residence of the governor, and sometimes called the capital of the province; and by some the province is called Lecce, instead of Otranto. It is 17 miles N.W. of Otranto, and 195 E.S.E. of Naples. Long. 18. 20. E. Lat. 40. 36. N.

LECCO, a town of Italy, in the Milanese, seated on the lake Como, 26 miles N. of Milan. Long. 9. 21. E. Lat. 45. 55. N.

LECH, a river of Germany, which rises in Tirol, divides Suabia from Bavaria, and falls into the Danube, below Donawert.

LECK, a river of the United Provinces, which branches off from the Rhine at Wyck-by-Dourfede, and enters the Merve, 10 miles E. of Rotterdam.

LEDUM (*Encycl.*). The following observations have been made by Dr. Maton on *Ledum Palustre*, and on the uses to which it may be applied in medicine. He considers it a plant which seems to possess very active properties. Its very odour indicates an aromatic quality, though this is not so strong in the spring as during the state of florescence. Westring mentions a curious fact respecting the permanence of the aroma. A dried specimen, which he found in the Burserian Herbarium at Upsal, retained a very sensible fragrance, though upwards of 150 years had elapsed from the time of its being gathered. An infusion of the leaves is somewhat bitter, and conveys a sensation to the palate similar to that produced by turpentine; a good evidence of its possessing an astringency. There is undoubtedly a narcotic quality in a strong decoction of the plant, some of the northern nations being accustomed to boil sticks of it in beer, for the sake of imparting to the latter an inebriating effect; and this liquor has been observed to occasion violent vomiting, cephalalgia, and even syncope. Some caution, therefore, is necessary in the exhibition of this vegetable; and though in many cases it may be advisable to keep up that state, resembling stupor, by which the advantageous effects of cicuta and other narcotics are produced, the dose ought to be small at first. Of the recent plant, four ounces may be infused in a quart of boiling water, and two ounces of the strained liquor are sufficient for the first exhibition.

Ledum Palustre grows so abundantly in all the northern parts of the Continent, that large quantities may be obtained without difficulty; though, as its favourite soil is of a moist, boggy nature, and as it is found on the declivities of lofty mountains, the cultivation of this plant may not often prove very successful. No animals appear to be fond of it, excepting the goat, which Linnaeus tells us (in the *Pan Succus*) will often browse it; and there is a species of palæna that dwells on its leaves; but insects in general shun, and are so much affected by its odour, that the smoke is used for the extermination of lice and other vermin. The spirit obtained by distillation seems likely to be most efficacious for this purpose.

There is another species of *ledum* (scarcely deserving, however, to be considered as different) which grows very plentifully in the vicinity of Hudson's Bay, in North America, and

is generally known by the name of *Labrador Tea*, an appellation that indicates its being used as a beverage by the natives of that district, probably on account of this plant possessing qualities similar to those of *ledum palustre*.—I mean more particularly, that of intoxicating. *Ledum latifolium*, as the name implies, is distinguished by its broader leaves; but in no other respect does it appear to differ from its congener. Dr. Maton has tasted infusions of the dried leaves, and found the flavour the same. This plant is well described by Jacquin in his *Collectanea*, tom. ii. and in the new edition of the *Species Plantarum*, by Willdenow, distinguished thus, *Ledum (latifolium) foliis oblongis, margine revolutis, subtis tomentosis floribus subpentandris*, tom. ii. p. 602. There is given in the Transactions of the Academy of Sciences of Stockholm, for 1774, an account of the efficacy of *ledum palustre* as a remedy for lepra. Dr. Odhelius speaks of his success in the exhibition of it in that disease, with the highest satisfaction.

LEE, a river of Ireland, which rises on the confines of Kerry, and flows E. to Cork, below which city it forms a fine harbour, and enters St. George's Channel.

LEEFOOGA, one of the Friendly Islands, in the South Pacific Ocean, visited by Captain Cook in 1776. Many parts of the country, near the sea, are sandy and barren; but in the internal parts, the marks of considerable population, and of an improved state of cultivation, are conspicuous. Many of the plantations are inclosed in such a manner, that the fences, running parallel to each other, form spacious public roads. Large ipots, covered with the paper mulberry-tree, were observed, and the plantations in general were abundantly stocked with plants and fruit-trees. To these Captain Cook made some addition, by sowing the seeds of melons, Indian corn, &c. The island is seven miles in length; its breadth, in some places, is not above three.

LEER, or LEHR, a town of Westphalia, in East Friesland, on a river of the same name, which soon after falls into the Embs. It is 11 miles S.E. of Embden, and 24 W.N.W. of Oldenburg. Long. 7. 11. E. Lat. 53. 21. N.

LEERDAM, a town of the United Provinces, in Holland, seated on the Linghe, 17 miles N.E. of Dort. Long. 5. 13. E. Lat. 51. 56. N.

LEEROT, a fortress of Westphalia, in East Friesland, seated at the confluence of the Lee with the Embs, 10 miles E. by S. of Embden.

LEERS, or LIERS, a town of Westphalia, in the bishopric of Liege, near which a battle was fought on the 1st of October, 1746, between the allies, commanded by Prince Charles of Lorraine, and the French under Count Saxe. It is four miles N. of Liege.

LEESTOWN, a town of Kentucky, in the county of Fayette, seated on the E. bank of the river Kentucky. As the banks of the river are remarkably high, there are few crossing places; and the best being at Leestown, is a circumstance which contributes to its increase. It is a few miles W. of Lexington. See KENTUCKY RIVER.

LEEWARD ISLANDS, that part of the Caribbee Islands, in the West Indies, commencing at Dominica, and extending to Porto Rico.

LEEWEE, a fortified town of Austrian Brabant, seated on the Geete, 12 miles E. of Louvain. Long. 5. 7. E. Lat. 50. 53. N.

LEGACY, a sum of money, or gift bequeathed to any one in the last will and testament of a deceased person. See TESTAMENT. The following duties have of late years been laid upon legacies. By the act of 20 Geo. III. c. 28, s. 1; 23 Geo. III. c. 58, s. 2; and 29 Geo. III. c. 51, s. 2; every executor for a legacy, whether pecuniary or specific, or share of

a personal estate, payable to the wife, children, or grandchildren of the deceased, shall be chargeable as follows:

Where the amount shall not exceed twenty pounds, 2s. 6d.

Where the amount thereof shall be of the value of twenty pounds and under one hundred pounds, 5s.

Where the amount thereof shall be of the value of one hundred pounds or upwards, 1l.

And for every such receipt for a legacy or share of a personal estate, payable to a husband:

Where the amount shall not exceed twenty pounds, 2s. 6d. by 20 Geo. III. c. 28, and 2s. 6d. by 23 Geo. III. c. 58. Total 5s.

Where the amount thereof shall be of the value of twenty pounds and under one hundred pounds, by 20 Geo. III. c. 28, 5s. and by 23 Geo. III. c. 58, 5s. Total 10s.

Where the amount thereof shall be one hundred pounds, by 20 Geo. III. c. 28, 1l. and 23 Geo. III. c. 58, 1l. Total 2l.

And by 23 Geo. III. c. 58, for every further sum of one hundred pounds, an additional 1l.

And by 29 Geo. III. c. 51, if of four hundred pounds, an additional 1l. and for every further sum of one hundred pounds, a further additional 1l.

And for every such receipt for a legacy or share of a personal estate, payable to collateral relations or strangers, there shall be charged:

Where the amount shall not exceed twenty pounds, 2s. 6d. by 20 Geo. III. c. 28, and 2s. 6d. by 23 Geo. III. c. 58. Total 5s.

And by the last act, 36 Geo. III. c. 52,

Upon any legacy of the value of 20l. or share of the personal estate of a person dying intestate, and leaving a personal estate of the clear value of 100l. after payment of debts, &c. which shall pass to a brother or sister of the deceased, or any descendant of a brother or sister of the deceased, there shall be charged a duty of 2l. for every one hundred pounds of the value, and so after the same rate for any greater or less sum.

To a brother or sister of a father or mother of the deceased, or any descendant of a brother or sister of a father or mother of the deceased, 3l. for every one hundred pounds of the value, and after the same rate for any greater or less sum.

To a brother or sister of a grandfather or grandmother of the deceased, or any descendant of a brother or sister of a grandfather or grandmother of the deceased, 4l. for every one hundred pounds of the value, and after the same rate for any greater or less sum.

To any person in any other degree of collateral consanguinity to the deceased than before described, or any stranger in blood to the deceased, 6l. for every one hundred pounds of the value, and after the same rate for any greater or less sum.

The duties are placed under the management of the commissioners of stamps, who are to appoint receivers in the different counties.

The duties are to be paid by executors or administrators on retaining or paying legacies or shares, and if duty be not paid before legacies or shares are retained by executors, or administrators, or discharged, they having deducted it, the amount shall be a debt from them to his majesty; and if they pay without deducting the duty, it shall be a debt, not only from them, but also the party receiving the same.

The value of any legacy given by way of annuity for life or lives or for a term of years, and the duty chargeable thereon, shall be charged according to the tables annexed to the act; and the duty chargeable on such annuity shall be paid by four equal payments, the first before or on completing the payment of the first year's annuity, and the three others in like manner successively, before or on completing the respective payments

of the three succeeding years' annuity respectively; but if any such annuity shall determine by death, or any other contingency, before four years' payment shall become due, then the duty shall be payable in proportion only, and all future payments of the duty shall cease.

The duty on legacies given to purchase annuities to be calculated on the sums necessary to purchase them, according to the tables before mentioned.

The duty on legacies whose value can only be ascertained by application of the allotted fund, to be charged on the money as applied.

The duty payable on a legacy given to different persons in succession, shall be paid thereout, as in the case of a legacy to one person; and where the same shall go to different persons in succession, some of whom shall be chargeable with no duty, or some with different rates, so that one rate cannot be immediately charged; all persons entitled for life, or other temporary interest, shall be chargeable in the same manner as for an annuity, and paid by equal portions in four years; and the duty on partial interests shall be charged as the duty on property given, otherwise than to different persons in succession; and persons who shall become absolutely entitled in succession, shall, when they begin to enjoy the benefit, pay the duty in the same manner as if the same had come immediately on the death of the party.

No duty shall be paid on any articles of plate, furniture, or other things, not yielding any income, and given to be enjoyed by different persons in succession, whilst the same shall be so enjoyed in kind only by any person not having any power of disposing thereof; but if the same shall be actually sold or disposed of, or come to any person having power to dispose thereof, then duty shall be paid thereon.

Duty on legacies in joint tenancy to be paid in proportion to the interest of the parties.

Any legacy, subject to any contingency which may defeat the gift, and whereupon the same may go to some other person (unless chargeable as an annuity), shall be charged with duty as an absolute bequest to the person who shall take the same, subject to such contingency, and such duty shall be paid out of the legacy.

Any legacy, subjected to any power of appointment for the benefit of persons specially described, shall be charged with duty as property given to different persons in succession.

Any money or personal estate, directed to be applied in the purchase of real estate, shall pay duty as personal estate.

Estates *pur autre vie*, applicable as personal estate, shall be charged as personal estate.

But if any direction shall be given, by any will, for payment of the duty out of some fund, so that the legacy may pass free of duty, no duty shall be chargeable upon the money applied for payment of the duty.

In cases of specific legacies, and where the residue of any personal estate shall consist of property which shall not be reduced into money, the executor or administrator, or the person to whom the duty thereon ought to be paid, may set a value thereon, and offer to pay the duty according to such value; or may require the commissioners of stamps to appoint a person to set such value, at their expense; and the commissioners may either accept the duty offered, or appoint a person to appraise such effects, and to set the value, on which the commissioners shall assess the duty; but if the party shall not be satisfied with the commissioners' valuation, they may cause such valuation to be reviewed by the commissioners of land tax, who may also (if they think fit) appoint a person to appraise the effects, and set a value thereon, whose judgment shall be final.

Duty on legacies not satisfied in money, &c. to be paid according to the value of the satisfaction.

If legatees refuse to accept legacies, duty deducted, the court, in case of suit, may order them to pay costs; and in suits where the party sued may wish to stop proceedings on payment of bequests, deducting duty, the court may make order therein.

If suit be instituted concerning administration, the court to provide for payment of the duty.

Executors and administrators may, at any time, discharge legacies, or pay shares of the personal estate, on payment of the duty accrued.

No legacy, liable to duty, to be paid without a receipt, expressing the date thereof, and the names of the testator, or intestate, and of the person to whom such receipt shall be given, and of the party to whom such legacy or residue shall belong, and the amount of the legacy or residue for which such receipt shall be given, and also the amount of the duty payable thereon; and no receipt shall be available, unless stamped.

But a copy of the entry, in the books of the commissioners of stamps, of payment of duty, shall be admitted as evidence; and payment of any annuity shall not be deemed a payment for which such stamped receipt shall be required, except it be the payment which shall complete the payment for each of the first four years during which such annuity shall be payable.

Any executor, administrator, or trustee, who shall pay any legacy, or residue, without taking such receipt as aforesaid, and causing the same to be stamped within the time hereby allowed for stamping the same, shall forfeit ten pounds *per cent.* on the amount of such receipt; and all persons receiving such money, or property, without giving a written receipt, as aforesaid, shall forfeit ten pounds *per cent.* on the money or property received.

Every such receipt shall be brought within twenty-one days after the date, to the next stamp-office, to be stamped, paying duty for the same, and upon such payment, an acknowledgment of the payment of the duty so paid, in words at length, and bearing date the day on which such payment shall be made, and subscribed with the officer's name, shall be wrote upon the receipt, and afterwards the same shall be duly stamped, in the manner directed in the act.

But if any such receipt shall not be brought to such office, within such space of twenty-one days as aforesaid, it shall nevertheless be lawful to carry such receipt to the head office to be stamped in like manner, within three calendar months after the date thereof, paying the duty, and a further sum of ten pounds *per cent.* on such duty, by way of penalty; but the commissioners shall not, on any pretence whatever, stamp any receipt unless the duty be paid, and such receipt be brought to be stamped as aforesaid, within the times before limited.

Upon oath or affirmation, administered by a justice, or master in chancery, that less duty has been paid than ought to have been paid, by mistake, the commissioners may rectify such mistake, and accept the difference between the money paid and the just duty, together with ten pounds *per cent.* on such difference, by way of penalty.

Persons paying or receiving money contrary to this act, indemnified on discovering the other offender.

If by infancy or absence legacies cannot be paid, the money may be paid into the bank, and laid out in the *3l. per cents.* and if such money be improperly paid in, the chancery may dispose thereof.

[And when money is paid into the bank in pursuance hereof, the accountant-general's certificate shall be filed in the

Report Office, where his drafts on the bank for the money for investment shall be entered, and be a warrant to the bank for the payment. 37 Geo. III. c. 135.]

If more than the proper duty has been paid, the commissioners for stamps may return the excess; and if less, on payment of the full duty, the chancery may order re-payment to the party.

If it shall appear to the commissioners for stamps, at the end of two years after the death of any person, that it will require time to collect the effects, or be difficult to ascertain the residue of the personal estate, the duty may be compounded for.

But the duty shall be paid on any part of personal estates not included in the composition.

If at any time after payment of duty on any legacy, or residue, any debt should be recovered against the estate, by reason whereof any legatee or entitled person shall be obliged to refund, the commissioners are, on proof thereof on oath as aforesaid, to repay the duty.

Executors, previous to retaining their own legacies, to transmit the particulars, with the duty offered, to the commissioners of stamps, who shall charge the same agreeably to this act; and in case any person shall neglect to pay such duty within fourteen days, such person shall forfeit treble the value of the duty which ought to have been paid.

If administration be made void, and any duty shall have been improperly paid, it shall be repaid; but if it ought to have been paid, it shall be allowed in account with the rightful executor.

Persons swearing falsely, are guilty of perjury. Penalty of 500. for altering receipts. And persons forging stamps, &c. to suffer death.

The penalties are recoverable in the courts of law.

The form of an account and receipt to be taken by the executor and administrator, is also annexed to the act, and is as follows:

On account of the personal estate of
deceased, between taking the administration of
the said estate, and legatee [or next
of kin, as the case may be]:

	L.	s.	d.
Amount of the sum [or value, if not in money] accounted for			
Duty allowed at the rate of per centum			
Balance received			

Received the day of the above balance in
[full, or part, as the case may be] of my [legacy, or share, as
the case may be] out of the personal estate above mentioned.

(Signed)

LEGENICH, or LECHENICH, a town of Germany, in the circle of Lower Rhine, and archbishopric of Cologne, 10 miles S.S.W. of Cologne, and 50 E.N.E. of Liege. Long. 6. 31. E. Lat. 50. 50. N.

LEGIUNCARA, a town of Naples, in the province of Bari, 21 miles N.W. of Matera.

LEGNAGO, a fortified town of Italy, in the Veronese. It surrendered to the French in 1796, and is seated on the Adige, 25 miles S.E. of Verona.

LEIBNITZ, a town of Germany, in the duchy of Stiria, seated on the Sulm, 16 miles S. of Gratz.

LEIGH, a sea-port in Essex, on a creek at the mouth of the Thames, opposite the east extremity of Canvey Island. It is noted for oysters, and has a good road for shipping. It is 18 miles S.E. of Chelmsford, and 40 E. of London. Long. 0. 42. E. Lat. 51. 31. N.

LEIGH, a town in Lancashire, whose market is now dissolved. It is seven miles N.N.E. of Warrington, and 191 N.W. of London.

LEIGHTON-BUZZARD, a town in Bedfordshire, with a market on Tuesday, considerable for fat cattle. It is seated on a branch of the Ouse, 18 miles S. of Bedford, and 41 N.W. of London. Long. 0. 35. W. Lat. 51. 55. N.

LEININGEN, a town of Germany, in the palatinate of the Rhine, seven miles S.W. of Worms. Long. 8. 22. E. Lat. 49. 30. N.

LEINA, a river of Germany, which flows through Brunswick-Lunenburgh, and passing by Helligensstadt, Gottingen, Calenberg, and Hanover, falls into the Aller.

LEIPHEIM, a town of Suabia, in the territory of Ulm, on the fourth bank of the Danube, 11 miles N.E. of Ulm; and 22 W.N.W. of Augsburg.

LEISZNIG, a town of Upper Saxony, in the circle of Leipzig, seated on the Mulde, where are manufactures of cloth, lace, stockings, &c. It is 24 miles E.S.E. of Leipzig, and 32 N.W. of Dresden. Long. 12. 53. E. Lat. 51. 7. N.

LEMBRO, the ancient Imbros, an island of the Archipelago, on the coast of Romania, 22 miles in circumference, with a town of the same name, and a harbour. Long. 26. 0. E. Lat. 40. 25. N.

LEMGOW, a town of Westphalia, in the county of Lippe, 17 miles N. of Paderborn. Long. 9. 0. E. Lat. 52. 5. N.

LEMNOS, a celebrated island of the Archipelago, now called STALIMENE, situate near the strait of Gallipoli. It is above 112 miles in circumference according to Pliny, who says, that it is often shadowed by Mount Athos, though at the distance of eighty-seven miles. The poets made it sacred to Vulcan, who was hence called Lemnius Pater. Lemnos was also celebrated for its labyrinth, of which not a trace remains; and what historians relate of it, serves only to excite, but not to gratify, curiosity. The modern Greeks entertain the same opinion of that earth of Lemnos, which is said to have cured Philoctetes, and which Galen went to examine. It is never dug up but on one particular day in the year, and then with great ceremony. This earth, called terra figillata, formed into small loaves, and sealed with the grand signior's seal, is then dispersed over all Europe. The greatest virtues are attributed to it; and yet a chemist can discover nothing but a mere clayey earth, incapable of producing the effects that have been attributed to it. Lemnos is subject to the Turks; but the inhabitants are almost all Greeks, and very industrious. Its capital is of the same name, and the see of a Greek archbishop. Long. 25. 28. E. Lat. 40. 3. N.

LENHAM, a town in Kent, with a market on Tuesday; seated on an eminence, 10 miles east of Maidstone, and 47 E.S.E. of London. Long. 0. 45. E. Lat. 51. 18. N.

LENNEP, a town of Westphalia, in the duchy of Berg, 20 miles E.S.E. of Dusseldorf. Long. 6. 56. E. Lat. 51. 11. N.

LENS, a town of France, in the department of the Straits of Calais, eight miles N.E. of Arras.

LENTINI, a town of Sicily, in Val di Noto. It is a small remainder of the ancient Leontium, contains 4000 inhabitants, and is situate at the foot of a height; on the top of which Charles V. built a new town, called Carlentini, which

contains 3000 people. Lentini was greatly damaged by an earthquake in 1693, and is seated on the Leonardo, 17 miles S.W. of Catania.

LENTZEN, a town of Upper Saxony, near the Elbe, 74 miles N.W. of Berlin. Long. 11. 32. E. Lat. 53. 6. N.

LENZBURGH, a town of Switzerland, in the canton of Bern, which has a considerable manufacture of flowered linens and cottons. It is seated on a small river, eight miles west of Baden.

LEOBEN, a town of Germany, in the duchy of Stiria, situate on the Muehr. At this town the preliminaries of peace between the emperor and the French were signed April 20, 1797. It is 68 miles S.W. of Vienna.

LEOBESCHUZ, a town of Silesia, in the principality of Jagerndorf, 14 miles N.N.E. of Jagerndorf, and 27 W.N.W. of Ratibon. Long. 17. 28. E. Lat. 50. 14. N.

LEOGANE, a town and fort with a good harbour, on the W. side of St. Domingo. It was taken by the English and the French royalists in January, 1794, but retaken by the republicans in October following; and it was unsuccessfully attacked by the English in March, 1796. Long. 72. 37. W. Lat. 18. 38. N.

LEON, an island of Spain, separated from the Continent by a strait about ten miles long, and scarcely three broad in any part. The town of Cadiz is built at its N.W. extremity.

LEON, NEW, a kingdom of North America, lying between New Mexico on the north, the gulf of Mexico on the east, Panuco on the south, and New Biscay on the west.

LEON DE NICARAGUA, a town of New Spain, in Nicaragua, the residence of the governor, and a bishop's see. It was taken by the buccaners in 1685, in fight of a Spanish army, who were six to one. It is seated at the foot of a volcano, at the N.W. extremity of the lake Nicaragua, 30 miles from the Pacific Ocean, and 104 N.W. of Niagara. Long. 88. 10. W. Lat. 12. 25. N.

LEONARD DE NOBLET, Sr. an ancient town of France, in the department of Upper Vienna, with a considerable manufacture of paper, and another of cloth for clothing the army. It is seated on the Vienna, 12 miles N.E. of Nimoges, and 195 south of Paris. Long. 1. 32. E. Lat. 45. 54. N.

LEONBERG, or LEONSBERG, a town of Suabia, in the duchy of Wirtemberg, situate on the Glem, six miles west of Stuttgart, and 34 N.N.E. of Freudenstadt. Long. 8. 51. E. Lat. 48. 46. N.

LEONESSA, a town of Naples, in Abruzzo Ulteriore, 19 miles N.W. of Aquila.

LEONHART, a town of Germany, in Carinthia, 42 miles east of Clagenfurt. Long. 15. 23. E. Lat. 46. 57. N.

LEOPOLDSTADT, a strong town of Upper Hungary, built by the emperor Leopold in 1665. It is seated on the Waag, 36 miles N.W. of Neuhausel, and 62 E. of Vienna. Long. 18. 6. E. Lat. 48. 35. N.

LEPERS, ISLE OF, one of the New Hebrides, in the South Pacific Ocean. Long. 168. 0. E. Lat. 15. 23. S.

LERICI, a sea-port of Italy, on the east coast of the gulf of Specia, in the territory of Genoa. Long. 9. 55. E. Lat. 44. 5. N.

LESINA, a town of Naples, in Capitanata, with a bishop's see, 26 miles N.N.W. of Manfredonia, and 86 N.N.E. of Naples. Long. 15. 14. E. Lat. 41. 44. N.

LESKO, a town of Poland, in the palatinate of Lemberg, and Austrian kingdom of Galicia, 68 miles S.W. of Lemberg.

LESNEVEN, a town of France, in the department of

Finisterre, ten miles north of Landernau, and 13 N.E. of Brest. Long. 4. 21. W. Lat. 48. 38. N.

LESPARE, a town of France, in the department of Girondet. In its environs are found transparent pebbles, resembling the false diamonds of Alençon, and known by the name of Medoc stones. It is 30 miles N.N.W. of Bourdeaux.

LETTERE, a commercial town of Naples, in Principato Citeriore, with a bishop's see. It is seated at the back of a mountain, 12 miles N.W. of Salerno, and 20 S.E. of Naples.

LEVANTINE VALLEY, a valley of Switzerland, on the confines of Italy, lying between Mount St. Gothard and Lake Maggiore. It is divided into two parts by the river Tesino; and is eight leagues long, but the breadth inconsiderable. The lower part is populous, rich in pastureage, and produces much hemp and flax. The houses are entirely of wood, and have externally the appearance of Swiss cottages; but a neglect of cleanliness proves the vicinity and greater similarity to the Italians. It is a bailiwick, subject to the canton of Uri; and Olisogna, the residence of the bailiff, consists only of a few houses.

LEUCATE, a town of France, in the department of Aude, 18 miles south of Narbonne. Long. 3. 9. E. Lat. 43. 0. N.

LEUCHTENBERG, a town of Germany, in the upper palatinate of Bavaria, seated on a mountain, near the river Eiseimpt, 50 miles N.W. of Ratibon. Long. 12. 26. E. Lat. 49. 40. N.

LEVEN, LOCH, a beautiful lake in Kinrossshire, twelve miles in circumference, and somewhat of a circular form. It has several small islands, on one of which is a ruinous castle. Here the unfortunate Mary, queen of Scots, was confined by the confederate lords, after the murder of her husband Lord Darnley, and her marriage with Bothwell; but she escaped in 1568 by the assistance of the brother of the governor of the castle. Another island, named St. Serf's Isle, is said to have been a residence of the Pictish priests: it was afterwards the seat of a priory, of which some remains are to be seen. This lake produces trout of peculiar excellence; of which great quantities, at certain seasons, are sent to the Edinburgh markets. In autumn, a singular species, called the gully trout, is here fatted and dried for winter provision.

LEVER (*Encycl.*). Levers are of various kinds, according to the purposes for which they are designed; and, being eminently serviceable for the lifting of weights, we have subjoined the following description of a *crus-bar lever*, which is particularly calculated for raising earth that abounds with great quantities of stones; though this machine is likewise applicable to other objects.—It was invented by Mrs. Wyndham, of Petworth, in Suffex, on whom the Society for the Encouragement of Arts, &c. in 1796, conferred their silver medal.

A (Plate 35), is the lever.

B, an upright piece of wood, to be affixed to the lever; care being taken to place the side marked with this letter opposite to that marked A on the lever; by which means it inclines backwards, and thus increases the power.

C, is a cross-bar, being the hand by which the workmen exert their strength.

D, is another cross-bar to be placed at the bottom, behind the upright piece of wood, on which the labourers are to stand, and through which the end of the lever passes. These additions are so constructed, that they may be occasionally fixed and removed, because they are to be employed only

when the strength of the rock, or earth, requires an increase of power.

Should the rock be elevated so considerably above the ground, as to endanger the men by its fall, when the separation takes place, the lever may be reversed; so that the labourers will stand upon the bar intended for the application of their hands, in common cases; and thus all danger will be effectually prevented.

Sliding-LEVER, an invention of Mr. Snart's for transferring the weight of a loaded cart from a fallen horse; called also *ALEXIPPOS*, and *HORSE-HELPER*. See the latter in this Supplement.

LEUGNE, a village of France, in the department of Upper Saone, lying to the east of Vesoul. Here is a cavern, thirty-five paces deep and sixty wide, which serves as a barometer to all the country people. A fog at the entrance of this glacier, is an infallible sign of rain the next day. From the roof, which is fifty feet high, descends columns of ice, of a prodigious size. The brook, which runs through a part of this grotto, is frozen in summer, but flows in winter.

LEVROUX, a town of France, in the department of Indre, with a castle, 35 miles S.W. of Bourges. Long. 1. 40. E. Lat. 47. 0. N.

LEUSE, a town of Austrian Hainault, seated on the Dender, 14 miles N.W. of Mons. Long. 3. 45. E. Lat. 50. 35. N.

LEUTMUEHL, a town of Bohemia, in the circle of Chrudim, erected into a bishopric in 1144, but the town having suffered greatly by the Hussites, the bishopric was suppressed. It is 22 miles east of Chrudim, and 76 east of Prague.

LEUTSCH, a town of Germany, in the duchy of Carinthia, eight miles S.S.E. of Idria.

LEWENSTEIN, a town of Franconia, capital of a county of the same name, with a fortress, 10 miles east of Hailbron, and 30 N.N.E. of Stuttgart. Long. 9. 38. E. Lat. 49. 18. N.

LEWISBURGH, a town of Northumberland county, in Pennsylvania, seated on the Susquehanna, 140 miles N.W. of Philadelphia.

LEWISTOWN, the county town of Mifflin, in Pennsylvania, seated on the Juniata, 150 miles W.N.W. of Philadelphia. Long. 78. 13. W. Lat. 40. 35. N.

LEWISHAM, a village in Kent, on the river Ravensbourne, five miles S.E. of London. The church is an elegant new edifice.

LEXINGTON, the capital of the state of Kentucky, and county of Fayette. Near this town are to be seen curious sepulchres, full of human skeletons, which were thus fabricated: first, on the ground were laid large broad stones; on these were placed the bodies, separated from each other by broad stones, covered with others, which served as a basis for the next arrangement of bodies. In this order they are built, without mortar, growing still narrower to the height of a man. This method of burying appears to be totally different from that now practised by the Indians. In the neighbourhood also are the remains of two ancient fortifications, with ditches and bastions; one containing about six acres of land, and the other nearly three. Pieces of earthen vessels have also been ploughed up near Lexington; a manufacture with which the Indians were never acquainted. These, with the fortifications, and the sepulchres, have been urged as an argument, that this country was formerly inhabited by a people different from the present Indians, and further advanced than they in the arts of life; and Mr. Filson, in his account of this country, has advanced arguments to prove, that these people were, in all probability, an ancient colony from Wales.

Lexington stands at the head of the river Elkhorn, 470 miles west of Washington. Long. 85. 10. W. Lat. 38. 20. N.

LEXINGTON, a town of the state of Massachusetts, celebrated for being the place where hostilities commenced between the British troops and the Americans, in April, 1775. It is 12 miles N.W. of Boston.

LIAMONE, or *LIMONE*, a river of Corsica, which falls into the sea, ten miles north of Ajazzo. It gives name to a department in the new French division of the island.

LIBRARY (*Encycl.*). The following extract from an account of a Parish Library for the Poor, by Mrs. Bernard, is published by the Society for Bettering the Condition of the Poor.

"At Steeple Morden, in the county of Cambridge, the poor have been furnished with a circulating library of short tracts of a religious and moral nature. The idea had been originally suggested by a similar plan, useful in its way, but not so peculiarly required, which has been adopted for the benefit of the children at the Foundling. The collection at Steeple Morden consists of the Cheap Repository tracts, and some few others of a similar kind; and has already, even at the beginning, proved of considerable benefit to the parish. On Sunday afternoon, when the business of the Sunday school is over, Mrs. King, the lady who has founded the library, reads one of the tracts to the children, and to such of the parents as choose to attend. It is then made the subject of conversation; and a few copies of the tract are lent to different children, who read it over again in the evening with their parents and neighbours; and by these means spend their Sunday evening well, and with useful amusement. Copies of the same tract are afterwards lent out for the week, and generally go round the parish. On the Sunday following they are brought back, when they receive others, which have been first read over to them in the same manner. Fifty-two tracts furnish the year's reading; and ten or twelve copies of each are sufficient for a moderate sized parish. It is very gratifying to contemplate the pleasure, the amusement, and other more material effects, which are produced in this parish by a measure perfectly simple and easy in itself, and executed at a trifling expence. It answers, in one respect, the end of the Sunday friendly societies at Winslow and Auckland, and with more general extension to the different ages in the parish.

"There is hardly any thing which will be found more useful in promoting moral and religious improvement in a parish, than the supply of Sunday reading for the poor, to fill up those hours which are not occupied by worldly employment. Many cottagers have been induced to an habitual attendance on the ale-house, to the entire ruin of themselves and their families, not so much by natural disposition, as by want of occupation, for the hours of cessation from labour. Perhaps the remark of dissipation being the consequence of want of employment, will apply with still more force to higher life; and it may be found that the disease is of a more incurable nature. But, among the poor, the remedy is neither expensive nor troublesome; and its application will be as beneficial to the benevolent dispenser of relief, as to the object for whose benefit it is applied. I will therefore," says Mrs. Bernard, "express my humble hope, that this plan, which has been also adopted by the same lady in two other parishes, and with the same success, may be imitated by those of our own sex, who feel gratefully the advantages they derive from the sources of religious and moral improvement, which are opened to them; and are therefore anxious to express their gratitude, by communicating those advantages to every individual who is dependent upon them."

LICENCE (*Entycl.*). The following are the regulations under which the licences granted to ale-house keepers, are placed by the act of 30 Geo. III. c. 38.

To retail foreign wines in England, if the party has not a spirit or beer licence

£. s. d.
5 4 0

If the party has a beer licence, and not one for spirits

4 4 0

If the party has also a spirit licence

2 4 0

For every licence to retail British made wines or sweets, either in England or Scotland

2 4 0

To retail foreign wines in Scotland if the party has not a spirit or beer licence

3 6 8

If he has a beer licence, but not one for spirits

2 13 4

If he has also a spirit licence

1 6 8

For every licence to retail spirits in Great Britain, if the party's house be rated to the house duty under the flat. 38 Geo. III. c. 40 (see p. 40, 41), at a sum not amounting to 1*l.* per annum

4 14 0

If at 15 and under 20

5 2 0

If at 20 and under 25

5 10 0

If at 25 and under 30

5 18 0

If at 30 and under 40

6 6 0

If at 40 and under 50

6 14 0

If at 50 or upwards

7 2 0

These licences to be renewed annually; every person who sells foreign wine retail without a licence, or renewing it in time, forfeits 5*l.*

On death or removal, upon application to the commissioners, or collectors, or supervisors, as before recited, the ex-
cutors, &c. will be authorized to carry on the trade for the remainder of the term.

All persons shall be deemed retailers of foreign wine who sell it in any less quantity than the quantity imported.

Any person selling 25 gallons or under of British made wine or sweets is deemed a retailer of that article.

All persons who shall sell spirits, mixed or unmixed, in any less quantity than two gallons, shall be deemed retailers.

N. B. The stamp duty on the justices' licence to retail ale, &c. is 1*l.* 1*s.* 6*d.* and by 41 Geo. III. c. 86. 1*os.* 6*d.*—Total two guineas.

LICH, or **LICHA**, a town of Germany, in the landgraviate of Hesse, and county of Selms, 21 miles north of Francfort. Long. 8. 42. E. Lat. 50. 15. N.

LICHTSTALL, a town of Germany, in the circle of Upper Rhine, and bishopric of Basle, seven miles S.E. of Basle.

LICHTALLEN, or **LIESTAL**, a town of Switzerland, in the county of Basle, seated on the Ergetz, eight miles S.E. of Basle. Long. 7. 39. E. Lat. 47. 29. N.

LICHTENAU, a town of Westphalia, in the bishopric of Paderborn, nine miles S.E. of Paderborn. Long. 8. 23. E. Lat. 51. 52. N.

LICHTENAU, a town of Germany, in the principality of Hesse Cassel, 13 miles S.E. of Cassel, and 24 east of Naumburg. Long. 5. 28. E. Lat. 51. 1. N.

LICHTENBERG, a town and castle of Germany, in the duchy of Deux Ponts, 25 miles north of Deux Ponts.

LICHTENBERG, a town of Germany in Franconia. In the neighbourhood are quarries of marble, and mines of copper and iron. It is 22 miles north of Bayreuth, and 26 E. of Coburg. Long. 11. 41. E. Lat. 50. 16. N.

LICHTENSTEIG, a town of Switzerland, capital of the county of Tockenburg, seated on the Thur, 31 miles east of Zurich. Long. 9. 8. E. Lat. 47. 15. N.

LICHTENSTEIN, a castle and village in the archduchy of Austria, nine miles S.S.W. of Vienna.

LIDA, a town of Lithuania, in the palatinate of Wilna, 56 miles south of Wilna. Long. 25. 34. E. Lat. 53. 50. N.

LIDDEL, a river in Roxburghshire, and the only one in that county that flows southward. It falls into Solway Frith, near the mouth of the Eik.

LIDDISDALE, a district in Roxburghshire, comprehending the southern angle of that county. It admits of little cultivation, and is chiefly employed in pasture.

LIEBENWERDER, a town of the electorate of Saxony, 22 miles north of Meissen, and 33 N.N.W. of Dresden. Long. 13. 20. E. Lat. 51. 30. N.

LIEN-TCHEOU-FOU, a city and sea-port of China, in the province of Quangtung. Its territories border on the kingdom of Tonquin, from which it is separated by inaccessible mountains. It is 325 miles S.W. of Canton.

LIEOU-KIEOU, the general name of 36 islands lying between Corea, Formosa, and Japan. They form a powerful empire, the inhabitants of which are civilized, and ought not to be confounded with the other savage nations dispersed throughout the islands of Asia. Each island has a particular name; the largest and principal, called Lieou-kieou, extends 146 miles from north to south, and 38 from east to west. They have a king, who is tributary to China. Kint-ching, the capital, in Checuli, the fourth part of Lieou-kieou, is in Long. 127. 30. E. Lat. 26. 2. N.

LIERE, a town of Austrian Brabant, at the junction of the Great and Little Lethes, nine miles N.N.E. of Mechlin, and 12 S.E. of Antwerp. Long. 4. 16. E. Lat. 51. 9. N.

LIESINA, an island of Venetian Dalmatia, in the gulf of Venice, 58 miles long and 12 broad. It abounds in corn, olives, saffron, and wine.

LIPSSENSHOECK, a fortress of Dutch Flanders, on the west side of the Scheldt, opposite Fort Lillo, and seven miles N.W. of Antwerp.

LIESSE, a town of France, in the department of Aisne, famous for an image of the Virgin Mary, to which a great number of pilgrims used to resort. It is six miles east of Laon. Long. 3. 51. E. Lat. 49. 35. N.

LIFFEY, a river of Ireland, which rises in the county of Wicklow, runs west thence into Kildare, and then turning N.E. passes through the county of Dublin, and by the city of that name, below which it falls into the Irish Sea.

LIFFORD, a borough of Ireland, in the county of Donegal, situate on the Foyle, 24 miles N.E. of Donegal. Long. 5. 45. W. Lat. 54. 47. N.

LIGHT (*Entycl.*). Mr. Walker, the author of "Familiar Philosophy" has endeavoured to shew, that the earth and planets perform both their diurnal and annual revolutions in consequence of the *impulse* which they receive from *solar light*, and that their respective distances from the sun may be determined by the balance subsisting between this projectile force of luminous matter, and their gravitating tendency towards the sun, as their common centre.

That the revolution of the sun on his own axis (which is easily ascertainable by observing the change of place that happens in the spots on his surface) answers some essential purpose in our system, that this purpose may be to give velocity and force to the light which emanates from him, and that the aggregate momentum of that light may occasion the daily and annual motions of the planetary world, which is subject to his influence, are all conjectures so exceedingly probable, that he who should have proposed them to the world unsupported by experimental investigation would, in our opinion, have deserved

praise for his ingenuity, and credit for the originality of his speculations.

Mr. Walker has not, however, rested his theory on the unstable basis of conjectural reasoning, but, from direct experiments, has shewn that light, contrary to the idea which many philosophers have entertained, *possesses an impulsive power*; a fact which neither the experiments of Homberg nor Michell had satisfactorily proved, but which is of high importance at a time when every circumstance which respects that first and fairest bounty of Providence is eagerly enquired into, in the conviction that we have but just begun to be acquainted with its all-pervading influence—an influence which justifies the beautiful observation of the regretted Lavoisier.

“L’organisation, le sentiment, le mouvement spontané, la vie, n’existent qu’à la surface de la terre, et dans les lieux exposés à la lumière.”

Mr. Walker calculates, from his experiments, that the impetus of solar light on $1\frac{1}{4}$ square foot of the earth’s surface is equal to the 100th part of a grain, and that it amounts to 20 tons on the whole disk of the earth; a force sufficient, according to him, to cause not only the diurnal rotation of this orb upon its own axis, floating as it is in an unresisting medium, but also its annual revolution round the great source of light, in consequence of the luminous impulse being greater on one half of the earth than on the other.

If there be some errors in the quantity of momentum which the author of this theory ascribes to solar light (for it does not arrive at the earth’s surface in a concentrated state, or as when brought to a focus by a mirror or lens), and if, therefore, a proportionate deduction must be made for this diminished force on the different planets, still it is of importance to know that small bodies are sensibly moved by the *impulse of light*, and until the contrary can be shewn, it will still remain probable that even the lessened momentum of the sun’s equatorial emanation acting upon the earth’s surface may be adequate to the production of its different motions, and to the preservation of its proper distance from the sun.

Light is essentially necessary to vegetation: in our climate it is seldom productive of injury by its excess, though the want of it is often pernicious. This fluid acts as a kind of stimulus on the more irritable parts of plants; as appears from the sun-flower and others, that expand or bow when exposed to the rays of the sun: hence Dr. Darwin supposes there may be diseases in plants, arising from the excess of this stimulus, but which, he thinks, have hitherto been disregarded. To corroborate this conjecture, he specifies the goat’s-beard, or false *tragopogon*, L.), and some other vegetable productions, which close their flowers about noon, in order to prevent the influence of such stimulus.

On the contrary, the absence or defect of light produces a disease called *etiolation*, or *blanching*, because vegetables deprived of that fluid become white. It has a similar effect on animal bodies; which, as Dr. Darwin has pointedly remarked, are in consequence rendered pale and inert: this is confirmed by the languid and *etiolated* countenances of the young ladies in some boarding-schools, where from false motives of delicacy, they are secluded both from the light of the sun, and the invigorating influence of the air: it is still farther evinced in those studious persons, who pass their waking hours in unventilated apartments, especially during a considerable part of the night.

But, though such *etiolation* be naturally injurious to vegetation, it has been artificially employed with success, in rendering certain plants esculent, by depriving them of their acrimony, cohesion, and colour. This method is chiefly practised on celery, by earthing up that plant nearly to the top; on sea-kale, by covering it entirely with horse-litter or straw;

and, lastly, on lettuces and endive, by tying the root-leaves together with a bandage.—On the chemical effects of light, the opinions of the learned are quite as unsettled as upon its nature.

Mr. Boeckmann has made several experiments respecting the particular influence of light on phosphorus dissolved in different gases. It has always been a matter of enquiry and discussion, whether there is any real difference between heat and light, some naturalists having attempted to prove the identity of those two matters; while others maintained, that there existed a great diversity between them. From the experiments of Mr. Boeckmann, however, it seems to result, that dark heat, and heat combined with light, produce phenomena essentially differing from each other; and that accordingly we ought not to adopt an identity in the nature of heat and light. As it would lead us too far to relate the single experiments, we shall only enumerate the facts that have arisen from them, and which are the following.

1. The solution of phosphorus in hydrogen gas proceeds not only at a heat combined with light, but also at a dark heat.

2. It proceeds with more speed when the temperature is increased, whereby, at the same time, a greater quantity of phosphorus dissolves than at a less degree of heat.

3. When the solar light is kept off by opaque bodies, either solid or fluid, from the glass tubes in which the phosphorus is exposed to solution, no phosphoric particles are found to adhere to the sides of the tubes, even when the degree of heat is so considerable as to melt the phosphorus; whereas,

4. When direct or reflected solar light falls on the glass tubes, the phosphorus is, as it were, sublimed at the sides of the tubes.

5. The phosphoric particles lay themselves on the inner sides of the tubes more or less quickly, according to the degree in which light acts upon them.

6. Those sublimations of phosphorus are even produced when the light is faint.

7. When the glass tubes are covered on the outside with opaque stripes, alternately with places uncovered, the phosphorus only adheres at these spots.

8. The difference of temperature has no influence on the phosphorus adhering to the places where light acts.

9. The experiments were made in vessels very closely shut, so that the atmosphere had not the least share in producing the crystallizations of phosphorus that adhered to the inner sides of the tubes.

On the whole, in these experiments we meet with two phenomena, viz. the solution of phosphorus in gases, and the adhesion of it to the sides of the vessel in which the solution was undertaken, when they are exposed to the light of the sun. The solution is undoubtedly promoted by heat, though the adhesion never takes place without the action of light. But how this is caused, is not so easily to be resolved.

LIGNAC, a town of France, in the department of Indre, 11 miles S.E. of Blanc. Long. 1. 20. E. Lat. 46. 31. N.

LIGNE, a town of Austrian Hainaut, on the river Dender, 12 miles N.W. of Mons. Long. 3. 45. E. Lat. 50. 35. N.

LIGNEROLLES, a town of France, in the department of Allier, four miles south of Montluçon.

LIGNIERES, a town of France, in the department of Cher, with a collegiate church and a castle, 22 miles S.S.W. of Bourges. Long. 2. 24. E. Lat. 46. 47. N.

LIGNITZ, a town of Silesia, capital of a principality of the same name, with a castle, seated on the rivulet Cet, 30 miles south of Glogaw. Long. 16. 36. E. Lat. 51. 10. N.

LIGNY, a town of France, in the department of Meuse,

with a castle, a collegiate church, and a handsome park. It is seated on the Orney, eight miles S.E. of Bar-le-Duc, and 125 of Paris. Long. 5. 26. E. Lat. 48. 39. N.

LIGON, a sea-port in the peninsula of Malacca, capital of a small territory of the same name, with a magazine belonging to the Dutch East-India Company. It is seated on the east coast. Long. 100. 5. E. Lat. 7. 40. N.

LIGUEIL, a town of France, in the department of Indre and Loire, seated on a brook, 23 miles S.S.E. of Tours. Long. 0. 52. E. Lat. 47. 3. N.

LILIENTHAL, a town of Lower Saxony in the duchy of Bremen, situate on the Warp, 10 miles N.N.E. of Bremen, and 20 N.N.W. of Verden.

LILLERS, a town of France, in the department of the Straits of Calais, seated on the Navez, 17 miles N.W. of Arras. Long. 2. 35. E. Lat. 50. 30. N.

LILLO, a fort of Dutch Brabant, on the east side of the Scheld, seven miles north of Antwerp. It was taken, in 1793, by the French, who soon after evacuated it, retaking it, however, in 1794. Long. 4. 18. E. Lat. 50. 30. N.

LIMALE, a town of Austrian Brabant, seated on the Dyle, 13 miles S.E. of Brussels. Long. 4. 42. E. Lat. 50. 42. N.

LIMAVADY, a town of Ireland. See *NEWTOWN LIMAVADY*.

LIMBURG, a town of Germany, in the electorate of Treves. The Austrians defeated the French on the heights near this place, in 1796. It is seated on the Lahn, 10 miles east of Nassau, and 20 north of Mentz. Long. 7. 51. E. Lat. 50. 24. N.

LIME, or QUICKLIME (*Encycl.*). Though we have already spoken of this substance as a valuable manure (see *HUSBANDRY*), we are induced to add the following particulars respecting the principle on which lime is of use in agriculture. Lime is prepared from various materials of the calcareous class, by the application of proper degrees of heat, by which one of their constituent principles is dissipated or forced off, and its place supplied by another; carbonic acid, or fixed air, being disengaged, and caloric, or the matter of heat, being taken in its stead. In this state lime possesses the greatest power over animal and vegetable substances, being capable of breaking down their texture, and destroying their organization, in the most expeditious manner. Hence it has been denominated *quick* or *caustic* lime. But on exposure to the atmosphere, moisture is absorbed, the caloric or heat disengaged, the carbonic acid or fixed air readily restored. This constitutes the mild *effete* or *carbonated* state of lime. In this situation, though it is far from acting with such violence on those animal or vegetable matters that come in its way, it has much effect in accelerating the putrefactive process, and in promoting their solution.

However well these different conditions of lime may have been discriminated by the chemist, they seem to us to have been but very little regarded by the practical agriculturist. The term *lime* being applied, without distinction, to the different states, it is easy to perceive that they must frequently have been used in an improper manner, and that, of course, much confusion, as well as contrariety of effect, must have been engendered.

The differences that have proceeded from the want of proper chemical examinations of the several kinds of calcareous substances that have been made use of for the purpose of lime, are perhaps not less productive of error or uncertainty than those which have arisen from the other cause which we have assigned; for it appears from the late experiments of that very able and ingenious chemist, Mr. Tennant (see the *Philos. Trans. Royal Society*, 1799, part II.), that there are sub-

stances contained in some sort of limestone that are highly injurious to vegetation, while other kinds do not possess them at all. He found, upon reducing two different sorts of limestone to a coarse powder, and sowing in them seeds of different plants, that in both the seeds grew equally well, and nearly in the same manner, as they would in sand or other substances that afford no nourishment to plants; but that, after burning them into lime, and exposing them for some weeks to the air, in order to lessen their causticity, and then sowing seeds in them, in that sort of lime which had been found the most advantageous when applied to land, almost all the seeds came up, and continued to grow so long as they were supplied with water, the roots of the plants having many fibres which penetrated to the bottom of the vessels in which they grew. The composition of this kind of lime, on examination, turned out to be entirely calcareous earth; and, on exposure to the air for about three months, was found to have absorbed four-fifths of the carbonic acid, or fixed air, that was necessary to saturate it. But in the other sort, which had been found injurious to land, only a few of the seeds grew, and the plants produced by them had scarcely any stalks or roots, being formed almost entirely of the two seed-leaves which lay quite loose on the surface. On spreading this sort of lime on a garden soil, to the thickness of the tenth of an inch, it prevented nearly all the seeds that had been sown from coming up, while no injury at all was occasioned by common lime applied in the same way. This lime, on being examined, was found to contain three parts of calcareous earth, and two of magnesia; it only absorbed, on being exposed to the air for nearly the same length of time as the other, forty-two hundredths of the carbonic acid that was combined with it before it was burnt into lime. As it seemed extremely probable, from these trials, that the magnesia contained in lime of this kind was the cause of its extraordinary properties, some experiments were made to ascertain the effects of that substance upon vegetation. Seeds of colewort, as growing rapidly, were sown in uncalcined magnesia, which, though they sprouted, the leaves never rose above the surface, and the plants were without roots: they did not appear to grow better in magnesia that had been washed in water, which contained carbonic acid or fixed air. Calcined magnesia was still more prejudicial, the seeds not coming up in it. In order to compare its effect on vegetables with those of lime, each of these earths were mixed in different proportions with sand in small cups, and seeds then sown in them. The lime being obtained from marble, and made to fall to powder from being moistened with water before it was put to the sand. In a mixture of four ounces of sand with three or four grains of calcined magnesia it was long before the seeds came up, and the plants had scarcely any roots or stems; and with ten grains or upwards of magnesia there was not the least sign of vegetation: thirty or forty grains of the lime not retarding the growth of the seeds more than three or four of the magnesia, and the injurious effects not so lasting. The lime, from its absorbing carbonic acid or fixed air, soon lost its destructive properties; so that after keeping the mixtures four or five weeks, seeds were found to grow in that with forty grains of lime nearly as well as in pure sand; but in that with four grains of magnesia they produced only the seed-leaves as stated before. It is necessary to break the sand occasionally where much lime is used, in order to allow the seeds to push through it. It was found that plants would bear a much larger proportion of magnesia in vegetable soil than in sand; but with twenty grains of calcined magnesia in as much soil as was equal in bulk to four ounces of sand, the seeds, however, only produced the seed-leaves without roots; and with forty grains they were totally prevented from coming up. As land

is frequently rendered barren for some time by the application of this sort of lime. Mr. Tennant made experiments with mortar constituted of this lime, which had been prepared three and eight years, and constantly exposed to the air. There, on being reduced to powder, had seeds sown in them, but only a few came up, and these merely produced the seed-leaves without roots. As plants would grow in the limestone from which this sort of lime was made, but not in the mortar prepared from it, he next endeavoured to ascertain what proportion of the carbonic acid contained originally in the limestone had been absorbed by the mortar. To prove this, a piece of it was finely powdered, and trials made of the quantities of this powder and of the limestone that would saturate the same measure of acid, from which he found that the mortar and limestone contained equal quantities of the magnesian lime; and the carbonic acid or fixed air being obtained from them and measured, it was found that the mortar which had been exposed three years had absorbed forty-three, and that of eight only forty-seven hundredths of the quantity originally combined with the limestone. Common mortar that had been exposed to the air for a year and three quarters had regained sixty-three hundredths of its full proportion of carbonic acid. The lime which contains magnesia may, Mr. Tennant observes, be readily distinguished from that which is purely calcareous by the slowness of its solution in acid, which is to be considered that the softest kind of the former is much longer in dissolving than marble. The crystallised structure which is generally observed in the magnesian limestone, he thinks, demonstrates that it has not been formed by the accidental union of the two earths, but that it must have been the result of their chemical combination. The difficulty of dissolving it, he supposes to arise from the greater attraction of its different constituent parts to each other. Mortar formed from this kind of lime is as soluble in acids as common marble; and the substances of which it consists are readily separated. The magnesia may be taken from it by boiling it in muriated lime, and lime precipitated by it from lime water; but these effects can neither of them be produced by the stone previous to its calcination. This able experimenter has offered several other observations and conclusions as to the different proportions of calcareous and magnesian earths contained in different specimens of this sort of limestone, which perhaps do not less deserve the attention of the agriculturist than the chemical enquirer; but the above are amply sufficient for the purposes of this work, as they abundantly prove that not only much error and confusion must have been caused in the practice of husbandry, but very different effects produced by the want of sufficient knowledge of the chemical properties of the various sorts of calcareous matter that are employed for the preparation of lime.

LIME, or LEMEN, a village in Kent, three miles west of Hithe. It was formerly a port, till choked up by the sands, and is now a poor town; but it has the horn and mace, and other tokens left of its ancient grandeur. It used to be the place where the lord warden of the Cinque Ports was sworn, at his entrance upon his office. The Roman road from Canterbury, called Stane-street, ended here; and from the brow of its hill may be seen the ruins of the Roman walls. Here was formerly a castle, now converted into a farm-house.

LIME-TREE; (see *TILIA*, *Encycl.*) The following is an extract of a paper on the genus *tilia*, read at the National Institute in France, by Citizen Venenat.

Linnaeus has mentioned in his *Species Plantarum*, only two species of lime-tree, to which he gave the name of *Europaea*

and *Americana*; but as there are more distinct species of this tree to be met with in Europe as well as in America, those names cannot conveniently be retained, because one might suppose by them, that the other species do not grow in Europe or in America.

Miller, in his *Gardener's Dictionary*, describes two American species of lime-tree, retaining the name of *Americana* for that which was known to Linnaeus, and assigning to the other, brought from Carolina by Catesby, the name of *Caroliniana*; but this cannot likewise be adopted, since Michx and other botanists have discovered in Carolina another species of lime-tree, different from that found by Catesby. Mr. Aiton, in his *Hortus Kewensis*, has probably changed, on that account, the name of *Caroliniana* into that of *pubescens*. Mr. Walther distinguishes a species of lime-tree, native of Carolina, "*Tilia Americana, floribus nectario instructis, stipulis floriferis*;" but as this description agrees evidently with all the lime-trees that may grow in the whole extent of America, it is obvious how difficult it would be to determine which species Walther may have meant; if the naturalists who travelled in Carolina had not brought with them specimens of the tree, which the English botanist meant to characterise.

After having given the generic character, Mr. Venenat describes the following species, of which he has given figures:

Lime-trees of Europe, with naked petals.

Tilia microphylla.—Folii cordato-subrotundis, acuminatis, argute serratis, capsula subglobosa, minime costulata, tenuissima, fragili. Var. fructu oblongo, utrinque acuminato. Tili Hort. Pisan. T. 49. fig. 3.

T. platyphyllos.—Folii cordato-subrotundis, acuminatis, inaequaliter serratis, capsula turbinata, costis prominentibus, insignita, lignosa, crassa. Var. Carolina. Ait. Hort. Kew.

Lime-trees of America; petals provided with a scale, at their bases.

T. glabra.—Folii profunde cordatis, serratis, glabris; petalis apice truncatis, crenatis, capsula ovata, subcostata (T. Americana L.).

Habitat in Virginia et Canada.

T. pubescens. Ait.—Folii basi truncatis et obliquis denticulato serratis, subtus pubescentibus, petalis emarginatis, capsula globosa levi.—T. Caroliniana Mill.

Habitat in Carolina.

Var. leptophylla, foliis tenuissimis, subpapyraceis. Habitat in Louisiana.

T. rotundifolia.—Folii cordato-subrotundis, subsinuatis, dentatis verticalibus subtus tomentosis; capsula ovata, obscuri nervosa. T. alba Ait. argentea Mus. Nat.

Habitat in America septentrionali.

T. heterophylla.—Folii ovatis, argute serratis, basi nunc cordatis nunc oblique aut aequaliter truncatis subtus tomentosis, capsula globosa, multinervosa.

Habitat in Carolina inferiori, et in Marylandia.

Mr. Venenat terminates this paper, by presenting some observations on the culture of the species of this genus, on the soil that agrees with them, and on the advantages that may result from them to the community.

LIMEUIL, a town of France, in the department of Dordogne, 20 miles S. of Périgueux. Long. o. 50. E. Lat. 44. 52. N.

LIMMAT, a river of Switzerland, formed by the junction of the Mat and the Linth; the former issuing from the N.W. extremity of the lake Wallenstadt, and the latter flowing from the S. The Limmat, continuing its course N.W. flows through the lake of Zurich, and falls into the Aar, below Baden.

LIMOUX, a commercial town of France, in the department of Aude. It has a manufacture of cloth; and the environs produce an excellent white wine, called the Perry of Limoux. It is seated on the Aude, 37 miles W. by S. of Narbonne, and 50 S.E. of Toulouse. Long. 2. 16. E. Lat. 43. 4. N.

LINCHE, or **LINKE**, a strong town of France, in the department of the North, seated on a river, 10 miles S.W. of Dunkirk. Long. 2. 20. E. Lat. 51. 0. N.

LINDAU, a free imperial town of Suabia. Here is a celebrated abbey of canons, whose abbess is a princess of the empire, and a Roman-catholic, though the inhabitants of the town are protestants. The French took possession of this town in July 1796. It is a trading place, seated on an island of the lake of Constance, joined to the main land by a long beautiful bridge, 12 miles S.E. of Buchorn, and 75 S. by W. of Augburg. Long. 9. 50. E. Lat. 47. 38. N.

LINDAU, a town of Upper Saxony, in the principality of Anhalt Zerbst, five miles N. of Zerbst.

LINDENFELS, or **LINDENFELD**, a town of Germany, in the palatinate of the Rhine, 14 miles N.N.E. of Manheim, and 17 of Heidelberg. Long. 8. 47. E. Lat. 49. 42. N.

LINDKOPING, or **LINKIOPING**, a town of Sweden, capital of West Gothland, with a bishop's see. It is seated on the lake Wenner, 12 miles N.W. of Skar, and 178 S.W. of Stockholm. Long. 13. 5. E. Lat. 58. 25. N.

LINDOW, a town of Upper Saxony, in the Middle Marche of Brandenburg, eight miles S.S.W. of Frankfort on the Oder.

LINDSEY, the largest of the three principal divisions of Lincolnshire, including all the county that lies N. of Lincoln, and the Fossidike, which Henry I. cut between the Witham and the Trent. It is the most elevated part of the county: and the air is generally esteemed healthy, especially on the W. side. To the N.E. is a large tract of heathy land, called the Wolds, the S. part of which is well inhabited, but the N. is thin of people: great flocks of sheep are bred throughout this tract. See **ARHOLM**.

LIN-KIANG-FOU, a city of China, in the province of Kiang-si, seated on the river Yu-ho. It has only four cities of the third class in its district; but is of some note, on account of one of its villages being the general mart for all the drugs sold in the empire. It is 410 miles N. by E. of Canton.

LIN-TCHEOU-FOU, a city of China, in the province of Kiang-nan; including, in its jurisdiction, two cities of the second, and six of the third class.

LIN-TCHIN-TCHEOU, a city of China, in the province of Chan-tong, seated on the Great Canal. Among the edifices admired here, is an octagonal tower, divided into eight stories, the walls of which are covered on the outside with porcelain; and near this are some temples of beautiful architecture. It is 225 miles S. of Peking.

LINEN, a general name given to those garments that the people of England, and other countries, usually wear immediately next the skin; these being, for the most part, of flaxen manufacture. That this is the most conducive to longevity, however, especially in so variable a climate as that of Britain, has been long doubted; and the more wholesome practice now prevails, not only with valetudinarians, but with confederate persons who even enjoy good health, to wear flannel or fleecy-hosiery (see **FLEECY-HOSIERY**, *Supp.*) under their linen.

The following extract from an account of an annual distribution of linen to the poor, with a proposal as to a mode of supplying them with blankets, by the Rev. Mr. Dolling, late vicar of Aldenham, Herts, is published by the Society for bettering the Condition of the Poor.

"A worthy friend," says Mr. Dolling, "annually confided to me the distribution of five guineas, for the benefit of the poor. With them I purchased about 110 yards of linen cloth, which was cut out chiefly into shifts, the pieces of each being pinned together. I kept an annual linen list, giving at Christmas a shift each to about thirty-seven women, and occasionally a shift to a girl, or a shift to a boy; so that they all had this benefit in their turns, and some more deserving mothers, with large families, constantly; the preference being given to those who did not receive parochial relief.—When- ever they attended together at my house to receive the linen, I took the opportunity of pointing out to them any improprieties in their conduct, deserving of observation. What was then said was often attended with good effect."

On this plan the following observations are made:

"At the same time that it must be admitted that the poor are not provident, it should be observed in their exculpation, that they frequently have not the means of being so. It seldom happens, when winter approaches, that they have been able to make, or at least that they have made, a sufficient provision for clothing during the severity of the season; and their health often suffers for want of it. If blankets were purchased, and lent out to cottagers in November, a register book being kept, and the blankets marked, and No. 1, 2, &c. placed against each name, and signed by the borrower, to be returned again clean in the ensuing month of May, unless the cottager could become the purchaser of it, at a limited and reduced price, it would contribute greatly to their health and comfort during the winter."

We cordially agree with the benevolent writer of these remarks, well knowing how greatly the miseries of the poor are aggravated, as well as their diseases promoted, in severe weather, from the mere want of the means of warmth and cleanliness. Nothing is more common amongst the poor, especially in great towns, than the use of sheets, and body linen that are worn for a continuance, perhaps till they are worn out, without once undergoing the purifications of a washing tub!

LINNE, a town of Germany, in the archbishopric of Cologne, 32 miles N.N.W. of Cologne.

LINNICH, a town of Westphalia, in the duchy of Juliers, five miles N.N.W. of Juliers. Long. 6. 2. E. Lat. 51. 2. N.

LINOSA, an island of the Mediterranean, on the coast of Africa, 12 miles from Lampedosa. It is 12 miles in circumference. Long. 12. 30. E. Lat. 36. 50. N.

LINSELLES, a town of Flanders, where, in 1794, a battle was fought between the allies, but chiefly the English commanded by the Duke of York, and the French. It is five miles N. of Lille.

LINTON, a town in Cambridgeshire, with a market on Thursday, 12 miles S.E. of Cambridge, and 46 N. by E. of London. Long. 0. 22. E. Lat. 52. 8. N.

LIPOUREC, a town of Poland, in the palatinate of Cracow, 32 miles W. of Cracow.

LIPPEHNE, a town of Upper Saxony, in the New Marche of Brandenburg, 26 miles N. of Cultrin. Long. 14. 52. E. Lat. 52. 53. N.

LIPSTADT, a considerable town of Westphalia, capital of the county of Lippe. It was once free and imperial; afterwards subject to its own counts, and now to the king of Prussia. It carries on a good trade in preparing timber for building vessels on the Rhine, with which it has a communication by the river Lippe. It is seated in a morass, 17 miles W.S.W. of Paderborn, and 30. S.E. of Munster. Long. 8. 30. E. Lat. 51. 42. N.

LIQUE, a town of France, in the department of the

Straits of Calais, 12 miles W. of St. Omer. Long. 2. o. E. Lat. 50. 45. N.

LIS, a river of the Netherlands, which has its source in Artois, and running N.E. into Flanders, passes by Aire, St Venant, Armentieres, Menin, Courtray, and Deynse, and then falls into the Scheldt, at Ghent.

LISCA, or LISCA-BIANCA, one of the Lipari Islands, three miles S.W. of Stromboli. It is a small desert spot.

LISIER, St. a town of France, in the department of Arriège, lately an episcopal see. Here is a chapel, which has been famous for the resort of pilgrims. It is situated on the Satat, 50 miles S.E. of Auch, and 390 S. by W. of Paris. Long. 1. 15. E. Lat. 42. 56. N.

LISONZO, a river, which rises in Carinthia, runs through part of the republic of Venice, and falls into the gulf of Venice, at the harbour of the same name.

LITHAY, a town of Germany, in the duchy of Carniola, situate on the Save, 15 miles E. of Lansbach.

LITIZ, a town of the state of Pennsylvania. Here is a flourishing settlement of the Moravians, begun in 1757. It is eight miles from Lancaster, and 70 W. of Philadelphia.

LITSCHAU, a town of Germany, in the archduchy of Austria, 70 miles N.W. of Vienna. Long. 14. 55. E. Lat. 48. 48. N.

LITTERMORE, an island near the W. coast of Ireland, and county of Galway, about four miles long and two broad. Long. 9. 40. W. Lat. 53. 17. N.

LIVADOSTA, a town of Livadia, seated on the gulf of Lepanto, in the isthmus of Corinth, to the N. of the city of that name, with a bishop's see.

LIVENZA, a river of Italy, in the territory of Venice, which runs on the confines of Trevisano and Friuli, and falls into the gulf of Venice, between the mouth of the Piava and the town of Caorlo.

LIVERDON, a town of France, in the department of Meurthe, seated on a mountain, near the river Moselle, eight miles N.E. of Toul. Long. 6. 5. E. Lat. 48. 45. N.

LIZARD; (see *BASILISCUS*, *Encycl.*). Some have insisted on the efficacy of lizards in curing the leprosy. The following translation of a letter from M. Rey Demourande, a French merchant settled in Spain, inserted in the *Journal de Bourdeaux*, together with a letter from M. Delarche at Madras, to George Smith, esq. at Calcutta, contain some curious accounts of this fact. The writer of the former expresses himself eager to communicate to his country what he calls "a most useful and precious discovery for human nature." "It is," says he, "a wonderful specific against the leprosy, cancers, venereal disorders, and every kind of ulcers. We owe the knowledge of this remedy to the Indians of the village of Saint Christoval Amalelace, dependent on the kingdoms of Guatemala. The trials which have been made of it in that country, at Malaga, and at Cadiz, have been so surprising and favourable, that about a month ago there was printed in the latter city a small pamphlet of twenty pages, containing an account of its discovery, and a detail of the miraculous cures which have been derived from it, as well at Guatemala as at Mexico and Malaga. This remedy is small lizards eaten or swallowed raw, either those called in the *Encyclopædia anolis de terre*, or *gobe mouches*; and the manner they are described by Doctor Joseph Storey, of the royal university of the city of Guatemala, is this: "These reptiles are very properly called small lizards, for their figure is exactly that of a lizard; they are eight or ten inches in length, and a little more than half an inch in breadth; they are very active and vivacious; some of them are gilt between a yellow and green, and others are grey with spots; both of them have their skin covered with

triangular scales from the head to the tail. I apprehend that the gilt ones, or those of the colour de *tourne fol*, are the female, because their bellies are larger and more protuberant. The Indians," adds the doctor, "are neither averse to them nor disgusted with them. They take a small lizard, and with much dexterity cut off its head and tail, immediately they extract the entrails, and with a single exertion tear off the skin. In this raw state, the flesh trembling and fill hot, they chew them slowly, and swallow them with great composure. They take daily one of them fasting. It is said they are accustomed not to take more, but it has happened that they have taken two and even three." Disgust has prevented the Spaniards, both in Europe and America, from taking the medicine in this manner: to render it more supportable and less repugnant to their feelings, after having cut off the head and tail, and feet of the animal, and taken away its entrails and skin, the remainder has been divided into small pieces, and being covered over with a paste of flour, administered to the patient in pills; the body of a small lizard making two, each a little less than a musket-ball. Every experiment which has been made, both at Guatemala, Mexico, and Malaga, in the most desperate cases, has been attended with the greatest success. It appears, nevertheless, that although at Guatemala and Mexico only five or six *anolis* are necessary to cure a patient radically, yet a much greater number is requisite at Malaga to produce the same effect, for it was not till after a leper's having swallowed thirty or forty at Malaga, in a like number of days, that his cure was completed. The effects which this remedy produces are constantly an extraordinary heat and burning, accompanied with a profuse sweat, and a salivation thick, plentiful, and yellow. There have been patients who have neither salivated or perspired much from it, but in lieu thereof have had plentiful evacuations either by the way of urine, which was excessively acrid and fetid, or from considerable excrements. In America a patient has never been prepared by bleeding, purging, or other course of medicine; but at Malaga in some cases it has been thought expedient to bleed slightly previous to administering the remedy.

"Although my letter is already very long, the subject is so interesting to human nature that I deem it incumbent on me to add some few observations; the first is to remark, that these small lizards, or anolis, retire during the winter into the holes of walls, old trunks of trees, in the sand, and in the earth, where they remain torpid until the return of heat. I believe as well from this circumstance as from the burning abundant sweats which the medicine causes, and to approach as near as possible the method made use of at Guatemala, that it will be proper to administer them only in summer; too much care cannot be taken to oblige the patient to swallow these animals whilst hot, and as soon after being killed as possible, it being probable that their singular and wonderful property arises from the animal spirits, and a salt, extremely volatile, which every part of their body contains, and which the smallest degree of fire or the least cooling after their death would dissipate. Here is a fine field for discoveries in physic! for if, as I am persuaded it will, this remedy produce the same effects in France as in America and Spain, it is not to be doubted but that the animal species being the most perfect and analogous to mankind, we ought to find in that class the most salutary remedies. I am alike convinced, that, after the example of the present discovery, if, instead of making use of the viper in broth, it were to be given raw, or in pills, it would produce a much greater effect, and might have the same efficacy as that attributed to the lizards.

"M. de Malzac, an experienced physician of Kaifres,

having promised to make experiments with these lizards or *analis*, I have given him a copy of the translation which I made of the pamphlet printed at Cadiz."

Mr. Delarache writes thus from Madras, 7th May, 1785, to Mr. Smith.

"I have, in conformity with the accompanying receipt, attempted to administer this cure to a leper here, who laboured under this malady for twenty years, and who had lost the joints of his toes on both feet, and who was all over covered with pimples and ulcers, especially about the ears and nose, which discharged a fetid and vicious matter. I caused him to take 180 of these lizards warm, and almost trembling, and for three months without interruption. The fifteenth day of the remedy he began to spit, or salivate, in great abundance, which he did for a month and a half, when it ceased of itself; during this time of his salivation, the pimples and ulcers, with which he was covered, dried up, and they fell off in scales, in such manner, that it would not seem that this man had ever been affected with the leprosy; but ulcers which he had on his feet, though without toes, did not dry up, but continued to discharge matter, though in smaller degree than before. In other respects, this man, who for fifteen years had not slept two hours in the twenty-four, and even that a broken and disturbed sleep, began on the thirteenth day of his cure to sleep soundly, and sometimes for six hours without interruption, recovering his appetite, which he had before lost. This, sir, is the present state of this man; if the leprosy should not again break out on his body, he may think himself very happy, though not radically cured. I intend next month, when it becomes very hot, to recommence the remedy, and to administer it for forty days without interval, for probably the lizards will then have more animal spirits, and more volatile salts, than they have in the months of October, November, and December, which you know is our rainy and cold season. May it please God, for the sake of human kind, that this man be radically cured; in such event, I shall inform you.—N. B. No fish or pickles must be eaten by the patient during this cure."

LIZARD, the most southerly promontory of England, whence ships usually take their departure, when bound to the westward. Long. 5. 10. W. Lat. 49. 57. N.

LLANARTH, a town in Cardiganshire, with a market on Tuesday, 17 miles east by north of Cardigan, and 212 west by north of London. Long. 4. 20. W. Lat. 52. 13. N.

LLANBEDER, a town in Cardiganshire, with a market on Tuesday. It is seated on the Tywi, over which is a bridge into Carmarthenshire, 24 miles east of Cardigan, and 197 west by north of London. Long. 4. 8. W. Lat. 52. 9. N.

LLANDILOVAWR, a town in Carmarthenshire, with 2 market on Tuesday and Saturday. It is seated on an ascent, in the river Towy, over which is a bridge, 13 miles east by north of Carmarthen, and 194 west by north of London. Long. 3. 58. W. Lat. 51. 55. N.

LLANELLY, a town in Carmarthenshire, with a market on Tuesday. It trades much in coal, and is seated on a creek of the Bristol Channel, 13 miles south by east of Carmarthen, and 216 west by north of London. Long. 4. 10. W. Lat. 51. 43. N.

LLANGADOC, a town in Carmarthenshire, with a market on Thursday. It is seated between the rivers Brane and Sawth, which soon join the Towy, 18 miles east by north of Carmarthen, and 185 west by north of London. Long. 3. 48. W. Lat. 51. 54. N.

LLANGOLLEN, a town in Denbighshire, with a beautiful bridge of four arches over the river Dee, seven miles S.W. of Wrexham, and 184 N.W. of London.

LLANGUNNER, a village in Carmarthenshire, a mile and a half from Carmarthen, noted for being the private seat of Sir Richard Steele, who died here in 1729.

LLANROOST, a town in Denbighshire, with a market on Tuesday, seated on the Conway, 15 miles S.W. of Denbigh, and 222 N.W. of London. Long. 3. 58. W. Lat. 53. 6. N.

LLANTRISSETT, a town in Glamorganshire, with a market on Friday. It is an ancient place, governed by a portreeve, who is sworn by the deputy constable of the castle that stands near it. It is 10 miles N.W. of Landaff, and 166 west of London. Long. 5. 22. W. Lat. 51. 28. N.

LLANWILLING, a town in Montgomeryshire, with a market on Tuesday. It is seated in a flat, among hills, near the river Cane, 15 miles north by west of Montgomery, and 179 N.W. of London. Long. 3. 8. W. Lat. 52. 40. N.

LLANYDLOS, a town in Montgomeryshire, with a great market on Saturday, for woollen yarn. It is seated on the Severn, near its source, 18 miles S.W. of Montgomery, and 180 W.N.W. of London. Long. 3. 28. W. Lat. 52. 19. N.

LLANYMDDOVRY, a town in Carmarthenshire, with a market on Wednesday and Saturday. It had once a castle, now in ruins, seated near the Towy, 26 miles E.N.E. of Carmarthen, and 181 west by north of London. Long. 3. 42. W. Lat. 51. 56. N.

LLAUGHARN, a town in Carmarthenshire, with a market on Friday; seated at the mouth of the Towy, near the ruins of two castles, seven miles S.W. of Carmarthen, and 233 west by north of London. Long. 4. 28. W. Lat. 51. 48. N.

LLERENA, a town of Spain, in Estremadura, 53 miles east of Cordova, and 54 north of Seville. Long. 5. 23. W. Lat. 38. 24. N.

LOREI, a town of Spain, in Catalonia, 20 miles N.E. of Mataro. Long. 2. 39. E. Lat. 41. 47. N.

LO, St. a town of France, in the department of the Channel, with a good citadel. It has considerable manufactures of ferges, thalloons, ribbons, and gold and silver lace. It is seated on the Vire, 12 miles east of Coutances, and 125 west by north of Paris. Long. 0. 53. W. Lat. 49. 6. N.

LOAN, or **LOVANO**, a town of Italy, in the state of Genoa, near the sea, six miles S.S.W. of Finale. Long. 7. 58. E. Lat. 44. 9. N.

LOBAW, a town of Western Prussia, with a castle, where the bishop of Culm resides. It is 25 miles east of Culm. Long. 19. 0. E. Lat. 53. 25. N.

LOBENSTEIN, a town of Upper Saxony, in the county of Reussen, 26 miles north of Barchin. Long. 11. 37. E. Lat. 50. 20. N.

LOBOA, a town of Spain, in Estremadura, seated on the Guadiana, 22 miles east of Badajoz. Long. 6. 22. W. Lat. 38. 32. N.

LOBSTADT, a town of the electorate of Saxony, in the circle of Leipzig, 10 miles S.S.E. of Leipzig.

LOBURG, a town of Lower Saxony, in the principality of Magdeburg, 22 miles east of Magdeburg. Long. 12. 7. E. Lat. 52. 12. N.

LOCCO, a town of Naples, in Abruzzo Citeriore, situated on the Pelicera, 10 miles north of Solmona.

LOCHEM, a town of Dutch Guelderland, in the county of Zutphen. It was taken by the French in 1672, who abandoned it in 1674, after having demolished the fortifications. It is seated on the Borrel, 10 miles east of Zutphen. Long. 6. 13. E. Lat. 52. 12. N.

LOCHEER MOSS, a morass in Dumfriesshire, 10 miles long and three broad. Here vast oak trees, and also canoes and anchors, have been dug up.

LOCHES, a town of France, in the department of Indre and Loire, with a strong castle, the prospect from which is very extensive. Here was one of those horrid dungeons, built by the cruel Lewis XI., the walls, floors, ceilings, and doors of which were lined with plates of iron fastened to bars of the same metal. The unfortunate Ludovic Sforza, duke of Milan, taken in battle, under Lewis XII., ended his days in one of them. In the choir of the late collegiate church, is the tomb of the celebrated Agnes Sorel, mistress of Charles VII., to whose patriotic exhortations that monarch owed almost all his glory. Loches is seated on the Indre, near a forest, 15 miles south of Amboise, and 20 S.E. of Tours. Long. o. 51. E. Lat. 47. 10. N.

LOCHMABEN, a borough in Dumfriesshire, situate on the west side of the Annan, nearly opposite the place where it receives the united streams of Yea and Kinnel, 10 miles N.E. of Dumfries. Long. 3. 19. W. Lat. 55. 19. N.

LOCHRIDA, or **OCRIDA**, a town of Turkey in Europe, in Albania, with a Greek archbishop's see. It is well fortified, and seated on a hill, near a lake of its own name, 62 miles S.E. of Durazzo. Long. 20. 40. E. Lat. 41. 40. N.

LOCHTA, a sea-port of Sweden, in East Bothnia, seated on the gulf of Bothnia, 90 miles south of Tornea. Long. 24. 16. E. Lat. 64. 20. N.

LOCHWINNOCH, a lake in Renfrewshire, called also Castle Semple Loch, near three miles in length. On an island in this lake, is an old fortress, called the Peel; a name frequently given to old fortresses in Scotland. From this lake issues the river Black Cart.

LOCHY, Loch, a lake in the S.W. part of Invernesshire, 10 miles in length, and from one to two in breadth. From the N.W. the waters of Loch Arkel descend into this lake. Out of it runs the river Lochy, which, about a mile below, receives the Spean, and after flowing through the district of Lochabar, falls into Loch Eil, at Port William.

LOCK (*Encycl.*). Under that article we have minutely described the ingenious inventions of Mr. Braham to prevent private depredation and pilfering; justice to the inventions of others, however, remains to be done, and we accordingly subjoin the following particulars on the subject of locks.

An account of a door or chest lock, of a peculiar construction, by Mr. Thomas Arkwright, of Chorley-moor, in Lancashire, appears in the Transactions of the Society for the Encouragement of Arts, Manufactures, and Commerce, who conferred fifteen guineas on Mr. Arkwright for his invention.

This lock has two bolts, so formed, that, if the key should by any accident be left in the lock, it would be scarcely probable that a servant could unlock it.

In Pl. 37. A, shews the pointer on the flank of the key.

B, the pin on which the key turns.

C, top bolt of the lock.

D, the upper higher tumbler for the top bolt.

E, another tumbler for the top bolt, and placed underneath

F, a lever, which works both bolts, and moves on a centre G.

H, the lower bolt, with a joint I upon its head.

K, the lower tumbler, with two joints L, which fall into two notches of the top bolt. Underneath the lower bolt is another tumbler, similar to that marked E. There are five springs within the lock, four of which act upon the upper and lower tumblers, the other on the joint bolt H.

M, the bottom part of the key. The dark ring in the centre represents the hollow to be applied to the lock-pin B, above mentioned.

Vol. X.

The directions given for working the double-bolted lock, are these:

First, place the head or bolts of the lock towards the left hand; then take the key with the right hand, with the small pointer A, in the flank of the key, towards the right: after this, put the key down to the bottom of the socket upon the centre pin B, in the lock, and give one half-turn with the pointer in the flank of the key, upwards; by which the bolt C at the top will be locked. In the next place, draw back the key about one inch, so that the webs or bits of the key may clear the tumblers in the lock; then turn the key with the small pointer towards the right hand, and put down the key in the manner above mentioned. After this, make one half-turn with the pointer in the flank of the key downwards, by which means the lower bolt H is locked, and the higher bolt C unlocked. Then draw up the key as aforesaid, and turn it with the pointer in the flank to the right hand. In the last place, thrust down the key, and give one half-turn with the pointer in the flank of the key, upwards, by which means both the bolts C and H will be locked; so that, when the bolts are to be unlocked, the pointer in the key must be towards the left hand, and must be worked as above directed.

We shall next lay before the reader a specification of the patent granted to Mr. Hølemberg, of Silver-street, Bridge-water-square, London, for locks or fastenings on an improved construction. It is dated June 24, 1801.

In Plate 37. fig. 1, shews the front of the lock finished:—1, the four fastening screws;—2, flat plate;—3, the box;—4, key hole;—5, 5, catch fastening to the door-post, &c. with two screws. Fig. 2:—1, second or inner plate on which the key turning opens number 4;—2, 3, screws fastening inner plate to the bottom of lock;—3, spring flat bolt to double fasten the lock;—4, circular or principal bolt;—5, key-hole. Fig. 3:—1, spring screw;—2, inside tumbler, designed for greater security of the principal bolt, as appears from the drawing;—3, the orbicular bolt, the principle of the whole, for security unequalled;—4, key-hole, exhibiting foot of the key;—5, stopper, for the recurrency of principal bolt;—6, quadra-circular conductor, for the principal bolt;—7, the catch. Fig. 4:—A fastening for sashes, shutters, and doors, upon the same principle with the above described. The dimensions, thickness, works, &c. may be varied at pleasure, according to the intended use and designation of the locks and fastenings.

In the year 1784, the Society for the Encouragement of Arts, &c. conferred their silver medal on Mr. Taylor, of Petworth, for his improvement on the latch or spring-bolts of common locks. This is effected by simply reversing the tumbler, so that its curved side acts against two studs fixed on the tail of the latch, and thrusts back the latter with ease, whether the knob be turned to the right or to the left, when the lock is opened. Mr. Taylor has also, behind the tail of the latch, fixed a guide containing a groove, in which runs a small friction-wheel, that serves to keep the latch in its direct situation, and at the same time to diminish its friction: the arms of his tumbler are somewhat contracted, in order that the latch or spring-bolt may move with greater facility. By this construction, the parts of the tumbler and latch, which are in contact, move in a line, so that they pass over the greatest space, under the smallest angle; and the lock itself may be constantly used for several years, without requiring the application of oil.

The same Society also granted, in the same year, the sum of ten guineas to Mr. Marhal, for a *secret escutcheon*, which, when fixed to a lock, may be so repeatedly varied, that even the artist who made it, is unable to open the lock: A satisfi-

factory description of its mechanism is given in the 3d volume of the Society's Transactions.

LOCKING-POLE, an ingenious piece of mechanism, to be affixed to the wheels of waggons or other carriages, when descending steep hills.

As many distressing accidents happen from loads overpowering the shaft-horse, when proceeding down declivities, Mr. Colley laid before the Society for the Encouragement of Arts, &c. a contrivance for preventing such casualties; in consequence of which, he was rewarded with their silver medal. See Pl. 35.

A. The hollow, which lies on the nave of the wheel.

BC. The chains, that clip the felly of the wheel.

D, the front part of the pole, shod with iron: and which is further strengthened by a rib of iron, that is rivetted along its side, as is indicated by the black line.

In order to apply this locking-pole, the chain C is put round the felly of the wheel: the pin B is passed through the last link of C, and turned back through the moveable ring *e*: thus the wheel is secured, and any waggon, however laden, may descend the steepest hill with safety.

To prevent the locking-pole from breaking, Mr. Colley directs it to be made of the stem of an ash-tree, the *spurns*, that is, the beginnings of which, have not been cut off in felling. He further remarks, that if a horse, which has been accustomed to such situation and to descents, be put in the shafts, the animal will be so much inclined to hold back, that it will be extremely difficult to make him draw. This exertion, however, is absolutely necessary; as otherwise the chain-horse, which should always be linked to the locked side, will be obliged to pull an unnecessary weight, occasioned by his being considerably lower than the points of the shafts.

Lastly, in conveying the locking-pole from one declivity to another, it is to be placed between the lower part of the cart and the axle-tree, while the smaller end is to be buckled with a strap fixed under the body of the cart, on the driving side.

LODDON, a town in Norfolk, with a market on Friday, eight miles S.E. of Norwich, and 113 N.E. of London. Long. 1. 18. E. Lat. 52. 36. N.

LODESAN, a district of Italy, in the duchy of Milan. It is very fertile and populous, and its cheeques are in high esteem. Lodi is the capital.

LODEVE, a town of France, in the department of Herault. It was lately a bishop's see; and has manufactures of hats and of cloth for the army. It is seated in a dry barren country, on the river Logue, at the foot of the Cevennes, 27 miles N.W. of Montpellier. Long. 3. 30. E. Lat. 42. 47. N.

LODI, a town of Italy, in the Milanese, and capital of the Lodofan, with a fortress. The French defeated the Austrians near this place, in 1796. It is seated on the Adda, 15 miles N.W. of Placentia, and 20 S.E. of Milan. Long. 9. 26. E. Lat. 45. 15. N.

LODRONE, a town of Italy, in the bishopric of Trent, seated on the small lake Idro, at the place where it receives the river Chiese, 31 miles S.W. of Trent. Long. 10. 46. E. Lat. 46. 0. N.

LOFINGEN, a town of Suabia, in the lordship of Furfenberg, with a famous medicinal bath, six miles west of Furfenberg.

LOFSTA, a town of Sweden, in the province of Upland, with a hammer-mill, eight forges, and a smelting furnace. These works were destroyed by the Russians, in 1719, but have since been again erected. It is 32 miles north of Upland.

LOGOWOGOROD, a town of Poland, in Volhonia, seated on the west bank of the Dnieper, 25 miles N.W. of Kiof. Long. 31. 7. E. Lat. 50. 46. N.

LOGRONO, an ancient town of Spain, in Old Castile, seated on the Ebro, in a country abounding with excellent fruits and good wines, 52 miles east of Burgos, and 115 north by east of Madrid. Long. 2. 20. W. Lat. 42. 29. N.

LOHEIA, a town of Arabia, in the province of Yemen. It has a great trade in coffee, and is 360 miles S.S.W. of Mecca. Long. 42. 49. E. Lat. 15. 42. N.

LOITZ, a town of Upper Saxony, in Anterior Pomerania, 16 miles north of Treptow, and 24 south of Stralsund. Long. 13. 4. E. Lat. 53. 56. N.

LOMBARDY, a part of Italy, which comprehends almost all the ancient Cisalpine Gaul. It lies towards the north, and is divided into the Upper and Lower. Upper Lombardy, the western part, comprehends Piedmont, with its dependencies, and the duchies of Montferrat and Milan. Lower Lombardy, the eastern part, contains Parma, Modena, Mantua, Ferrara, the Bolognese, the territories of the Church, the Paduan, Vicentino, Veronese, Bresciano, Cremasco, and Bergame. In the late war, the whole of these provinces were overrun by the French republicans, who not only levied exorbitant contributions on the inhabitants, but also demanded many of their finest pictures and statues, which they transported to Paris.

LOMBEZ, a town of France, in the department of Gers, lately a bishop's see. It is seated on the Save, 27 miles S.W. of Toulouse. Long. 1. 0. E. Lat. 43. 29. N.

LOMOND, BEN, a great mountain, in the north of Stirlingshire, about 3200 feet above the level of the lake, at its bottom. It stretches along the east side of Loch Lomond several miles; and its broad base extends far into the country, that the ascent of this mountain, though steep, is computed to be six miles. Ptarmigans, and other heath fowls, frequent its upper regions: its lower are the haunts of the roebuck; and herds of cattle feed in the irriguous valleys at its base. From this lofty mountain are seen Loch Lomond, the Clyde, the Forth, Edinburgh, the eastern coast as far as the Cheviot Fells, the isles of Bute and Arran, the rock of Aila, Ireland, the mountain of Plynlimmon in Wales, the Skiddaw in Cumberland, and the hills far beyond it.

LON, or **LUNE**, a river which rises in Westmoreland, and flowing by Kirby Lonsdale in that county, falls into the Irish Sea, below Lancaster. Its banks are beautiful and romantic.

LONATO, a town of Italy, in the Bresciano, 12 miles E.S.E. of Brescia. Long. 10. 11. E. Lat. 45. 24. N.

LONDON, New, a sea-port in the state of Connecticut, and county of New London. Its harbour is the best in Connecticut, and as good as any in the United States. It is defended by two forts, and seated on the Thames, near its entrance into the Sound, 80 miles N.E. of New York. Long. 72. 45. W. Lat. 41. 15. N.

LONDON, New, a town of the United States, in Virginia, on James River, 135 miles west by fourth of Richmond.

LONG ISLAND SOUND, a kind of inland sea in North America, 25 miles broad and 140 long, extending the whole length of Long Island, and dividing it from Connecticut. It communicates with the Atlantic at both ends of the island.

LONGARA, a town of Naples, in Calabria Ulteriore, 20 miles W.N.W. of St. Severino.

LONGEVITY (*Encycl.*). The following "*Hints on Longevity*," were drawn up by Sir John Sinclair, baronet, with the view of being inserted in the Analysis of the Statistical Account of Scotland; and printed in a fugitive form for the purpose of obtaining additional facts and observations on that interesting subject. They contain, however, so much truly valuable matter, and the object of them is so important to society, that we are tempted to give them further publicity, by adding them to the information we have already furnished on the subject.

1. *On the healthiness of Scotland.*—Perhaps there is no country in Europe, where, in proportion to its population, a greater number of individuals reach to sixty, and thence to eighty, and even ninety years of age, in full possession of all their faculties, both personal and mental, than in Scotland; and such a circumstance, is a stronger proof of the healthiness of a climate, than a few remarkable instances of extraordinary longevity. At the same time, North Britain is not a little distinguished, for having given birth to a number of persons, who have lived beyond the usual period of human existence *. In a work containing a collection of instances of longevity, for no less a period than 1733 years; namely, from A.D. 66 to 1799, in which there is given the name, age, place of residence, &c. of 1712 persons, from all parts of the world, who had attained to a century and upwards, 170 are stated to have been natives of Scotland, and the two most remarkable in the whole list, are Kentigern, a native of Scotland †, and Peter Torton of Temeswar, in Hungary, both of whom attained the great age of 185 years ‡.

"II. *Tables of longevity.*—But before we proceed to discuss the subject of longevity in general, it may not be improper, to lay before the reader the following table, drawn up by an eminent author (Hufeland), which explains the shortness of human life, and points out how few there are, in proportion to the number born, who reach even the period of sixty years §.

"Of a hundred men who are born, there die, according to Hufeland,

Under	10	-	-	50
Between 10 and 20	-	-	-	20
20 and 30	-	-	-	10
30 and 40	-	-	-	5
40 and 50	-	-	-	5
50 and 60	-	-	-	3
				94

"Hence only six remain, out of a hundred, who stand a chance of living beyond sixty years.

"Of persons who have lived above a hundred years, the industrious Haller has collected 1113 instances, and gives the following statement of the duration of their lives ||.

"Of those who lived from 100 to 110 years, the instances have been above

From 110 to 120	about	-	1000
120 to 130	-	-	62
130 to 140	-	-	29
140 to 150	-	-	15
152 (Parr)	-	-	5
169 (Jenkins)	-	-	1
			1113

"But in a recent publication, the following table is given, as the result of a more extensive collection of instances of longevity.

"Of males and females, who lived from 100 to 110 years, both inclusive, the instances have been

Above 110 to 120	-	-	277
120 to 130	-	-	84
130 to 140	-	-	26
140 to 150	-	-	7
150 to 160	-	-	3
160 to 170	-	-	2
170 to 185	-	-	3
			1712

"III. *Circumstances tending to promote longevity.*—As the means of attaining great age, is a subject respecting which it is natural to entertain a considerable degree of anxiety, and as many interesting facts regarding it, are scattered throughout the Statistical Volumes, I shall proceed to state the circumstances on which longevity seems principally to depend.

"In the first place, climate seems to be of considerable importance; and it may be laid down as a general rule, that the moderate, or even the coldest climates, are the most favourable to long life. Heat seems to relax and enfeeble, cold to strengthen and brace, the human frame. The diet also of hot countries is not so nourishing, as that of cold **; and there is in general a greater disposition, and greater opportunities, to indulge in various excesses, in the former, than in the latter. But if the climate be cool, a rainy atmosphere seems to be less unfavourable to longevity than could well be

* "Buffon places the mountainous districts of Scotland, at the head of a list containing those parts of Europe the most distinguished for longevity. *Hist. Nat. de l'Homme.* edit. 1752, tom. IV. p. 358. The celebrated Pallas, in the second volume of his *Travels*, states, that the inhabitants of the mountainous districts of the province of Jersk, in the northern parts of Siberia, live to a great age; people of 100 years are very common; and he saw an invalid soldier aged 120. The inhabitants of the plains in their neighbourhood, are by no means so healthy or so long lived."

† "Kentigern, known also under the name of St. Mungo, was the founder of the bishopric of Glasgow. The following verses were made on his extraordinary age and place of interment:

"Cum octogenos centum quoque quinque vir annos
Complerat, Sanctus est Glasgow funere functus."

Spotiswood's *Hist. of the Church of Scotland*, p. 11 and 12.

If we should not be willing to give credit to the extraordinary age which Kentigern and Torton are said to have reached, in which there is nothing impossible, as Parr and Jenkins approached to it so nearly, the first being 152, and the second 169 years of age; yet they may certainly be cited as examples of long life, greatly beyond the usual extent."

‡ "See *Human Longevity*, by James Eafon. Printed at Salisbury, in one vol. 8vo. anno 1799. There is a portrait of Torton in England, which it would be desirable to have engraved."

§ "On the Art of prolonging Human Life; a work written by Professor Hufeland of Jena, in Germany, which merits to be translated. The original may be had at Geisweiller's, Parliament-street."

|| "Haller's *Elementa Physiologiae Corporis Humani*, vol. III. lib. xxx. sect. 3. p. 103."

** "In cold countries they live more upon animal, in hot countries upon vegetable, food, and fruits. A judicious mixture of both is the best plan to pursue, but of the two, animal food is the most nourishing."

imagined; for Ireland, which is a wet country, boasts of a great number of old people. And a very large proportion of the aged who have lived in England and Scotland, have resided in the western, and consequently the rainiest, counties in the island*.

"The next circumstance to be considered is, the form † and size of the individual. It is generally admitted, that persons of a compact shape, and of a moderate stature, are the most likely to live long. Height often originates from the disproportioned growth of some particular part of the body, which necessarily has a tendency to engender weakness and disease. Tall persons also are apt to acquire a habit of stooping, which contracts the chest, and is a great enemy to free respiration; whereas the short-sized find little difficulty in keeping themselves erect, and are naturally much more active, by which the animal functions are retained in a state of much greater perfection. The only disadvantage attending a short stature is, that it is frequently accompanied with corpulence, which is extremely unfavourable to long life.

"Being born of healthy parents, and exempted from hereditary disease, are circumstances evidently favourable to longevity. A puny frame, like Cornaro's, may, by the greatest care and anxiety, be preserved in existence, but those who inherit health and strength, and are born with robust constitutions, can alone expect not only to live long, but to enjoy the pleasures and comforts of life, while they continue to possess it.

"Longevity also, seems to depend upon good temper, mixed at the same time with a cheerfulness of disposition, or good spirits ‡. Neither the irascible, nor those who, from dependency, sink under the crosses of life, can expect to live long. Even those who suffer their strength and spirits to be exhausted by severe study, or other mental exertions, seldom reach great age. Of the long list of 1712 persons, who lived about a century, Fontenelle (who did not quite reach 100 years) is the only author of any note; and his great age is ascribed to the tranquil ease of his temper, and that liveliness of spirits, for which he was much distinguished; for he retained to the last, the *youth of old age*, as the French happily express it.

"It is commonly observed, that it is not the rich and great, nor those who depend on medicines, who become old, but such as use much exercise, are exposed to the fresh air, and whose food is plain and moderate §. And it is certain that persons of that description, in general stand the best chance of living long. At the same time, though instances of great age, in royal and in noble personages, are not often to be met with, yet they may be as many, in proportion to the smaller number of such persons, as those in the lower but more numerous classes of society. Nor is there any thing in-

consistent in sovereign power, high rank, or great wealth, being accompanied with a long period of existence, provided other circumstances are favourable to longevity.

"In the next place, it is evident, that long life must depend much on the manner in which the individual is employed. Unhealthy occupations generally become fatal. Yet Peter Pein, a glass-blower, is said to have attained the great age of 101; and John Tyler, a miner at Leadhills, in Scotland, is supposed to have reached even 132 years ||. His age, indeed, could not be proved by direct, but it rests on very strong circumstantial evidence; and a person of the most undoubted authority (Dr. Walker, professor of natural history in the university of Edinburgh) informs me, that in his muscles, joints, and in his whole conformation and aspect, he wore the appearance of more remote antiquity, than he had ever seen in any human creature. But on the whole, farmers, gardeners, and labourers in the country, are in general the longest lived. Foot soldiers also, who have survived the dangers of war, are remarkable for long life. They are generally stout and vigorous men; and the regularity to which surviving soldiers must have accustomed themselves, whilst the careles and disorderly drop off, the erect posture to which they have been trained, and being of course men well formed by nature, and habituated to march and walk well (which familiarizes them to a natural and healthy exercise), all combine in their favour.

"It is also proper to remark, that not only moderate exercise, but even labour, if not too severe, contributes to good health, and old age. In many instances, persons have worked at threshing, and other laborious occupations, exposed to a current of fresh air, after they had passed beyond the age of 100; and, if accustomed to them, they do not appear to have suffered any inconvenience from such exertions.

"Nor ought it to be omitted, that a large proportion of the long lived have preferred a married to a single state, and in general have left behind them a numerous family. Whether a life of celibacy occasions disease, or leads to irregularity, or sours the temper, or to whatever other cause it ought to be attributed, may be a subject of dispute, but it is certain, that the number of single persons who live long, bear no proportion to the married**.

"In the last place, though a greater number of males are born than of females, at least in European countries, yet there is reason to believe, that of the two sexes, women reach old age in the greatest proportion. For this various causes may be assigned, as the greater regularity and temperance of their mode of living, their being less exposed to danger and hardships, less subject to violent agitations, and generally endowed with more cheerfulness and gentleness of disposition ††.

* "Moisture, it would appear, is not prejudicial to health, if it does not affect the purity of the air. Even stagnated water, if in peat bogs or morasses, is not unwholesome, as the water, by the asfringency of the peat, is prevented from becoming putrid. Lincolnshire, also, and several of the marshy counties of England, can produce a number of instances of great age, but probably they were from the more elevated parts of these districts."

† "On the extent of the thorax, and the moderation of impulse on the heart, it has been remarked, that the endurance of animal life materially depends."

‡ "Hence the great age to which many of the French nobility lived, particularly before the regency of Orleans."

§ "See Easson on Human Longevity, Introduction, p. 11."

|| "It is said that neither of these instances ought much to be wondered at, as a glass-blower is constantly exposed to fresh and dry air, and the labour of miners under ground is not for many hours, and they generally reside in hilly districts."

** "This applies to both sexes, in particular to the male. Dr. Rush of Philadelphia asserts, that he never saw but one unmarried man exceed fourscore years."

†† "Among the symptoms of longevity, none is more striking, than when nature seems to renew itself, by producing, even in old age, new teeth, new hair, &c. but the instances of this are extremely rare."

“ IV. *Rules tending to promote long life.*—We shall conclude with shortly stating such rules as have been followed by those who have attained great age, as they may furnish some hints that may be serviceable to others.

“ The plan laid down by the celebrated Cornaro is well known, and the abstemious manner in which he lived has often been recommended to the imitation of others; but I question much, whether many would wish to lead the same life, for the sake of mere existence. Life is no longer desirable, than whilst it can be enjoyed with some degree of satisfaction, and it is of little consequence, if a person merely vegetates, whether he lives or not.

“ Without entering therefore into minute particulars, fitter for the discussions of experimental philosophy, than for real life, we shall proceed to state the rules which have been found the most effectual, and which are the most likely to be carried into practice.

“ The first rule is, to avoid excess, whether in eating, in drinking, or in mental or personal exertion of any sort, for nothing is more likely to destroy the springs of life, particularly when these become more feeble. Some instances are mentioned, of persons who have continued to commit excesses, and have lived long; but these are to be considered in no other light than exceptions from a general rule. It may indeed be reasonably contended, that if such persons lived to a great age, notwithstanding their intemperance, they would have lived much longer, had they followed a different course.

“ In the second place, any great alteration with regard to clothing, occupation, or mode of living, ought to be avoided. When once an individual has been accustomed to any particular style of life, a change must in general be dangerous, and a long period must elapse before he can accommodate himself to the alteration. Even if a person has been accustomed to live freely, and finds it necessary to become temperate, the change ought to be gradual.

“ In the third place, nothing is more conducive to longevity, than to preserve equanimity and good spirits, and not to sink under the disappointments of life, to which all, but particularly the old, are necessarily subjected. Regularity of hours, early rising, a due proportion of sleep, pure air, wholesome food, warm clothing, particularly in advanced life, and moderate exercise or labour*, are also of essential importance.

“ In the next place, good health, and consequently longevity, depends much on personal cleanliness, and a variety of minute attentions, which it is impossible here to discuss. It were much to be wished, that some author would undertake the trouble of collecting the result of general experience upon that subject, and would point out a number of habits, which taken singly, appear very trifling, yet when combined, there is every reason to believe, that much additional health and comfort would arise from their observance†.

“ It is a common saying, that every man, after the age

of forty, should be his own physician. This seems, however, to be a dangerous maxim. The greatest physicians, when they are sick, seldom venture to prescribe for themselves, but generally rely on the advice of their medical friends. Persons who pretend to be their own physicians are generally much addicted to quackery, than which nothing can be more injurious to the constitution. It is essential to health, that medicines should never be taken but when necessary, and never without the best advice, in regard to the commencement, which ought not to be too long delayed, otherwise much benefit cannot be expected from them, and also with respect to nature or sort, quantity, and continuance.

“ It is generally acknowledged, that the powers of physic are bounded. The medical art, however, is probably still in its infancy, and it is impossible yet to say, to what perfection it may reach, not only in consequence of the new improvements which chemistry daily furnishes, but also of those which may be made, by the discovery of new and valuable plants, in countries either already known or hitherto unexplored, and indeed the new uses to which old medicinal plants may be applied. Perhaps such discoveries will be much accelerated, when, instead of being left to the zeal and industry of individuals, they shall meet with that public encouragement and protection, to which they are so peculiarly well entitled.

“ It has frequently been remarked, that the greatest number of old people die in winter, and that many individuals, in a weak and consumptive state, are obliged to fly to warmer climates, as the only means of safety. It has thence occurred to Dr. Pearson, that it would be of service, both to the aged and to the consumptive, to have houses erected, of such a peculiar construction, that the air could always be preserved, not only pure, but nearly of the same, and of rather an elevated temperature, so that the invalids who resided in them, should never be affected by the vicissitudes of the seasons‡. Such an idea, it must be admitted, cannot be a general remedy, or resource, but it is well entitled to the attention of those who are in affluent circumstances, by some of whom, it is to be hoped, an hospital for the aged and consumptive will be erected, and the experiment fairly tried, both for their own sakes, and for that of human nature in general§.

“ On the whole, it is more than probable, that by proper attention and good management, persons in general might not only live longer, but might enjoy life with more relish, than is commonly the case at present; and it is to be hoped, in respect of this, as well as of many other particulars, that human nature is still in the threshold of acquirement, that it will yet obtain greater and more important acquisitions of knowledge, and may reach further improvement, both with regard to the extent of personal and mental gratifications, which our species may be found capable of enjoying, and also the means of possessing them, with more satisfaction and comfort, and for a much longer period of time.”

* “ Travelling, in moderation, from the change of air and scene, has also been found of great use.”

† “ Many people, for instance, injure their health, by neglecting their teeth, in consequence of which, the gums become first diseased, the breath becomes tainted and noxious, the teeth then rapidly decay, and the food not being properly masticated, much occasion various complaints.”

‡ “ Haller (p. 118) recommends it to old men to emigrate from a colder to a warmer region; but the proposed building will probably answer the same purposes equally well.”

§ “ An eminent surgeon (Mr. Benjamin Bell, of Edinburgh) is of opinion, that any common house might be made sufficiently warm to answer the proposed object; and he has frequently recommended the plan of keeping the house, during the colder seasons of the year, with much advantage to aged and infirm patients; but to give the idea a fair trial, a house peculiarly constructed for the purpose should be built.”

Sir John Sinclair justly observes, that it would be of importance, if some author, who had leisure to probe this enquiry to the bottom, would undertake a paper on longevity; and he annexes a list of some publications upon the subject, which might be consulted with advantage. The following observations, he adds, also, coming from so respectable a quarter as that of Dr. Fordyce, merit particular attention :

" If a man wishes to prolong life to a very long period, he must take great care to eat very moderately, and drink no wine, nor use any intoxicating liquor whatever. In all polished nations, men eat at least double the quantity of food necessary, perhaps four or five times. If men eat only the necessary quantity, they have no occasion for wine, spices, or any other stimulant to assist the digestion of their food. On the other hand, if a man be contented to live to the age of seventy, rather a greater quantity of food is useful, to support the exertions of the bodily powers; but eating in excess, always wears out the body without any advantage whatever. If a man uses more food than is necessary, it is likewise proper to use stimulants to increase the powers of digestion. This contributes also to wear out the powers of the body. Drinking large quantities of wine of any kind, beer, cyder, mead, &c. tends to produce many diseases, but at the same time defends a man intoxicated from many, such as arise from sudden exposure to cold, infection, and many others, if their cause be applied during the time of intoxication; so that many men who have been intoxicated every day, have lived to the age of eighty, ninety, or even longer, but never to any very great length beyond that time. Those who have been intoxicated by spirits distilled from these liquors have hardly ever arrived at even the age of seventy, and most of them have been cut off at an early age. This much I have to observe in general; to enter into the proofs, would require a long disquisition, which I have not time at present to enter into."

Another respectable physician observes, " that in respect of diet, no one rule is of so much importance as to avoid all sorts of compound liquors, water being the only wholesome beverage, the best solvent and diluent of the solid portions of our food; supporting the tone of the stomach, without exhausting its vigour, and furnishing the most simple, the most bland, and manifestly the most suitable supply to the secretory vessels and general humidity of the body. In a word, good water is the only fit, and salutary, liquor for the ordinary uses of man; all others are noxious, and this in the proportion as they recede in their qualities from water."

It is to be observed, however, that though water may be an effectual solvent, yet that wine, beer, and other fermented liquors, must contain more nourishment; and consequently a moderate use of them, besides acting as a stimulant, and assisting digestion, must be serviceable to persons exhausted by severe labour, whether mental or personal; and in particular must prove a strengthening and refreshing cordial to the aged and the infirm.

LONGUION, a town of France, in the department of Moselle. Here is a considerable iron-works and cannon-foundry. It is 10 miles S.W. of Longwy, and 22 W. of Thionville. Long. 5. 29. E. Lat. 49. 27. N.

LONS-LE-SAULNIER, a town of France, in the department of Jura, with a late abbey of noble Bernardines. It derives its name from the salt springs with which it abounds, and is seated on the Solvan, 30 miles S.S.W. of Dole. Long. 5. 30. E. Lat. 46. 37. N.

LOOKOUT, CAPE, a cape of North Carolina, south of Cape Hatteras, and opposite Core Sound.

LOOTS, a town of Germany, capital of a county of the

same name, in the bishopric of Liege, 16 miles west of Maëtricht. Long. 5. 19. E. Lat. 50. 52. N.

LOPATKA, CAPE, the fourth extremity of the peninsula of Kamtschatka. See KURILES.

LOPESCO, a town of Naples, in the province of Abruzzo Ulteriore, 19 miles S.W. of Aquila. Long. 13. 30. E. Lat. 45. 50. N.

LORA, a town of Spain, in Andalusia, on the river Guadalquivir, 28 miles N.E. of Seville. Long. 5. 4. W. Lat. 37. 46. N.

LORA, a town of Upper Saxony, in the county of Hohenstein, 30 miles north of Saxe-Gotha. Long. 10. 55. E. Lat. 51. 30. N.

LORE, a town of Spain, in Granada, 15 miles north of Malaga. Long. 4. 35. W. Lat. 36. 50. N.

LORBUS, a town of the kingdom of Tunis, with a castle, and fine remains of antiquity. It is seated in a plain, fertile in corn, 150 miles S.W. of Tunis. Long. 9. 0. E. Lat. 35. 35. N.

LORCA, an ancient town of Spain, in Murcia, seated on an eminence, near the river Guadalquivir, 30 miles west of Cartagena. Long. 1. 37. W. Lat. 37. 44. N.

LORCA, a town of Suabia, in the duchy of Wurtemberg. It had formerly a very rich abbey, whose revenues now belong to the university of Tubingen. It is seated on the Remms, 20 miles N.W. of Ellingen.

LORCH, a town of Germany, in the electorate of Mentz. The inhabitants subsist principally by cultivating vineyards and making wine. It is 24 miles W.N.W. of Mentz. Long. 8. 1. E. Lat. 50. 8. N.

LORCHAUSEN, a town of Germany, in the electorate of Mentz, 27 miles west of Mentz.

LORD HOWE'S GROUP, an extensive group of islands in the South Pacific Ocean, discovered, in 1791, by Captain Hunter, who distinctly discerned 32 of them, some of considerable extent. They appeared thickly covered with wood, among which the cocoa nut was very distinguishable. Nine of the natives came near the ship, in a canoe, which was about 40 feet long, badly made, and had an outrigger. They were a stout, clean, well-made people, of a dark copper colour; their hair tied in a knot on the back of the head; and they appeared as clean-shaven. They had an ornament, consisting of a number of fringes, like an artificial beard, which was fastened close under the nose; and to this beard hung a row of teeth, which gave them the appearance of having a mouth lower than their natural one. They had holes run through the sides of the nose into the passage, into which, as well as through the septum, were thrust pieces of reed or bone. The arms and thighs were tattooed, and some were painted with red and white streaks. They wore a wrapper round their middle. Long. from 159. 14. to 159. 37. E. Lat. 5. 30. S.

LORD HOWE'S ISLAND, an island of the South Pacific Ocean, discovered, in 1788, by Lieutenant King, in his voyage from Port Jackson to Norfolk Island. Many excellent turtle have been caught here on a sandy beach; and it abounds with a variety of birds, which were so unaccustomed to be disturbed, that the seamen went near enough to knock down as many as they wanted with a stick. At its south end are two high mountains, nearly perpendicular from the sea; the southernmost named Mount Gower. About 14 miles to the south is a remarkable rock, named Ball's Pyramid, which has much the appearance of a steeple at a distance. The island is three miles and a half long, and very narrow. Long. 159. 0. E. Lat. 31. 36. N.

LOREDO, a town of Italy, in Polesino di Rovigo, seated on the Adige, 20 miles east of Rovigo. Long. 12. 50. E. Lat. 45. 5. N.

LOGUES, a populous town of France, in the department of Var, seated on the Argens, five miles west by south of Draguignan, and 360 south by east of Paris. Long. 6. 27. E. Lat. 43. 30. N.

LORRACH, or **LARACH**, a town of Suabia, in the margravate of Baden, six miles N.W. of Rheinfelden, and six N.E. of Balle.

LORRIS, a town of France, in the department of Loiret. It was the residence of Philip the Long, in 1377, and of other kings of France. It is 15 miles west by south of Montargis.

LOT, a river of France, which rises in the department of Lozere, and watering Mende and Cahors, enters the Garonne, below Agen. It begins to be navigable at Cahors.

Lot, a department of France, including the late province of Quercy. It takes its name from the river Lot. Cahors is the capital.

LOT AND GARONNE, a department of France, including part of the late province of Guienne. It is so called from two rivers. Agen is the capital.

LOTZIN, a town of Prussia, with a castle, situate on a canal, which joins the Angerburg and Leventin lakes, 36 miles S.E. of Konigsberg.

LOUANS, a small town of France, in the department of Saone and Loire, situate in a kind of island between the rivers Seilles, Salle, and Solnan, 18 miles S.E. of Chalons.

LOUDEAC, a town of France, in the department of the North Coast. Here is an iron forge and a manufacture of thread. It is 20 miles south of St. Brieux, and 27 S.S.E. of Guingamp. Long. 2. 40. W. Lat. 48. 11. N.

LOUDUN, a town of France, in the department of Vienne. It is remarkable for the tragical end of its rector, Urban Grandier, who, in 1634, was burnt alive for having caused certain Ursulin nuns to be possessed with devils! It is seated on a mountain, 30 miles N.W. of Poitiers, and 155 S.W. of Paris. Long. 0. 17. E. Lat. 47. 2. N.

LOUGHREA, a town of Ireland, in the county of Galway, near a lake of the same name, 15 miles S.W. of Galway.

LOVIGNANO, a town of Naples, in Otranto, 12 miles S.S.W. of Brindisi.

LOUISA, a town of Swedish Finland, with a fortress, on a bay of the gulf of Finland. The houses are all of wood, two stories high, and painted red.

LOUISBURGH, the capital of the island of Cape Breton. It was taken by the English in 1745, restored to the French in 1745, taken by the English in 1758, and ceded to them in 1763; since which the fortifications have been destroyed. It has an excellent harbour, near four leagues in circumference. Long. 59. 48. W. Lat. 45. 54. N.

LOUISVILLE, a town of the state of Georgia, in the county of Burke, seated on the north side of the Ogeechee, 50 miles S.W. of Augusta. Long. 82. 30. W. Lat. 32. 42. N.

LOUISVILLE, a town of Kentucky, in the county of Jefferson, seated on the Ohio; at its rapids, 95 miles S.W. of Lexington. Long. 86. 30. W. Lat. 38. 3. N.

LOUI-TCHEOU-FOU, a city of China, in the province of Quang-tong. Its territory is separated, by a narrow strait only, from the life of Hai-nan. It is 315 miles S.W. of Canton.

LOUITZ, a town of Great Poland, in the palatinate of Rava, 55 miles east of Gnesna. Long. 19. 0. E. Lat. 52. 26. N.

LOULE, a town of Portugal, in Algarva, with a castle. It is surrounded with antique walls, and seated on the river Loulé, near the sea, 10 miles north of Faro, and 15 west of Tavira. Long. 8. 1. W. Lat. 37. 18. N.

LOU-NGAN-FOU, a city of China, in the province of

Chan-fi, situate near the source of the Tfo-tsang-lo, and containing eight cities of the third class in its jurisdiction. It is 375 miles S.W. of Peking.

LOUNG, Loch, a great arm of the sea, in Argyleshire, which communicates, on the south, with the frith of Clyde.

LOURDE, a town of France, in the department of the Upper Pyrenées, with an ancient castle, seated on a rock, on the Gave de Pau, 10 miles N.W. of Bagneres. Long. 0. 5. W. Lat. 43. 8. N.

LOURICAL, a town of Portugal, in Estremadura, 12 miles south of Montemor-o-Velho.

LOUSE (*Encycl.*). Reference was erroneously made, in that article, to LICE. See PEDICULUS.

LOUVESTEIN, a fortress of the United Provinces, in Holland, on the west end of an island, called Bommel Waert. In this castle, the patriotic chiefs were imprisoned by Prince Maurice; whence that party has ever since been called the Louvestein party. It is 16 miles east of Dort. Long. 5. 13. E. Lat. 50. 40. N.

LOUIERS, a fortified town of France, in the department of Eure, with a considerable manufacture of fine cloths. It is seated on the Eure, in a fertile plain, 10 miles N. of Evreux, and 55 N.W. of Paris. Long. 1. 15. E. Lat. 49. 0. N.

LOUVO, a populous town of the kingdom of Siam, with a royal palace, 50 miles north of the city of Siam. Long. 100. 50. E. Lat. 15. 8. N.

LOUVRES, a town of France in the department of Seine and Oise, 12 miles north of Paris. Long. 2. 24. E. Lat. 49. 3. N.

LOWDORE, a fine cataract in Cumberland, on the east side of the lake of Derwent-water, in the vale of Keswick. It is formed by the rushing of the waters of Watanlath through an awful chafin made by the contiguity of two vast rocks; but it falls entirely in a dry season.

LOWENSTEIN, a town of Suabia, and capital of a county. It is 20 miles N.E. of Stutgard. Long. 9. 19. E. Lat. 49. 1. N.

LOWESTOFFE, a town in Suffolk, with a market on Wednesday. It is built on a cliff, the most easterly point of Great Britain; partakes with Yarmouth in the mackerel and herring fisheries; is much frequented for sea-bathing; and has a manufacture of coarse china. It is 10 miles south of Yarmouth, and 117 N.E. of London. Long. 1. 55. E. Lat. 52. 35. N.

LOWES-WATER, a lake in Cumberland, one mile long and a quarter of a mile broad. It is of no great depth, and without char; but it abounds with pike and perch. In opposition to all the other lakes, it has its course from north to south, and, under the lofty Mellbreak, falls into Cromack-water.

LOWICZ, a populous town of Poland, in the palatinate of Rava, with a strong fortress, seated on the Bzura, 21 miles south of Plockko, and 30 north of Rava. Long. 19. 29. E. Lat. 52. 24. N.

LOW-LAYTON, a village in Essex, six miles N.E. of London. Here several foundations, with Roman bricks, and coins, have been found near the manor-house; and some urns, with ashes in them, have been dug up in the church-yard, and other parts.

LOXA, a considerable town of Spain, in Granada, seated in a fertile country, on the river Xenil, 18 miles west of Granada. Long. 3. 52. W. Lat. 37. 15. N.

Loxa, a town of Peru, in the province of Quito, 200 miles E.N.E. of Paiza. Long. 77. 10. W. Lat. 4. 50. S.

LOYTZ, a town of Pomerania, in the county of Gutz-

kow, seated on the Pene, 10 miles above the city of Gutzkow.

LOZERE, a department of France, including the late province of Gevaudan. - It is a mountainous barren country, and receives its name from one of its principal mountains, Mende is the capital.

LU, a town of Italy, in Monterrat, eight miles south of Casal, and eight west of Alexandria.

LUARCA, a town of Spain, in Asturias, near the north coast, 30 miles N.W. of Oviedo.

LUBAN, a town of the Russian government of Livonia, 70 miles east of Riga. Long. 26. 36. E. Lat. 56. 55. N.

LUBANSKEN-SEA, or **LAKE OF LUBAN**, a lake in Livonia, toward the confines of Courland and Lithuania. The river Rositta falls into this lake.

LUBBEN, a town of Germany, in Lower Lusatia, capital of a district of the same name. It has several churches, with a noble hospital, and a landhouse, or a house where the diets assemble. It is seated on the Spree, 60 miles S.E. of Berlin. Long. 14. 25. E. Lat. 52. 0. N.

LUBEC, bishopric of, a small bishopric, in the duchy of Holstein. It has been enjoyed by protestant princes of the house of Holstein, ever since 1561, when Lutheranism was established here.

LUBEC, an island of the Indian Ocean. Long. 112. 22. E. Lat. 5. 50. S.

LUBOW, a town of Poland, in the palatinate of Cracow, 50 miles S.E. of Cracow. Long. 20. 36. E. Lat. 49. 36. N.

LUBZ, or **LUBITZ**, a town of Lower Saxony, in the duchy of Mecklenburgh, 23 miles S.S.W. of Guffrow.

LUC, a town of France, in the department of Var, 25 miles N.E. of Toulon. Long. 6. 25. E. Lat. 43. 28. N.

LUC, a town of France, in the department of liere, seated on the Drome, 32 miles south of Grenoble. Long. 5. 48. E. Lat. 44. 40. N.

LUCE, a great bay in Wigtonshire, lying to the east of the promontory, called the Mull of Galloway.

LUCENA, a town of Spain, in the province of Cordova, 29 miles S.S.E. of Cordova, and 40 N.W. of Granada. Long. 3. 50. W. Lat. 37. 28. N.

LUCERA, an ancient town of Naples, in Capitanata, with a bishop's see. The town is small but populous, and has a manufacture of cloth. It is 30 miles W.S.W. of Manfredonia, and 65 N.E. of Naples. Long. 15. 34. E. Lat. 41. 28. N.

LUCERNA, a town of Italy, in Piedmont, 15 miles S.W. of Turin. Long. 7. 38. E. Lat. 44. 52. N.

LUCHEIN, a town of Spain, in Valencia, 30 miles S. of the city of that name. Long. 0. 30. E. Lat. 38. 53. N.

LUCHO, a town of Lower Saxony, in the principality of Lauenburg, situate on the Jetze, 40 miles E.S.E. of Lauenburg, and 54 N.E. of Zell.

LUCHOWICE, a town of Lithuania, in the palatinate of Novogorodeck, 40 miles S.S.E. of Novogorodeck.

LUCIANA, a town of Spain, in the province of Seville, eight miles W.N.W. of Eoya.

LUCIANO, a town of Spain, in New Castile, 19 miles W. of Ciudad Real.

LUCIGNANO, a town of Italy, in Tuscany, 10 miles S. of Sienna. Long. 11. 11. E. Lat. 43. 0. N.

LUCITO, a town of Naples, in the Molise, 11 miles N.E. of Molise.

LUCKNOW, an ancient and extensive city of Hindoostan Proper, capital of Oude. It is meanly built; the houses are chiefly mud walls, covered with thatch; many are entirely of mats and bamboos, thatched with leaves of the cocconut, palm-tree, and sometimes with straw; and very few are

built with brick: the streets are crooked, narrow, and worse than most in India. In the dry season, the dust and heat are intolerable; in the rainy season, the mire is so deep, as to be scarcely passable; and there is a great number of elephants, belonging to the nabob and the great men of his court, which are continually passing the streets, either to the palace, or to the river, to the great danger and annoyance of the foot passenger, as well as the inferior class of shopkeepers. The comforts, convenience, or property of this class of people are, indeed, little attended to, either by the great men or their servants; the elephant itself being frequently known to be infinitely more attentive to them as he passes, and to children in particular. The palace of the nabob is seated on a high bank near the Goomty, and commands an extensive view both of that river and the country on the eastern side. Lucknow is 605 miles N.W. of Calcutta. Long. 81. 25. E. Lat. 26. 35. N.

LUCKO, a town of Poland, capital of Volhynia, with a citadel, and a bishop's see, seated on the Ster, 75 miles N.E. of Lemberg, and 175 S.E. of Warlaw. Long. 25. 39. E. Lat. 51. 13. N.

LUCO, a town of Naples, in Abruzzo Citeriore, seated on the W. bank of the lake Celano, nine miles S.S.W. of Celano.

LUCON, or **LUZON**, a town of France, in the department of Vendée, and late province of Poitou, and lately an episcopal see. It is seated in an unwholesome morass, 17 miles N. of Rochelle, and 50 S. of Nantes. Long. 1. 5. W. Lat. 46. 27. N.

LUCONIA, or **LUCON**, the chief of the Philippine Islands, in the N. Pacific Ocean, 400 miles in length, and 100 in breadth. It is not so hot as may be expected, because it is well watered by large lakes and rivers, and the periodical rains, which inundate all the plains. There are several volcanoes in the mountains, which occasion earthquakes; and a variety of hot baths. The produce of this island is wax, cotton, silk, wild cinnamon, sulphur, cocoa nuts, rice, gold, hories, buffaloes, and game. Philip II. of Spain, formed a scheme of planting a colony in the Philippine Islands, which had been neglected since the discovery of them by Magellan, in 1521. Manila, in this island, was the station chosen for the capital of the new establishment. Hence an active commercial intercourse began with the Chinese, a considerable number of whom settled in the Philippine Islands, under the Spanish protection. These supplied the colony so amply with all the valuable productions and manufactures of Asia, as enabled it to open a trade with America, by a direct course of navigation, the longest from land to land on the globe. This trade, at first, was carried on with Calao, on the coast of Peru; but it was afterward removed to Acapulco, on the coast of New Spain. From this port, annually fail one or two ships, which are permitted to carry out silver to the amount of 500,000 crowns, in return for which they bring back from Manila spices, drugs, China and Japan wares, calicoes, chintz, mullins, silks, &c. The inhabitants are a mixture of several nations, beside Spaniards; and they all produce a mixed breed distinct from any of the rest. The blacks have long hair, and good features; and there is one tribe, who prick their skins, and draw figures on them, as they do in most other countries where they go naked.

LUDENSCHEIDE, or **LUNSCHEDE**, a town of Westphalia, in the county of Mark. The principal trade is in manufactures of iron. In 1723 it was almost wholly destroyed by fire, since which it has been rebuilt with stone. It is 28 miles N.E. of Cologne. Long. 7. 20. E. Lat. 51. 11. N.

LUDERSBURG, a town of Lower Saxony, in the duchy of Lauenburg, seated on the Elbe, five miles above the town of Lauenburg.

LUDGERSHALL. See **LUGGERSHALL**.

LUDWIGSBURG, a town of Suabia, in the duchy of Wurttemberg, which manufactures cloth, damask linen, and marble paper. Here is a fine hunting feat belonging to the Duke of Wurttemberg, called La Favorita. It is five miles N.N.E. of Stutgard.

LUDWIGSBURG, a town of Upper Saxony, in Anterior Pomerania, five miles E.N.E. of Griefswalde.

LUDWIGSTADT, a town of Franconia, in the principality of Culmbach, 13 miles S. of Saalfeld.

LUGA, a town of Russia, in the government of Peterburg, situate on a river of the same name, 80 miles S. of Peterburg. Long. 29. 30. E. Lat. 51. 40. N.

LUGANO, a town of Switzerland, capital of a bailiwick of the same name, which is the principal of the four transalpine bailiwicks. It is built round a gentle curve of the lake of Lugano, and backed by an amphitheatre of hills. It is the emporium of the greatest part of the merchandise, which passes from Italy over the St. Gothard, or the Bernardin. It contains 8000 inhabitants; and on an eminence above the town, is the principal church, which has a delightful prospect from its terrace. Most of the houses are built of tuff-stone; and the residence of the governor is a low building, on the walls of which are the arms of 12 cantons to which this bailiwick is subject; for the canton of Appenzel has no jurisdiction over it. It is 17 miles N.W. of Como. Long. 8. 48. E. Lat. 45. 54. N.

LUGANO, a lake of Switzerland, on the Italian side of the Alps. It is 25 miles in length, and from two to four in breadth; its form is irregular, and bending into continual sinuities. It lies about 190 feet higher than the lakes of Como and Locarno.

LUGDE, or **LUDE**, a town of Westphalia, in the bishopric of Paderborn, situate on the Emmer, 24 miles N.N.E. of Paderborn. Long. 8. 39. E. Lat. 51. 49. N.

LUGO, an ancient city of Spain, in Galicia, with a bishop's see. There are springs in this city boiling hot. It is seated on the Minho, 32 miles S.E. of Mondonnedo, and 60 S.W. of Oviedo. Long. 8. 52. W. Lat. 42. 46. N.

LUNDEN, a town of Lower Saxony, in the duchy of Holstein, seated near the Eyder, 36 miles N.N.W. of Gluckstadt. Long. 9. 20. E. Lat. 54. 26. N.

LUNEL, a town of France, in the department of Gard, near the river Ridourle. It produces excellent Muscadine wine, and is 16 miles E. of Montpellier. Long. 4. 19. E. Lat. 43. 38. N.

LUNEN, a town of Westphalia, in the county of Marche, situate at the conflux of the Zesick and Lippe, 20 miles S.S.W. of Munster. Long. 7. 49. E. Lat. 50. 40. N.

LUNERA, a mountain of Italy, between Naples and Puzzoli. It contains much sulphur, and alum; and the springs that rise from it are excellent for curing wounds.

LUNEVILLE, a considerable town of France, in the department of Meurthe, with a castle, where the dukes of Lorraine formerly kept their court, as did afterward King Stanislaus. It is now converted into barracks. The church of the late regular canons is very handsome; and here Stanislaus founded a military school, a large library, and a fine hospital. It is seated in a plain, on the rivers Vezouze and Meurte, 12 miles S.E. of Nancy, and 62 W. of Strasbourg. Long. 6. 35. E. Lat. 48. 36. N.

LUPO GLAVO, a town of Austrian Istria, seated near the mountains of Vena, 15 miles W. of St. Veit.

LURE, a town of France, in the department of Upper Saone, remarkable only for a late abbey of Benedictines, converted, in 1764, into a chapter of noble canons. It is 30 miles N.E. of Besançon. Long. 6. 33. E. Lat. 47. 38. N.

Vol. X.

LURI, an ancient town of Corsica, between Cape Corie and the towns of Bastia and St. Fiorenza.

LUSIGNAN, a town of France, in the department of Vienna, seated on the Vonne, 15 miles S.S.W. of Poitiers, and 200 of Paris. Long. 0. 10. E. Lat. 46. 25. N.

LUSO, a river of Italy, which rises in the duchy of Urbino, crosses part of Romagna, and falls into the gulf of Venice, 10 miles W. of Rimini.

LUTANGE, a town of France, in the department of Moselle, eight miles S.E. of Thionville, and 11 N.N.E. of Metz. Long. 6. 19. E. Lat. 49. 11. N.

LUTKENBURG, a town of Germany, in the duchy of Holstein, seated near the Baltic, 13 miles from Ploen.

LUTON, a town in Bedfordshire, with a market on Monday, seated among hills, 18 miles S. of Bedford, and 31 N. by W. of London. Long. 0. 25. W. Lat. 52. 27. N.

LUTSCHINEN, a river of Switzerland, in the canton of Bern. It is formed by the junction of two streams; the Weiß Lutschinen, which flows through the valley of Lauterbrunn, and the Schwartz Lutschinen, which comes from the valley of Grindelwald. In a rainy season, the river forms a torrent, which rushes impetuously through the great masses of rock that obstruct its course, and, with inconceivable violence, forces from their beds the most enormous fragments. The road to Zwey Lutschinen and Lauterbrunn is over this roaring torrent, by a kind of bridge, which is fixed against the sides of rocks, that are almost in a leaning position. A huge vertical stone, raised in the middle of the river, supports some thick planks, so badly joined, as to be neither steady nor solid; and these form the wretched bridge, over which the inhabitants daily pass, with a firm step and undaunted eyes; a passage, which the traveller, unaccustomed to such strange communications, would tremble to attempt. Hence the Lutschinen flows till it falls into the lake of Brienz.

LUTTENBURG, a town of Germany, in the duchy of Stiria, seated on the Muehr, 34 miles S.E. of Gratz. Long. 16. 10. E. Lat. 46. 46. N.

LUTTER, a town of Lower Saxony, in the duchy of Brunswick, remarkable for a battle gained over the Austrians, by the Danes, in 1626. It is eight miles N.W. of Goslar, and 13 S.E. of Hildelheim. Long. 10. 25. E. Lat. 52. 4. N.

LUTTERBERG, a town of Lower Saxony, in the electorate of Hanover. It was formerly a county, and for a long time governed by lords of its own. It is 15 miles S. of Goslar. Long. 10. 40. E. Lat. 51. 45. N.

LUTTERWORTH, a town in Leicestershire, with a market on Thursday, and a large handsome church, with a fine lofty steeple. Here Wickliffe, the first reformer, was rector, who died in 1385; but was dug up and burnt for a heretic 40 years after. Lutterworth is seated on the river Swift, 14 miles S. of Leicester, and 88 N.N.W. of London. Long. 1. 10. W. Lat. 52. 26. N.

LUTZENSTEIN, a town of France, in the department of Lower Rhine, with a strong castle, seated on a mountain, 30 miles N.W. of Strasbourg. Long. 7. 17. E. Lat. 48. 55. N.

LUXEUIL, a town of France, in the department of Upper Saone, remarkable for its mineral waters. From the number of urns, medals, and inscriptions, found here, it is supposed to have been a considerable place in the time of the Romans. It was destroyed by Atilla in 450. Near the town was a late celebrated abbey, founded by St. Columban, an Irishman. It is seated at the foot of the Voiges, 15 miles W. of Vesoul. Long. 6. 24. E. Lat. 47. 50. N.

LUZARCHES, a town of France, in the department of Seine and Oise, 15 miles N. of Paris. Long. 2. 19. E. Lat. 49. 7. N.

10 G

LUZERNE, a county of Pennsylvania, 86 miles long and 61 broad. In 1790, it contained 4,904 inhabitants. Wilkesborough is the capital.

LUZZANA, a town of Italy, in the Mantuan, 22 miles S. of Mantua; Long. 10. 48. E. Lat. 44. 50. N.

LUZZARA, a strong town of Italy, on the confines of the Duchies of Mantua and Guastalla, near the confluence of the Crostolo with the Po. Here a battle was fought between the French and Spaniards, in 1702, when each side claimed the victory. It is 10 miles S. of Mantua. Long. 10. 50. E. Lat. 45. 0. N.

LUZZI, a town of Naples, in Calabria Citeriore, near the river Craté, three miles S. of Bisignano.

LYCHAM, a town in Norfolk, whose market is dispersed. It is 24 miles W. by N. of Norwich, and 92 N.N.E. of London.

LYDSING, a village in Kent, near Gravesend. Here 600 young Normans, who came over with Alfred and Edward, the sons of Ethelred, after the death of Canute, to take possession of their father's throne, were massacred by Godwin, earl of Kent.

LYESSE, a town of France, in the department of the North, 15 miles E. of Landrecy. Long. 4. 10. E. Lat. 50. 6. N.

LYGE, a town of Norway, near a lake of the same name, 16 miles N.W. of Christianfand.

LYGUM, a town of Denmark, in the duchy of Sleswick, 14 miles W. of Apenrade.

LYING-IN CHARITIES, a kind of useful institutions, which, happily for the female poor, have multiplied greatly of late years, in the most populous districts of the united kingdom. The establishments which go by this name differ from the Lying-in Hospitals very essentially, and in fact confer greater benefits on the indigent at a smaller expence to the subscribers. One important and distinguishing feature in them, which marks them with a decided preference is, that poor women are not under the necessity of leaving their families, but have charitable aid administered to them at their own homes, where their presence cannot but be of great use in keeping an eye on their small domestic concerns, which might suffer materially during an absence of some weeks at an hospital.

The following extract from an account of a charity, for assisting the female poor, at the period of their lying-in, with *child-bed linen*, &c. is published in the Reports of the Society for bettering the Condition of the Poor, and may serve as a sufficient model for similar Institutions:

Fifteen sets of child-bed linen and clothes are distributed in parcels at Stowe, Wotton, Buckingham, and Aylesbury, in the county of Buckingham, and at Gosfield Hall in Essex, under the care of persons at those places, who receive applications and enquire into the characters of the persons applying. The sets are lent out for a fortnight, three weeks, or a month, according to circumstances, and consist of the fol-

lowing articles each;—three sheets, two blankets, one leather sheet, two bed-gowns, two night-caps, three bed shifts, three children's caps, three children's shirts, one cotton wrapper, one flannel wrapper, and a sufficient quantity of small articles.

The woman, who has the use of any set, is allowed to retain a cap, a shirt, and some flannel for the child: the rest are returned clean, and five shillings allowed her for washing them; which, as that is generally done by the kindness of her neighbours, is so far an additional charity to her.—During her confinement, broth and beer caudle, are occasionally sent her, and medical aid in particular cases.

This charity was instituted by the Marchioness of Buckingham about ten years ago.—The benefit of it has been accepted by the poor in the most grateful manner; and there occurs no instance of its having been abused, by their damaging or purloining any of the articles. Almost every article is spun, woven, and made up, at the schools for poor children, which have been of late years established at Stowe, Wotton, and Gosfield; and, when made of coarse materials, which will answer the purpose, need not cost more than 30s. a set. The annual expence of keeping them up may be about 10s. a set.

The advantage of this charity is, that it affords the poor, at a small expence, much more relief and comfort than they could provide for themselves with the same sum, even if they possessed it: for one set of articles may, in the course of a year, serve a dozen families successively, who either might not have the means of purchasing them, or, if they had, would be obliged to buy them merely for temporary use, and then to sell them again to disadvantage. Besides this there is a saving in the purchase of the articles by wholesale, and an advantage in thus furnishing work for a village school. Though what has been done, in this instance, is at the expence of one person, it is quite as well suited to be established by a subscription, and conducted by a committee of subscribers. This charity has been administered many years, at Audley End, in Essex; and has also been adopted, on a smaller scale, in some other places. Aid is also given to females during their lying-in by some of the Benefit Societies for women. See FEMALE BENEFIT SOCIETIES, *Supp.*

LYNDHURST, a village in Hants, with a seat which belongs to the Duke of Gloucester, as lord warden of the New Forest. It is seven miles N. of Lymington.

LYNN, a town of Massachusetts, with a considerable manufacture of women's silk and cloth shoes. It is nine miles N.E. of Boston. Long. 70. 55. W. Lat. 42. 33. N.

LYSE, a town of Norway, eight miles S.S.W. of Bergen.

LYSEKIL, a sea-port of Sweden, in West Gothland, 16 miles W. of Uddevalla.

LYSOBYKI, a town of Poland in the palatinate of Lublin, 20 miles N.N.W. of Lublin. Long. 22. 40. E. Lat. 51. 29. N.

M.

MABRA, a town of the kingdom of Algiers, seated on the gulf of Bona, W. of the town of Bona.

MACEDONIA, a province of Turkey in Europe, bounded on the N. by Servia and Bulgaria, on the E. by Romania and the Archipelago, on the S. by Livadia, and on the W. by that country and Albania. Salonichi is the capital.

MACERATA, a town of Naples, in Terra di Lavoro, four miles S. of Capua.

MACHECOUL, a town of France, in the department of Lower Loire, situated on the Tenu, 20 miles S.W. of Nantes. Long. 1. 11. W. Lat. 47. 2. N.

MACHERRY, a town of Hindoostan Proper, in the country of Mewat, 70 miles S.S.W. of Delhi.

MACHIA, a town of Naples, in the Molise, 12 miles S.W. of Molise.

MACHICAGO, a promontory of Spain, in the Bay of Biscay. Long. 3. 0. W. Lat. 43. 37. N.

MACKERAN, a province of Persia, bounded on the N. by Segestan and Sablestan, on the E. by Hindoostan Proper, on the S. by the Arabian Sea, and on the W. by Kerman. It is tributary to the sultan of Candahar, and the capital, of the same name, is 100 miles N. W. of Tatta. Long. 66. 0. E. Lat. 26. 0. N.

MACOCO, or **ANZICO**, a kingdom of Africa, to the E. of Congo, and S. of the equator. The Portuguese trade with the inhabitants for slaves, elephants' teeth, and copper.

MACON, or **MASCON**, an ancient town of France, in the department of Saone and Loire, and lately a bishop's see. It is remarkable for good wine, and seated on the declivity of a hill, near the Saone, 35 miles N. of Lyons, and 88 S.E. of Paris.

MACPHERSON (James), a Scotch writer of some celebrity, was born in 1738. His first work, and that which brought him mostly into notice, was a translation of poems attributed by him to Ossian. These poems, certainly possess great beauty; but after they had been published some time, their authenticity was doubted by Dr. Johnson and other writers, while they were as vigorously defended by some men of genius, the principal of whom was Dr. Blair. Mr. Macpherson was greatly irritated at Dr. Johnson's remarks, and wrote him a threatening letter, which the doctor answered in the most indignant terms. In 1773 Mr. Macpherson published a Translation of the Iliad into heroic prose, but it sunk into contempt. In 1775 Mr. Macpherson published *The History of Great Britain from the Restoration to the Accession of the House of Hanover*, in two volumes 4to.; a work in our opinion of great merit, though by one party it has been industriously, and, we are sorry to add, too successfully, decried. As an historian, our author could not indeed boast the attic elegance of a Robertson, the splendor of a Gibbon, or the philosophical profundity of a Hume; but his *style*, though it has sometimes been the avowed, was not the real, cause of the coldness with which his history was received. The writer of this sketch once saw a gentleman of rank, and of the whig interest, turn over one of Macpherson's volumes, and heard him say, upon shutting the book: "I cannot bear that work." He was asked if he thought the narrative false; and he replied, "No! It is too true; but I cannot bear it, because it gives me a bad opinion of those great men to whom I have been accustomed to look back with reverence as to the saviours of my country."

The author, however, acted with great fairness; as, together with the history, he published the proofs upon which

his facts were founded, in two quarto volumes, entitled, *Original Papers, containing the Secret History of Great Britain, from the Restoration to the Accession of the House of Hanover; to which are prefixed, Extracts from the Life of James II. as written by himself*. These papers were chiefly collected by Mr. Carte, but are not all of equal authority.

Soon after this period, the tide of fortune flowed very rapidly in Mr. Macpherson's favour, and his talents and industry were amply sufficient to avail himself of every favourable circumstance which arose. The resistance of the Colonies called for the aid of a ready writer to combat the arguments of the Americans, and to give force to the reasons which influenced the conduct of government, and he was selected for the purpose. Among other things, he wrote a pamphlet, which was circulated with much industry, entitled, *The Rights of Great Britain asserted against the Claims of the Colonies; being an Answer to the Declaration of the General Congress*, 8vo. 1776, and of which many editions were published. He also was the author of *A Short History of Opposition during the last Session of Parliament*, 8vo. 1779; a pamphlet which, on account of its merit, was by many ascribed to Mr. Gibbon.

But a more lucrative employment was conferred on him about this time. He was appointed agent to the nabob of Arcot, and in that capacity exerted his talents in several appeals to the public in behalf of his client. Among others, he published, *Letters from Mahommud Ali Cban, Nabob of Arcot, to the Court of Directors; to which is annexed, a State of Facts relative to Tanjore, with an Appendix of Original Papers*, 4to. 1777; and he was supposed to be the author of *The History and Management of the East-India Company from its Origin in 1600 to the present Times*, vol. I. containing the affairs of the Carnatic, in which the rights of the Nabob are explained, and the injustice of the Company proved, 4to. 1779.

In his capacity of agent to the nabob, it was probably thought requisite that he should have a seat in the British Parliament. He was accordingly, in 1780, chosen member for Camelford; but we do not recollect that he ever attempted to speak in the House. He was also re-chosen in 1784 and 1790.

He had purchased, we think before the year 1790, an estate in the parish in which he was born; and changing its name from *Retz* to *Belville*, built on it a large and elegant mansion, commanding a very romantic and picturesque view; and thither he retired, when his health began to fail, in expectation of receiving benefit from the change of air. He continued, however, to decline; and after lingering some time, died at his seat at Belville, in Inverness, on the 17th of February, 1796. He appears to have died in very opulent circumstances; and by his will, dated June 1793, gave various annuities and legacies to several persons to a great amount. His remains were afterwards taken from the place where he died, and buried in the Poets' Corner of Westminster church.

MACRES, a river of Africa, which crosses the kingdom of Tripoli, and falls into the Mediterranean, a little to the E. of Lebeda.

MACRI, an ancient town of Samos, in the Archipelago.

MACRO, or **MACROMISI**, an island of the Archipelago, near the coast of Livadia, 20 miles E. of Athens. Long. 24. 16. E. Lat. 37. 30. N.

MACZUA, a small island on the Red Sea, near the coast of Abex.

MADIA, or **MAGGIA**, a town, river, valley, and bailiwick

of Switzerland, in Upper Valais. The valley is long and narrow, between high mountains, watered throughout its whole length by the river; and it is the fourth transalpine ballivice. The town is 10 miles N.W. of Locarno.

MADRE DE DIOS, an island in the S. Pacific Ocean, near the coast of Patagonia, 180 miles in circumference. Long. 42. o. W. Lat. 51. o. N.

MADRID, New, a city, now building, or to be built, in a new Spanish settlement, in Louisiana, on the Mississippi, opposite the mouth of the Ohio. The settlers are to enjoy a free toleration in religion. Long. 89. 50. W. Lat. 30. 36. N.

MADRIGAL, a town of Spain, in Old Castile, seated in a plain, fertile in excellent wine, 10 miles N.E. of Medina-del-Campo. Long. 4. 19. W. Lat. 41. 25. N.

MADRIGAL, a town of Terra Firma, in the province of Popayan. Long. 75. 45. W. Lat. o. 50. N.

MADRISIO, a town of Italy, in Friuli, lately belonging to the state of Venice, 30 miles N. of Venice.

MADROGAM, the capital of Monomotapa, with a spacious royal palace. The upper part of the houses is in the shape of a bell. Long. 31. 40. E. Lat. 18. o. N.

MADURA, a town of the Carnatic, capital of a province of the same name, on the coast of Coromandel. It is 130 miles N. by E. of Cape Comorin, and 300 S.S.W. of Madras. Long. 78. 12. E. Lat. 9. 55. N.

MADURA, the capital of an island of the same name, in the Indian Ocean, situate to the N. of the E. end of the island of Java. Long. 112. 49. E. Lat. 9. 50. N.

MAELER, a lake of Sweden, between the provinces of Westmania and Sudermania. It contains several fine islands, is usually frozen during a few weeks in winter, and opens an easy communication, by sledges, between the interior parts of Sweden and the city of Stockholm.

MAERNA, a town of Germany, in the county of Tyrol, 23 miles W.S.W. of Trent.

MAESLANDSLUYS, a town of the United Provinces, in Holland, five miles S.W. of Delft. Long. 4. 18. E. Lat. 51. 57. N.

MAESYCK, a town in the bishopric of Liege, on the river Maese, eight miles S.W. of Ruremoe.

MAFFRA, a town of Portugal, in Estremadura, near which, in a sandy and barren place, King John V. erected a building of extraordinary magnificence. This was done in pursuance of a vow, made in a dangerous fit of illness, to found a convent for the use of the poorest friary in the kingdom. Upon enquiry, this poorest of convents was found at Maffra, where twelve Franciscans lived together in a hut. The king procured from Rome the design of a building far exceeding the Ecclurial. It is five miles N.W. of Lisbon.

MAGGEROE, a large island, near the coast of Norway, said to be the most northern land in Europe. Long. 25. o. E. Lat. 72. o. N.

MAGGIORE, or LOCARNO, a lake of Italy, partly in the duchy of Milan, and partly in the country of the Grisons. It is 35 miles long and six broad.

MAGHERAFELT, a town of Ireland, in the county of Londonderry, considerable for its linen manufactures, 13 miles W. of Antim, and 30 S.E. of Londonderry.

MAGLIANO, a small but populous town of Italy, in the territory of the pope, and district of Sabina, seated on a mountain, near the river Tiber, 30 miles S.W. of Spoleto, and 50 N. of Rome. Long. 12. 35. E. Lat. 42. 25. N.

MAGNAVACCA, a town of Italy, in the Ferrarese, with a fort, seated at the mouth of the lake of Comacchio, in the gulf of Venice, 18 miles N. of Ravenna. Long. 12. 4. E. Lat. 44. 52. N.

MAGNY, a town of France, in the department of Seine and Oise, 32 miles N.W. of Paris. Long. 1. 54. E. Lat. 49. 10. N.

MAGRA, a river of Italy, which rises in the Appennines, in the valley of Magra, washes Pont-Remoli and Sarzana, below which it falls into the Mediterranean.

MAËRA, a valley in the duchy of Tuscany, 27 miles long and 15 broad.

MAGUELONE, a lake of France, in the department of Herault, near a town of the same name, which is seated on the coast of the Mediterranean, into which the lake enters by a canal, the beginning of the famous canal of Languedoc.

MAHALEU, a town of Egypt, capital of Garbia. It carries on a considerable trade in linen, cottons, and sal-ammoniac; and the inhabitants have ovens to hatch chickens. Long. 30. 31. E. Lat. 31. 30. N.

MAHANUDDY, or MAHANADY, a river of Hindoostan, which rises in the N.W. part of Berar, and falls by several mouths into the bay of Bengal, at Cattach. These mouths form an assemblage of low woody islands; and at the mouth of the principal channel, near Falie Point, is a fortified island, named Cajung or Conjung.

MAHMUDPOUR, a town of Hindoostan Proper, in Bengal, 80 miles N.E. of Calcutta, and 84 S.E. of Moorhedabad.

MAHOMDY, a town of Hindoostan Proper, in the country of Oude, 70 miles N.W. of Lucknow, and 150 E.S.E. of Delhi. Long. 80. 32. E. Lat. 27. 54. N.

MAIDA, a town of Naples, in Calabria Ulteriore, nine miles W.N.W. of Squillace.

MAILLEZAIS, a town of France, in the department of Vendée, seated in an island formed by the Seure and Autize, 22 miles N.E. of Rochelle, and 210 S.W. of Paris. Long. o. 40. W. Lat. 46. 27. N.

MAIN, a district of Massachusetts, 300 miles long and 104 broad; bounded on the N.W. by the high lands, which separate the rivers that fall into the St. Lawrence, and those that fall into the Atlantic; on the east by the river St. Croix, and a line drawn due north from its source to the said high lands, which divides this territory from Nova Scotia; on the S.E. by the Atlantic; and on the west by New Hampshire. It is divided into three counties. The heat in summer is intense, and the cold in winter extreme: all the lakes and rivers are usually passable on ice, from Christmas till the middle of March. Portland is the capital.

MAINA, a country of Turkey in Europe, in the Morea, according to tradition, derives its name from the Greek word *Mania*, signifying *rage* or *fury*, and intended to express the ardor with which those people fought against the Turks. That tract of territory, though rough with rocks and mountains, contains a population of about forty-five thousand souls. It reckons three hundred and sixty villages, of which Vitulo is the most considerable.

Its principal productions are wheat, barley, and lupines, which are each year grown in rotation, so as never to let the land lie uncultivated. Here, as every-where else, agriculture is the mother of the principal domestic resources. It is not attended with great difficulty in Maina, in consequence of the great population, and the proximity of the villages. The labours of the plough are performed by oxen: the crops are not abundant; but the deficiency of corn is compensated by a prodigious quantity of oil, and by the produce of the silk-worm.

The lands of Maina, like its inhabitants, are unacquainted with rest. They annually yield their produce, without the aid of manure, except such as they derive from the natural deposits of the cattle, which remain constantly in the fields, as there are no fables in the country. Besides, the soil is dotted with little rocks which prevent the waters from washing away the mould; and the rain, being stopped by those rocks, deposits around them a kind of mud, which probably contributes to the fertility of the land.

No vineyards are seen in Maina. It is not that the soil is

tinist for the cultivation of the grape; for there are parts of it well adapted for the propagation of the vine; but the Mainots give the preference to Ceres over Bacchus. They can very well dispense with wine, they say, but not with corn. Besides, they can easily procure grapes and wine from any other part of the Morea.

The Mainots are equally unacquainted with extreme poverty and great opulence. During the summer, they imitate the ant, and carefully lay up for winter a sufficient store of provisions of prime necessity. The inhabitants of Cape Matapan are alone destitute of that advantage: their territory being less fertile than the other parts of the district of Maina, numbers of them go in the harvest season to work in the Morea, and thus procure supplies of wheat and barley for the whole year.

Since the fall of the Greek empire, the Mainots have ever considered courage as the virtue which was the most necessary to them for the preservation of their liberty. Their bodily exercises give them agility; and their temperance renders them robust. Having neither tribunals nor judges, they have acquired the habit of personally avenging themselves for every kind of injury. To pardon an outrage is deemed the conduct of a coward: to punish it, is frequently to kindle the flames of war between the families of the parties: but even this kind of family hostilities is advantageous to them, inasmuch as it inures them to martial toils.

Their economy constitutes their wealth. Equally sparing of their time and their money, they have sufficient dependence on each other's word, to supersede the necessity of binding themselves by written agreement. Neither notaries nor lawyers are to be found among them: all their engagements are made verbally, but are not on that account the less faithfully observed.

At Maina, nothing is more sacred than the honour of the fair sex. To deceive a woman is accounted an act of baseness; an outrage offered to her is, in the eyes of her family, a stain which cannot be washed out except in blood. The women, it is true; shew in the first instance a proper respect for themselves. The conduct of the mothers is the best lesson for their daughters. They seldom go abroad from their houses, and then on family business alone. Accustomed to labour, they neither experience the irksome *ennui* of our polite circles, nor are exposed to the dangers of our public places, nor frequent balls, where every thing is masked, except debauchery. Accordingly they are safe from those dark intrigues in which virtue too often falls a sacrifice. It is not that their hearts are proof against the shafts of love, or that the young men view them with the eyes of indifference; but both sexes are equally attentive to preserve their moral and physical powers for the purpose of more effectually securing their liberty.

All the inhabitants of the same village live together like children of the same family: they mutually lend to each whatever is necessary, and take pleasure in relieving each other's wants. If any one of them, burthened with a numerous family, is reduced to distress, the priests or principal inhabitants of the place make for him a collection without naming him, and cause it to be privately conveyed to his hands.

Hospitality is the favourite virtue of the Mainots. Does a hapless victim of Turkish cruelty come to them from any other part of the Morea in quest of an asylum? he is received with all the attention due to misfortune and to friendship: he

is provided with lodging, food, raiment, every thing. If they do not observe the same conduct toward foreigners, it is because the Mainots are afraid of feeling corruption introduced among them. To insure himself a good reception, a foreigner must come recommended by some person who is well known to the inhabitants, or bring with him the means of supplying all his wants until his demeanour have gained him respect, and he have learned in some measure to speak the language of the country. His character once established, he is thenceforward treated as if he were a native Mainot.

In no other part of the globe is so great affection and friendship seen to reign among relatives as in Maina. The glory of a noble deed, or the disgrace of an act of baseness, reflects on the whole kindred. Each family regards its seniors as its guides. Is there question of a marriage, or of any other important undertaking? The old men are consulted before a single step be taken in the business.

There is no corporal punishment for theft; but the deprecator is obliged to make seven-fold reparation. His crime is never expiated by the penalty of death: for "all the wealth in the world," say the Mainots, "is not equal in value to the life of a man." Indeed, what is stolen among them is of no great moment: it is only fruits or garden produce. The most effectual check upon persons who might be inclined to thievery, is the sentence of excommunication pronounced against them by the priest at mass.

The Mainots profess the Christian religion according to the rites and tenets of the Eastern church, which acknowledges for its chief the patriarch of Constantinople. They scrupulously observe the commandments of their church, which have been handed down to them without innovation. They consider the head of the Roman church as a schismatic, on account of the changes introduced into the Romish religion: changes, in consequence of which it is no longer recognisable. In particular, they cannot pardon the popes for having forbidden married men to exercise the ecclesiastic functions, and having sold indulgences which were pretended to possess the virtue of releasing souls from purgatory.

In Maina there is a bishop, residing at Vitulo, but who has neither salary nor house. He lodges in a little convent with a small number of monks, where he lives on the fruit of his personal labour, and the produce of his masses, for each of which he receives a stated price, amounting to four times the sum paid for a mass said by a common priest. The priests are in general married, and obliged to work for their subsistence, having no other income than the casual fees arising from the exercise of their functions. The custom of paying to the church either tithes or any other stated contribution, is equally unknown to the Mainots as to the rest of the Greeks.

It rarely happens that the priests accompany their masses with sermons; they supply the place of the latter by their exemplary lives. Their modesty, their mildness, their simplicity, gain for them the unbounded confidence of the people, whom they inspire with equal attachment to their religion as to their native country. Hence that axiom, common to all the Greeks, "Fight for your religion and country"—an axiom so scrupulously respected at Maina, that the priests are ever among the foremost in flying to arms for the defence of the country, and that they never take up arms except in her cause.

In the Greek churches* there is but a single altar; at that

* Different in this respect from the Romish churches; the latter containing numerous altars, at each of which, numerous masses are each day said. In the *ci-devant* cathedral of *Notre Dame*, at Paris, not a single minute elapsed, between the hours of six in the morning and twelve at noon, without the appearance of a priest passing or repassing, between the vestry and some

altar no more than one, mass can be celebrated on the same day; and the celebration usually takes place only on Saturdays and Sundays. On those days, therefore, and on the festivals, not an individual is to be seen in the villages during the hour of divine service, all the inhabitants being at church. At Maina there is no parochial rector: if there happen to be several priests in one village, each in rotation exercises his functions during a week; whence he is, for the time being, called the hebdomadary.—At church, the wives of the priests hold the foremost rank among the women.

When a Mainot woman is on the verge of puerperal labour, a midwife is called in, together with some of the female relatives or neighbours, who prepare every thing necessary for the occasion. The woman places herself upright in the arms of her husband, who also holds himself in a standing position, but with his back leaning against the bed, that he may have more strength. Nothing can be better calculated to facilitate the delivery than that posture. The midwife attends for no other purpose than that of receiving the infant; her skill extending no further than to encourage the patient by her discourse. If the child presents itself in a wrong direction, the mother is laid on a sheet, and rocked to and fro until that inconvenience be remedied.

As soon as the infant is come into the world, the midwife handles all his limbs, puts them into proper shape, carefully forms the nipples of the breast, and sprinkles the babe from head to foot with finely powdered salt. After the expiration of three days she washes him with a tepid decoction of aromatic plants, which preserves him from all eruption either in the head or in any other part of the body. When the child is swathed, he is sprinkled, particularly on the joints, with fine powder of myrtle-leaves.—With respect to the lying-in woman, she is bound beneath with a girdle, and supplied with a bowl of good broth.

The birth of a son is announced by a musket-shot fired by the father. At that signal, all his male relatives and friends testify their joy by a discharge of their fire-arms. During the first eight days from her delivery, the mother is visited by her female relatives, who bring her presents of food suited to her condition. So long as she keeps her bed, she takes the best of nourishment, and drinks nothing but wine, being expressly prohibited to use water. Hence she acquires an abundance of milk.

Every mother suckles her own child; and, if a mother happen to die, each of her female neighbours is eager to supply, toward the orphan, the place not only of a nurse but also of a mother. The babe receives baptism and confirmation together. The priest takes a small bit of wax from each of the two candles used at the ceremony, cuts, on four sides, some hairs from the child's head, fastens them to the wax, and, together with it, throws them into the water in which he has been baptised.

The cradle used in Maina proves the simple and natural genius of the people. It is made of a sheep-skin well tanned, and dyed with any colour, according to the fancy of the maker. It is three feet in length: its breadth at the head is three feet and half, at the foot only two. To each side is fastened a stick, having at each end a ring, through which passes a cord. The child's head rests on a pillow, which prevents the sticks from meeting, and thus leaves a free access to the air. At home, the mother hangs the cradle from a nail fastened in the wall. Whenever she goes abroad, she slings it over her shoulder, and carries it as a soldier carries his car-

touch-box. Nothing is more common than to see a Mainot woman returning from the fields with a faggot of wood on her back, and, on top of the faggot, her child in its cradle; the whole burthen so well adjusted, that she has her hands at liberty to spin cotton as she walks along.

The male child continues till the age of seven years under the direction of his mother. She carefully instils into him a love for his country, respect for old age, discretion, fidelity to his friends, and, above all things, hospitality to the poor and the stranger.—After the expiration of the seven years, the father takes charge of his son's education, teaches him to read and write, accustoms him to agricultural labours for the purpose of strengthening his limbs, trains him to the handling of arms until he becomes capable of participating the exercises of youth, which consist in wrestling, lifting a weight and placing it on his shoulders, hurling stones of a certain size, leaping, and swimming.

The daughters are left to the care of the mother, who trains them to the labours of the household. Their principal instruction has for its objects the spinning of cotton, and the rearing of silk-worms. Each woman has her loom in the house, and can weave cotton and silk stuffs, which serve for the raiment of both sexes. The girls, constantly employed under the inspection of their mother, never think of the sports and amusements suited to their age. It is only on holidays that they are allowed to quit the house, for the purpose of going to church, and to the dances, which are held only in the public market-places, and by day:—there is no dancing by night.

At Maina the young men are robust; and though, at the age of eighteen, their bodies are hardened by laborious exercises, they do not, however, marry till five-and-twenty. That age is deemed necessary for the procreation of well-constituted children. Till that period their chief desire is to signalise their prowess in combat; and they find frequent opportunities of gratifying their wishes in that respect. There never comes a new pacha to the Morea, who is not ambitious to announce his arrival by an attack on the Mainots. These, on the other hand, are all up in arms in an instant. The young men are the foremost in falling forth to meet the enemy. The only recompense which they covet is the approbation of the fair sex. Nothing is more efficacious to fire their courage than encomiums from the lips of young heroines, who are ever ready to partake their dangers. Accordingly, notwithstanding the enormous superiority of the Ottoman force, the Mainots continue unsubdued.

Their gunpowder is excellent. Each man prepares it in his own family. This is one of the principal occupations of the young men. They take care, in the first instance, to reduce the saltpetre, the sulphur, and the charcoal, separately, to fine powder in wooden mortars; after which they blend the ingredients together, and work them to a proper consistency. There are some spots of land in Maina which produce saltpetre in abundance; but the inhabitants are unacquainted with the art of extracting it.

If the Mainots have preserved their innocence and their liberty, they are indebted for the enjoyment of those blessings to the care with which they have retained that austerity of manners which characterised their progenitors. Even in the age of infancy they breathe the pure air of virtue: in years of adolescence they triumph over the allurements of libertinism. Their parents are aware, that, in adding a new member to society, they have done no more than acquit themselves

one of the many altars. And as many of those gentlemen could expedite their masses in fifteen or twenty minutes, the reader may judge what a number were said at each altar, and what sums were paid for that commodity, even at a shilling per mass, which was the very lowest and poorest price.

of a debt which they owed to it: they know that they have a more important duty to fulfil—that of directing the first affections of their children, and as it were the first pulsations of their hearts, until they have taken their bent toward wedlock.

In Maine those intrigues are unknown, which elsewhere serve as an introduction to the conjugal union, and which frequently prove favourable to love at the expense of matrimony. So soon as a young man has made the choice of a partner, he communicates the matter to his kindred, who then apply to hers, and ask of them her hand in marriage: nor do the latter hesitate to grant the request, if they approve the young man. The girl is next made acquainted with the choice of her future husband, which she sanctions by her silence. Not having before laid her heart open to love, this first object presented to her becomes the sole possessor of her entire affection for the remainder of her life.

That affection is increased by an obstacle which is not known in any other country. From the moment when the marriage has been decreed, the young man is expressly prohibited from entering the abode of his intended bride, or even speaking to her, until the marriage have taken place. If he should happen to transgress that prohibition, the spousal contract would be broken. This privation tends to fan the soft flame in the bosoms of the young betrothed, and adds a new stimulus to their desire of seeing themselves bound in the hymeneal chain.

The wedding-day being arrived, the relatives of the party assemble—those of the bride in her dwelling, where they remain—the others in the abode of the bridegroom, whence they set out with him, to go to the house of his betrothed wife. The young man presenting himself at the door, one of her kindred stops him, and asks what is the object of his visit.

"My promised bride," he replies, "that I may go and be married to her according to the established forms."

"Have you sufficient means to support the partner whom you desire?"

"Would her family have consented to give her to me, if I had not the ability to maintain her?"

Immediately the girl's father is called, and informed that his future son-in-law is at the door. The father advances to the youth, and salutes him in these terms—"Welcome, my son-in-law! May God grant thee happy days, peace and concord with thy partner, and every thing that thy heart desires!" So saying, he embraces him.

After the father, comes the brothers of the bride, who hail the youth with the same prayer, make him a present in money proportioned to their faculties, and, having embraced him, deposit their offering in the hands of a female appointed to receive it; for which office the bridegroom's sister or cousin is always chosen.

The brothers are succeeded by the male relatives, who each in turn present similar gifts, and in like manner embrace him. After them, come the females, preceded by the bride's mother and sisters.

The salutations and embraces which they bestow are accompanied by presents of a different nature; each of them places a handkerchief on the bridegroom's shoulders, where the sisters it to remain.

This ceremony concluded, a little boy, brother or cousin-german to the bride, and not above six years old, takes the young man by the hand, and conducts him to the apartment which contains his destined wife. The betrothed pair salute each other, and remain together with the relatives of the bride. Immediately those of the bridegroom being introduced, both parties unite, divert themselves, eat some dried fruits, drink, and sing hymns suited to the occasion. After about an hour spent in this manner, the whole company walk

forth; which is generally done at the setting-in of night. Foremost advance the relatives of the bridegroom, at whose side marches the bridegroom, appointed to the office of exchanging the rings and chaplets. Next follows the bride, attended by all the females.

In this order the procession arrives at the church, in the middle of which rises an altar erected for the occasion, and displaying a cross surrounded by six candles. The priest, arrayed in his ceremonial robes, assigns their stations to the young couple, placing the bride to the right of the bridegroom. Near to them stands the bridegroom and a young woman, who is attentive to wipe the perspired moisture from their faces with a white handkerchief.

The priest alternately asks the youthful votaries of hymen whether they be satisfied to unite with each other according to the rules prescribed by the church. Having received their several answers in the affirmative, he bestows on them his benediction; and taking their right hands, puts them together, saying—"These hearts, which God has united, let no man disunite." He then blesses the two rings, and places one on the fourth finger of the right hand of each of the parties, saying, "God's faithful servant *AB* is united with God's faithful handmaid *CD*;" after which he turns to the altar, and blesses the chaplets, which are composed of vine-twigs ornamented with branches of lemon-tree and laurel.

During this time, the bridegroom exchanges the rings three times, finally leaving the ring of each party on the finger of the other. The priest now takes the chaplets, which he places on the heads of the new-married pair, saying, as he crowns the bridegroom, "I crown God's faithful servant *AB*, in uniting him with God's faithful hand-maid *CD*," and repeating a similar formula as he places the garland on the head of the bride: after which ceremony he wishes them a life of peace. The garlands being exchanged in the same manner as the rings, he directs the young couple to take from the same glass a morsel of bread and a few drops of wine: finally he walks forward with the bride and bridegroom, leads them three times round the altar, conducts them back to their former station, bestows on them a new benediction, and thus terminates the functions of his ministry.

The company retire from the church in the same order as they had repaired to it, firing musket and pistol-shots. While the new-married pair proceed along the streets, the women, from the windows, sprinkle the ground before their steps with wheat and millet, symbolic of fecundity. The procession returns amid the sounds of musical instruments, to the bridegroom's dwelling, which the bride cannot enter with her attendant until she have answered the same questions at the door as had been put to him when he presented himself for admission into her abode. Here also a little child is employed to introduce her into the house of her husband. On her entrance, her mother-in-law, having disrobed her of her veil, conducts her into an apartment, where she seats her on a cushion placed upon a sack of flour. By her side stands another sack full of nuts, almonds, and other dry fruits, which she distributes to the relatives who successively approach and wish her every kind of prosperity.

The bridegroom's mother takes her station at the window, whence she throws fruits, and sometimes money, to those persons who have followed the hymeneal train without invitation. The bride, having finished her distribution, is conducted to the hall where the wedding-feast is prepared. The remainder of the evening is spent at table; the night is devoted to dancing; and—what will no doubt be considered as the most singular circumstance in the whole business—the new-married pair are, by the traditionary usage handed down from their ancestors, debarred from all opportunity of *à-la-à-la* interview during this night.

Three days after the marriage, and it is always on a Wednesday, the bridegroom, accompanied by his bride, and preceded by a boy of the age of seven years, repairs to the house of his father-in-law, where he dines—having, however, taken care to bring with him every thing necessary for the meal. When they are preparing to return home, the mother presents her daughter with a distaff and spindle, emblems of the kind of occupation for which she is destined. The husband is presented with agricultural implements, which he accepts. Mutual embraces being exchanged, the new-married pair retire, and pass eight days without attending to any domestic business.

In the evening of the seventh day, the nearest relatives of the husband invite the kindred of both families to escort the young couple to church on the morrow, and to re-conduct them to the house of the husband's father-in-law. They all attend the summons: after having saluted the bride and bridegroom, they sing and dance until the moment of their departure for the church.

During that interval, the young man's father presents the father of the young woman with bread, cheese, wine, and other provisions, such as almonds, nuts, and figs, in sufficient quantity to supply a breakfast for the whole company.

After the celebration of divine service, the party go to the house of the bride's family, where the same kind of distribution is made as had taken place on the wedding-night. They dine, they dance, they sing. After dinner, the husband receives from his father-in-law his wife's portion, consisting of clothes and furniture, of which an inventory is drawn up, and signed by both parties. If perchance the woman die without issue, the marriage-portion is punctually restored to her family; on the other hand, if the husband happens so to die, his realty enjoys his property during her widowhood. No law-suit ever occurs on these occasions: any difficulty arising relative to such matters is immediately removed by the decision of arbitrators, whose judgment admits of no appeal.

The Mainots have a particular mode of dress for the marriage ceremony. The bridegroom wears on his head a small close-fitting red cap, from the top of which depends a silken tassel. His vest is scarlet, having all the seams covered with twist of the same colour; it has no collar, and is edged round with three rows of similar twist: its sleeves are open as far as the middle of the fore-arm. His jacket is of the same stuff: it is open in the fore part, and, from the neck to the bottom, is ornamented with five rows of gold or silk twist: a sixth serves, on the left side, to furnish loops, and on the right, to fasten twenty-four small round buttons, which lie close to each other. The vest and jacket are both fashioned to a point in front. The breeches are very wide, and defend six inches below the knee. He wears no stockings: his shoes are fastened with silken strings ascending half way up the leg, and are bordered before and behind with an edging to prevent the strings from hurting the foot.

The bride wears a veil of white gauze, two yards in length, which goes round the upper part of her head, passes under her chin, and falls behind, hanging down as low as her mid-leg. It is fastened on each side of the head with a pin. This veil is ornamented with fringes of the same stuff. Under it she wears a bonnet of scarlet cloth or of silk. From her ears hang two pendants of curious workmanship. Her under garment is of silk, without sleeves, and has three edgings, one red at the bottom, another of white lace, at a small distance above the former, and a third, blue or yellow, at equal distance from the second. Her breast is bound with an elegant girdle. Over the inner garment she wears an ample scarlet robe with very wide sleeves. Her shoes are flat, and she has no stockings.

Divorce is allowed at Maina, but that indulgence is rarely

used. A separation seldom takes place, except in consequence of a notorious incompatibility of dispositions in the married pair, or of the husband's continuing seven years absent without sending any intelligence to his wife. No legal process is necessary: no expence is incurred: the parties simply present themselves before the bishop, who, after having ascertained the fact, pronounces their separation, and declares them at liberty to form new engagements. If there be any children from their union, they remain with the father.

At Maina there are no school-masters, in the proper acceptance of the term. It is by the priests that the children are taught to read and write: which two acquisitions constitute nearly all the knowledge possessed by the teachers themselves. They however form the heart at the same time that they instruct the mind. Their morality consists much less in precept than in good example.

The best policy of the Mainots is, that they are totally unacquainted with what we call policy. Justice is their guide, and jealous vigilance their safeguard. They are strangers to the art of printing, that art which enables designing impostors to deceive millions of men at once. They have scarcely any books, and exclusively devote their attention to agriculture, fishing, hunting, and practising with the weapons of war. Their martial exercises are considered as an object of prime importance. Hence it is common to see a boy running from school, and a priest from the altar, to oppose the enemy.

The Mainots have not among them either surgeons, or physicians, or apothecaries. To the purity of the air they breathe, and more especially to their temperate mode of life, they are indebted for the preservation of their health. Their blood is not tainted with maladies imported from foreign lands. Fevers, indeed, of the putrid and intermittent classes, are not unknown in the country; but these prevail only on the frontier, toward Monenbassa, where low lands and marshes abound.

During the period of a continuous fever, the patient is surrounded by his relatives, who are attentive to afford him every aid which their knowledge or experience can suggest. They do not administer to him any internal medicines, through an apprehension of counteracting nature in her crisis, but suffer the disease to take its natural course. If the sick person have lost his appetite, they present him no food: but if he have retained an inclination to eat, they give him such aliment, of the lighter kinds, as he prefers; thus endeavouring to support his strength. Hence he frequently recovers.

It is from long experience that the Mainots have learned to distinguish the critical days in violent diseases. They then employ diet-drinks and gentle medicines internal and external, calculated to facilitate a perfect crisis. By the application of external medicaments they remove accidental pains, such as head-ach, nephritic colic, stitch in the side.

At Maina the physicians of the soul have also the additional advantage of acting as physicians for the body. A priest is stationed near the sick person, having one hand placed on his forehead, and holding in the other a book, from which he continually reads prayers with a loud voice, until he have procured him some relief. He sometimes passes whole nights thus exorcising the fever.—The recovery of a patient is a triumph for religion, since the superstitious credulity of those good folks never fails to attribute the cure to the efficacy of the holy man's prayers.

Every Mainot acts as surgeon in his own family. They have learned by routine how to apply the first dressings, and to follow up the process by the use of medicaments suited to determine the suppuration. In cases of gun-shot wounds, they successively employ detensive and cicatrizing applications, which are usually derived from plants. For wounds from

edged weapons, when there is no loss of substance, they content themselves with the aid of decorative plants, to prevent suppuration; by which method they speedily cure them. With respect to luxations and fractures, there are particular men at Maina who are noted for their skill in treating them; and these are called in on such occasions.

The Mainots are not so rashly hasty in drawing blood from sick persons, as people are in those countries which are subject to the despotism of medicine. Before they have recourse to that operation, the relatives, and particularly the old men, assemble, consult the great book of experience, examine whether, under a similar malady, phlebotomy has proved beneficial or injurious, and conformable to the result of their examination, adopt or reject the expedient. The Mainots are almost universally expert in opening a vein.

None of the nation has ever yet attempted to establish a public pharmacy. Each individual possesses one at home, or carries it as it were in his head. They have a number of remedies generally adopted as specifics for certain complaints. They pursue an equally singular and efficacious mode of treating fevers arising from a vitiated state of the humours; they apply to them the leaves of a detestive plant, adding, every four-and-twenty hours, a new leaf, without removing the former, or doing more than gently to press the fore with the hand, for the purpose of squeezing out the purulent matter by the sides. That matter becoming each day thicker, because also, in our faculty phrase, more "*laudable*," and, when the fore is cicatrised, the leaves are dried by the heat of the flesh, and detach themselves from the part on being gently rubbed.

When a Mainot has expired his last breath, his decease is announced by the lamentations of all around him. He is enwrapped in a sheet, and placed in the middle of the house, under a white coverlet, with his face exposed. The near relatives of the female sex, their cheeks bedewed with the drops of sorrow, and their hair dishevelled, stand round the corse, singing mournful airs so tenderly affecting as to call forth sympathetic tears from all who are present. The male relatives or friends who come to the mournful scene, so soon as they have reached the threshold of the door, pronounce three times, in conformity to a very ancient custom, the words, "Brother! ah! sweet brother!" To these lamentations they generally add questions analogous to the connections which had existed between them and the defunct.—The widow, after having given a loose rein to her grief, rehearses all the good qualities of her deceased husband. She pours forth in extemporaneous poetry the most pathetic speeches, suited to the melancholy occasion.

When the priests are come, attended by almost the entire population of the village, the wailings and tears are redoubled at the moment when the dead body is placed in the coffin; but, when the funeral procession has commenced its march, they cease. The priests advance singing, in front; the men follow the coffin; and the woman close the rear.

After their arrival at the church, when the clergyman in the course of the funeral-service pronounces the words "Friends and brethren! weep my separation!" the nearest relatives of the deceased walk successively in pairs, one on each side of the coffin, with their faces turned toward the altar, and, bowing in adoration, respectfully kiss the image of Christ on his breast, and then his forehead. The interment being concluded, the company all return to the house of the defunct, testify their regret, and retire.

As ancient custom hath forbidden the lighting of any fire in the house of a deceased person, on the day of his death, each of the relatives and friends carries from home a ready-cooked dish to go and dine with the family of the defunct.

The men first take their repast, seated on the floor or carpets, before a cloth which covers the whole length of the hall. At the head sit the priests, next to them the old men, and after these the others in the order of seniority. This custom of assigning the places according to age is so regularly observed at Maina, that no confusion ever takes place in that respect. On beginning the meal, at the first morsel which they are preparing to eat, each of the company successively exclaims, "God have mercy on his soul, and grant him a place among the just!" After the men have dined, the women come and take their places in the same order. The visitors invite the near relatives of the deceased to take some food, and in the most affectionate language endeavour to console them. The whole company remain with them till dark: as soon as night has commenced, each of them embraces the family, and retires.

All the Mainot women wear trimmings at the bottom of their petticoats or gowns. Widows are known by the want of these, which they cannot replace until married again.

If a widow is burdened with children, her relatives and friends choose a holiday to cultivate her lands, but not without having previously obtained the bishop's permission for that purpose. A single day is sufficient for sowing her field, or gathering in her harvest.

MAINBURG, a town of Bavaria, situate on the Ambs, 18 miles S.E. of Ingolstadt, and 32 N.N.E. of Munich. Long. 11. 21. E. Lat. 48. 40. N.

MAINEVILLE, a town of France, in the department of Eure, 24 miles S.E. of Rouen. Long. 1. 26. E. Lat. 49. 20. N.

MAINLAND, the principal of the Shetland Isles, 60 miles long, but its breadth seldom exceeds six. The face of the country exhibits a prospect of black craggy mountains, and marshy plains, interspersed with some verdant spots, which appear smooth and fertile. Neither tree nor shrub is to be seen, except the juniper and the heath. The mountains abound with various kinds of game. Lofly cliffs, impending over the ocean, are the haunts of eagles, falcons, and ravens. The deep caverns underneath shelter seals and otters; and to the winding bays resort swans, geese, scarfs, and other aquatic birds. The seas abound with cod, turbot, and haddock; and, at certain seasons, with shoals of herrings of incredible extent. They are visited, at the same time, by whales, and other voracious fishes. Lobsters, oysters, mussels, &c. are also plentiful. The hills are covered with sheep of a small breed; the horses are also of a diminutive size, but remarkably strong and handsome, and are well known by the name of Shelties, from the name of the country. The rivulets and lakes abound with salmon, trout, &c. A mine of copper, and one of iron, near the fourth extremity of the island, are said to be extremely productive. There is an inexhaustible store of peat, but no coal. Lerwick is the capital.

MAINLAND, or POMONA, the principal of the Orkney Islands, 24 miles long and nine broad. The general appearance of the country is not very different from the Mainland of Shetland. The soil, however, is more fertile, and in some parts better cultivated. Kirkwall is the capital. See ORKADES.

MAINTENON, a town of France, in the department of Eure and Loire, with a castle, a late collegiate church, and a late priory. It is seated between two mountains, on the river Eure, five miles N. by E. of Chartres. Long. 1. 36. E. Lat. 48. 31. N.

MAINUNGEN, a town of Franconia, capital of a small district belonging to the house of Saxe-Gotha. It is eight miles N. of Henneberg. Long. 10. 39. E. Lat. 50. 46. N.

MAISY, a town of France, in the department of Calvados, five miles N. of Ifigni, and 27 W.N.W. of Caen. Long. 1. 2. W. Lat. 49. 24. N.

MAIXANT, Sr. an ancient town of France, in the department of Two Sevres. It had lately a Benedictine abbey, and is one of the new bishoprics created since the revolution of 1789. It carries on a trade in corn, stockings, and woollen stuffs; and is seated on the Sevre, 26 miles S.W. of Poitiers. Long. 0. 7. W. Lat. 46. 24. N.

MAIZE, or **INDIAN CORN** (see *ZEAL*); when properly cooked, a most excellent article of human sustenance, happily introduced into Britain during the late scarcity. To be thoroughly acquainted with this valuable grain, and the means of making its use general among the poor, it is necessary to consult Count Rumford's *Essays*, vol. I. See also the article *CORN*, *Supp.*

MAKAREV, a town of Russia, in the government of Niznei Novogorod, situate on the Volga, 24 miles E.N.E. of Niznei Novogorod. Long. 44. 46. E. Lat. 56. 25. N.

MAKARIEF, or **MAKAREU**, a town of Russia, in the government of Kostrom. It is the capital of the province of Unzha, and situate on the river Unzha, 80 miles east of Kostrom. Long. 44. 14. E. Lat. 58. 50. N.

MAKOONDA, a town of Hindoostan Proper, in the country of Allahabad, 66 miles S. of Allahabad, and 110 N.N.E. Gurrab. Long. 84. 37. E. Lat. 24. 33. N.

MALAMOCCO, a small island and town in the Lagoon of Venice, five miles south of Venice.

MALATHIA, an ancient town of Turkey in Asia, capital of Lesser Armenia, seated on the Arzu, with an archbishop's see. Long. 43. 25. E. Lat. 39. 8. N.

MALCHIN, a town of Lower Saxony, in the duchy of Mecklenburg, seated on the river Peene, where it falls into the lake Camrow, 10 miles N. of Wahren. Long. 13. 12. E. Lat. 53. 0. N.

MALDEN, a village in Surrey, two miles S.E. of Kingston. Here are some gunpowder mills, on the stream that flows from Ewel to Kingston.

MALESHERBES, a town of France, in the department of Loiret; 11 miles N.E. of Pluviers. Long. 2. 6. E. Lat. 48. 20. N.

MALESTROIT, a town of France, in the department of Morbihan, seated on the Oust, 37 miles E. of Port l'Orient. Long. 2. 23. W. Lat. 47. 45. N.

MALIO, **CAPE**, or **ST. ANGELO**, a cape of the Morea, at the fourth entrance of the gulf of Napoli, 15 miles E. of Malvasia.

MALKAR, a town of the Deccan of Hindoostan, in the country of Golconda, 22 miles S.E. of Calberga, and 54 W. of Hydrabad. Long. 77. 36. E. Lat. 17. 12. N.

MALLEVILLE, a town of France, in the department of Lower Loire, 15 miles N.W. of Nantes.

MALLING, **WEST**, a town in Kent, with a market on Saturday, 6x miles W. of Maidstone, and 30 E. by S. of London. Long. 0. 33. E. Lat. 51. 20. N.

MALMEDY, a town of the Netherlands, in the bishopric of Liege, with an abbey. It was taken by the French in 1794. It is seated on the Recht, nine miles S. of Limburg. Long. 6. 2. E. Lat. 50. 18. N.

MALMISTRA, an ancient town of Natolia, with an archbishop's see; seated at the mouth of a river of the same name, which divides it into the Old and New town. It is 30 miles S.E. of Teraflo. Long. 36. 15. E. Lat. 36. 50. N.

MALMOE, a sea-port of Sweden, in the province of Schonen, with a large harbour and a strong citadel. It is

seated on the Sound, 15 miles S.E. of Copenhagen. Long. 13. 7. E. Lat. 53. 38. N.

MALMSAS, a town of Sweden, in the province of Sudermania, 23 miles W.N.W. of Nikoping.

MALORIA, a small island of Italy, on the coast of Tuscany, 10 miles W. of Leghorn. Long. 10. 4. E. Lat. 43. 34. N.

MALPARTIDO, a town of Spain, in Estramadura, 14 miles S. of Placentia. Long. 5. 30. W. Lat. 39. 36. N.

MALSESENA, a town of Italy, in the Veronese, 13 miles N.N.W. of Verona.

MALT-KILN. Under the article *KILN* we have given an account of the improved construction of malt-kilns. We here present the reader with the description of a Malt and Corn Kiln invented by Mr. Joseph Coppinger, of Harbour View, near Cove, Ireland, which was communicated by him to the editors of the *Repertory of Arts*, &c.

"The enclosed plan of a malt and corn kiln," says Mr. Coppinger, "for which I have been favoured with the thanks of the Bath Society, at a general meeting, held in September last, is particularly adapted to the use of farmers, who, in wet seasons, often lose quantities of grain for want of such convenience. The advantages it appears to me to possess above the kiln now in common use are many; *first*, it may be erected for one-tenth of the expence, if you take in the value of the separate buildings which are now almost invariably allotted for this purpose. *Secondly*, any kind of fuel may be used without prejudice to the malt or corn to be dried in it. *Thirdly*, the heat (by the construction of the flues) will be more regularly and evenly distributed without any waste, as at present. *Fourthly*, the health of the people attending will not, as at present, be exposed to certain injury, by always breathing and sleeping in heated and unwholesome atmospheres, as their beds will be placed in a shed on the outside of the building. This, in my mind, is the most important part of the plan, and highly worthy the attention of every humane and considerate employer in this way. *Fifthly*, this construction of a kiln may be erected on a loft or ground floor. If in the latter situation, sufficient elevation should be given the fire-place, so as not to impede the draught. These are the principal advantages that occur to me. If the experience of others confirm them, I shall be highly gratified.

In Plate 34: A, shews the main walls. B, the flues. C, the chimneys; in each of which may be placed a metal damper, to regulate the heat. It is recommended, in the case of a new building, to carry up the flues of the chimneys in the thickness of the walls. In a house already built, they may be carried up either inside or outside the building. D, the fire-place, which may be divided, or in one, just as desired; by which the half or the whole may be heated.

"Kiln tiles, eighteen inches square, and two inches thick in the solid, with a lapping of half an inch broad and one inch deep quite round the edge of each tile, are proposed for covering the flues, which, if fairly cast, may be laid dry, without mortar. If it should be difficult, or too expensive, to procure tiles of eighteen inches, nine inches can be made to answer. The flues are proposed to be divided by a brick, on edge, so as that every eighteen-inch tile will cover two flues. The breadth of the flues may be six inches and a half, and ten inches high. This proportion, it is hoped, will be found to answer in most cases; but it may be varied according to the better judgment of the party erecting. The sides and bottoms of the flues should be plastered. The platform of this kiln should, in all cases, be well rammed with earth, and made perfectly level before laying out the flues."

Iron grate doors are intended to be hung on hinges, in a

reefs, at the mouth of each flue, to prevent them being choked with large pieces of cinder, or other substances. It is proposed that these doors should shut and open at pleasure, as may be found necessary.

MALTA, MELITA, or CITTA VECCHIA, an ancient and strongly fortified city of the island of Malta. It is the residence of the bishop, and the cathedral is a very fine structure. Near this city are the catacombs, which are said to extend 15 miles under ground; and a small church, dedicated to St. Paul, adjoining to which is a statue of the saint, with a viper in his hand, said to be placed on the spot where he shook the viper off, without having been hurt; and close to it is the grotto in which he was imprisoned. Malta is seated on a hill in the centre of the island, and was formerly twice as large as at present; for the new city, Valetta, being more conveniently situate, has drawn away the greater number of its inhabitants.

MALTOY, a town of the Decan of Hindoostan, in the country of Berar, 58 miles N.W. of Nagpore.

MALVASIA, a small island of Turkey in Europe, on the east coast of the Morea, remarkable for its rich wine, called Malmsey. The capital is Napoli-di-Malvasia.

MALUNG, a town of Sweden, in the province of Dalecarlia, 55 miles W. of Fahlun. Long. 15. 20. E. Lat. 60. 30. N.

MALWA, a province of Hindoostan Proper, bounded on the W. by Guzerat, on the N. by Agimere, on the E. by Allahabad and Orissa, and on the S. by Candia. It is one of the most extensive, elevated, and diversified tracts in Hindoostan; and is divided among the chiefs of the Poonah Mahrattas. Ougein and Indore are the principal towns.

MALZIEU, a town of France, in the department of Lotzere, 20 miles N.N.W. of Mende.

MAMARS, an ancient town of France, in the department of Sarthe, seated on the Dive, 14 miles W. of Belleme. Long. o. 16. E. Lat. 48. 22. N.

MANACHIA, or MAGNISA, the ancient Magnesia, a town of Natolia Proper, with a bishop's see, and a castle. It was formerly the capital of the Ottoman empire, and is seated at the foot of a mountain, on the river Sarabat, 22 miles N. of Smyrna. Long. 27. 25. E. Lat. 38. 45. N.

MANAR, an island of the East Indies, on the east coast of the island of Ceylon. The Portuguese got possession of it in 1560; the Dutch took it from them in 1658; and the English took it from the Dutch in 1795. Long. 80. 45. E. Lat. 9. o. N.

MANATOULIN, a chain of islands on the N. side of Lake Huron, in N. America, extending about 100 miles in length and eight in breadth. The name signifies a Place of Spirits; and they are held sacred by the Indians.

MANBED, a town of Persia, in the province of Irak, 150 miles E.S.E. of Ispahan.

MANBOBE, the capital of the kingdom of Sabia, situate on the sea-coast, at the entrance of the channel of Mosambique. Long. 32. 19. E. Lat. 20. 55. N.

MANCHESTER, a village in Warwickshire, near Atherstone and the river Anker. It was a Roman station on the Watling-street, and here several coins have been dug up.

MANCHE, or CHANNEL, a department of France, including part of the late province of Normandy. It is almost surrounded by the English Channel, and Coutances is the capital.

MANCHESTER, a town of Virginia, on James River, opposite to Richmond, with which it is connected by a bridge.

MANCIET, a town of France, in the department of

Gers, 17 miles S.W. of Condom. Long. o. 5. W. Lat. 43. 38. N.

MANDAL, a sea-port of Norway, in the province of Christiansand, at the mouth of a river of the same name, 19 miles W.S.W. of Christiansand. Long. 7. 42. E. Lat. 58. 2. N.

MANDRIA, a small desert island, in the Archipelago, between Samos and Langos. It gives name to the sea near it.

MANGALORE, a sea-port of Canara, on the coast of Malabar, with an excellent road for ships. It is inhabited by Gentoos and Mahometans. The former, on their festival days, carry their idols in triumph, placed in a waggon, adorned on all sides with flowers; and on the wheels are several sharp crooked iron hooks, upon which the mad devotees throw themselves, and are crushed to pieces. It is a place of great trade, and the Portuguese have a factory here for rice, and a large church frequented by black converts. The adjoining fields bear two crops of corn in a year; and the higher grounds produce pepper, betel-nuts, sandal-wood, iron, and steel. It is seated on a rising ground, 100 miles N. by W. of Tellicherry. Long. 75. 24. E. Lat. 13. 8. N.

MANGANESE (*Encycl.*). The following remarks on the decomposition of the sulphate of iron and copper by means of the natural calx of manganese, by Mr. Fischer, of Berlin, appears in Scherer's Chemical Journal.

"Accident," says the author, "led me to these experiments. I had, for a different purpose, let a solution of sulphate of iron, to which I had added two parts of calx of manganese and half a part of muriate of natron, to one part of the crystallised salt of iron, stand for several days in a moderate temperature. After the mixture had stood for this space of time, I found it considerably tinged with a reddish yellow colour, and a considerable quantity of calx of iron had separated itself in a completely oxydized state. My first idea was, that it had acquired oxygen from the calx of manganese, in consequence of which it had been separated in an insoluble form. However, upon adding a quantity of carbonate of lime to the liquid, a precipitate was formed, which might almost have been mistaken for a pure calx of iron; but, upon a more accurate examination, it was found to consist, for the greater part, of imperfect calx of manganese, and a small quantity of a perfect calx of iron. This unexpected phenomenon induced me to make the following experiments.

"One part of the vitriol of iron of commerce, containing copper, which had also been employed in the first case, with two parts of natural calx of manganese, and half a part of muriate of natron, were exposed in a glass retort to a red heat. An extremely small quantity of muriatic acid gas was extricated. After the extrication of gas had ceased, the retort was cooled and broken, and the mass that had been melted together was boiled out with hot distilled water. The residuum was found to be calx of copper, iron, and magnesia; but the filtrated fluid, on the contrary, which was perfectly colourless, contained no calx of iron, as appeared by proving it with the solution of prussiate of kali, for a precipitate of a light red colour was formed, which was completely dissolved by the addition of more water. It therefore contained pure calx of manganese, partly combined with sulphuric acid, but for the greater part with muriatic acid, besides which the solution contained sulphate of natron.

"These carbonates of kali and natron precipitated from this solution a perfectly white carbonated calx of manganese, which, however, in the course of time assumed a brownish yellow colour. Carbonate of ammonia added to the fluid produced also the same effects.

"I became doubtful whether the calx of manganese, thus obtained, was entirely free from iron, as it appeared to become coloured by the contact of the air, which might easily proceed from the presence of iron; however, I found, when the alkali was not added in excessive quantity, but in such proportion as not to be able to precipitate the whole of the calx of manganese, that the precipitate, after having been adulcerated and dried, retained its white colour without alteration.

"I am much inclined to account for the first appearance, by supposing a complete oxydation of the calx of manganese, which perhaps obtained oxygen from the superabundant addition of alkali; for that the alkalies really contain oxygen, seems to me to be proved by various facts, amongst which I also reckon the great change which siliceous earths undergo in being heated with the alkalies.

"I further mixed one part of pure sulphate of iron with four parts of calx of manganese, and exposed this mixture, for the space of half an hour, to a strong red heat. A portion of the sulphuric acid was, by this means, volatilized, but that which remained was found, after boiling out the torrefied pulverulent mass, to be combined with calx of manganese, completely free from iron, in which the prussiate of kali produced a clean, light red, and easily soluble precipitate. The undissolved residuum was perfect calx of iron and manganese.

"Sulphate of copper, in the same proportion with calx of manganese, and treated in the same manner, afforded the same results. The residuum contained calx of copper, undecomposed calx of manganese, and, in the latter, always an admixture of calx of iron.

"Possibly these experiments may procure us the advantage of being able to exhibit the calx of manganese free from iron, in an extremely cheap manner, and to employ it as a cheap and agreeable glass-flux for earthen-ware and china.

"By the method first mentioned, the sulphate of iron is never completely decomposed by the calx of manganese; for, by constant boiling for four hours, and afterwards digesting for twelve days, I could effect no complete separation of the iron; though, after this treatment, it is contained in the solution as completely oxydized iron. I have found, by repeated experiments upon this subject, that the decomposition may be completely effected in the dry way, by the application of a red heat for the space of fifteen minutes."

MANGEEA, an island in the South Pacific Ocean, five leagues in circumference. In the interior parts it rises into small hills, and Captain Cook represents it as a fine island; but the hostile appearance of its inhabitants obliged him to leave it soon. Long. 158. 16. W. Lat. 21. 27. S.

MANGLE, a valuable domestic machine, employed for the purpose of smoothing such linen as cannot be conveniently ironed.

Various patents have been granted for improvements in this machinery: but, as they are not expired, and too complicated to be understood without very tedious details, we have annexed the figure in Pl. 35, representing an improved mangle contrived by Mr. Jee, of Rotterdam; to whom the Society for the Encouragement of Arts, &c. in 1798, voted their silver medal, for the ingenuity displayed on that occasion.

The following is a description of Mr. Jee's improved mangle:

A, points out the great wheel, which, in machines of a full size, is 15 inches in diameter. B, the arbor, on which the nut, C, is fixed. D, the handle of the wheel. E, the crank, 21 inches in length. F, the rod of the crank. G, G, represents the hollow studs, by which the ends of the bed are lifted up. H, H, the levers. I, I, I, the four pulleys fixed on the moveable bed K. L, L, the ends of the rollers.

Fig. 2, represents a front view of one of the hollow studs G, to shew its form, when standing at the end of the bed; and into which the levers enter alternately, as often as it becomes necessary to elevate the bed, in order to put in, or take out, the rollers.

Mr. Jee's mangle is so constructed, that the handle requires to be turned one way only, in consequence of which the machine moves with greater facility, and with incomparably less injury to the linen, than by varying the turnings, and in a manner cutting the different folds. Besides, it possesses the great advantage, that a woman and one boy are sufficient to work it, and can perform as much labour in the same period of time, as three or four persons with mangles of the common construction.

MANGUSHLAK, a town of Turcomania, on the east coast of the Caspian Sea. Its commerce is considerable; the neighbouring Tartars bringing thither the productions of their own country, and even of Bokharia, such as cotton, yarn, fluffs, furs, skins, and rhubarb. It is 37 miles S.W. of Astracan. Long. 48. 20. E. Lat. 44. 45. N.

MANHARTZBERG, the northern part of Lower Austria, separated from the southern by the river Danube, and bounded on the west by Upper Austria, on the north by Bohemia and Moravia, and on the east by Hungary.

MANICA, or CHICANGA, an inland kingdom of Africa, bounded on the north by Monomatapa, on the east by Sofala and Sabia, and on the south and west by unknown regions. It is said to abound with mines of gold, and to have a great number of elephants; but it is little known to the Europeans.

MANICKDURG, a town of the Deccan of Hindoostan, in the country of Berar, five miles S.E. of Chanda.

MANICKPOUR, a town of Hindoostan Proper, in the country of Oude, 30 miles N.W. of Allahabad, and 68 S.S.E. of Lucknow. Long. 81. 45. E. Lat. 37. 26. N.

MANIEL, a mountain of St. Domingo, 20 miles in circumference, and so high and craggy, that it is almost inaccessible.

MANNINGTREE, a town in Essex, with a market on Tuesday; seated on the river Stour, which is here called Manningtree-water, 11 miles W. of Harwich, and 60 E.N.E. of London. Long. 1. 12. E. Lat. 52. 0. N.

MANOSQUE, a populous town of France, in the department of the Lower Alps, with a castle. It is seated on the Durance, 10 miles S. of Forcalquier, and 350 S. by E. of Paris. Long. 5. 55. E. Lat. 43. 51. N.

MANPURRY, a town of Hindoostan Proper, in the country of Doab, 54 miles E. of Agra. Long. 77. 40. E. Lat. 27. 5. N.

MANRESA, an ancient town of Spain, in Catalonia, seated at the confluence of the Cardenero and Llobregat, 15 miles S.E. of Cardona, and 20 N.W. of Barcelona. Long. 1. 56. E. Lat. 41. 36. N.

MANSAROAR, a lake of Thibet, from which the southernmost head of the Ganges is supposed to issue. It is 115 miles in circumference, and lies about 79° E. long. and 34° N. lat.

MANSILLA, a town of Spain, in Leon, 15 miles S.W. of the city of Leon. Long. 4. 55. W. Lat. 42. 30. N.

MANSOURA, a town of Egypt, which has a considerable trade in rice and sal-ammoniac. Here are likewise vast chicken ovens. It is seated on the east side of the Nile, 24 miles S.S.W. of Damietta, and 60 N. of Cairo. Long. 31. 36. E. Lat. 31. 10. N.

MANSURA, a town of Turkey in Asia, in Trac Arabia, situate on the Euphrates, where it is joined by a branch of the Tigris, 110 miles W.N.W. of Bassora.

MANTCHEW TARTARS, a branch of the Mogul Tartars, whose ancestors conquered China in the 13th century, but were expelled by the Chinese in 1368. They inhabit the three departments of east Chinese Tartary, called Lea tong, Kirin, and Teiticar. They retain the customs they brought from China.

MAOUNA, one of the Navigators Islands, in the South Pacific Ocean. Here, in 1787, M. de la Pérouse, commander of the French ships the *Bouffole* and *Astrolabe*, met with his first fatal accident; M. de Langle, captain of the *Astrolabe*, with 11 officers and sailors, being massacred by the natives. Long. 169. o. W. Lat. 14. 19. S.

MARAGAL, a town of Persia, in the province of Aderbeizan, 42 miles south of Tauris. Long. 47. 52. E. Lat. 37. 36. N.

MARANS, a town of France, in the department of Lower Charente. The inhabitants carry on a considerable trade in falt, malt, corn, and meal. It is situate in the midst of falt marshes, 12 miles N.N.E. of Rochelle, and 21 west of Niort. Long. 1. 5. W. Lat. 46. 18. N.

MARANT, or **AMARANT**, a town of Persia, in the province of Adirbeizan, containing 2500 houses, each with a garden, situate near a river, and watered by canals. Cochineal is found in the neighbourhood. The inhabitants say that Noah was buried here. It is 50 miles north of Tauris. Long. 47. 46. E. Lat. 39. 7. N.

MARASCH, a populous town of Natolia, encompassed by the mountains of Taurus and Anti-taurus, and the river Euphrates. Long. 38. 25. E. Lat. 38. 15. N.

MARAWINA, a river of Guiana, which separates Surinam from the French colony of Cayenne. It is noted for a curious pebble, known by the name of the Marawina diamond; which, when polished, is often set in rings, &c. It falls into the Atlantic in long. 53. 48. W. Lat. 5. 58. N.

MARBACH, a town of Suabia, in the duchy of Wirtemberg, seated on the Neckar. It was burnt by the French in 1693. It is 12 miles south of Hailbron, and 13 north of Stuttgart. Long. 9. 25. E. Lat. 48. 59. N.

MARCA, a small island in the gulf of Venice, five miles from Ragusa, on which it depends. It had formerly a bishop's see; but the town is now in ruins.

MARCELLIN, St. a town of France, in the department of Isere, seated on the Isere, at the foot of a hill, in a country that produces excellent wine. It is five miles from St. Antoine, and 253 south by east of Paris. Long. 5. 32. E. Lat. 45. 14. N.

MARCELLINO, a small river of Sicily, in Val-di-Noto, which falls into the sea, two miles from Augusta.

MARCHIENNES, a town of the Austrian Netherlands, in the county of Namur, seated on both sides of the Sambre, four miles west of Charleroy, and 22 south-west of Namur. Long. 4. 22. E. Lat. 50. 20. N.

MARCHIENNES, a village of France, in the department of the North, with a late abbey; seated in a morass, on the river Scarpe, between Douay and St. Amand.

MARCHPURG, a town of Germany, in the duchy of Stiria, with a strong castle, seated on the Drave, 18 miles west of Pettaw, and 25 S.S.W. of Gratz. Long. 15. 19. E. Lat. 46. 44. N.

MARCIGLIANO, a town of Naples, in Terra di Lavoro, seven miles east of Naples, between Nola and Acerra. Long. 14. 30. E. Lat. 40. 51. N.

MARCK, a territory of Germany, in the circle of Westphalia, bounded on the north by the bishopric of Munster, on the east by the duchy of Westphalia, and on the south and west by that of Berg. It is pretty fertile, and belongs to the King of Prussia. Ham is the capital.

Vol. X.

MARCKECK, a town of the archduchy of Austria, situate on the Marfch, 14 miles north-west of Presburg, and 24 E.N.E. of Vienna. Long. 16. 58. E. Lat. 48. 17. N.

MARCKOLSHEIM, a town of France, in the department of Lower Rhine, 26 miles south of Strasburg. Long. 7. 27. E. Lat. 48. 10. N.

MARCO, St. a town of Naples, in Calabria Citeriore, with a bishop's see, seated on the Senito, 22 miles north of Cosenza. Long. 16. 20. E. Lat. 39. 41. N.

MARCOU St. two islands in the English channel, near the coast of France, about seven miles south-east of La Hogue. Long. 1. 17. W. Lat. 49. 31. N.

MARDIKE, a village of France, in the department of the North, seated on a canal, to which it gives name, four miles west by south of Dunkirk.

MAREB, a town of Arabia, capital of a district, in the province of Yemen. It is 88 miles east of Sanaa. Long. 27. 30. E. Lat. 15. 44. N.

MAREB, Loch, a fresh-water lake in Ross-shire, 18 miles long, and in some parts, four broad. It contains many small islands, and abounds with salmon, char, and trout.

MARENNES, a town of France, in the department of Lower Charente, remarkable for the green-finned oysters found near the coast, and its salt. It is seated near the Atlantic, 32 miles north-west of Saintes, and 270 south-west of Paris. Long. o. 49. W. Lat. 45. 15. N.

MARETIMO, an island of Italy, on the west coast of Sicily. It is 10 miles in circumference, has a castle, with a few farm-houses, and produces much honey. Long. 12. 35. E. Lat. 38. 5. N.

MARGARETTA, an island near Terra Firma, 40 miles long and 15 broad, discovered by Columbus in 1498. The continual verdure renders it pleasant; but it is not considerable since the Spaniards retired thence to Terra Firma. The present inhabitants are mulattoes, and the original natives. It was taken in 1626 by the Dutch, who demolished the castle. Long. 63. 12. E. Lat. 10. 46. N.

MARGOZZA, a town of Italy, in the Milanese, situate near a small lake, to which it gives name, 40 miles N.W. of Milan.

MARICELLO, a town of Naples, in the province of Bari, six miles N.W. of Gravina.

MARIE-AUX-MINES, a town of France, in the department of the Vosges, divided into two parts by the river Leber. It is famous for its silver mines, and 25 miles N.W. of New Brisch. Long. 7. 24. E. Lat. 48. 16. N.

MARIENBURG, a town of Upper Saxony, in Mifnia, remarkable for its rich silver mines. It is seated among the mountains, on the confines of Bohemia, 28 miles S.S.W. of Dresden. Long. 13. 35. E. Lat. 50. 49. N.

MARIENBURG, an ancient and strong town of Western Prussia, capital of a palatinate of the same name, with a castle. It is seated on a branch of the Vistula, 30 miles S.W. of Elbing, and 30 S.E. of Dantzic. Long. 19. 15. E. Lat. 54. 9. N.

MARIENSTADT, a town of Sweden, in West Gothland, seated on the lake Wenner, 35 miles S.E. of Carlstadt, and 162 S.W. of Stockholm. Long. 14. 25. E. Lat. 58. 28. N.

MARIENWERDER, a town of Western Prussia, with a castle. The cathedral is the largest church in the kingdom of Prussia, being 320 feet long; and by its strong breast-works seems to have formerly served as a fortress. The palace here is spacious, and built in the old Gothic taste. Marienwerder is seated on the Vistula, 20 miles S.S.W. of Marienburg. Long. 19. 5. E. Lat. 53. 49. N.

10 K

MARGINANO, a town of Italy, in the duchy of Milan, remarkable for the defeat of the Swifs, by the French, in 1515. It is feated on the Lambro, 10 miles S.E. of Milan.

MARINO, Sr. a town of Italy, in Campagna di Roma, with a caſtle, 10 miles E. of Rome. Long. 12. 46. E. Lat. 41. 54. N.

MARK, Sr. a ſea-port on the W. ſide of St. Domingo. The houſes are built of free-ftone, which is abundant in the neighbouring country. It was taken by the Engliſh and royaliſts in 1794, and is 45 miles N.W. of Port-au-Prince. Long. 72. 40. W. Lat. 19. 20. N.

MARKDORF, or **MARCHDORF**, a town of Suabia, in the biſhopric of Conſtance, nine miles N.E. of Conſtance, and 11 S.W. of Ravensburg. Long. 9. 14. E. Lat. 47. 43. N.

MARKET-RASEN, a town of England, in the county of Lincoln, with a weekly market on Tueſday: ſixteen miles and a half N.N.E. Lincoln, and 151 N. of London.

MARMORA, a ſea between Europe and Aſia, which communicates with the Archipelago, by the ſtrait of Gallipoli on the S.W. and with the Black Sea, by the ſtrait of Conſtantinople, on the N.E. It is 120 miles in length, and 50 in breadth, and was anciently called the Propontis.

MARMORA, a celebrated caſcade of Italy, in the duchy of Spoletto, three miles from Terni.

MARMORA, a town of Naples, in Calabria Ulteriore, 16 miles W. of St. Severino.

MARNE, a department of France, including part of the late province of Champagne. It takes its name from a river which riles near Langres, and flowing N.W. joins the Seine, a little above Paris. Rheims is the archiepiſcopal ſee, but Chalons is the capital.

MARNE, UPPER, a department of France, including part of the late province of Champagne. Chaumont is the capital.

MARNE, a town of Perſia, in the province of Choraſan, 200 miles N. of Herat.

MARNHULL, a village in Dorſetſhire, on the Stour, five miles S.W. of Shaftbury. The church is an ancient lofty building; the tower of which fell in 1710, in time of divine ſervice, but was handſomely rebuilt.

MARO, a town of Italy, on the coaſt of Genoa, in a valley of the ſame name, eight miles N.W. of Oneglia, and 48 W.S.W. of Genoa. Long. 7. 41. E. Lat. 44. 55. N.

MAROGNA, a town of Rumania, with a Greek arch-biſhop's ſee, feated near the Mediterranean, 70 miles S.W. of Adrianople. Long. 25. 41. E. Lat. 40. 59. N.

MAROTIER, a town of France, in the department of Lower Rhine, with a late Benedictine abbey, 18 miles N.W. of Straßburg. Long. 7. 33. E. Lat. 48. 38. N.

MARPACH, a town of Suabia, in the duchy of Wirtemberg, ſituate on the Neckar, eight miles N.N.E. of Stuttgart, and 30 E.N.E. of Wildbad. Long. 9. 7. E. Lat. 48. 51. N.

MAR-FOREST, a diſtrict in Aberdeeniſhire, conſiſting of vaſt woodland mountains, which occupy the weſtern angle of the country. The river Dee riles among theſe mountains.

MARSICO NUOVO, a town of Naples, in Principato Citeriore, with a biſhop's ſee; feated on the foot of the Appennines, near the river Agri, 73 miles S.E. of Naples. Long. 15. 40. E. Lat. 40. 28. N.

MARSILLY, a town of France, in the department of Marne, 10 miles S. of Suzanne.

MARSTRAND, a rocky iſland of Sweden, in the Cate-gate, lying N.W. of the mouth of the Götha. It is two miles in circumference; and, on account of its ſtrength, is

called the Gibraltar of Sweden. The town, which lies on the E. ſide, contains about 1200 inhabitants; and the harbour is ſecure and commodious, but of difficult entrance. Since the peace of 1783, its trade has declined; and the inhabitants ſubſiſt chiefly by the herring fiſhery, by the number of ſhips which in bad weather take refuge in the harbour, and by a contraband trade. It is 23 miles N.W. of Gotheborg. Long. 11. 30. E. Lat. 57. 59. N.

MARTA, a town in Italy, in the patrimony of St. Peter, and duchy of Castro; feated on a lake of the ſame name, called alſo Belena, 35 miles N. of Rome. Long. 12. 40. E. Lat. 42. 26. N.

MARTAGO, a town of Spain, in Leon, 10 miles S.S.E. of Ciudad Rodrigo.

MARTEL, a town of France, in the department of Lot, feated near the Dordogne, 18 miles E. of Sarlat. Long. 1. 44. E. Lat. 44. 51. N.

MARTHALEN, a conſiderable town of Switzerland, in that part of the county of Kyburg, ſubject to Zurich. It is feated near the Rhine, fix miles S. of Scaffhaufen.

MARTIGAO, a town of Portugal, in the Beira, 22 miles N.E. of Coimbra.

MARTIGNANA, a town of Piedmont, in the marquiſate of Saluzzo, feated near the Po, five miles W. of Saluzzo.

MARTIGNI, a town of Switzerland, and the ſeat of a government, in the Valais. It is 11 miles W. of Sion, and 58 E. of Geneva. Long. 71. E. Lat. 46. 5. N.

MARTORANO, a town of Naples, in Calabria Citeriore, with a biſhop's ſee, eight miles from the ſea, and 15 S. of Cofenza. Long. 16. 20. E. Lat. 39. 6. N.

MARTOREL, a town of Naples, in Catalonia, feated at the confluence of the Noya and Llobregal, 18 miles N.W. of Barcelona. Long. 1. 56. E. Lat. 41. 36. N.

MARTOS, a town of Spain, in Andalucia, with a fortrefs on a rock, eight miles S. of Anduxar.

MARU, a town of Perſia, in Choraſan, celebrated for its ſalt-works; 150 miles E.N.E. of Meſched, and 190 N.N.E. of Herat.

MARVAO, a town of Portugal, in Alentejo, ſeven miles S.E. of Valença de Alcantara. Long. 6. 14. W. Lat. 44. 33. N.

MARVEJOLS, a commercial town of France, in the department of Lozere, feated in a valley, on the river Colange, 10 miles N.W. of Mende, and 300 S. of Paris. Long. 2. 23. E. Lat. 44. 36. N.

MARVILLE, a town of France, in the department of Meufe, feated on the Othein, three miles N. of Jametz.

MARY'S RIVER, Sr. a river of the United States, in Georgia. It is navigable for veſſels of conſiderable burthen for ninety miles; and its banks afford immenſe quantities of fine timber ſuited to the Weſt-India markets. It forms a part of the ſouthern boundary of the United States, and enters Amelia Sound, in lat. 30. 44. N.

MARY'S STRAIT, Sr. a ſtrait in North America, which forms the communication between Lake Superior and Lake Huron. It is about 40 miles long; and at the upper end is a rapid fall, which, when conducted by careful pilots, may be defended without danger.

MARZA SIROCCO, a gulf on the ſouth ſide of the iſle of Malta. The Turks landed here in 1565, when they went to beſiege Valetta; for which reaſon the grand maſter ordered three forts to be built, two at the entrance of the gulf, and one on the point of land that advances into the middle of it.

MARZILLA, a town of Spain, in the province of Navarre, feated near the river Arragon, 30 miles S. of Pampe-luna.

MASBATE, one of the Philippine Iſlands, almoſt in the

centre of the reef. It is 75 miles in circumference, and the natives are tributary to the Spaniards. Long. 122. 25. E. Lat. 11. 36. N.

MASBROUGH, a village in Yorkshire, on the river Don, adjoining the bridge of Rotherham. Here are considerable iron works, where all sorts of hammered and cast-iron goods are made, from the most trifling article to a large cannon, of which great quantities are exported.

MASCATE, a town of Arabia Felix, in the province of Oman. It has a castle on a rock, and is very strong both by nature and art, though the buildings are mean. It was fortified, in 1650, by the Portuguese; but afterwards taken by the Arabs, who put all the garrison to the sword, except 13, who turned Mahometans. The cathedral, built by the Portuguese, is now the king's palace. There are neither trees, shrubs, nor grass, to be seen on the sea-coast near it, and only a few date-trees in a valley at the back of the town, though they have all things in plenty. The weather is so hot from May to September, that no people are to be seen in the streets from ten in the morning till four in the afternoon. The bazars or market places are covered with the leaves of date-trees, laid on beams which reach from the house tops on one side to those on the other. The religion of the inhabitants is Mahometanism, and yet, contrary to the custom of the Turks, they suffer any one to go into their mosques. The products of the country are horses, dates, fine brimstone, coffee, and ruins, a root that dyes red. Mascate is seated at the bottom of a small bay, of the Arabian Sea, 68 miles S.E. of Oman. Long. 57. 26. E. Lat. 24. 0. N.

MAS-DASIL, a town of France, in the department of Arriège, with a late rich Benedictine abbey; seated on the rivulet Rife, eight miles S.W. of Pamiers.

MASHANGUR, a town of Hindoostan Proper, in the province of Cabul, situate on the Seward, 48 miles N. of Attock, and 130 E.S.E. of Cabul. Long. 71. 7. E. Lat. 33. 54. N.

MASKELYNE'S ISLES, a group of small beautiful islands, in the South Pacific Ocean, lying off the S.E. point of Malicollo, one of the New Hebrides.

MASON (William), an eminent poet and distinguished scholar, was born at Hull, where his father possessed the vicarage of St. Trinity. Where he received his school education we have not been able to learn. At the proper time he was admitted into St. John's College, Cambridge; where he took the degree of B.A. and M.A. and in 1747 he obtained a fellowship in Pembroke-hall. It was there that he contracted an intimate friendship with Gray the poet, and with Mr. Hurd, now Bishop of Worcester. When the former of these gentlemen died, Mr. Mason took upon himself the office of editor of his works and guardian of his fame; and upon the promotion of the latter to the see of Lichfield and Coventry, he expressed his satisfaction in some beautiful verses.

In 1754 he entered into holy orders, and was patronised by the then Earl of Holderness, who obtained for him the appointment of chaplain to the king, and presented him with the valuable rectory of Aston in Yorkshire. He was some time afterwards made preacher of York Cathedral, when he published a small volume of church music, which has alternately met with opposition and applause. In our opinion some of his anthems are unrivalled.

It was natural for the precentor of a cathedral church, who was likewise a poet, to turn his attention to sacred music; and Mason had been a poet from his early years. His *Elfrida* and *Caractacus*, two tragedies on the Grecian model, were both published before the year 1757. These two dramas, in the opinion of Dr. Hurd, do honour to modern poetry, and are, according to him, a sufficient proof of the propriety of re-

viving the choros on the British stage. In this sentiment few critics, we believe, will agree with his lordship; but the tragedies have certainly great merit, and transcend perhaps every poem of the same cast in our own or any other modern tongue. In the first, the language is elegant and sweet; in the latter, it is daring and sublime. The author himself always considered the former as the most perfect; and Johnson, whose critical judgment will not be rationally questioned, seems to have been of the same opinion.

Besides his two tragedies, Mr. Mason published many other poems. His English Garden is universally read and admired, being unquestionably the finest poem of the kind that has appeared since the days of Thomson; though some have affected to consider it as treating the subject rather with professional skill than with poetical genius. That there are in it a few prosaic expressions we shall not controvert; for such seem inseparable from didactic poetry: but, taken as a whole, where shall we find its equal? His elegies, particularly that on the death of his wife, and that on the demise of Lady Coventry, have been generally read and extolled, though not more than they deserve, as superior in classical elegance to any thing of the kind in the English tongue, and expressing a manliness and tenderness of the pathetic, rarely found in the most polished elegies of Roman writers. The splendor of genius, and accuracy of judgment, conspicuous in his dramas, are equally displayed in his character as a lyric writer. His quarry was bold and impetuous, and he never swept the ground with an ignominious flight. In his Sappho and Phaon he has happily imitated the style of Dryden and Metastasio; and at his death he was employed on a poem in which he proposed to measure his strength with Dryden.

It is said, we know not how truly, that this ingenious man was the inventor of the fashionable instrument the Piano-forte.

Poetry and music, and the duties of his office, might be supposed to have employed all his time; but, unfortunately, he caught the alarm which in 1769 was spread over the nation by the expulsion of Mr. Wilkes from the House of Commons, and immediately enrolled himself among the supporters of the *Bill of Rights*.

Being leagued with the opposition, he joined in some violent clamours for a parliamentary reform. In the year 1779, when the city of London, and some other commercial towns, agreed to present their petition to parliament for a more economical expenditure of the public money, and a more equal representation of the people, Mr. Mason came forward, and took an active part in promoting these designs, as one who was convinced of their importance and necessity. Yet he shewed, by his subsequent conduct, that however earnestly he might wish for what he doubtless considered as an expedient reform in the commons-house of Parliament, he was firmly attached to the British constitution. He was indeed a whig; but he was a whig of the old school. In the beginning of 1794, when the reformers had betrayed the principles of French democrats, he deserted them, and ranged himself under the banners of the servants of the crown; and for this conduct, which was certainly consistent, he has been plentifully traduced by our Jacobin journalists as an alarmist, who not only deserted his old friends, but ascribed to them a certain degree of guilt and political depravity.

The death of this great and good-man, which happened in April 1797, was occasioned neither by age nor by inveterate disease. As he was stepping into his chariot, his foot slipped, and his shin grazed against the step. This accident had taken place several days before he paid the proper attention to it; and on April the 3d a mortification ensued, which in the space of 48 hours put a period to his life.

That he was a scholar and a poet of high eminence is universally acknowledged; and we are assured, that his posthumous works, when published, will not detract from his living fame. In private life, though he affected perhaps too much the fastidious manners of Mr. Gray, whose genius he estimated with a degree of enthusiasm amounting almost to idolatry, his character was distinguished by philanthropy and the most fervid friendships; and he may be considered as a man who merits to be ranked with the ablest supporters of British liberty and British morals.

MASOVIA, a province of Poland, containing the two palatinates of Czerk, or Malovia Proper, and Polotk. By the last dismemberment of the kingdom, it is annexed to the territories of Prussia. Warfaw is the chief city.

MASSA, a town of Italy, in the Siennese, with a bishop's see; seated on a mountain near the sea, 25 miles S.W. of Sienna. Long. 10. 48. E. Lat. 42. 40. N.

MASSACHUSETTS BAY, a bay of North America, which spreads eastward of Bolton, and is comprehended between Cape Ann on the north, and Cape Cod on the south. It is so named, as well as the whole state of Massachusetts, from a tribe of Indians of the same name, that formerly lived round this bay.

MASSAFRA, a strong town of Naples, in Terra d'Otranto, with a bishop's see; seated at the foot of the Appennines, 16 miles N.N.W. of Tarento. Long. 17. 20. E. Lat. 40. 50. N.

MASSEERANO, a town of Piedmont, capital of a small principality of the same name, held by its prince as a fief of the church. It is seated on a mountain, 40 miles N.E. of Turin. Long. 8. 14. E. Lat. 45. 38. N.

MASSEUBE, a town of France, in the department of Gers, 14 miles south of Auch. Long. 0. 28. E. Lat. 43. 25. N.

MASTICO, or CAPO MASTICO, a cape on the south side Scio, one of the islands of the Archipelago.

MASUAH, a town of Abyssinia, situate on an island on the coast of the Red Sea. The houses, in general, are built of poles and bent grass, as in the towns in Arabia; and a few are of stone, some of them two stories high. Long. 39. 36. E. Lat. 15. 35. N.

MATAGORDA, a fortress of Spain, at the entrance of the harbour of Cadiz.

MATALA, a town and cape of the S. coast of the island of Candia, 30 miles S. of Candia. Long. 24. 58. E. Lat. 34. 46. N.

MATALONA, a town of Naples, in Terri di Lavoro, eight miles N.W. of Capua, and 19 W. by S. of Benevento. Long. 14. 14. E. Lat. 41. 12. N.

MATCOWITZ, a strong town of Upper Hungary, in the county of Scepus, seated on a mountain, 185 miles N.E. of Presburg.

MATELICA, an ancient town of Italy, in the marquisate of Ancona, 15 miles S. of Jesi.

MATTHEW, St. an island of Africa, 420 miles S. by W. of Cape Palmas on the coast of Guinea. It was planted by the Portuguese, but is now deserted. Long. 6. 10. W. Lat. 1. 24. S.

MATTHEW, St. a small island in the Indian Ocean. Long. 123. 51. E. Lat. 52. 2. S.

MATZSEE, a town of Bavaria, in the archbishopric of Salzburg, 12 miles N. of Salzburg. Long. 13. 3. E. Lat. 47. 50. N.

MATUMAY, a sea-port in the island of Jesso, capital of a province of the same name, tributary to Japan. Long. 138. 55. E. Lat. 42. 0. N.

MATURA, a town of Hindoostan Proper, in the province

of Agra, 22 miles N.E. of Agra, and 70 S.S.E. of Delhi. Long. 78. 41. E. Lat. 27. 11. N.

MAUBAL, a town of Hindoostan Proper, in the country of Candahar, 70 miles N.N.E. of Candahar.

MAULDAH, a city of Hindoostan Proper, in Bengal, situate on a river that communicates with the Ganges. It arose out of the ruins of Gour, which are in its neighbourhood; and is a place of trade, particularly in silk, 190 miles N. of Calcutta. Long. 88. 28. E. Lat. 25. 10. N.

MAULEON, a town of France, in the department of the Lower Pyrenées, situate on the frontiers of Spain, 20 miles S.W. of Pau, and 40 S.E. of Dax. Long. 0. 31. W. Lat. 43. 10. N.

MAULEON, a town of France, in the department of Vendée, with a late famous Augustine abbey. It is seated near the river Oint, 52 miles N.E. of Rochelle, and 52 N.W. of Poitiers. Long. 0. 36. W. Lat. 46. 54. N.

MAURA, St. an island of the Mediterranean, near the coast of Albania, 15 miles N.E. of the island of Cephalonin. Long. 20. 46. E. Lat. 39. 2. N.

MAURE, St. a town of France, in the department of Indre and Loire, 17 miles S. of Tours, and 148 S.W. of Paris. Long. 0. 42. E. Lat. 47. 9. N.

MAURIAC, a trading town of France, in the department of Cantal, famous for excellent horses. It is seated near the Dordogne, 27 miles S.E. of Talles. Long. 2. 16. E. Lat. 45. 15. N.

MAURICE, St. a town of Switzerland, in the Valais, situate on the Rhone, between two high mountains, 16 miles N.W. of Martigny. It guards the entrance into the Lower Valais.

MAURIENNE, a valley of Savoy, 50 miles in length, extending to Mount Cenis, which separates it from Piedmont. St. John is the capital town.

MAXEN, a town of the electorate of Saxony, celebrated for a victory obtained by the Austrians, commanded by Count Daun, over the Prussians, in 1759, when 20,000 Prussians surrendered prisoners of war. It is eight miles S.W. of Pirna, and 10 S. of Dresden.

MAXIMIN, St. a town of France, in the department of Var. Before the revolution, here was a convent for Dominicans, who pretended to preserve in it the body of Mary Magdalen, which brought them great riches by the resort of superstitious visitors. It is seated on the Argens, 20 miles N. of Toulon. Long. 5. 57. E. Lat. 43. 30. M.

MAY, or MAYO, one of the Cape de Verd Islands, 17 miles in circumference. The N.E. end is extremely low, and the land rises gradually till it arrives at a volcanic mountain, to the S.W. of which is irregular ground, soon followed by a high disorderly peak, much more lofty than the volcanic cone. The soil in general is very barren, and water scarce; but there are plenty of beeves, goats, and asses; as also some corn, yams, potatoes, plantains, figs, and water-melons. The chief commodity is salt, with which many English ships are freighted in the summer time. Pinofa is the principal town, and has two churches. The inhabitants are negroes; who speak the Portuguese language, and many of them go naked. Long. 23. 5. W. Lat. 15. 10. N.

MAY, CAPE, a cape of North America, on the North side of the mouth of the Delaware. Long. 75. 4. W. Lat. 39. 0. N.

MAYAMBA, a town of the kingdom of Loango, capital of a district of the same name. Long. 13. 6. E. Lat. 3. 20. S.

MAYENCE. See MENTZ.

MAYENNE. See MAINE.

MAYORGA, a town of Portugal, in Estramadura, near

the Atlantic, 15 miles S.W. of Leria, and 51 N. of Lisbon.
Long. 9 7. W. Lat. 39. 33. N.

MAZANDERAN, a province of Persia, bounded on the north by the Caspian Sea, on the west by Gilan, on the south by Irac Agemi, and on the east by Astrabad. Ferabad is the capital.

MEACU, or **KIO**, a city of the island of Nippon, in Japan, of which it was formerly the capital. It is the great magazine of all the manufactures in Japan, and the principal place for trade. The inhabitants are said to be 600,000.
Long. 134. 25. E. Lat. 35. 30. N.

MEADIA, a town of Hungary, in the bannat of Temeswar, seated on the north side of the Danube, 15 miles east of Belgrade. It was dismantled by the Turks in 1738. Long. 12. 0. E. Lat. 45. 0. N.

MEAO, a small island, one of the Moluccas, in the Indian Ocean, with a good harbour. Long. 127. 5. E. Lat. 1. 12. N.

MEASURES (*Encycl.*). The following is an account of the present French weights and measures:

Measures of length.	English inches.
Millimetre	0.3937
Centimetre	3.9370
Decimetre	3.93702
Metre	39.37023
Decametre	393.70226
Hecatometre	3937.02260
Chiliometre	39370.22601
Myriometre	393702.26014

	M.	F.	I.	Ft.	In.
A decametre is	0	0	10	2	9.7
A hecatometre	0	0	109	1	1
A chiliometre	0	4	213	1	10.2
A myriometre	6	1	150	0	6

8 chiliometres are nearly 5 miles.

Measures of capacity.	Cubic inch. E.
Millilitre	0.06102
Centilitre	0.61024
Decilitre	6.10244
Litre	61.02443
Decalitre	610.24429
Hecalitre	6102.44288
Chilolitre	61024.42878
Myriolitre	610244.28778

A litre is nearly 2½ wine-pints.

12 decilitres are nearly 3 wine-pints.

A chilolitre is 1 tun, 12.75 wine-gallons.

Weights.	E. grains.
Milligramme	0.0154
Centigramme	0.1544
Decigramme	1.5444
Gramme	15.4440
Decagramme	154.4402
Hecagramme	1544.4023
Chilogramme	15444.0234
Myriogramme	154440.2344

A decagramme is 6 dwts. 10.44 gr. tr.; dr. iii.
gr. 4.44 apoth.; or 5.65 dr. avoird.

A hecatogramme is 3 oz. 8.5 dr. av.

A chilogramme is 2 lbs. 3 oz. 5 dr. av.

A myriogramme is 22 lbs. 1.15 oz. av.

100 myriogrammes are 1 ton wanting 32.8 lbs.

Agvrian measures.

Are, 1 square decametre, - - - 3.95 perches.

Hectare, - - 2 acres, 1 rood, 38.1 perches.

Vol. X.

For Fire-wood.

Decistre, $\frac{1}{2}$ fere, - - - 3.5315 cub. f. E.

Stere, 1 cubic metre, - - - 35.3150 cub. f.

MECAN, a large river, which rises in Thibet, and flowing S.E. through Laos and Cambodia, falls by two mountains into the China sea, forming an island below the city of Cambodia, which here gives name to the eastern branch.

MECHADEB, a town of Arabia Felix, in the province of Yemen, 72 miles S. of Sanaa. Long. 44. 15. E. Lat. 14. 7. N.

MECHLIN, a city of the Austrian Netherlands, capital of a district of the same name, with an archbishop's see. It consists of several small islands made by artificial canals, over which are a great many bridges; and its cathedral is a superb structure, with a very high steeple. Here is a great foundry for ordnance of all kinds; and it is famous for fine lace, and a fort of beer, which is sent into the neighbouring provinces. The territory of this town is a lordship, which comprehends two small districts containing nine towns of little consequence, and some villages. It submitted to the Duke of Marlborough in 1706, and was taken by the French in 1746, but restored in 1748. In 1792 the French again took it, evacuated it the next year, and re-entered it in 1794. It is seated on the Dender, 10 miles N.E. of Brussels, and 15 S.E. of Antwerp. Long. 4. 34. E. Lat. 51. 2. N.

MECHOACHAN, or **VALLADOLID**, a considerable town of New Spain, capital of the province of Mechoachan, with a bishop's see. It is seated near a great lake, 110 miles W. of Mexico. Long. 102. 28. W. Lat. 20. 5. N.

MECKENHEIM, a town of Germany, in the archbishopric of Cologne, situate on the Erft, seven miles S.S.W. of Bonn, and 18. S. of Cologne. Long. 6. 43. E. Lat. 51. 40. N.

MECKLEY, a province of Asia, bounded on the N. by Affam, on the E. by China, on the W. by Bengal, and on the S. by Rodhaan and Burmah, to which last it is subject.

MECRAN, a province of Persia, bounded on the N. by Segeftan and Candahar, on the E. by Hindooftan, on the S. by the Indian Ocean, and on the W. by Kerman. The southern part is dry, and little more than a desert; the northern is less so; but animals are rare, and the soil far from fertile.

MECRINHOS, a town of Portugal, in Tra los Montes, 15 miles N.N.E. of Torre de Moncove, and 24 S.E. of Miranda. Long. 6. 3. W. Lat. 41. 8. N.

MEDEBACH, a town of Westphalia, 32 miles W. of Cassel. Long. 10. 1. E. Lat. 51. 4. N.

MEDELIN, a town of Spain, in Estramadura, remarkable for being the birth-place of Fernando Cortes. It is seated in a fertile country, on the river Guadiana, 22 miles E. of Merida. Long. 5. 38. W. Lat. 38. 41. N.

MEDELPADIA, a maritime province of Sweden, in Norland, on the gulf of Bothnia. It is full of mountains and forests. Sundwall is the capital.

MEDEMBLICK, a town of the United Provinces, in North Holland, seated on the Zuider-Zee, with a good harbour. It is nine miles N. of Hoor, and 22 N.E. of Amsterdam. Long. 5. 0. E. Lat. 52. 47. N.

MEDICINE (*Encycl.*). There is no art or science in which a greater degree of penetration and of accuracy appears to be required than in medicine; for, involved in difficulty and uncertainty as it must, in general, be, its possessors ought, in order to combat them, to possess no small share of capacity and discernment. This, perhaps, the reason that where the professions have been separate, physic has been generally esteemed more respectable than surgery; although, in point of utility, it may justly be doubted whether a preference may

not be due to surgery. The almost inextricable obscurity in which the nature of the animal functions, and the operations of medicines, are at present involved, are the more to be lamented, as the ignorant and impatient are, in general, more disposed to commit themselves to the care of pretenders, who do not deserve the name even of empirics, than to be contented with the moderate degree of relief that can be promised them by the honourable practitioner; who, from the supposed depth and extent of his acquaintance with nature and its laws in general, has been denominated a physician;—an appellation once as usual in France and Germany as it is still in England.

Whether any great advances will ever be made in rendering the animal processes as intelligible as those of inanimate nature, is very much to be doubted; and indeed, to judge from general inferences, can scarcely ever be hoped: although the rapid advances which have been made within our recollection, and which are daily making, in many kindred sciences, render it hazardous to pronounce an absolute negative. Hitherto very little progress can be said to have been made in the immediate subjects of medical speculation; and the grand advantage of modern practice appears to consist in a partial return to nature and simplicity. It is no longer the fashion to irritate every wound by hot and stimulating balsams, nor to deprive it of the protection and assistance of the blood which coagulates round it: a fever is not oppressed with a miliary eruption, nor the small-pox made confluent, by a forced accumulation of heat; and the natural inclination for cold liquids has been followed with the most salutary effects: a patient in a dropy is not tormented with hunger and thirst to produce the temporary relief of a symptom; and the support of the whole system is not prodigally wasted by unnecessary venesection. But all this has required time for its attainment; however natural and easy it might have seemed to compare at least those cases in which nature had been uninterrupted and successful, with others where art had been mischievously active.

It may be enquired, then, how far the writings of the Greek physicians, so much extolled by medical writers of no ancient date, really deserve their commendations: and if a man who has taken the pains to make himself master of their contents would be candid enough to divest himself of partiality for his pursuits, he would be obliged to confess, that he would in no case think himself justified in following in his practice an aphorism of Hippocrates, unsupported by modern experience, if it came in competition with a single observation of a country apothecary, published in any medical journal of the present century. This being granted, it is difficult to conceive on what ground the most prejudiced can maintain the propriety of a man's spending a considerable portion of his time in endeavouring to deduce practical information from sources so precarious. That the form of examining candidates for medical honours in the ancient medical writers should be retained, is exceedingly necessary for the support of the good education and literary respectability of the profession. And it must also be allowed, that pathological studies may be assisted, and, perhaps, hints for experiments may often be derived from their works; but for every single fact of practical importance known to the Greeks and Romans, it is probable that ten were discovered in the last century, and twenty in the present: and yet, for the mortification of human vanity, it must be confessed that the average period of human life does not appear to be perceptibly longer now than at the time of the oldest calculations. In physiology, the discovery of the nature of the circulation of the blood, of the change which this fluid undergoes in the lungs, of the process of its coagulation, of the cause of the pleuritic coat, of the existence and

functions of the absorbents, of the nature of the placenta; the explosion of the notion of the origin of animal heat from friction, and of the exaggerated doctrines of the human pathology; all these improvements are of such vast magnitude, that it is almost astonishing that they have not produced more conspicuous effects on the practical treatment of all possible diseases. Of the most powerful articles of our materia medica, opium and cantharides alone were known to the ancients; antimony, bark, ipecacuan, and mercurials, are entirely of modern invention; and, perhaps, the application of electricity may, in time, deserve to be reckoned among the most efficacious, when its highly interesting chemical properties and its effect in the animal economy shall have been more fully investigated. On the other hand, we have to combat with many diseases unknown to the ancients; it is singular enough, that almost all of these are curable with tolerable certainty, and yet sometimes not without the greatest risk. The small-pox, although in great measure deprived of its terrors by the practice of inoculation, is still so formidable a disorder, as to create a doubt whether more individuals do not annually die of it than before the introduction of that practice; and a more complete protection from its effects, which there is every reason to hope from the vaccine contagion, must still be reckoned an invaluable addition to the expedients for the preservation of the public health, and such as will fairly entitle the man who first introduced inoculation for the cow-pox, both to honorary and to substantial tokens of public gratitude.

Supposing a preference to be decidedly granted to modern, beyond ancient medicine, it will be of consequence to enquire into what countries of Europe the most rational practice in general prevails. And here, without being accused of partiality, we may be allowed by the concurring testimony of the majority, to give the preference to Great Britain, and, perhaps, in particular to that of the metropolis of England. One of the few who have disputed the superiority of the English practice, Dr. Fischer of Brunswick, begins with accusing his countrymen in general of a servile adoption of foreign innovations, and in particular of the medical anglo-mania. Undoubtedly the former part of the accusation is well founded, and it is with reason that he asserts that they spend their whole time in amassing materials, without taking sufficient pains to methodise, to digest, and to appropriate them; so that where this is the case we cannot expect to find a high degree of practical perfection: and the truth of the second part of the charge is so well known, as to constitute a well-grounded compliment to this country; for if the Germans, who are so diligent compilers, are usually in the habit of giving a decided preference to the English practice of physic, this is by no means the slightest recommendation that can be produced in its favour. The specific objections that he makes to the practice in London are principally four; that it is too simple, too inappropriate, too bold, and too impatient; nor will our physicians have any objection to confessing that these characters may, in comparison with continental medicine, be in some degree allowed to be just; and especially in that limited kind of practice which a stranger can see in a few months in an hospital. The German practice would here, on the contrary, he called old womanish and fanciful; their inciding medicines, their decoction of grafts-root, their horrors of the rheumatic matter contained in a boiled potatoe and a pork chop, and of the inflammatory and antiseptic powers of a cup of coffee, would here excite a smile. On the whole it may be fair to conclude, that the German physicians compile well, the Scotch reason well, and the English describe well, and that the liberal and diligent student may derive from each of the schools information and instruction enough to repay him for his application.

MEDINA-SIDONIA, an ancient town of Spain, in Andalusia, with a castle, 36 miles N.N.W. of Gibraltar, and 20 N.E. of Cadiz. Long. 5. 36. E. Lat. 36. 40. N.

MEDNIKI, a town of Poland, in the province of Samogitia, with a bishop's see; seated on the Warwitz, 40 miles E. of Memel. Long. 22. 49. E. Lat. 55. 42. N.

MEDUA, a town of the kingdom of Algiers, seated in a country abounding in corn, fruits, and flocks of sheep, 175 miles S.W. of Algiers. Long. o. 13. E. Lat. 34. 45. N.

MEDUSA (*Encycl.*). The animal now known among naturalists by the name of *medusa*, was called by the ancients the *sea nettle*, on account of its producing a sensation on the skin similar to that which is excited by the plant, called a *nettle*. This animal was peculiarly called the *sea nettle*, to distinguish it from another of the same species, which adheres to rocks. Linnæus, desirous of avoiding these compound and equivocal denominations, assigned to the animal the name of *medusa*: there is no obvious reason for this preference; except that, in many cases, it is fortunate to find a name which distinguishes the given object, without exciting any other idea. See Pl. 1, Vol. VI, and Pl. 38 in this SUPPLEMENT.

The medusa lives in the waves of the sea, and swims with considerable swiftness. The body forms a segment of a sphere, similar to the head of a mushroom. Though no muscular fibre can be perceived, it possesses the faculty of contracting and dilating itself at will, either in parts, or in the whole. By increasing or diminishing the concavity of its upper surface, it strikes the water with sufficient force to rise to the surface; its own weight enables it, without exertion, to sink to the bottom: and when desirous of making an horizontal progress, the animal strikes the water with a part of its edge, and thus proceeds with a rotatory motion.

Under the centre of the plane of the segment of a sphere according to the species of the animal, representing, in a manner, the stalk of the mushroom, supporting the body to represent the head of the plant. In some kind of medusas this excrecence is terminated by a large opening, which is the mouth of the animal; but that which is here described has no mouth, or, to speak more correctly, hundreds of mouths.

Although this species of the medusa is most common on the coast of France, it has not been accurately described and delineated till the present time, except by Réaumur. At the ebb of the tide they are left in large quantities, motionless, on the sand. They are of all sizes, from about four fifths of an inch to eight or nine inches diameter; transparent, with a bluish reflection, producing an agreeable effect. Their substance is about the consistency of the jelly of veal; and when they are suspended for a short time, they become reduced almost to nothing, as the water, which swells out their parenchyma, drops out, and nothing remains but their thin and fragile membranes.

The delicacy of their conformation has hitherto prevented all attempts to ascertain their interior structure by dissection. It was also peculiarly difficult to inject them with success. No heated substance, such as melted wax, could be used, because it would parch them up in an instant. Mercury, by its weight, tore all their vessels; and liquids, as ink and coloured oil, escaped at the minutest aperture. At length Cuvier had the good fortune to succeed in displaying the vascular system of the medusa, and even to preserve the injected animal for a long time in spirits of wine, by the use of a very fluid matter, which could be consolidated at pleasure, without changing its temperature. He injected the animal with milk, and, the moment the vessels were sufficiently distended,

coagulated the milk, by pouring on a quantity of very strong vinegar.

From this experiment, the following information was obtained:

Under the excrecence above mentioned are eight leaves of flesh, of considerable size, triangular, and indented at the edges. At each of the indentations of these leaves is a small hole, which is only visible when the animal is dilated by means of the injected liquor. Through these small holes the medusa imbibes the portion of fluid by which it is nourished. These small orifices give birth to an equal number of minute vessels, which, after uniting to the number of two or three, terminate in one greater vessel, which occupies the centre of each leaf of flesh.

These eight vessels also unite themselves, two by two, in four large trunks, which descend into a cavity, the only one in the body, and which may be denominated either the heart or the stomach.

This cavity is situated in the base of the cylindrical excrecence, before compared to the stalk of the mushroom: this base, increasing in size, extends itself between four pillars of flesh, which terminate in the body, or part already compared to the head of the mushroom. It is in the midst of these four pillars that the cavity of the stomach is situated. The interstices of the pillars would be so many orifices to this cavity; but they are closed by a thin folded membrane, the use of which, undoubtedly, is to extend itself in proportion as the stomach is filled: however this may be, sixteen vessels branch out from the stomach, which direct themselves immediately to the circumference of the body, dividing its area into sixteen equal partitions.

Four of these vessels correspond with the four pillars of flesh; and there is, on the internal surface of each pillar, a groove which establishes a direct communication between the corresponding vessels, and one of the four grand vessels of the stalk. The remaining twelve are distributed in divisions of three in the interstices of those four, and terminate in those parts of the stomach which are closed by the folded membranes.

The sixteen vessels in the body all communicate with each other by a circular vessel, exactly concentric to the periphery of the animal.

The space, or fillet, situate between this circular vessel and the edge, is filled with an innumerable multitude of small vessels, which form a common net-work, exactly resembling the most beautiful lace.

On the side opposite to the circular vessel, that is to say, on the concave of the body, are sixteen vessels, forming a semicircle, one for each division; they communicate with the greater vessel, not only at their two extremities, but also by means of two or three short vessels, which go directly from the one to the other.

These sixteen semicircles appear to supply with nourishment those parts of the body which are situate between the circular vessel and the stalk; but this fact could not be demonstratively ascertained, as the injection could not be sufficiently projected.

The following facts could, however, be safely inferred:—
1. That the nutritive juices reach the inside by a multitude of small apertures, and not through a single mouth: this is an instance of approximation in this animal to the vegetable species never before intimated by the naturalists.

2. That the nutritive juices do not pass into the vessels until they have been deposited in the great interior cavity: this circumstance restores the medusa to the order of animals.

3. That the vessels which conduct these juices to all parts of the body branch out immediately from this great cavity.

This would also be a singularity, if these vessels are to be considered as real arteries; but if they are supposed to be only elongations of the intestinal cavity, a kind of *cæca*, then the *medusa* may, in this respect, be classed between the star-fish and the polypus; for the star-fish also produces *cæca* disposed in rays, but floating in the cavity of the body, and not connected with it in a common mass; and in the polypus the stomach produces no *cæcum*, but adheres to and incorporates with the rest of the animal.

The *medusa*, uniting in itself both these singularities, is also connected with both the species to which it appertains. If these inferences are correct, Cuvier, in his Elements of Zoology, and Lamarck, in the tables annexed to his Lectures on Helminthology, have rightly placed it between the star-fish and the polypus. In that case, the remarkable characteristic of this animal will consist only in the multitude of its little mouths.

If, on the other hand, the interior cavity be considered as a heart, and the vessels branching from it as arteries, the small vessels leading to it must be considered as veins, or as lymphatic vessels, and we may say that the sea serves it for a stomach, as the earth does to plants.

But the former is the more reasonable supposition, considering that, in the animal scale, the heart disappears much more early than the stomach.

This *medusa* has no nerves, nor any particular organs of sensation; nor could Cuvier discover any organs of generation, or by what particular means the species was multiplied. The thin folded membranes surrounding the stomach, in the interstices between the pillars of flesh, may be considered as adapted for respiration, since the ambient element can pervade their substance to act on the nutritive fluid.

Such is the result of observations hitherto made on this extraordinary animal, whose singularity consists in its having apparently no mouth, but nourishing itself like a plant, by means of ramified suckers, and in the circumstance of its stomach fulfilling the office of the heart.

MEDWI, a town of Sweden, in E. Gothland, called the Swedish Spa, on account of its waters, which are vitriolic and sulphureous. The lodging-houses form one street of uniform wooden buildings painted red. The walks and rides are delightful, particularly on the banks of the Wetter. It is three miles from Wadstena.

MEDZIBOZ, a town of Poland, in the palatinate of Volhonia, seated on the river Bog, 20 miles S. of Constantinow.

MEGEN, a town of Dutch Brabant, seated on the Maese, 15 miles S.W. of Nimeguen. Long. 5. 26. E. Lat. 51. 49. N.

MEGESVAR, a town of Transylvania, capital of a county of the same name, remarkable for its good wines. It is seated on the river Koter. Long. 25. 20. E. Lat. 46. 50. N.

MEGIERS, a town of Transylvania, 28 miles N. of Hermanstadt. Long. 24. 41. E. Lat. 46. 53. N.

MEHRAN, the principal of the channels into which the river Indus divides itself, near Tatta, in Hindooistan Proper.

MEHUN-SUR-YEVRE, an ancient town of France, in the department of Cher. Here are ruins of a castle built by Charles VII. as a place of retirement; and here he starved himself, in the dread of being poisoned by his son, afterward Lewis XI. It is seated in a fertile plain, on the river Yevre, 10 miles N.W. of Bourges, and 105 S. of Paris. Long. 2. 17. E. Lat. 47. 10. N.

MEHUN-SUR-LOIRE, a town of France, in the department of Loiret, seated on the Loire, 10 miles S.W. of Orleans. Long. 1. 48. E. Lat. 47. 50. N.

MEILLERIE, a village of Savoy, in Chablais. It is seated on the S. side of the lake of Geneva, in the recess of a small bay; and at the foot of impending mountains, which in some parts are gently sloping, and clothed to the edge of the water with dark forests, and in others are naked and perpendicular. These dark and gloomy rocks lie S.W. of Clarens, which place and Meillerie are both interesting scenes in the Eloisa of Rousseau.

MEINAU, an island in the bay of the Bodmer Sea, or middle lake of Constance, one mile in circumference. It belongs to the knights of the Teutonic order, and produces excellent wine, which forms the chief revenue of the commander. It is five miles N. of Constance.

MEINUNGEN, a town of Franconia, situate amid mountains, on the river Werra, 14 miles N.W. of Hilburgshausen, and 21 N. of Schweinfurt. Long. 10. 26. E. Lat. 50. 36. N.

MEISSAU, a town of the archduchy of Austria, 14 miles S.S.W. of Znaim, and 34 N.W. of Vienna. Long. 16. 7. E. Lat. 48. 30. N.

MEISSEN, or MISNIA, a margravate of Germany, in the electorate of Saxony, 100 miles long and 80 broad; bounded on the N. by the duchy of Saxony, on the E. by Lusatia, on the S. by Bohemia, and on the W. by Thuringia. It is a very fine country, producing corn, wine, metals, and all the conveniences of life. The inhabitants speak the purest language in Germany. The capital is Dresden.

MEISSENHEIM, a town of Germany, in the duchy of Deux Ponts, situate on the Glan, 28 miles N. of Deux Ponts, and 30 W.S.W. of Mentz. Long. 7. 22. E. Lat. 49. 42. N.

MELAZZO, an ancient town of Natolia, with a bishop's see, and some curious monuments of antiquity. It is seated on a bay of the Archipelago, 60 miles S. of Smyrna. Long. 27. 25. E. Lat. 37. 28. N.

MELCK, a small fortified town of Lower Austria, with a celebrated Benedictine abbey, seated on a hill, 47 miles W. of Vienna. Long. 15. 26. E. Lat. 48. 11. N.

MELDELA, a town of Italy, in Romagna, belonging to its own prince, eight miles S.W. of Ravenna. Long. 11. 48. E. Lat. 44. 22. N.

MELDERT, a town of Austrian Brabant, 10 miles S.E. of Louvain. Long. 4. 41. E. Lat. 50. 45. N.

MELDORP, a town of Lower Saxony, in the duchy of Holstein, seated near the Elbe, 15 miles S. of Tonnigen, and 45. W. of Hamburg. Long. 9. 6. E. Lat. 54. 10. N.

MELFI, a town of Naples, in Basilicata, with a bishop's see, and an ancient castle, seated on a rock, 16 miles N.E. of Conza, and 72 of Naples. Long. 15. 52. E. Lat. 41. 2. N.

MELIDA, an island of Dalmatia, in the gulf of Venice, and in the republic of Ragusa. It is 25 miles in length, and abounds in oranges, citrons, wine, and fish. It has a Benedictine abbey, six villages, and several harbours.

MELILLITHUS, in toxicology, the honey-stone. The celebrated chemist, Mr. Klaproth, of Berlin, has enriched chemistry with a discovery of a new acid, which he obtained by the analysis of this stone. It is not a simple mineral acid; but rather of the nature of a vegetable acid; and according to the properties it shews, it must be considered as a peculiar modification of those elements which constitute vegetable acids, and consequently as a specific vegetable acid, and an acid of its own. The properties it possesses are the following:

1. It crystallises in small fibrous and glomerated masses, and sometimes in small and short columns. It does not appear to be able to crystallise at first, but gets the power

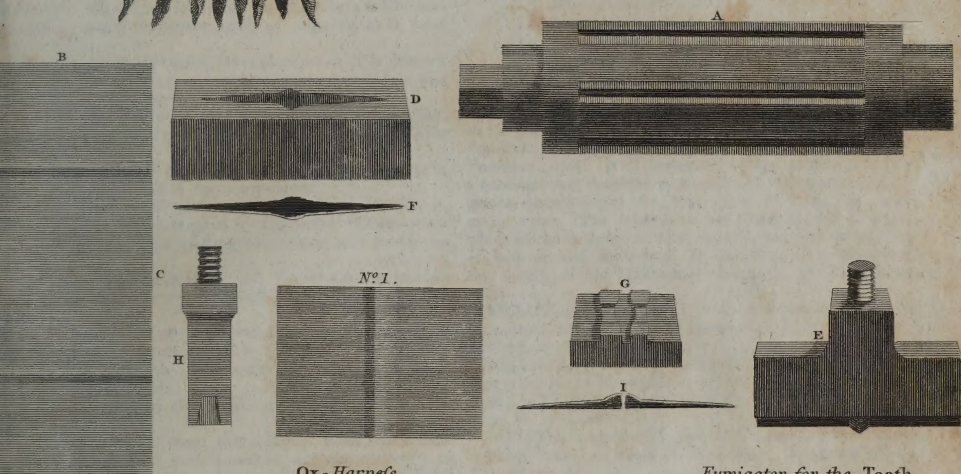
Medusa



Skull of the Ornithorhynchus paradoxus.



Patent Horse-Shoe Nail Machine.



Ox-Harness.
Fig. 1.

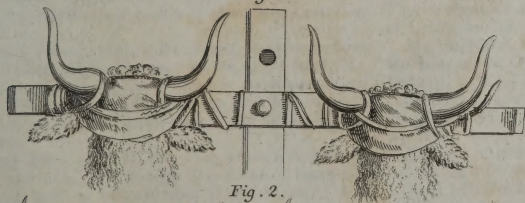
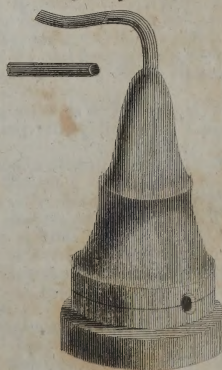


Fig. 2.



Fumigator for the Teeth.



of crystallizing by degrees, by imbibing more oxygen from the air.

2. Its taste is sweetish-four at first, but becomes afterwards a little bitter.

3. Poured upon a heated potsherd it quickly evaporates, spreading a dark grey smoke, which, however, does but little affect the smell; a small quantity of yellowish light ashes is left, which, moistened with water, are quite tasteless, and cause no change at all in blue colours.

4. Neutralized with kali, it forms a crystalline mass of a fibrous, radiant texture.

5. Saturated with natron, or soda, it produces cubic crystallizations, partly diagonal single prisms, partly concrete in a flattened manner.

6. The neutral salt which it produces with ammonia, exhibits small hexagonal prisms, that lose their transparency when exposed to the air, and get a silver-white appearance.

7. Dissolved in water, and dropped into lime-water, into a solution of burned barytes in water, it causes a white precipitation, which disappears again by dropping to it some nitric acid.

8. A similar precipitation takes place when it is dropped into a solution of acetated barytes (acetate de baryte), that also dissolves again in nitric acid.

9. No precipitation followed with muriated barytes; but, soon after, some small needle-like crystals became visible in the mixture.

10. A solution of silver in nitric acid remained clear in mixing it with the acid of the honey-stone.

11. A solution of nitrate of mercury mixed with it, let fall a frequent precipitation of a white colour, which was dissolved again by putting more nitric acid to the solution.

12. Iron dissolved in nitric acid, formed a yellow precipitation with it, and was made soluble by the addition of muriatic acid.

13. A solution of the acetate of lead is much precipitated by it, but clearly dissolved again by nitric acid.

14. With a solution of the acetate of copper, a verdigrise precipitation followed.

15. A solution of nitrate of copper suffered no change by it.

These experiments shew, that this acid enters into a combination with several metallic calces, and that its affinity to them is greater than that of the acetic acid, though inferior to mineral acids. Similar effects are produced by its neutral salts, and the precipitation caused by them is in a great degree soluble.

As this acid is constituted by the carbon, oxygen, and hydrogen, and easily destroyed by fire; and as, at the same time, it agrees with none of the known acids in its properties and relations; it deserves to be placed among the vegetable acids, as an acid of its own, to which the name of *Mellitic Acid* may be given.

The honey-stone, or Mellithus, from which it is obtained, is a fossil found in Saxony amongst the strata of bovey-coal (braunkohle), and was first described by Mr. Werner. It is of a honey-yellow colour, sometimes darker, sometimes lighter, and is always found in a crystallized octædrous form, but seldom in a perfect state. Its surface is generally smooth and shining, but sometimes rough and eaten. It rarely is quite clear, but generally half transparent only, and it is soft, brittle, and easily reduced to a yellow grey powder. Its specific weight is, according to Klaproth, 1550. Mr. Klaproth was induced to subject this mineral to a new analysis, in consequence of the different opinions of chemists and mineralogists about its nature and constituent particles. Some of

them took it for a kind of amber, as Mr. Born; others, for a sort of gypsum impregnated with petroleum. The chief particles are now, according to Mr. Klaproth, a peculiar acid combined with aluminous earth; and the proportion in 100 parts of it is, 16 parts of aluminous earth and 46 of acid, besides the water of crystallization.

Prof. Lampadius, of Freyberg, in Saxony, found in 100

85½ carbon
3¼ petroleum
1 siliceous earth
5 water of crystallization

96

Mr. Abick relates its constituent particles as follow:

40 carbonic acid
28 water of crystallization
16 carbonic aluminous earth
5 benzoic aluminous earth
5½ benzoic acid
5 calx of iron
2½ refin

100

MELINDA, the capital of a kingdom of the same name, on the coast of Zanguebar. Here the Portuguese have 17 churches, nine convents, and warehouses well provided with European goods. It is surrounded by fine gardens, and has a good harbour, defended by a fort; but the entrance is dangerous, on account of the great number of shoals, and rocks under water. The inhabitants are Christians and Negroes, which last have their own king and religion; and the number of both is said to amount to 200,000. It is seated at the mouth of the Quilmanci. Long. 39. 38. E. Lat. 2. 15. S.

MELIPILLA, a town of Chili, in a jurisdiction of the same name, 200 miles N. of Concepcion. Long. 71. 39. W. Lat. 33. 28. S.

MELISSAU, a town of Naples, in Calabria Citeriore, four miles N. of Strongoli.

MELITELLO, a town of Sicily, in Valdi Noto, eight miles W. of Leontini.

MELITO, a town of Naples, in Calabria Ulteriore, with a bishop's see, 40 miles N. of Reggio. Long. 16. 30. E. Lat. 38. 40. N.

MELITOPOL, a town of Russia, in the province of Tauris, about 12 miles from the sea of Azoph, and 108 S. of Catharinensklaf. Long. 83. 10. E. Lat. 46. 22. N.

MELLDORF, a sea-port of Lower Saxony, in the duchy of Holstein, on the German Sea, 48 miles N.W. of Hamburg. Long. 9. 4. E. Lat. 54. 10. N.

MELLE, a town of Westphalia, in the bishopric of Osnaburg, 10 miles E. of Osnaburg. Long. 8. 35. E. Lat. 52. 25. N.

MELLE, a town of France, in the département of the Two Sevres, 13 miles S. of St. Maixent.

MELLINGEN, a town of Switzerland, in the bailiwick of Baden, which, since 1712, depends on the cantons of Zurich and Bern. It is seated in a fertile country, on the river Reufs, five miles S. by W. of Baden.

MELNICK, a town of Bohemia, seated at the confluence of the Elbe and Muldaw, 18 miles N. of Prague. Long. 14. 50. E. Lat. 50. 22. N.

MELOUE, a town of Upper Egypt, seated on the Nile, with a remarkable mosque. Long. 31. 55. E. Lat. 27. 30. N.

MELRICHTADT, a town of Franconia, in the bishoprick of Wurzburg, remarkable for a battle fought near it,

10 M

between the emperor Henry IV. and Rodolph duke of Suabia. It is located on the Strät, 20 miles N. of Schweinfurt.

MELUN, an ancient town of France, in the department of Seine and Marne, located on the Seine 25 miles S.E. of Paris. Long. 2. 55. E. Lat. 48. 30. N.

MEMBRILLO, a town of Spain, in Extremadura, 14 miles S. of Alcantara. Long. 6. 0. W. Lat. 39. 12. N.

MEMMINGEN, a strong town of Suabia, near which, in 1795, the French republicans defeated the emigrants under the Prince of Condé. It is located in a fertile plain, 24 miles S.E. of Ulm, and 35 S.W. of Augsburg. Long. 10. 16. E. Lat. 48. 3. N.

MENAN, a large river of the kingdom of Siam, which runs through it from N. to S. passes by the city of Siam, and falls into the gulf of Siam, below Bangkok. There are several singular fishes in it, beside crocodiles, which are common in these parts.

MENANCABO, the capital of a small kingdom of the same name, in the island of Sumatra; located on the S. coast, opposite the isle of Nias, 250 miles from the strait of Sunda.

MENDE, an ancient town of France, capital of the department of Lozere, with a bishop's see. The fountains, and one of the steeples of the cathedral, are remarkable. It is very populous; has manufactures of serges and other woollen stuffs; and is located on the Lot, 35 miles S.W. of Puy, and 210 S. by E. of Paris. Long. 3. 35. E. Lat. 44. 31. N.

MENDICITY, that state in which paupers frequently are; especially in crowded cities, where the pursuit of pleasure too much engrosses *their natural guardians, the rich*, to attend duly to the charge which Providence has assigned them.

It is certainly a disgrace to the metropolis of Britain, that, with all our charitable establishments, no adequate provision has yet been made to prevent mendicity in London; but that our funds of charity are to be wasted on the indolent and drunken beggar, while modest indigence is often neglected and forgotten.—When the means of occupation, and the inducement to industry and exertion, are provided in London, there will be no further occasion for *vagrant passes, and for orders of removal*. The idle and the profligate beggars will soon find that the air of the metropolis does not suit them; and will retire, as they have done from Edinburgh, to other more congenial climates, where liberal encouragement continues to be offered to idleness and profligacy.

It is no small merit in the Edinburgh establishment (see *EDINBURGH, Supp.*), that they have adopted the principle, so strongly recommended by Count Rumford, of giving the poor the **WHOLE** ENTIRE of their earnings, and **ALL** the benefit of their industry. Those earnings, it is true, are considerable, and at the present period inadequate to their support; and, indeed, whenever an establishment of this kind shall be formed in London, it is probable that the produce of the industry of the poor, in the commencement at least, will be comparatively small. But if we could suppose only one half of the beggars of London to be usefully employed (the other half having retired to other cities, where *speculative idleness is not perfected*), the gain to the public in the positive produce* of labour, in the examples of industry, and in the comparative improvement of morals, would be of an importance beyond all calculation.

"I am aware," says Mr. Bernard, in the Reports of the Society for bettering the Condition of the Poor, "that I shall

be told that the situation, the magnitude, and the circumstances, of Edinburgh and London are very different. In like manner if I urge the example of Munich, I am answered, that "the scale is small,—the difficulty less;—with the military under his orders, and the springs of government at command, the favourite minister of a despotic prince might do much."

—So, if I cite what Mr. Voght has done at Hamburg;—Mr. Venn, at Clapham;—what Lord Winchelsea, at Burley;—Mr. Conyers, at Epping;—Mr. Eitcourt, at Shipton Moyne;—or Mr. Gilpin, at Boldre;—still I am told, there are all peculiar cases, exempt from those circumstances, which are every ready to prevent any thing of that kind being attempted by the projector.—I admit that the magnitude of Edinburgh is less, the education and domestic habits of the poor are better, and that they are free from the embarrassments attending our complicated system of poor laws: but I must observe, that those circumstances in London, which enhance the difficulty, do all increase the necessity of the measure; and that if we are innumerable by poor laws, we may receive from them funds more than adequate to the perfecting and continuing of such a reform; as there can be little doubt that half the money which is now applied in our metropolis in making the poor helpless and idle, would be sufficient for the encouragement of industry, and for the relief of poverty, to the extent that political wisdom and general philanthropy would require; even if we can suppose that the benevolence of individuals would not afford any pecuniary supplies; and that Bridewell, and some other charities, originally intended to have been subversive to this general object, shall remain for ever in their present condition.

"In short, when we consider the degree of distress which such an establishment may alleviate, the comfort it may bestow, the industry it may promote, the productive labour it may create, the bad habits it may amend, the good habits it may form, the improvement in skill and dexterity of working it may produce, the benefit to be done to the metropolis by diminishing the number of beggars at the present, and by keeping down the poor rates in future, and the probable advantages to the country from such an example leading to the erection of similar establishments in other parts of the kingdom,—I flatter myself we shall all speedily unite in measures, for forming an institution to PROVIDE FOR THE BEGGARS OF LONDON, upon principles similar to those which have been adopted with such success and effect at Edinburgh."

After this account of what *ought* to be done to check the growing disposition to mendicity among the poor, especially in the metropolis, we may very properly state what has been done. The following is extracted from an account of an attempt to ascertain the circumstances of the beggars of London, with observations on the best mode of relieving them, by Thomas Bernard, *esq.*

In order to inform himself on this subject, Mr. Martin has, from the beginning of the year 1797, distributed tickets in London, to appoint such of the beggars there, as seemed to merit and wish enquiry into their circumstances, to come to him for that purpose. Of these as many as 120 have attended in consequence;—21 men and 99 women.

Of the men the greater part were maimed, or disabled by age or sickness; and only two of them belonged to any place of legal settlement in London.

Of the women there were 48 widows; seven of them the

* Few persons are fully aware of the extent of the loss to the public by a certain number of persons being unemployed.—The following paper was very lately distributed with good effect among the riotous colliers at Bristol.—"Kingwood, April 11, 1801.—The loss to every **IDLE MAN**, for one day's work, is 2s; one week's ditto, 12s; and if five hundred men do not work for a week, their wives and children will be deprived of the enormous sum of **THREE HUNDRED POUNDS!**"

widows of soldiers; only one of them of a seaman. About a third of these consisted of aged women; some were crippled, and some distressed from want of work: many of them embarrassed by ignorance of the mode of obtaining parochial assistance, or by the fear of applying for it.

Of the wives, in most cases, the difficulty was the want of work, or the incapability of doing it on account of a child in arms. These were cases of very great distress. Above half of them had two or more children, who were some of them infants, and the greater part of the residue of an helpless age, too young for work.

With regard to the settlements of the women, twenty-four referred him to parishes in London and Westminster; thirty-three to parishes in different parts of England; twenty-two belonged to Scotland and Ireland; and the remaining twenty said they could not give, or at least declined giving, him any account of their place of settlement.

By application, in most cases to their parishes, and in some to their friends, he was enabled to obtain effectual relief for several of them: for others he is now using his endeavours. To all of them, the gift of a little food, and the hearing of their melancholy story, afforded some comfort.

Upon this paper, extracted from Mr. Martin's account, Mr. Bernard adds the following observations:—As the parochial poor of the metropolis," says he, "though they are in general treated with kindness and attention, yet the overseers in London have more room allowed for the operations of favour and prejudice, than in country parishes. The magistrates, in the city of Westminster and its suburbs, interfere very little in questions of parochial relief; and the poor are, in consequence, left almost entirely to the *discretion or caprice* of the parish officers; and frequently, by the want of relief, or by their not understanding the mode of applying for it, are induced to increase the number of beggars in London.

"In many of the instances, where persons of this description beg in the streets, a neglect of duty is, in a certain degree, imputable to some of the parish officers of London.—But there is, in the metropolis, a more numerous class of mendicants, who belong to parishes in the country. By the preceding account it will appear, that, of the 120 beggars whose cases have been enquired into, one third of the women, and the greater part of the men, belonged to country parishes; which, in some cases, there is too much reason to believe, their parish officers, either by menaces or promises, had prevailed upon them to quit, in order to set up the trade of a London beggar. In this manner the poor and the helpless, by harsh treatment, or by a trifling present, are sometimes separated from their own connections, where they might live cheaper and earn something, and where by law they are entitled to support and protection, and are, in a degree, compelled to increase the mass of vice and misery in the metropolis.

"This is an abuse which *ought* to be corrected.—Left, however, I should be misunderstood, I must state what has always been my sentiment; that, in policy and justice, every individual should be at liberty, while he can work, to carry his industry to that parish, in which he can exert it with most benefit to himself and the community; and I should add that, in point of kindness and humanity, the aged and infirm, who want parochial aid, should not be removed to a distant parish, that may have been their place of settlement, though not of residence; much less that they should be driven, at the close of a useful life, into a parish work-house, while they have friends and connections, with whom they may continue upon a parochial allowance, not more, and probably less, than they would cost in a work-

house. But the case of London beggars, with country settlements, is very different. Their connections are not in London. They have wandered from their parishes, from their friends, and from those who are by law directed to maintain them, to a place new and unknown to them; where, by a display of misery, too frequently the genuine, though uncredited, representation of real sufferings, they draw *compassionately* and *ingenuously* relief from the compassion of individuals, instead of receiving at home that parochial protection and support, to which by law they are entitled.

"To these two classes is to be added a third, consisting chiefly of casual poor, who are occasionally out of employment, and either are not, or pretend not to be able to procure work. Of these some are ready and desirous to be employed; and the greater part would work, if it were as easy for them to obtain employment, as it is to ask alms. For the relief of them, we have only to follow the example of Count Rumford, in his great and excellent establishment at Munich; or that of Lord Winchelsea, in his school at Oakham, admirable in its simplicity and facility of execution: we have only to establish work-rooms in different parts of the metropolis, where the poor shall have the option of attending or not, where they shall receive inviolably every penny of their earnings, and where they may, *if they prefer it*, partake of a comfortable and good meal at a cheap rate.

"I have described the three classes, of which the beggars of London do principally consist:—1st. of aged and infirm persons, belonging to parishes in or about the metropolis; parishes, which ought, and, with proper assistance, would pay more attention to them: 2d. of a similar description of persons from country parishes, where they should be received and maintained; something being done, if an extraordinary case occurred, to prevent their sending away their parochial poor: and 3d. of persons who cannot procure employment, and of other casual poor, for whose resort and relief work-rooms ought to be opened.

"What is proposed would have the merit of being capable of execution with little or no addition to the statute book; as it would hardly require more than the enforcement of our present laws, in instances where the neglect of them has been attended with serious evils to the community. If, therefore, by the enforcement of those laws, and by the aid of individuals, these three objects are attained;—the relieving of the aged and impotent of London parishes;—the assisting of the country poor to return to their own parishes;—and the finding of employment for the casual poor, who either cannot find work, or do not wish to find it;—begging will soon become, in London, an unnecessary and unprofitable trade.

"A question, however, may arise, whether this object, so far as it calls for the aid of the magistrate, can be attained by the present police offices; or whether it will not require a new and original office of its own.—Most of the police offices are already pretty fully employed; but even if they were not, yet a regular system of relief, that is to pervade the whole of the metropolis—to provide work, and the means of maintenance for all who *can* labour, and for the aged and infirm (who *cannot*) comfort and relief, in the mode best for them, and least burthen some to society;—a measure like this, I am persuaded, could never be completed, and properly carried into effect in this great town, but by one office. It would otherwise be devoid of that singleness and uniformity of plan, which would be essential to its success:—not that it seems necessary that any new appointment should be made for the purpose; as a weekly board held at one of the now existing offices, or, which perhaps would be better, at a separate office, by some of the most active and intelligent

magistrates, selected from the other offices, might be fully adequate to these important objects.

"Such an office, established in the metropolis for the sole purpose of attending to the poor, and forming and promoting plans for their employment and protection, if conducted with zeal, industry, temper, and discretion, would be attended with the most beneficial effects; not merely in the relief of the distressed and impotent poor, but in the reform of the idle and profligate. Whether the execution of the measure should be conducted by the Society, the expenses being defrayed from funds to be furnished by public contribution, or by any other mode, is matter for serious consideration. In any event, it would produce an important diminution in the amount of misery and vice in London; and it would be the means of assisting and encouraging virtue and industry, and converting the benevolence of individuals into its proper and legitimate channel.

MENDIP-HILLS, a lofty tract, in the N.E. of Somersetshire, abounding in coal, calamine, and lead; the latter said to be of a harder quality than that of other countries. Copper, manganese, bole, and red ochre, are also found in these hills. On their summits are large swampy flats, dangerous to crofs.

MENDLESHAM, a town in Suffolk, with a market on Friday, 18 miles E. of Bury St. Edmunds, and 82 N.E. of London. Long. 1. 12. E. Lat. 52. 24. N.

MENDRAH, a province of the kingdom of Fezzan, much of which is a continued level of hard and barren soil; but the quantity of trona, a species of fossil alkali, that floats on the surface, or settles on the banks of its numerous smoking lakes, has given it a higher importance than that of the most fertile districts. It has a town of the same name, 60 miles S. of Mourzook.

MENDRISIO, a town of Switzerland, the capital of an Italian bailiwick, containing about 16,000 inhabitants. It is seven miles W. of Como. Long. 8. 59. E. Lat. 25. 45. N.

MENEHOULD, fr. an ancient and considerable town of France, in the department of Marne, with a castle advantageously situate; but its other fortifications have been demolished. It was almost totally destroyed by a conflagration in 1710. It was here, in 1792, that the French gave the first check to the progress of the victorious Prussians, which in the end compelled them to a retreat. St. Menehould is seated in a morass, on the river Aisne, between two rocks, 20 miles N.E. of Chalons, and 110 E. of Paris. Long. 4. 59. E. Lat. 49. 2. N.

MENGEN, a town of Germany, in Austrian Suabia, 33 miles S.W. of Ulm, and 45. S. of Stuttgart. Long. 9. 13. E. Lat. 48. 1. N.

MENIN, a town of Austrian Flanders, seated on the Lis. In 1585 it was almost entirely destroyed by fire. It is considered as the key of the country; and in every war, from the middle of the 17th century, the possession of it has been deemed of the utmost consequence. It has, therefore, been often taken and retaken; the last time by the French in 1794, when the garrison (in order to save the unhappy emigrants) bravely forced their way through the enemy. It is eight miles S.E. of Ypres, and 10 N. of Lille. Long. 3. 9. E. Lat. 50. 48. N.

MENTON, a city of Italy, in the principality of Monaco, with a castle. It has a considerable trade in fruit and oil; and is seated near the sea, five miles E.N.E. of Monaco, and eight W.S.W. of Ventimiglia. Long. 7. 35. E. Lat. 43. 46. N.

MENZALA, a town of Egypt, situate near a great lake to which it gives name, 20 miles S.S.E. of Damietta, and 73 N.N.E. of Cairo. Long. 32. 2. E. Lat. 31. 3. N.

MEPHITIS (*Enceyl.*) The following communication on a method of preventing and destroying the mephitic taint with which walls become impregnated where a number of persons, particularly sick, are collected together, is inserted in the *Décade Philologique*, &c.

"In my Memoir," says the author, "on milk-painting (see *PAINTING*, *Supp.*), I had considered it only as an object of domestic economy, so that I neglected to treat of the useful application of this method of painting to the demephitization of walls. Let me therefore supply the omission.

"Wherever a great number of persons, either healthy or sick, are collected together, the walls are penetrated, and become intensely furcharged with infectious effluvia; which they again exhale in consequence of the motions of the atmospheric air; so that actual inhalation and exhalation take place in them. The currents of air which are conducted through such places serve very well to renovate the atmosphere, but they do not carry away with them the miasmata that lurk in the pores of the walls, and which are retained there by the infectious moisture proceeding from the perspiration of the bodies, and which condenses itself upon their surface.

"I have mentioned inhalation and exhalation: in fact, in the southern climates, and particularly in Italy, where the phthisis assumes a character of energy that renders it very contagious, experience has shewn that it is necessary, not only to burn all the clothes and furniture that have been in contact with the phthisical person, but likewise to remove the superficial layer of the walls and floors, in order to prevent the contagious miasmata, which is concealed in them, and which they re-exhale, from taking effect. In my opinion, quick-lime might be substituted in the place of these means, and prove a sufficient preventive of the contagion, as it has powerful demephitizing properties.

"By washing with water and lime I entirely deprived a dead body, in a state of putrefaction, which I was charged, by a decree of the parliament, to have dug out of the ground, of its smell, on account of the dangers that might arise from digging it out of ground.

"This mephitism is so inherent, that even time cannot dissipate it, as was proved by the example of the Donjon of Vincennes, when it ceased to be a state prison, under the administration of Maleherbes. Curiosity attracted a great concourse of people to the dungeon; and those who had formerly inhabited the prison being particularly curious to see it, they recognised the same smell in it with which they had been struck upon entering it the first time: and yet the doors and windows had been removed, and the elevation of the building exposed it to the free action of the air.

"Workshops, manufactories, infirmaries, hospitals, prisons, and all such buildings, have an atmosphere peculiar to themselves, an atmosphere which shortens the lives of the individuals, or often becomes the source of epidemic, and sometimes pestilential maladies, as the hospital or prison fever, &c. Plants, when deprived of air, languish and lose their colour; the effects of this privation must be still more powerful upon animals, whose lungs consume so large a quantity of air.

"Citizen Guyton-de-Morveau has discovered a method, by means of muriatic, or preferably oxygenated muriatic gas, of purifying any atmosphere impregnated with contagious and pestilential miasmata. It washes such an atmosphere, and deprives it of its miasmata, which it seizes upon and destroys. This important discovery gives Citizen Morveau a claim to the title of one of the benefactors of humanity, and a right to the civic crown.

"This means, however, though it subdues the mephitism of the air, would, perhaps, not act with equal efficacy upon walls, which conceal, deep within their pores, the miasmata

with which they are infected. The activity of time is sufficient for the purpose.

"I find in my notes the result of an experiment which I shall relate. Wishing to ascertain the power of lime as a means of demephitisation, I had layers, to the thickness of nine lines, taken away from a wall, before I arrived at a layer that was not yet altered. The other portion of the same wall, which I reserved for the comparative experiment, was completely deprived of its mephitic impregnation by three successive applications of common white-wash (pure water and quick-lime). See WHITE-WASH, *Supp.*

"Now lime enters into the composition of the milk-paint, and it may be made the base of it by substituting it instead of the Spanish white, or whitening.

"The painting will become still cheaper by this substitution, on account of the cheapness of the lime, so that the toils of the painting will cost only five centimes: as to the labour, there can be no want of hands in buildings where great numbers of individuals are collected together, and where every thing ought to be conducted as economically as possible.

"To be able to destroy the mephitism of the walls in the asylums of industry, indigence, and misfortune, is certainly a great point gained; but the means of preventing the evil, so that there may be none that requires to be remedied, is a no less valuable acquisition. Now milk-painting, with the base of lime, is the means of preventing the walls from becoming impregnated with infectious miasmata.

"But of what advantage, it may be objected, is the addition of milk and of oil? It is not by a chemist that this objection will be made; however this is our answer to it. The addition is made because lime has no adhesion to the walls: it cannot be applied in a thick layer; and the slightest contact causes it to come off; on which account walls white-washed in the common way soil the clothes that come into contact with them. The caesous part of milk, the addition of the oil, which forms a saponaceous substance with the lime, afford, on the contrary, after the evaporation of the moisture, a layer that possesses density and cohesion, and is capable of receiving thickness; it is a coating, in some measure varnished, which annihilates the porosity of the stone, plaster, brick, or wood, and from which we may wipe off the dust, without laying bare the place which has been painted.

"Milk painting affords another advantage, which I have not mentioned in my memoir, namely, that of checking the nitrification of the walls, which is accelerated by painting in distemper.

"In fact, glue is an animal substance, of which one of the constituent principles is azot; now the decomposition of the glue extricates this azot, which is also one of the constituent principles of the nitric acid, and enables it to combine with the oxygen, with which it forms this acid.

"As milk painting produces no extrication of azot, one of the aliments of the nitrification is removed; not that the caesous part of milk does not also contain azot, but that it does not become decomposed, nor give this principle the freedom requisite to enable it to enter into a new combination. Moreover, this painting stops up the pores of the stone, and intercepts itself between the walls and the nitrifying action.

"Supported by the theory which I have just explained, by the authority of two of our first chemists, Citizens Fourcroy and Deyeux, to whom I have submitted my opinion, and, lastly, by my own experience, I think myself justified in recommending to the administrators of hospitals, to adopt the *resinous milk painting* (always substituting lime in the place of Spanish white) as the most efficacious, and at the same time the most economical means of destroying the mephitisation of the walls, and preventing it for the future."

MEPPEN, a town of Westphalia, which depends on the Bishop of Munster. It is seated on the Embs, 15 miles N. of Lingen, and 50 N.W. of Munster. Long. 7. 36. E. Lat. 52. 45. N.

MEQUINENZA, an ancient town of Spain, in Arragon, with a castle; seated at the confluence of the Lbro and Segra, in a fertile country, 39 miles N.W. of Tortosa, and 180 N.E. of Madrid. Long. 0. 29. E. Lat. 41. 36. N.

MER, a town of France, in the department of Loir and Cher, 10 miles N.E. of Blois.

MERAN, a trading town of Germany, in the Tyrol, capital of Erieland. It is seated on the Adige, 12 miles N.W. of Bolzano. Long. 11. 18. E. Lat. 46. 44. N.

MERAZION, or MARKET JEW, a sea-port in Cornwall, with a market on Thursday; seated on an arm of the sea, called Mountbay, three miles E. of Penzance, and 283 W. by S. of London. Long. 5. 30. W. Lat. 50. 12. N.

MERCURY (*Encycl.*). The following experimental enquiry concerning the solution and oxydation of mercury, by Mr. Schmidt, apothecary at Sondeburg, appears in Scherer's Chemical Journal.

"In preparing," says the author, "the red oxyd of mercury (red precipitate of mercury), the idea had frequently occurred to me, whether the nitrous acid that passes over might not still be employed for other similar purposes, or more mercury employed for solution. Time and circumstances did not at first permit me to enter upon the investigation of this subject, which afterwards ceased to engage my attention, till the observations of Van Mons upon the oxydation of mercury, in this Journal, vol. II. p. 712, which so entirely coincided with what I had formerly suspected, recalled my thoughts to it, and I now felt a more urgent impulse to institute a more accurate enquiry into the subject.

"I therefore first subjected, according to the old method commonly in use, one part of mercury, and two parts of the common aquafortis of the shops, to distillation, in order to examine, whether the acid, which is carried over, might not still be employed once more, or perhaps oftener, for the same purpose. After the distillation, I found that the loss of aquafortis amounted to no more than four scruples in the ounce. To this I added three drachms more of fresh mercury, and my expectations were completely fulfilled; the mercury was completely dissolved, and the fluid that was carried over amounted to six drachms all but one scruple, which, as the acid did not yet seem to have entirely lost its powers, I mixed still with three drachms of mercury, in order to carry my experiments to this ultimate point. Here, however, my expectations failed: scarcely two drachms were dissolved, and amongst this salt I found globules of liquid mercury, which, being accurately weighed, amounted to sixty-six grains; and the fluid that had passed over no longer exhibited any traces of predominant acidity.

"After having repeated these experiments several times, and always with the same result, I took equal parts of mercury and common aquafortis, as the former experiments clearly proved that this completely dissolved, and consequently oxydated the mercury, put both together into a retort, and subjected them to distillation. I again obtained a perfect nitrate of mercury, but the nitrous acid that was carried over was far less in weight than before, which was to be attributed to the greater quantity of mercury that had been employed. I then mixed the acid that had passed over once more with half the quantity of mercury; but now nine scruples remained undissolved in the retort out of one ounce of mercury.

"These experiments sufficiently convinced me, that the common aquafortis of the shops is able to dissolve only a little more than an equal quantity of mercury: I therefore thought

proper to try the *double aquafortis* (*aquafortis duplex*), and the concentrated fuming nitrous acid (*Acidum nitri concentratum*). But all the experiments which I made with those afforded me little more dissolved mercury than the common single aquafortis had done: a drachm of fuming nitrous acid dissolved only four scruples of mercury, all of which, under the extrication of a large quantity of nitrous gas, was converted into a dry saline mass, to which no artificial heat could be applied. Double aquafortis was more convenient for my experiments, as it produced no constant extrication of vapours; however it dissolved and oxydized no larger a quantity of mercury than had been done in the former processes.

"It now therefore only remained for me to try the purified acid of nitre; and it was necessary for me to make the experiment also with this, in order that I might be able to draw certain inferences from my experiments. I therefore purified good common single aquafortis again over dry saltpetre, put the fluid which first passed over apart, and employed only that which followed for my experiments. Their result was as follows:

"1. Equal parts of mercury and purified acid of nitre, immediately dissolved in the cold, under an extrication of nitrous gas, in a glass vessel, and yielded a white salt, over which fell one scruple of fluid flood; this I poured anew upon half a drachm of mercury, which likewise was entirely converted into a saline mass.

"2. Half an ounce of purified aquafortis, and an ounce of mercury, were likewise completely dissolved, without the application of artificial heat.

"3. I then poured half an ounce more of this aquafortis, and two ounces of mercury, into a small retort, in which I let them remain inclosed over night, and, on the following morning, I found that six drachms were dissolved. I then fixed a receiver to the retort, and applied a gentle heat; however, no more mercury was dissolved; I therefore poured the remaining crude mercury into the fluid that had passed over into the receiver, in which, upon the application of heat, two drachms were again dissolved, so that in all an ounce of mercury remained undissolved*.

"After having made these experiments, I endeavoured to avail myself of the hints which Van Mons gives in the above-mentioned article in Scherer's Journal, namely, "To perform the solution and oxydation of the mercury in an open vessel, which enables us to stir the mass, and divide the mercury." An evaporating dish of porcelain was chosen for this purpose: I began the solution at a low temperature, and gradually increased the heat, at the same time keeping the mass in constant motion by stirring it; however, all my labour was in vain. I obtained nothing more than what the preceding experiments had already exhibited, and the supposition of Van Mons, "That, by proceeding in this manner, it might be possible to oxydize at least fifty parts of mercury with twenty parts of moderately concentrated nitrous acid," was proved to be groundless. I obtained, indeed, a very good oxyd; but the mercury that was not dissolved had escaped in increasing the temperature.

"However, if we take the proper proportions of acid and mercury, and manage the fuel properly, this mode of proceeding is the most convenient, easy, and advantageous. By con-

stant stirring, every part of the mercury is exposed to the action of the acid; the whole process is completed in a few hours, and a considerable saving of fuel is made.

"From all the experiments hitherto mentioned, I deduce the following inferences:

1. "That the common, not purified, aquafortis of the shops, both single and double, can dissolve and oxydize well only equal quantities of mercury; but that one part of purified aquafortis can dissolve and oxydize two parts of mercury.

2. "That consequently purified aquafortis, free from all admixture of muriate and sulphuric acid, is the best adapted for the solution of mercury.

3. That the solution or oxydation of mercury, performed in open vessels, effects nothing more than that which is performed in close vessels; but that, for the reasons already adduced, it is more advantageous to perform the operation in open vessels†.

4. "That it is advantageous, when this operation is performed in close vessels, to reserve the acid that passes over from the mercurial oxyd, for new solutions of mercury; or also to make use of this fluid in preparing the white precipitate of mercury, as always a portion of dissolved mercury passes over together with it, which affords a white precipitate with muriate of ammonia and carbonate of kali.

5. "When too much mercury was employed, I did not observe that it passed over into the receiver in the metallic salt; but it was always at first covered by the mercurial salt; and upon increasing the temperature, it was raised indeed, but it deposited itself in a half-calcined state upon the upper part of the retort, in the form of a greyish-white sublimate. The very trifling quantity of metallic mercurial globules that passed over was immediately dissolved by the distilled acid contained in the receiver.

MERDIN, a town of Turkey, in Diarbeck, with a castle, and an archbishop's see. The country about it produces a great deal of cotton. It is 45 miles S.E. of Diarbekar. Long. 39. 59. E. Lat. 36. 50. N.

MERE, a town in Wiltshire, with a market on Tuesday, 28 miles W. of Salisbury, and 100 W. by S. of London. Long. 2. 25. W. Lat. 51. 6. N.

MERECZ, a town of Lithuania, seated at the confluence of the Perezino and Merez, 30 miles N. of Grodno. Long. 24. 10. E. Lat. 50. 0. N.

MERGENTHEIM, a town of Franconia, subject to the grand master of the Teutonic order; and seated on the Tauber, 16 miles S.W. of Wurtzburg. Long. 8. 50. E. Lat. 49. 30. N.

MERGUL, the capital of a province of the kingdom of Siam, situate on an island near the coast, with an harbour, which is said to be one of the best in the East Indies. Long. 98. 28. E. Lat. 12. 6. N.

MERINDOL, a village of France, in the department of the Mouths of the Rhone, whose inhabitants were massacred on account of their religion, in 1545, by virtue of an arrest of the parliament of Aix. It is nine miles E. of Cavallion.

MERITZ, MERITCH, or MERRICH, an important fortress and city of the Decan of Hindoostan. It was taken by Hyder Ally, in 1778; and is situate near the N. bank of the river Kistna, 70 miles S.W. of Viliapour.

* "It is not yet entirely clear to me (says Mr. Schmidt in a note), from whence it proceeded, that the whole of the nitrous acid did not at first saturate itself with mercury, and that the fluid that passed over still dissolved a portion of mercury, as was the case in all the processes before mentioned. Perhaps the nitrous salt of mercury that had separated itself from, and covered, the metallic mercury, prevented the nitrous acid, that was now left in a weak state, from acting upon it."

† Note of Prof. Scherer. "In the same manner I also dissolve the sulphate of mercury, complete the operation in a few hours, which, when performed in close vessels, occupies several days, on account of the difficulty with which the concentrated sulphuric acid passes over, and nevertheless obtain Turpeth mineral of the finest yellow colour."

MERK, a river of Austrian Brabant, which running N. by Breda, afterward turns W. and falls into one of the mouths of the river Maese, opposite the island of Overflackee, in Holland.

MERO, a strong town of the kingdom of Pegu, 140 miles S.W. of the town of Pegu. Long. 98. 36. E. Lat. 16. 6. N.

MEROU, a town of Persia, in Chorasan, seated in a fertile country, which produces salt, 112 miles S.W. of Bokhara. Long. 64. 25. E. Lat. 37. 40. N.

MERRIMACK, a town of the United States, in New Hampshire, situate on a river of the same name, 35 miles N.W. of Boston.

MERSEBURG, a town of the electorate of Saxony, in Misnia, with a bishop's see; seated on the Sala, 10 miles S. of Halle, and 56 N.W. of Dresden. Long. 12. 6. E. Lat. 51. 28. N.

MERSPURG, a town of Suabia, in the bishopric of Constance, and the bishop's usual place of residence. It is seated on the N. side of the lake of Constance, 11 miles from the town of that name. Long. 9. 26. E. Lat. 47. 45. N.

MERTOLA, a strong town of Portugal, in Alentejo, seated near the Guadiana, 60 miles S. of Evora, and 100 S.E. of Lisbon. Long. 7. 40. W. Lat. 37. 30. N.

MERTON, a village near Oxford, situate near two military ways. There were intrenchments in the neighbouring woods, supposed to be thrown up by King Ethelred, or the Danes, whom he defeated in 871.

MERTON, a village in Surrey, seated on the Wandle, seven miles S.W. of London. It had a celebrated abbey, founded in the reign of Henry I. in which several important transactions took place; particularly, at a parliament held here, in 1236, were enacted the provisions of Merton (the most ancient body of laws after Magna Charta), and the barons gave that celebrated answer to the clergy, *Nolumus leges Anglie mutari*—We will not change the laws of England. Nothing remains of this abbey, but the E. window of a chapel; and the walls that surround the premises, which are built of flint, are nearly entire, and include about 60 acres. Upon the site of this abbey are two calico manufactures, and a copper-mill; and about 1000 persons are now employed on a spot, once the abode of monastic indolence.

MERVE, the north branch of the river Maese, in Holland, on which the city of Rotterdam is seated.

MERVILLE, a town of France, in the department of the North, seated on the Lis, 10 miles S.E. of Cassel, and 24 S.W. of Menin. Long. 2. 43. E. Lat. 50. 57. N.

MESEN, a sea-port of Russia, in the government of Archangel, capital of a district of the same name. It is seated on the river Mefen, on the E. coast of the White Sea, 160 miles N. of Archangel. Long. 44. 45. E. Lat. 65. 50. N.

MESKIRK, a town of Suabia, in the county of Furstenturg, 15 miles N. of Ueberlingen.

MESSA, a town of Morocco, on the river Sus, not far from the Atlantic, at the foot of Mount Atlas. Near it is a mosque, in which are the bones of a whale, which the inhabitants consider as the bones of the whale that swallowed Jonah. It is 165 miles S.W. of Morocco. Long. 10. 46. W. Lat. 29. 58. N.

MESSING, a town of Franconia, in the bishopric of Aichstatt, 14 miles N.N.E. of Aichstatt.

MESTRE, a town of Italy, in the dogado of Venice, 16 miles N.E. of Padua. Long. 12. 2. E. Lat. 45. 26. N.

MESURATA, a sea-port of Tripoli, and the residence of a governor. Caravans travel hence to Fezzan and other interior parts of Africa, with which they carry on a great trade. It

is 100 miles E.S.E. of Tripoli. Long. 15. 2. E. Lat. 37. 55. N.

METELN, a town of Westphalia, in the bishopric of Munster, 19 miles N.W. of Munster. Long. 6. 59. E. Lat. 52. 18. N.

METERISCH, a town of Moravia, in the circle of Iglau, 17 miles E. of Iglau, and 76 S.E. of Prague. Long. 15. 58. E. Lat. 49. 6. N.

METHODISTS (*Encycl.*). We have already given a general account of this religious body, but it may not be disagreeable to the reader to have their present state in England more particularly described. The most trivial causes have oftentimes effected the greatest changes in society. Systems have been overturned by casual incidents, apparently of no significance; and widely-extended corruptions have been purged away, by means the most inadequate, and through the instrumentality of persons from whom different designs might have been expected. The reformation of the church, and the ultimate destruction of the papal power, may be attributed to the preference given by Leo X. to the Dominicans, and the consequent resentment of the Augustine monks, who encouraged their brother Luther to a spirited opposition of the papal indulgences.

The great change which has evidently taken place in the protestant churches within the present century, and the spread of religious knowledge in various parts of the earth, not long since obscured with ignorance and superstition, may be traced to the chambers of a private fellow of a college in Oxford. The sentiments of John Wesley, upon the necessity of a living Christianity, seated in the hearts and commanding the practice of men, in opposition to a mere formal profession, led him to associate with others of the same serious disposition. The remark made to him by a good man, whom he went many miles to see, affected him not a little: "Sir (said he), you wish to serve God and to go to heaven. Remember, you cannot serve him alone. You must, therefore, find companions, or make them: the Bible knows nothing of a solitary religion." Soon after this, which was about the year 1729, Mr. Wesley formed a small society at Oxford, of serious students, as his brother Charles, a Mr. Morgan, the exemplary Mr. Harvey, the celebrated George Whitfield, and others. These pious young men met together, to promote one another's studies, and to read the scriptures for mutual edification. Finding the benefit of this course, they proceeded, in the next place, to render themselves more conspicuous in a work of love; namely, to visit the prisoners in the castle, and the sick poor in the town. Being increased to the number of fifteen, they were strengthened in their minds, and encouraged in their pious labours. At this time, when prejudice is so much softened down, and religious intolerance has been driven away by a spirit of liberality, the man of enlarged mind, whatever may be his principles, cannot see any thing to discommend in this conduct: it was, on the contrary, such as highly became persons defined for the most sacred professions, and ought to be held up as an example to all candidates for the ministry. Thus far, candour must approve the rise of what is called *Methodism*, which term was applied to these serious young men by a fellow of Merton college, in allusion to an ancient sect of physicians at Rome, who were remarkable for putting their patients under regimen, and were therefore called *Methodists*. But religious zeal is a delicate thing, and requires to be tempered with much discretion. Messrs. Wesley and Whitfield were fired with the spirit to such a degree, that no limits could contain them. Though ordained in an episcopal church, the canons of which are very severe against all irregularities, they ventured to break the barriers, and went forth as missionaries to convert the world.

The churches being soon shut against them, they adopted the novel method of field-preaching, which produced much disorder, and, it must also be confessed, much good. The next irregular step of these good men, for such they undoubtedly were, was the authorizing laymen, and those in general of the lowest occupations, to preach the gospel. Nothing can prove the tenderness of our national establishment more effectually than the indulgence which was shewn to these clergymen: no ecclesiastical censure was ever passed upon their conduct, although suspension might naturally have been expected. The churches, it is true, were in general shut against them; but this was the private act of individuals, with which the bishops could have no concern. But to return: the societies of methodists increased rapidly, and were multiplied throughout the kingdom. At length the two great leaders, John Wesley and George Whitfield, separated from each other, and a grand breach was made between their followers. The former held universal redemption and free will, while the others strenuously adhered to absolute election and free grace. The heats occasioned by this difference subsisted for many years, and produced much violent and indecent controversy: at present there is more unity between them, and they appear to be ashamed of the intemperance which disgraced their once favourite disputants. Mr. Wesley preserved an admirable economy in his numerous societies, which were held together, during his life-time, by a simple, but firm, discipline. Since his death, they have suffered considerably from a spirit of dissension. Mr. Wesley always preserved a great regard for the church of England; and never suffered his societies to have religious worship in the hours of church service, or the sacrament to be administered by lay-preachers. Since his death, both these restrictions have been broken, and most of his societies have become complete dissenters. Many, however, from their veneration for Mr. Wesley, disapprove these measures, and refuse to hold communion with their brethren—calling themselves, with an honest pride, *Church Methodists*. Mr. Wesley, it is said, about the year 1765, was so imprudent as to accept of consecration from a person calling himself a Greek bishop, who also ordained several of the lay-preachers. This was a scandalous violation of the canons, and a pitiful subterfuge at the very best. It is generally concluded that the man was an impostor. Mr. Wesley afterwards took upon him, with the assistance of some other presbyters, to ordain preachers, and even consecrated, after a manner, Dr. Coke to be a superintendant, or bishop, of the methodists in North America. This gentleman is now at the head of the Wesleyan, or Arminian methodists, and is indefatigable in following the steps of his great leader. He has made several voyages to America and the West-Indies, where the societies are very numerous; and it is said that their labours among the negroes have been exceedingly successful. No less than ten thousand are regular members of classes in the West-India islands, where there are also many black preachers. The methodists of Mr. Wesley's establishment are more numerous than those of the Calvinistic persuasion, and appear to be better subjects of the government.

METHVEN, a town of Scotland in Perthshire, with an ancient castle. It has manufactures of broad and narrow linen; with two paper and some other mills. King Robert Bruce, soon after his coronation in 1306, was defeated here by the English troops under the earl of Pembroke, and found himself forsaken by the greater part of his army. It is five miles W.N.W. of Perth.

METHWOLD, a town in Norfolk, with a market on Tuesday, 15 miles N.W. of Thetford, and 86 N.N.E. of London. Long. 0. 40. E. Lat. 52. 34. N.

METLING, a strong town and castle of Germany, in the

duchy of Carniola, seated on the Kulp, 40 miles S.E. of Laubach. Long. 15. 10. E. Lat. 46. 2. N.

METRO, a river of Italy, which rises in the territory of the church, runs into the duchy of Urbino, and falls into the gulf of Venice, near Fano.

MEUDON, a village of France, where was a magnificent royal palace on the Seine, six miles S.E. of Paris.

MEULAN, an ancient town of France, in the department of Seine and Oise. It is built in the form of an amphitheatre, on the river Seine, over which are two bridges, 20 miles N.W. of Paris. Long. 1. 57. E. Lat. 49. 1. N.

MEURS, a town of Germany, in the duchy of Cleves, seated on the Rhine, 15 miles N.W. of Dusseldorf. Long. 6. 41. E. Lat. 51. 25. N.

MEURTHER, a department of France, including part of the late province of Lorraine. It is so called from a river that rises in the department of the Voges, and watering Lunéville and Nancy, falls into the Moselle. Nancy is the principal see of this department.

MEUSE, a department in France, including the late duchy of Bar. It takes its name from the river Meuse, or Maëse. Bar-le-Duc is the capital. See **MAËSE**.

MEWARI, a considerable town of Japan, in the island of Niphon, with a royal palace. It is seated on a hill, at the foot of which are vast fields of wheat and rice, with fine orchards, full of excellent plums.

MEWAT, a hilly and woody tract of Hindoostan Proper, lying on the S.W. of Delhi, confining the low country, along the W. bank of the Jumna, to a comparatively narrow strip, and extending westward 130 miles. From N. to S. it is 90 miles. Although situate in the heart of Hindoostan, within 25 miles of its former capital (Delhi), its inhabitants, the Mewatis, have been ever characterized as the most savage and brutal; and their chief employment has been robbery and plunder. In 1265, 100,000 of these wretches were put to the sword; but they are still so noted as thieves and robbers, that parties of them are taken into pay by the chiefs of Upper Hindoostan, in order to distress the countries that are the seat of warfare. Mewat contains some strong fortresses on steep or inaccessible hills, and was almost entirely subject to the late Madajee Sindia, a Mahratta chief.

MEWAT-ALI, a town of Persia, in Irac-Arabia, not so considerable as formerly, but famous for the superb and rich mosque of Ali, to which the Persians go in pilgrimage from all parts. It is 100 miles S.W. of Bagdad. Long. 42. 57. E. Lat. 32. 0. N.

MEXAT-OCREM, a considerable town of Persia, which takes its name from a mosque dedicated to Ocem, the son of Ali. It is seated in a fertile country, on the river Euphrates, 70 miles N. of Mexat-Ali. Long. 42. 57. E. Lat. 33. 0. N.

MEXICANO, or **ADAYES**, a river of Louisiana, which empties itself into the gulf of Mexico.

MEXICO, the capital of the province of Mexico Proper, of the audience of Mexico, and of all New Spain. It was a flourishing place before the Spaniards entered the country, and was seated on several islands, in a salt-water lake, to which there was no entrance, but by three causeways, two miles in length each. It contained about 80,000 houses, with several large temples, full of rich idols, and three palaces where the emperor of Mexico resided. The abbé Clavigero says, that when the Mexicans were subjected to the Colhuau and Tepanecan nations, and confined to the miserable little islands on the lake of Mexico, they ceased for some years to cultivate the land, because they had none, until necessity taught them to form moveable fields and gardens, which floated on the waters of the lake. The method which they pursued to make these, and which they still practise, is extremely simple. They

plait and twist willows and roots of marsh plants or other materials together, which are light, but capable of supporting the earth of the garden firmly united. Upon this foundation they lay the light bushes which float on the lake; and over all, the mud and dirt which they draw from the bottom of the same lake. Their regular figure is quadrangular; their length and breadth various; but generally they are about eight perches long, and not more than three in breadth, and have less than a foot of elevation above the surface of the water. These were the first fields which the Mexicans owned after the foundation of Mexico; and there they first cultivated the maize, great pepper, and other plants necessary for their support. In progress of time, as these fields grew numerous from the industry of the people, there were among them gardens of flowers and odoriferous plants. Every day, at sunrise, innumerable vessels, loaded with various kinds of flowers and herbs cultivated in these gardens, are seen arriving by the canal, at the great market-place of the capital. The mud of the lake is an extremely fertile soil, and requires no water from the clouds. In the largest gardens there is commonly a little tree, and even a hut, to shelter the cultivator and defend him from rain or the sun. When the owner of a garden wishes to change his situation, he gets into his little vessel, and by his own strength alone, if the garden is small, or with the assistance of others, if it is large, he tows it after him, and conducts it wherever he pleases. Mexico was taken by Cortez, in 1519, after a siege of three months. As the Mexicans defended themselves from street to street, it was almost ruined, but afterward rebuilt by the Spaniards. The streets are straight, and so exactly disposed, that in point of regularity it is the finest city in the world; and the great causeways leading to it, with the want of walls, gates, and artillery, render Mexico extremely remarkable. The great square in the centre of the city, and the public buildings, are magnificent. There are 20 cathedrals and churches, and 22 convents; of the riches of which an idea may be formed from the revenues of the grand cathedral, amounting to 80,000*l.* a year, of which the archbishop has 15,000*l.* There is also a tribunal of the inquisition, a mint, and an university. This city contains above 200,000 inhabitants. The goldsmiths here are immensely rich, and it carries on a great trade to Europe by St. Juan de Ulhua, and to Asia by Acapulco. This place was overthrown by an inundation in 1629, in which 40,000 persons were drowned. This obliged the Spaniards to make a great conduit through a mountain, in order to empty the lake; which being done, part of the town became seated on dry land. Mexico is supplied with fresh water by an aqueduct three miles long. It is 200 miles E.N.E. of St. Juan de Ulhua, and 250 N.E. of Acapulco. Long. 100. 34. W. Lat. 20. 2. N.

MEXICO, GULF OF, that part of the Atlantic Ocean, on the coast of N. America, bounded on the S. and W. by Mexico, and on the N. by W. and E. Florida; the entrance lying to the E. between the S. coast of E. Florida, and the N.E. point of Yucatan.

MEYENBERG, a town of Upper Saxony, in the marche of Prenzitz, 21 miles N.E. of Perleberg, and 60 N.N.W. of Berlin. Long. 12. 19. E. Lat. 53. 20. N.

MEYENFELDT, a town in the country of the Grifons, seated on the Rhine, in a pleasant country, fertile in excellent wine, 15 miles N.E. of Coire. Long. 9. 36. E. Lat. 47. 2. N.

MEYRVEIS, a town of France, in the department of Lozère, 23 miles S. of Mende, and 27 W. of Alais. Long. 3. 18. E. Lat. 44. 10. N.

MEZANA, a town of Naples, in Basilicata, 17 miles S.S.W. of Turin.

Vol. X

MEZEMNA, a sea-port of Fez, on the coast of the Mediterranean, 80 miles E. of Tetuan. Long. 4. 1. W. Lat. 35. 22. N.

MEZEN, a sea-port of Russia, in the government of Archangel, near the White Sea, at the mouth of a river of the same name, 128 miles N.N.E. of Archangel. Long. 43. 34. E. Lat. 66. 30. N.

MEZIN, a town of France, in the department of Lot and Garonne: seated in a country that abounds in wheat, with vines, from which is principally made brandy; and with the cork-tree, which is sold both in its natural state, and in corks. It is nine miles N.W. of Condom.

MIA, or MIJAH, a large town of Japan, seated on the S. coast of the island of Niphon, with a fortified palace. Long. 130. 40. E. Lat. 35. 50. N.

MIANA, a town of Persia, in the province of Aderbeizan. Here the celebrated traveller M. Thevenot died, on his return from Ispahan. It is 57 miles S.E. of Tauris.

MICHA, a cape of Dalmatia, which advances into the gulf of Venice, near the town of Zara.

MICHAEL, St. the most fertile and populous of the Azores or Western Islands. Its two principal harbours are Ponta Guda and Villa Franca: the former is the capital of the island. Long. 25. 42. W. Lat. 37. 47. N.

MICHAEL, St. a town of France, in the department of Meuse, remarkable for its hospital, and the rich library of a late Benedictine abbey. It is seated on the Meuse, 20 miles N.E. of Bar-le-Duc, and 165 E. of Paris. Long. 5. 38. E. Lat. 48. 51. N.

MICHAEL, St. a sea-port of New Spain, in the province of Guatemala, seated on a small river, 130 miles S.E. of New Guatemala. Long. 87. 45. W. Lat. 12. 25. N.

MICHAEL, St. a town of Peru, in the province of Quito. It was the first Spanish colony in Peru, and is seated near the mouth of the Piura, 225 miles S. by W. of Quito. Long. 80. 50. W. Lat. 5. 0. S.

MICHAEL DE IBARRA, St. a town of Peru, in the province of Quito, 60 miles N.E. of Quito.

MICHAEL, GULF OF St. to the E. of Panama, that part of the Pacific Ocean, which was first discovered by the Spaniards, after their march across the isthmus of Darien.

MICHELONA, a country of Prussia, which is part of the circle of Culm, and separated from the other part by the river Dribeats. It takes its name from the castle of Michelow.

MICHIGAN, a considerable lake of N. America, whose N.E. extremity communicates with the N.W. end of Lake Huron, by the strait of Michillimackinac.

MICHELLIMACKINAC, a strait of N. America, which unites the lakes Michigan and Huron, and lies in 85° W. long. and 46° N. lat.

MIDDLEBURG, a large and strong commercial city of the United Provinces, capital of the island of Walcheren, and of all Zealand. The squares and public buildings are magnificent. The Dutch took it from the Spaniards, in 1574, after a siege of 22 months. The inhabitants are computed at 26,000. The harbour is large and commodious, and has a communication with the sea by a canal, which will bear the largest vessels. It is 20 miles N.E. of Broges, 30 N.W. of Ghent, and 72 S.W. of Amsterdam. Long. 3. 39. E. Lat. 51. 32. N.

MIDDLEBURG, a town of Dutch Flanders, which belongs to the prince of Hensgenin. It is five miles S.E. of Sluys. Long. 3. 26. E. Lat. 51. 15. N.

MIDDLESEX, a county of the state of Massachusetts. Charlestown, Cambridge, and Concord, are the chief towns.

MIDDLESEX, a county of the state of Connecticut, which,

with the county of Tolland, has been recently formed from that of Hartford. Middletown and Haddam are the county towns.

MIDDLESEX, a county of the state of New Jersey. New Brunswick is the chief town.

MIDDLETON, a commercial town of the state of Connecticut, seated on the river Connecticut, 15 miles S. of Hartford. It is one of the county-towns of Middlesex.

MIDDLETOWN, a town of the state of New Jersey, and adjoining Shrewsbury, in the county of Monmouth. Sandy Hook (so called from its shape and soil) is included in this township. On the point of the Hook stands the light-house, 100 feet high, built by the city of New York. Middletown is 30 miles S.W. of New York, and 50 E. by N. of Trenton.

MIDWIFE (*Encycl.*). The following extract from an account of the mode of supplying a country parish with a midwife, by the Rev. Mr. Dolling, late Vicar of Aldenham, Herts, appears in the Reports of the Society for bettering the Condition of the Poor.

"Fifteen years ago (says Mr. Dolling), there being then no midwife living in the parish of Aldenham, I selected a poor widow, who had three children supported by the parish, and sent her up for instruction, to the Lying-in Hospital in Store-street, near Tottenham court-road; where Dr. Osborn permitted her to continue for three months, at a very small expence. Though without any preparatory education, she returned so well instructed, as to exercise her calling in the parish ever since, without a single accident, or ever having occasion to call in medical assistance*. She has been enabled thereby to support herself and her children comfortably: and is now living, and in the enjoyment of the confidence due to her skill. She attends all the day-labourers' wives, at the stipulated sum of half-a-crown.

"The expence of her instruction and setting up, was collected in the parish by subscription; part of which paid for her board in the hospital; and the rest of the money was applied for her journey and incidental expences.—She has been the cause of a considerable saving in the medical bills of the parish, besides being a very great comfort + and relief to the poor."

The expence and trouble of the above was trifling; its benefit, both to the poor and to the parish, considerable: whenever, therefore, a parish is distant from medical aid, and unprovided with a midwife of its own, the above may be recommended to its consideration.

MIECHAU, or **MIEZAWA**, a town of Poland, in Cujavia, seated on the Vistula, 10 miles S. by E. of Thorn. Long. 18. 46. E. Lat. 52. 58. N.

MIGLIANO, a town of Naples, in Principato Ulteriore, 15 miles N.N.E. of Conza.

MIKALIDI, a town of Turkey in Asia, in Natolia, with

a fort, situate on a river, which runs into the sea of Marmora, 35 miles W. of Bursa. Long. 28. 24. E. Lat. 40. 10. N.

MILAZZO, a strong sea-port of Sicily, in Val-di-Demona. It is divided into the upper and lower town; the upper is very strong, and the lower has a fine square, with a superb fountain. It is seated on a rock, on the W. side of a bay of the same name, 13 miles W. of Messina. Long. 15. 34. E. Lat. 38. 12. N.

MILETO, an ancient town of Naples, in Calabria Ulteriore, with a bishop's see, five miles from Nicotera.

MILETS, anciently **MILETUS**, a town of Turkey, in Asia, in Natolia, 64 miles S. of Smyrna. Long. 27. 14. E. Lat. 38. 22. N.

MILFORD, a town of the state of Delaware, in the county of Sussex, seated at the source of a small river, 15 miles from the bay of Delaware, and 150 S. of Philadelphia.

MILHAUD, a town of France, in the department of Aveyron. It was dismantled in 1629, and is seated on the Tarn, 50 miles N.W. of Montpellier, and 142 S. of Paris. Long. 3. 11. E. Lat. 44. 3. N.

MILANE, a town of the state of Algiers in Tremesen, with a castle. It is seated in a country fertile in oranges, citrons, and other fruits, the best in all Barbary. Long. 2. 35. E. Lat. 35. 15. N.

MILK (*Encycl.*). In the village of Barton-under-Needwood, Staffordshire, the principal number of the poorer inhabitants were destitute of all means of procuring this most useful species of food for their families. The benefit which would result, if they could be furnished with that article of food, appeared of so much importance, that, nearly three years since, a specific plan for providing a supply was adopted. A respectable tradesman in the parish expressed his readiness to take a quantity of his land into his own hands, and to employ it in keeping cows, for the purpose of selling their milk to the poor. He mentioned, however, two obstacles, as necessary to be removed. He stated the impracticability of distributing the milk at his own house; as the crowd, which would frequent it for a considerable time every morning and evening, together with the consequent noise and trouble, would be equally unpleasant and inconvenient. And he apprehended that he should receive from the purchasers a quantity of copper coin, larger than he should be capable of circulating again, either in the way of change to them, or in his own business. It was therefore settled, that the milk should be regularly carried from the field to the house of another inhabitant of the village, and sold there: and a friend of the undertaking engaged to pay this person annually for his trouble. The tradesman had also an assurance, that copper coin, to the amount of some guineas annually, should be taken off his hands, if he thought proper. These points being adjusted, the measure was carried into effect at Candlemas, 1795; and it has been continued without interruption to the present

* In the Manchester Infirmary, upon the suggestion of Mr. Simmons, a surgeon of eminence there, a plan for the relief of poor lying-in women has been adopted, which may deserve the attention of other medical hospitals. Upon notice of any difficult case of delivery, the infirmary surgeon of the district, or in his absence the one next in rotation, immediately attends gratis, and assists the poor woman at home; and the Infirmary provides medicines if wanted. The cases that have occurred have been very few, but they were cases of difficulty, and most of them would have been of extreme danger without such medical aid.

+ It seems much better for the wives of the poor, that they should be attended at home, and receive a little pecuniary or other assistance, than that they should be moved into a lying-in hospital; in which case the woman is usually absent from home for a month, her family neglected during her absence, some parochial charge incurred, and she returns home with habits of life not suitable to her situation. If she is attended at home she is generally capable of managing and assisting in her family in a very few days, and the relief is given her at about a tenth part of the expence that would have attended her lying-in at an hospital.

time. The advantages which have accrued from it to the poor, have completely answered the expectations previously formed.

The following brief statement will sufficiently shew the detail of the scheme.

Nineteen acres of land, which might be let to good tenants at 2l. 10s. per acre, are wholly employed in furnishing grafs and hay for the cows, and in rearing two or three calves. The flock of cows constantly kept is seven. Four of them calve at different periods in the spring and summer, and three in the autumn and winter—The price, at which the milk is sold, is three halfpence per quart, from the beginning of August until the time of turning out to grafs in the spring; and one penny, during the remainder of the year. It is always paid in ready money.

The quantity furnished to each poor family is regulated by the number of children in the family, and by other similar circumstances. Some of the purchasers generally attend to see the milk carried from the field to the place of sale: and they are all satisfied that the quality is unadulterated, and the measure ample.

If the milk had been sold at two pence a quart, during the three winter months, and at three halfpence the rest of the year, the account would have been in profit: but, at a penny a quart for the summer half year, there was a deficiency of about 5l. * as will appear by the following statement, made by the tradesman who sells the milk, of the receipts and expences, for one year, ending the 17th of September, 1797.

RECEIPTS.

£. s. d.

One year's receipts for milk	-	-	70	8	5
Milk kept for the tradesman's family	-	-	12	5	9
Sale of young calves	-	-	3	6	0
Value of three rearing calves	-	-	8	10	0
Lattermath of part of the land	-	-	2	1	6
			96	11	8

EXPENCES.

£. s. d.

A year's rent of nineteen acres of land, at 50s. per annum	-	-	-	47	10	0
Taxes, &c.	-	-	-	3	16	6
Mowing, getting hay, &c.	-	-	-	6	12	6
Straw for dry cows and litter	-	-	-	6	0	0
Rent of croft at home, yards, and shed	-	-	-	2	10	0
Decrease in value of stock from age	-	-	-	3	10	0
<i>N. B. If young cows, they may improve.</i>						
Hazard in stock, drugs, &c.	-	-	-	6	3	0
Interest of the value of stock	-	-	-	4	4	0
Loss in changing flock, to keep a regular supply, and expences	-	-	-	3	10	0
James Harding, for care of cows and extra wages to servant	-	-	-	8	17	0
Carrying dung and soil, mixing and carrying composts	-	-	-	5	5	0
Hedging, ditching, spreading, &c.	-	-	-	1	10	0
Cultivation of cabbages	-	-	-	1	6	0
Use of bull	-	-	-	0	17	6

101 13 6

To the foregoing, which appear in the Reports of the Society for bettering the Condition of the Poor, Mr. Bernard annexes the following observations: he says, "I do not mean to intimate that this plan is preferable to others which have been adopted elsewhere; that object, universally most desirable, may in different places be best attained in different ways; and in some places it may be attainable by that method only which has been described. When this mode is selected, to provide for the permanence of the measure, will generally prove more beneficial, than to require *extreme* cheapness in the price of the article. To be able daily to purchase milk, though at its full value, is a very important advantage to the poor †. A local subscription, however, for the purpose of reducing the price, will frequently be an eligible mode of charity. But, if the seller be urged to dispose of the milk at a rate †, that will not allow him to draw from

* There are many parts of England, in which milk may be had at less cost, than in this part of Staffordshire. Mr. Manfell, of Lathbury Hall, near Newport Pagnell, asserts, that in his neighbourhood, cows may be kept with more advantage and less expence, than in that of Mr. Gifborne. This information is of importance, as it shews that Mr. Gifborne's example may be imitated with great advantage in other parts of England. Mr. Manfell thinks that the lattermath should be kept; and that, where the supply of milk is the object, calves should not be reared; as they consume the richest milk, which should be mixed with the other: he conceives that, in his own neighbourhood, the cutting of hedges will pay the expence of fences; and that nothing need be allowed for changing cows; as an intelligent farmer would make some benefit by buying and selling.

† It would be a great benefit and comfort to the poor, if farmers would generally, or even occasionally, sell them, for ready money, small quantities (as half a bushel) of corn, and single cheeses. The trouble of small dealings, which is the objection alleged, would be trifling, if one or two stated hours, on a fixed day in each week, were assigned for the purpose. By being thus rescued from the impositions too prevalent among millers, bakers, and hucksters, the poor would save, perhaps, two pence in every shilling, not to mention other important benefits.

‡ Milk is an article of very great importance to the poor; it is essential to the nourishment of children, and extremely useful to the economy of families. Where the cottager can be supplied with the means of keeping his cow, his benefit will be very considerable: where he cannot, the mode adopted by Mr. Gifborne is very deserving of attention and imitation. There may, however, be parts of England (particularly where a good deal of butter, or rich cheese, is made) in which the poor cannot in general have new milk: but, in those places, if they could be supplied, either as a gift or by purchase, with skim-milk, even that would be of great use to them; especially as it would come at a very cheap rate. Where the poor can purchase skim-milk, they get it very cheap; it costs them about a halfpenny a quart. To ascertain its utility to a cottager, who has children, try the following ingredients:

Two quarts of skim-milk	-	-	-	-	1d.
Half a pound of rice	-	-	-	-	1d.
Two ounces of treacle	-	-	-	-	0 ½
					2 ½d

These,

his fields a profit equal to the rent for which he could let them, or to the common returns from other modes of husbandry in the neighbourhood, he will probably continue the plan with reluctance, or will ultimately abandon it. In Barton, the price was originally fixed at one penny per quart, from Lady-day to Michaelmas; and at three halfpence, during the rest of the year. But experience proved it to be too low; and the more so, as of late the prime cost of cattle has been very high, and the advantage resulting from raising Butchers' meat, cheese, and butter, proportionally large.

"The tradesman has not had occasion to apply to be relieved from a superabundance of copper coin; a circumstance which suggests the hope that in other places, where the plan now detailed may be instituted, difficulties, apprehended at first, may be found on trial to be of little moment."

The following is extracted from an account of a supply of milk for the poor at Stockton, in the county of Durham, by Robert Clarke, esq. published in the same work.

In October, 1800, upon a farm at Stockton, of 173 acres, belonging to the episcopal demesne of Durham, the bishop, in order to relieve the distress of the poor in that place, on account of the want of milk, especially in the winter season, gave directions for the farm being let upon the old-rent, provided that (in addition to the usual stipulations applicable to a farm, consisting partly of arable land, and partly of dairy land) it should be held upon the following terms: that the tenant, Mr. John Robson, should undertake to keep upon the farm, during his lease, fifteen cows of the best breed and size in the country, over and above the number necessary for his own family; not less than twelve of which should be at one time in milk, and the remainder in calf. The tenant was to sell the milk, unadulterated, and without any cream being taken from it, to the poor of Stockton indiscriminately, whether parishioners or not, at one halfpenny per pint, beer measure in summer, and wine measure in winter. The tenant has engaged to produce for sale in Stockton, and in clean and proper vessels, the milk of these 15 cows twice a-day in summer, and once a-day in winter; every poor person applying, being to be entitled, without any preference, except that which is due to the aged and infirm, to one quart of milk in summer, and one pint of milk in winter; and as to the residue not so disposed of, a preference to be given to cottagers having families of young children.

The mode of selling the milk may be varied by the bishop or his agent; and to prevent any doubts as to the fair disposal of the milk, the tenant is not to sell any milk whatever, except to the poor; nor to sell any butter or cheese to any one; nor is he to make more butter or cheese than may be wanted for the supply of his own family.—In consideration of the preceding stipulations on the part of the tenant, it has been agreed on the bishop's part, that upon the punctual performance of the tenant's agreement to the satisfaction of the bishop's steward, the annual sum of 30*l.* shall be discounted and allowed the tenant out of his rent.

In letting this farm, a particular attention has been paid to

the character of the tenant, in respect of integrity, industry, and regularity. In consequence of what the bishop has done, and in order to incorporate upon his charity a gratuitous supply of milk for those families which cannot earn the means of purchasing it for themselves, the town of Stockton has been since divided into nine districts; in each of which five or six of the most respectable inhabitants have undertaken the office of visitors, and to attend the houses of the poor, so as to ascertain their situations and characters, and their means of livelihood. The consequence is, that upon any application for parochial relief, or for private charity, in the town of Stockton, the visitors may be referred to, and the relief to be granted may be proportioned in manner, and in degree, to the industry, the necessity, and the character of the object. By these means, coals also have been delivered to the poor, with a great attention to justice, as well as to effect; and milk is distributing, at present, to the most necessitous and deserving, by means of tickets issued by the inspectors of the district; so as, in some degree, to confine the benefit of the bishop's charity to those for whom it is peculiarly intended.

In order to give a similar accommodation to the tradesmen, and other inhabitants of Stockton *, and thereby to promote the effect and success of this plan for the benefit of the poor, the bishop has applied a further part of his estate, in providing a cow pasture, and inclosed fields, for the other inhabitants. Four fields, containing together twenty-four acres, have been laid together as a summer pasture; and a number of inclosures are to be subdivided and fenced, and to have cow-houses built in them at his lordship's expence; each of these subdivisions will contain from two acres and a half to three acres, and will be sufficient for hay and winter pasturage for two cows.

It will often come within our notice, that the country poor are more thankful for employment kindly offered, with the occasional aid of a little *skim milk* or spare vegetables for their family, than for any thing that benevolence can give in the way of alms. There is, indeed, hardly any circumstance which does more essential prejudice to the cottager's domestic system of economy, and to the health and well-being of his children, than the difficulty under which he labours, in his endeavours to procure a supply of milk. With that variety of information upon this subject, that has for some time engaged the attention of the Society for bettering the Condition of the Poor, and with the zeal which its president possesses on this and on every other object of the society, it is not to be wondered that he should have given an early and beneficial example, of the means by which this inconvenience may be removed. For the subsistence of children, there is perhaps nothing so exclusively useful as milk; no other food which assimilates and co-operates with every kind of grain of this, and of every other country, and with almost every species of vegetable and animal food; so as to correct and ameliorate our general means of life.

Until the cottager can be supplied with milk, it can hardly

These, either boiled or baked, will produce four pounds of pudding; and, at the expence of hardly more than a halfpenny each, will give a plentiful and wholesome dinner to four children. But it is not unusual for persons in many parts of England, instead of giving or even selling their refuse skim-milk to their poorer neighbours, to throw it to their dogs.

* This town has been fortunate in the attention not only of the bishop, but of Mr. Burdon, one of the members for the county, who has the merit of establishing another milk farm at Stockton for a similar purpose, and with the following covenants:—that the lessors should keep upon the ground ten milch cows, and take all the milk (except what shall be used in their own families) pure, unmixed, and unadulterated, and without having any cream taken from the same, to the inhabitants of the town of Stockton, for the time being, at or under the price of one halfpenny per pint, and in quantities not exceeding three gallons per day to any one person or family; and on performance of this covenant, Mr. Burdon agrees that the annual sum of twenty pounds shall be allowed out of the rents.

be expected that his present thrifless and comfortable table of diet of dry bread, should be changed for a more healthful and economical system of food. But with the full advantage of such a supply as is provided for the poor of Stockton, it is hardly possible but that the cottager will eventually become sensible of the advantages of milk dressed with rice, as a nourishing and palatable food for his children. And whatever prejudices may have existed against rice as a food for the labouring man (prejudices which will not, however, bear the test of experience), no one can doubt of rice, prepared with milk, being a pleasant, nutritious, and economical food for children.

Charity is meritorious, not merely in respect of its motive and principle, but in proportion as it is extensive in its influence, and unexceptionable in its effect; particularly in that of not diminishing or prejudicing the virtue, or energy, of the persons for whose benefit it is applied. As to the sums annually devoted in this instance by the founders of the milk charities at Stockton, it is not easy to say how they could have been otherwise directed with any proportionable advantage; or how any funds can be applied with less risk of impairing the industry and the prudence of those, who come within the scope of its influence.

For an account of the benefit of the arrangement of districts, and of the division of attention in the care and conduct of the interests of the poor, we must refer the reader to the Bishop of Durham's narrative and observations, in the beginning of the second volume of the Reports of the society. With regard to the latter plan, for encouraging the keeping of cows by the tradesmen and other inhabitants of the place, we have only to observe, that it removes every possible degree of odium or jealousy, to which, in some minds, the poor might have been subjected, by the extensive benefits provided for them; and that the additional number of cows thereby kept in the neighbourhood of the town, increases considerably the general supply of milk for that place; thereby diminishing the price, and leaving a surplus to be disposed of among their dependents and poorer neighbours.

MILK-HOUSE, a building designed for the reception and preservation of milk, previously to its undergoing the various processes of the dairy. In Pl. 35, we have given a representation of a milk-house, upon an improved plan, by Dr. Anderson, of Aberdeen.—Fig. 1, represents a plan of the whole structure. A, the dairy in the centre, surrounded by an open passage; B, the entry to the dairy from the north; C, the ice-house; D, the scullery, or wash-house, with the door or entrance from the south, and benches placed beneath; f, a door, which communicates with the milk-house, &c.; h, the fire-place.—Fig. 2, is an elevation of the milk-house A. In this, B B, shew the passages round it; c, the interior window; d, the ventilator or air-pipe; g, the exterior window.—Fig. 3, is a delineation of the ventilator; i, represents the valve at the top; k, another valve at the bottom, which communicates with the milk-house; n, a similar valve, with the passage. The whole of this structure ought to consist of a range of narrow buildings, as in the section first delineated, where the middle division marked A, represents the *milk-house*, properly so called. Dr. Anderson directs it to be built with a double wall, so that a current of air may continually pass, for the purpose of preserving a regular, cool temperature; the inner wall being constructed with lath or bricks, doubly plastered on both sides; and the outer one, consisting of plastered lath: both being carefully worked, so as to render them perfectly air-tight.

The entrance to the dairy ought to be on the north-side B; but it will be requisite, for greater convenience, to make another communication through the door f, into the front-
VOL. X.

room, especially during the winter, when the outer door, E, should be kept continually shut. The external roof ought to be constructed with tiles, or slate, while the inner one should be made of plaster, *slightly applied*. Between both, it will be necessary to leave a vacant space, at least four feet wide, for the free passage of air, as delineated in the elevation above given; in which the letter A represents the inside of the *milk-house*. The letters B B designate the area between the two walls, that gradually diminishes towards the top, till it terminates in the ventilator or wooden chimney d; which ought to be constructed, on three sides, with planks or boards lined with plaster; the fourth, or south front, should consist wholly of glass, carefully closed with putty, so as to render it completely air-tight. Its dimensions may vary at pleasure, from one to two feet in diameter, internally; but it should be elevated at least six or eight feet above the roof; as its effects will be more or less powerful, according to its length.

This tube is furnished at the top with a valve i, placed immediately beneath the air-holes, which may be closed when required; and at the bottom is a similar valve k. The lower pipe, which communicates with the milk-house, is considerably smaller than the upper tube just described. The opening m, is closed on one side; and at n is a valve, which, when shut, prevents any communication between this pipe and the external area. Further, the top of the ventilator is covered with boards, placed in the form of a roof, so that the rain may be thrown off, without impeding the current of air; while, by means of the valves above mentioned, the air, heated by the action of the sun through the outer wall, will immediately escape, thus constantly preserving a due temperature; and, by the same means, all damp and confined air, which is extremely pernicious in dairies, will be constantly expelled.

The building is furnished with a window placed along the slanting interior roof at e, and which is closed down with putty, to prevent it from being opened. Another window, g, is fixed over it in a similar manner on the external roof, so as to transmit the light, without impeding the current of air between the two glasses.

The passage round the milk-house ought to communicate with the external air below, only at the threshold of the door B. But it will be necessary to make a small aperture on every side, about one foot in height from the floor, in order that such area may be occasionally ventilated. Each of these apertures should be secured with a piece of thin wire-work, in order to prevent the approach of insects, or other vermin; and ought likewise to be furnished with a door, or cover, by which it may be opened, or closed, according to circumstances. Further, if this passage be furnished with shelves, and lighted by a glazed window from the inner apartment, so as to admit *light only*, it may be advantageously converted into a pantry for keeping butter, cheese, &c. perfectly cool, independently of its use for preserving the temperature of the milk-room.

The whole of the interior apartment should be finished with hard plaster neatly smoothed, and totally devoid of ornament, so that it may be cleaned as often as becomes necessary. In its centre, Dr. Anderson directs a large stone table to be placed, being about 2½ feet high, 3 feet wide at the least, and of a breadth proportioned to the length of the room. Beneath the table is to be fixed a stone trough, corresponding to the length and breadth of the former, and being about one foot deep, that is, six inches above and below the floor of the milk-house. From the bottom of the trough, a pipe is to be conducted, for the purpose of carrying off the water; and, in case it be supplied by a running stream, it will be requisite to make one side of such trough somewhat lower, that the water may run over, and thus be carried out

of the house. The floor of the building should be constructed with stones neatly laid; and, if these be easily attainable, the shelves, delineated in the elevation above given, should be ~~have~~ ^{be} ~~of~~ ^{made} of the same materials: otherwise, they may consist of wooden planks.

If the mill-house be situated near a large town, where ice could be vended during the summer, Dr. Anderson is of opinion, it would be very beneficial to the owner, to erect an ice-house contiguous to this dairy, as represented at the letter C, in the plan, fig. 1, in the plate. He recommends it to be surrounded by a double wall on three sides, with a passage or area intervening, as in the dairy. The receptacle for the ice ought to be formed of upright posts, lined with wattled-work of wands, or with clove rail-work, but so as to leave a walk two feet and a half wide every way; round which a gutter should be made to carry off such water as may drain from the ice. This is, in his opinion, the cheapest method of building an ice-house in any situation; and is far preferable to the usual mode of making vaults, which are not only more liable to be damp, and become mouldy, but are also far more expensive, and by no means so well calculated to preserve a gentle coolness, and an equal temperature, at every season.

The apartment, marked with the letter D, is designed as a repository for the utensils of the dairy, in which they may be cleaned and arranged. For this purpose, it will be advisable to place shelves round the walls, together with tables, and such other articles as may be found necessary. Its entrance should be from the south, where the roof projects about two feet over the wall, as at f, which door communicates immediately with the milk-house, and may be occasionally opened in the summer; but which alone ought to be used during the winter, when the chief entrance, B, should be constantly shut. At one end of this apartment is a fire-place, on which a cauldron, proportioned to the size of the dairy, ought to be fixed; in order that there may be a continual supply of warm or hot water.

Such is the outline of Dr. Anderson's ingenious plan, which appears to be well calculated to enable attentive dairy-men to keep their milk of an equal temperature at all seasons, while they may, at the same time, carry on the necessary operations with little trouble or expence. Those of our readers who wish to become more intimately acquainted with the whole economy of the milk-house, will not without instruction peruse Dr. Anderson's *Practical Remarks on the Management of the Dairy*, which were originally published in the 5th vol. of the *Letters and Papers of the Bath Society*; but which have been considerably enlarged in the 3d vol. of the new series of his valuable miscellany, entitled *Recreations in Agriculture*, &c.

MILL (*Encycl.*) The following account of a family-mill, invented by Mr. Thomas Ruffall, was presented to the Society for the Encouragement of Arts, &c. who voted him a premium of forty guineas, in 1800.

In Pl. 35, fig. 1, A, is the handle of the mill; B, one of the mill-stones, which is about 30 inches in diameter, and 5 inches in thickness, moving with its axis C; D, is the other mill-stone, which, when in use, is stationary; but which may be placed nearer to, or at a distance from, the moveable stone B, by means of three screws passing through the wooden block E, that supports one end of the axis C; after it has been put through a hole or perforation in the bed-stone. The grain likewise passes through this perforation from the hopper F, into the mill; F, represents the hopper, which is agitated by two iron pins on the axis C, that alternately raise the vessel containing the grain, which again sinks by its own weight. In consequence of this motion, the corn is conveyed through a spout, that passes from such hopper into the centre of the mill behind, and through the bed-stone D. G, a paddle, re-

gulating the quantity of corn to be delivered to the mill; and, by raising or lowering which, a larger or smaller proportion of grain may be furnished: H, the receptacle for the flour, into which it falls from the mill-stones, when ground: I, represents one of the two wooden supporters on which the bed-stone, D, rests. These are screwed to the block E, and likewise mortised into the lower frame-work of the mill at K, which is connected by means of the pins or wedges L, L, that admit the whole mill to be easily taken to-pieces: M, a fly-wheel, placed at the furthest extremity of the axis C, and on which another handle may be occasionally fixed; N, a small rail, serving to keep the hopper in its place; the furthest part of such hopper resting on a small pin, which admits of sufficient motion for that vessel, to shake forward the corn: O, a spur-rail, for strengthening the frame-work of the mill; P, the front upright, that is mortised into the frame-work, and serves as a rest for the end of the iron axis C, which is next to the handle. On each extremity of such axis, there is a shoulder, which keeps it steady in its place. Lastly, there is a cloth-hood fixed to a broad wooden hoop, and which is placed over the stones while working, to prevent the finer particles of flour from escaping.

Fig. 2, represents the bolter, with its front removed, in order to display its interior structure; the machine being 3 feet 10 inches in length, 19½ inches in breadth, and 18 inches in depth. A, is a moveable partition, sliding about four feet backwards or forwards, from the centre of the box, upon two wooden ribs, which are fixed to the back and front of the box, and one of which is delineated at the letter B; C, the lid of the bolter represented open; D, a slider, which is moveable in a groove made in the lid, by means of two handles on the back of such lid; E, a forked iron, fixed in the slider D, and which, when the lid is shut, takes hold of the edge of the sieve F, and moves it backwards and forwards on the wooden ribs B, according to the agitation of the slider; G, represents a fixed partition in the lower centre of the box, which it divides into two parts, in order to separate the fine from the coarse flour; from this partition, the slider A moves each way about four inches; and thus affords room for working the sieve: H, a board that is parallel to the bottom of the bolter, and forms part of the slider A; this board serves to prevent any of the sifted matter from falling into the other partition: I, represents two of the back feet, which support the bolter.

Fig. 3, of the plate above mentioned, is a view of the top, or upper part of the lid of the bolter; K, the slider that moves the lengthwise of the bolter; L, L, the handles by which the slider is worked; M, a screw, serving to hold the fork, which imparts motion to the sieve.

Fig. 4, represents the forked iron, E, separately from the lid. Both the mill and bolter may be constructed at a moderate expence, and they occupy only a small space of ground. The former may even be worked in a public kitchen, or within a room in a farm-house, without occasioning any great incumbrance.

The particular excellence of the mill consists in this circumstance, that, from the vertical position of its stones, it may be put in action without the intervention of cogs or wheels. It may be employed in the grinding of malt, the bruising of oats for horses, and for making flour, or for all these purposes: it may likewise be easily altered, so as to grind either of those articles to a greater or less degree of fineness.

Another advantage peculiar to Mr. Ruffall's contrivance is, that one man is sufficient to work it; though, if two persons, namely, a man and a boy, be employed, they will be able to produce, in the course of two hours, a quantity of flour sufficient to serve a family, consisting of six or eight persons, for a whole week:—repeated satisfactory trials have proved, that

this mill grinds the corn completely, and at the rate of one bushel of wheat within the hour. Besides, the industrious farmer will thus be enabled to make comparative experiments on the quality of his grain, and may furnish himself, at a trifling expence, with flour from his own wheat; without apprehending any adulteration; or without being exposed to the impositions, or caprice, of fraudulent and avaricious millers.

Lastly, though Mr. R.'s bolter be more particularly calculated for sifting flour, it may also be applied to various other useful purposes, and especially with a view to obviate the inconveniences necessarily attendant on the levigation of noxious substances, and to prevent the waste of their finer particles.

The original mill may be inspected in the Repository of the Society for the Encouragement of Arts, &c. Adelphi; and we understand from Mr. Taylor, the secretary to this patriotic association, that the inventor of the machinery, Mr. Thomas Rustall, wheelwright, of Purbrook-heath, near Portsmouth, engages to furnish the whole apparatus, and to deliver it free of carriage, in London, for the moderate price of *twenty guineas*.

MILL-REEK, a dreadful disease, caused by the poisonous fumes of melted lead, which affect not only those who are employed in the smelting or preparing of that metal, but likewise all who reside near the mines whence it is dug, or contiguous to the furnaces, &c. where it is worked.

On the first attack of this disease, the patient feels a weight and uneasiness in the region of the stomach, and a slight degree of colic in the bowels: the pulse is low; the appetite impaired; the legs become feeble, and the whole body is debilitated. Sometimes these symptoms abate in consequence of a slight diarrhoea; though, if the latter continue for some time, it is always attended with danger.

At first, however, the patient is not prevented from following his usual occupations; but, if the disorder progressively increase, and he neglect to apply for relief, the next symptoms will be, obstinate costiveness, violent pain in the intestines; a troublesome giddiness, insensibility, and delirium. The extremities become convulsed; the pulse intermits; and, at length, the highest degree of palsy, or apoplexy, closes the distressing scene.

The *mill-reck* is of a similar nature and origin with the *Devonshire-colic*, of which we have already treated. We cannot, however, conclude this article, without recommending the following precautions, which the editor of the Domestic Encyclopedia takes from the first vol. of the *Edinburgh Essays and Observations, physical and literary*, &c. It is certainly a duty incumbent on all those persons who are in any manner connected with the manufacture of lead, or who reside in the vicinity of lead mines, to spread and inculcate the means of rescuing many industrious members of society from a most painful death; or, if a person be attacked by this terrible disease, to contribute their share towards preserving them from feeling its extensive horrors.

1. No labourer should be suffered to repair to his work, *sifting*; his food ought to be fat and oily; and it would be very beneficial, if he were to drink a glass of sweet oil, either pure, or mixed with a little brandy, every morning.

2. It will be advisable to take some aperient physic, not only in the spring and in autumn, but likewise, as often as any symptoms of the mill-reck, however slight, are perceived.

3. No spirituous liquors should be allowed, or, at least, be very sparingly used, especially while the labourer is at work, or immediately after it.

4. No workman in a state of perspiration must expose himself to the cold air; but he should retire to his home, as

speedily as possible; and, after having changed his clothes, cool himself gradually.

5. Immediately after the labourer returns from his work, he ought to take some nourishing aliment, which should principally consist of fat broths, or similar liquids.

6. The diet should be wholesome and nourishing; because scanty or poor food disposes such persons to be more frequently affected, and renders them too feeble to undergo a complete cure.

Lastly, as often as their employment will permit, they ought to visit an open country, where they may breathe an untainted air, and find provisions free from the noxious fumes of lead. Particular care must, however, be taken not to venture upon long journeys; because such persons will be more fatigued, and reduced; by travelling one day, than by labouring two days in the lead-mines.

MILTENBERG, a town of Franconia, in the electorate of Mentz, seated on the Maine, 20 miles S.E. of Alschaffenburg. Long. 9. 19. E. Lat. 49. 46. N.

MILTON ABBEY, a town in Dorsetshire, with a market on Tuesday. It is famous for a ruinous abbey, built by king Athelstan, and for a magnificent Gothic church. It is 14 miles N.E. of Dorchester, and 112 W. by S. of London. Long. 2. 32. W. Lat. 50. 50. N.

MINCIO, a river of Italy, which rises in the lake Garda, and passing by Pelfchiera, forms the lake which surrounds the city of Mantua, and afterward runs into the Po.

MINCKENDORF, a town of the archduchy of Austria, situate on the Triesting, six miles E.N.E. of Baden.

MINEHEAD, a borough in Somersetshire, with a market on Wednesday. It has a good harbour on the Bristol Channel, for ships of large burthen; and carries on a trade in wool, coal, and herrings. It sends two members to parliament, and is 31 miles N. of Exeter, and 161 W. by S. of London. Long. 3. 34. W. Lat. 51. 12. N.

MINER, a workman or labourer in the mines. The following general view of the situation of the miners, compared with that of some other classes of the poor, by the Reverend Thomas Gisborne, is published by the Society for bettering the Condition of the Poor, with the hope of awakening the attention of the higher orders of the community to the abject state of this useful class of men. He very justly observes, that the respective occupations of the different classes, into which the poor of this country may be divided, are found to produce important effects, not only on the habits of life, but also on the moral character of each class. To state with brevity the principal of these effects, as they severally appear exemplified in two or three of the most numerous classes, together with some practical remarks, may not be useless; since, from such a statement, persons who are solicitous to benefit and improve the poor in their vicinity, may derive occasional suggestions as to the particular channels, in which their exertions are likely to be the most needed, and most beneficial.

It would be desirable to speak successively of the situation of miners, of fishermen, and of manufacturers; illustrating each by incidental references to that of labourers in husbandry. The present paper will be confined to the case of miners.

Miners are commonly exempted, by the nature of their work, from the superintending inspection of their employer. The latter, in consequence, finds the mode of paying them a certain sum per day unadvisable. He sets them their task by the great, trusting the mode to prevailing custom and other local circumstances. In Derbyshire, the workmen frequently take a mine, or bargain for a determinate period, as three months, on the terms of receiving a settled price for each measure of ore which they shall produce; or occasionally, on the condition of being themselves allowed to purchase all the

ore at a stipulated rate. In Cornwall, the established course of proceeding is not substantially different. Hence there is a fundamental diversity between the gains of the miner and those of the husbandman. The husbandman, in general, earns a fixed sum per week. If he sometimes undertakes task-work, the amount of his earnings may still be foreseen with tolerable accuracy; and it has a known limit in the strength of his body, and in his skill in the particular sort of work. But the pay of the miner depends upon chance. The working miner is almost always in some measure a gambler, and embarks in the adventure of the mine. The ore may be found deposited in ample or in scanty veins; may be with ease, or with great difficulty, detached from its bed; it may stretch far and wide in an unbroken range, or it may be suddenly removed many yards to a higher or a lower level. Even in breaking up ground which does not contain veins of ore, the miner is still a gambler. The work is put up to a kind of auction; and the person who will undertake it on the cheapest terms is preferred. His bargain proves good or bad, according to circumstances. He may find himself engaged upon a mass of soil, which yields readily to his spade, and pick-axe; or retarded in his progress by rocky strata, whose stubborn opposition must be overcome by gunpowder.

The earnings, however, of the miner, though precarious, are on an average great; and in many instances very far exceed all prospects of gain which a labourer in husbandry can propose to himself. Those miners who are industrious, and at the same time frugal, often make a conspicuous use of the opportunities which they possess, of improving their situation. With the surplus of their gains they purchase little spots of property (in Cornwall, chiefly on leasehold tenures), and cultivate them in their hours of leisure.

But, in common, the miner is not disposed to adjust the scale of his expenses to the *average* of his earnings. Being accustomed to the occasional receipt of considerable sums of money; money too which has flowed in suddenly upon him, rather from good fortune than from proportionate exertions; he often raises his expenditure and mode of living to a pitch, to which the labourer in agriculture ventures not to aspire. He feeds on better diet, and wears clothes of finer materials, than the husbandman. And, in general, he perishes in this manner of life, in spite of a change of circumstances. He is buoyed up with the sanguine hopes of a gamester; and, for what he cannot pay to-day, draws on the favourable luck of to-morrow. This natural propensity is cherished and aggravated by the ease with which he obtains credit, in comparison of those classes of labourers, whose gains, though steady, are limited. If he happens to be unsuccessful, he is trusted nevertheless at shops, and permitted to run up long scores at public-houses; through the hopes entertained by the shopkeeper and the publican, that a day will come, when fortune will smile on the debtor. Thus the habits of the miner are seldom interrupted by any rubs and difficulties, which may teach him caution. He has less occasion than most other men to dread the immediate inconveniences of poverty; and does not willingly learn the necessity of frugality and fore-cast.

Miners very frequently work and live in large companies. Hence naturally arises the communication and the encouragement of vice. In Derbyshire it is observed, and the case is probably the same elsewhere, that, when only two or three miners work together, they are frequently much more sober and orderly than the rest of their class. Among the vices of miners, those are naturally prominent, which are usually associated with rudeness of character; as riotous dispositions, impatience of supposed grievances, and discontent inflamed by

the contagion of turbulence and clamour, and filling with just alarm the adjacent country.

Drunkenness is a vice, to which particular classes of workmen are allured, in an especial manner, by the nature of their employments. Blacksmiths, glass-makers, and they who labour in other ways at the forge and the furnace, are led, by intense thirst and exhaustion of strength, first to the use, and then to the abuse, of strong liquors. The cold and dampness of subterranean situations, and in some measure the powerful exertions of subterranean labour, produce a similar effect on the miner. Several other causes concur; numerous and unprincipled society, large gains, and, in many cases, much vacant time. In Derbyshire and Cornwall, the miners frequently do not work above six hours—and, in the former county, sometimes even but four hours—in a day. The ease, too, with which a miner has obtained credit, often proves a temptation to excess. He who has met with a friend in the time of need, in the keeper of an alehouse or of a brandy shop, will feel inclined, when he has money, to spend it freely at the house of his friend, partly from gratitude, and partly from the hope of obtaining credit hereafter. Another inducement to drunkenness remains to be mentioned; namely, the custom which prevails in some few places, of paying the miners, on Saturday evening, by a bill, for a sum which is to be divided among them. These men, however disposed to depart home with their wages entire in their pockets, are absolutely forced to go for change to the neighbouring public-house: the master of which is known regularly to provide himself with cash, to answer the demand. During the division something must be spent. From this custom many miners, once sober and well disposed, have probably had to date the commencement of habits of ebriety.

The labourer in industry is commonly attached to some particular family, either of a private gentleman, or of a farmer. In the former case, it generally happens that he receives from his employer many little favours. In the latter, he is perhaps furnished with corn at a price lower than that of the neighbouring market, or enjoys some similar advantage. Hence the master acquires an influence over the conduct of his workmen; and is often seen to exert it in promoting their comfort, and guarding them from extravagant and profligate courses. The connection, which subsists between the proprietor of a mine and the working miner, is comparatively slight. The latter considers himself as independent; frequently shifts his quarters; and is little under the control of authority, or of persuasion.

Another circumstance in the situation of miners, which is unfavourable to domestic frugality and good management, is to be traced in the sort of women which they often choose for wives. At almost every mine, there is a number of women, daughters in general of the mining poor, who earn their livelihood by picking and washing the ore, and performing other operations of the same nature. In these employments they have been busied from their childhood. A young mining labourer takes a hasty liking to one of these young women, and marries her, without thinking about consequences. This is the history of a multitude of marriages among miners; and, circumstanced as the parties are, it is natural that the case should be so. The wife, however, is not likely to have found the mine an excellent school, either of virtue, or of economy. Nor is it, in consequence, very surprising that waste, profligacy, and dram-drinking, should be almost among the ordinary habits of a miner's family. The daughters of the husbandman are commonly brought up much more under the eye of their mother. They help her in nursing and spinning, and other occupations at home; and when they go out

to work in the field, it is frequently in her company. They stand, therefore, a better chance of being trained in morality and religion, and the arts of female industry; and become habituated to that economy, and those various contrivances, which actual necessity forces on the wife of a day labourer. They of course will, in general, make more virtuous and more prudent wives, than young women who have been accustomed, from an early age, to the company and example of the mixed crowd of their own sex and of the other, which is usually assembled at the mine and the stamping mill.

The colliers in the vicinity of the Tyne form so large a body of men, and shew so strongly marked a character, that some distinct account of them seems proper to be subjoined.

Few undertakings open the door so soon to the employment of the young, and few operate so powerfully to impress durable habits on the mind of youth, as the coal trade.

Boys enter the subterranean workings at the age of six or seven, in the character of *trap-door keepers*, an employment suited to their years; the labour being little more than to open and shut doors, fixed for conducting air round the various works, when the coals are passing through them from the workmen to the shaft.

In this situation they remain four or five years, with little intercourse during the hours of labour (which are from 12 to 18 out of the 24), either with their equals in years, or with their superiors; and hear little that can influence their minds, except the noise of imprecations spreading through the works, from the pitman contending with his overseer, down to the half-grown youth, employed in leading the coals from the workmen, and imposing upon his younger partner in the labour, a disproportionate share of the work, to procure ease to himself. When they reach the age of ten or twelve years, a more laborious station is allotted to them.

They then become what are termed *lads* or *foals*; supplying the inferior place at a machine called a tram, where two are employed in drawing the coals from the workmen to the shaft. In this situation they are subject to the most harsh usage from their superior in the work, who frequently forces upon them, with profane and abusive language, followed by blows, a greater share of the labour than they are able to perform. Hence, in order to avoid punishment, they soon learn habits of deceit and evasion; and scruple not to practise them, whenever they seem expedient, at the expense of truth and honesty. And when the period arrives, which places them in the station from which they have received so much abuse, they seldom fail to retaliate on those, whom progressive advancement from the trap-door to the tram brings into their power.

In every subsequent step towards manhood, they consider it as a merit to deceive and over-reach. In their next stage of occupation they are employed, during one half of their time, in *putting* and *drawing* the coals: and, during the other half, in raising the coal from its bed. Here a wider field opens itself to the display of their ingenuity in the art of evasion; and new incentives impel them to the exercise of it. Let loose from even that small degree of restraint, under which they considered themselves as held by the authority of their parents (for at this period they generally become their own masters, having the full disposal of the product of their labour), and inflamed with the growing passions of youth, they indulge themselves, with the most vicious emulation, in the scenes of intemperance and profligacy. If they are, at any time, without the means necessary to procure those indulgences, they study to avail themselves, in their respective departments, of every artifice (however injurious to the interest of their employer) to complete their purpose. Thus, by

slow but perceptible degrees, the mind becomes poisoned with wicked principles and guilty habits.

The hours devoted to what they term their amusement, are not less prejudicial to the moral character. At a very early period in life they attend the haunts of their fathers at public-houses; where their growing fondness for strong liquors is encouraged, rather than checked, by their parents; and the child soon becomes a man in the frequency of intoxication. To gratify this passion for intemperance, which is a leading characteristic of pitmen, they endeavour to enhance the price of their labour by every art in their power; and in this, as well as in every other transaction with their employers, easily sacrifice the principles of rectitude, to promote their selfish designs.

The early age, at which the child is separated from the parent, and the little communication which they have with each other afterwards, visibly impair those affectionate feelings, which constitute parental happiness.

They seem to consider their children chiefly in the light of servants and dependents, from whose labour they expect to reap advantage; and are little solicitous to impress on their minds, habits of sobriety, honesty, and truth; and thus to train them in the paths of religion.

For the purpose of inculcating Christian principles, Sunday schools have been established. While the institution was novel, they were numerously attended. As soon as that impression lost its influence, they became far less frequented. And no representations of the good effects of such institutions, have been sufficient to prevail upon the parents to enforce attendance by their authority. Even where daily schools have been established by some of the opulent coal-owners, the pitmen frequently do not give their children the advantage of that little education, which might there be obtained, antecedently to the period when they enter the pit.

When the principles are thus habitually depraved, it is not to be expected that much attention will be paid to the duties of religion. By most, even external forms are disregarded; and the time, which ought to be spent in attendance on divine worship, is generally dissipated in frivolous pursuits, vulgar athletic exercises, or in drinking at public-houses. Where attention to religion prevails, the good effects are manifest. Colliers of that character are usually sober, industrious, honest, and frugal, both in themselves and in their families.

Another trait in the character of a collier, is his predilection to change of situation. Whatever may be the comfort and conveniences resulting from his connection with any particular employ, he sacrifices them all to his love of variety, and the hope of superior advantage; so that annual changes are almost as common with the pitman, as the return of the seasons; and, not unfrequently, the succeeding year finds him in the same situation, which he quitted twelve months before. And whatever favours he may have received, he is disposed to consider them as all cancelled by the refusal of a single request.

It is to high wages, that many of the criminal habits, so often attached to the character of a collier, may in part be ascribed. He is furnished with the power of obtaining more than the necessities of life; and being destitute of the principles, which would teach him to apply the surplus to proper purposes, he squanders it in the gratification of gross sensuality. To economy he is, in general, an utter stranger. It is no unusual thing to see a man and his family, during the first week after they receive their wages (which are commonly paid to them once a fortnight) indulging themselves in the use of animal food three times a-day; and in the succeeding week living on a little rye bread, with oatmeal and

water, until the next receipt of their wages enables them to return to a course of luxury. The contrast between the pitman and the labourer in husbandry is very striking. The latter, with 9s. a-week, is seen keeping himself, his wife, and several children, from whose labour he reaps little advantage, with all the appearance of decency and frugality; and even allowing out of his wages something for the education of his children: while the former with 16s. a-week, and often more, together with the labour of his family (which, if it consist of three or four boys, brings him in from 20 to 30s. a-week in addition to his own gains), passes half of his time in luxury and riot, and the remainder in filth and poverty. The manners of the pitman are said evidently to have altered, within a few years, materially for the worse.

"As the preceding account of the colliers (says Mr. Gifford), does not represent them in an attractive light, it is the more incumbent on me to say, that I speak from concurrent information, derived from different sources, each of high authority. Many exceptions to the general description undoubtedly exist.

"The preceding statement contains facts of such a nature, that the perusal of it will probably suggest to the reader several practical remarks. There are, however, some points, on which it may be useful to add a few words.

"The first evil, in the situation of miners, which ought to be remedied, is the very little education and religious instruction, which their children in general receive. How are these children, when they compose in their turn the next generation of the mining poor, to discharge their duty to God and man, if they are not impressed early with the principles, from which the sense of religious and moral obligation flows? The institution of Sunday-schools is one excellent mean for the attainment of the object in question. Every possible encouragement ought to be given to them, and persuasion and little premiums and all other fit inducements should be employed, to secure the regular and cheerful attendance of the scholars. Another method of improving the parents, as well as the children, has been recently and deservedly recommended by an eminent prelate; namely, the erection of additional chapels in populous districts. Let it here be generally observed, that, in every plan for improving the character of the mining poor, the proprietor of the mine and the clergyman of the place ought cordially and actively to co-operate. Each has it in his power to contribute to that improvement; and, in proportion to his power, each is responsible.

"The predominant vice of drunkennells calls for the most vigilant counteraction.—Let the number of public-houses be reduced within as narrow limits as convenience will permit: and the conduct of publicans be carefully observed by the gentlemen and magistrates of the country. Let the very pernicious custom, of paying miners by a bill to be changed at the public-house, be immediately abolished. The temporal distresses, which result from ebriety, afford arguments proper to be urged to individuals, in proportion to their intrinsic force. But I know no method of recalling guilt to the paths of rectitude, either in public or in private life, likely to be durably efficacious, except this: first to impress the mind with a conviction of the truth and awful import of Christianity; and then, to point out the bearings of Christian commands and prohibitions on the particular subject, with respect to which you wish to accomplish a reformation. He who, under the impulse of brutish appetite, disregards all considerations of injured health, wasted property, a heart-broken wife, and starving children, may pause, tremble, and be reclaimed, when he sees that the "drunkard" has his place in the dark catalogue of those, who "shall not inherit the kingdom of God!"

"The use of profane language may be in a great degree repressed by care, on the part of the proprietor, to appoint conscientious agents and superintendants over his works. I could name more than one instance of captains of men-of-war, who, by suitable penalties and personal exertions, have almost eradicated that vice from their ships. Why should it be more difficult to be subdued in a coal-mine?

"Deceit appears to be among the general faults of miners. It is stated as one of the characteristics of the Newcastle colliers: and a similar reproach is applied to the miners in Derbyshire, who are said by practice to have attained great adroitness in disfiguring the sides of a mine, when the time, for which they have taken it, is expiring, that the owner may be entrapped into a new bargain advantageous to the workmen. By a due choice of agents, let the tyranny of the elder partner over his colleague at the tram, one principal source of deceit, be prevented. And, universally, let the love of truth be habitually encouraged, and traced up to Christian motives.

"In opposition to the spirit of mutiny and discontent, it may easily be shewn, and it ought to be inculcated, that no principles are, on the one hand, more adverse to turbulence and anarchy, nor, on the other, more favourable to genuine freedom, than those of the religion which we profess; and that corresponding praise belongs to those of the constitution under which we live.

"The propensity to change of situation, which prevails among miners, to the detriment of themselves and their employers, will be best encountered, by solicitude, on the part of the proprietor, to attach his workmen to himself, by rendering their condition comfortable. Let him make their cottages neat, and moderately commodious; adding to them ample gardens, and affording to each family an opportunity, as far as may be practicable, of keeping a cow, or of purchasing milk: let him study to allure them to habitual cleanliness, when above ground. Let him invite them to foreswear, by encouraging the establishment of friendly societies; the advantage of which to miners is the greater, on account of the frequent accidents to which they are exposed; and let him promote similar institutions for the benefit of widows and orphans. Let him set up schools, where the girls may be instructed in sewing, knitting, and spinning, and those little domestic arts, which will be of the utmost utility, when they become wives and mothers. By abundant ventilation, and other suitable contrivances, let him render the different subterranean occupations salubrious, and as free from disagreeable circumstances of every kind, as the nature of the case will admit."

From the pen of the same benevolent writer we have the following account of the provisions made for the benefit of the Duke of Bridgewater's colliers, near Manchester.

The Duke of Bridgewater pays his colliers, in the neighbourhood of Manchester, monthly. He has established shops, and a little market for them; and when his agents pay the wages, the shop-keepers bring in their monthly bills. These the agents discharge, and give to each collier his surplus. Thus the collier always has credit for necessaries and reasonable comforts; and, at the same time, is not able to squander the mass of his gains, to the injury of himself and his family. Debts at public-houses are not allowed to be brought in. The butchers and other tradesmen, being the duke's tenants, dare not be exorbitant in their charges, or fraudulent as to the weight of their commodities. The duke lets to his colliers their houses at a low rent, and nearly at a price. To the best and pleasiest of these houses, he prefers those colliers, who have been the longest time in his service, if they have behaved well. They are, however, all tenants at will. These

circumstances operate as ties and encouragement to good conduct. All the workmen are bound to contribute to a general sick-club. The duke's colliers are stationary with him: a neighbouring magistrate informs me, that he hears few complaints from either side; and that the colliers there are more moral than the weavers who are spread over the adjacent country. Some of the duke's agents are men of a religious cast; and have established Sunday schools for the instruction of the children.

What has been done in this instance is worthy of attention and imitation, as tending to diminish the evils and inconveniences, to which the class of men under consideration is peculiarly exposed. Colliers and miners, however, are so numerous in some parts of England, and are subject to so many and so great disadvantages, that they merit more attention than they have yet received. No persons stand more in need of the advantages of a religious education, and none are so little favoured in that respect, or possess so few means of correcting the vices and infirmities to which they are peculiarly liable.

Of miners and colliers it is to be observed, that living in large companies, without favourable examples of conduct before them, and being, through the circumstances and mode of their employment, little subject to the control or influence of their employers, they are naturally turbulent, passionate, and rude in manners and character.—Their gains are large and *uncertain*; and their employment is a species of task-work, the profit of which can very rarely be previously ascertained. This circumstance gives them the wasteful habits of a gamester, leading them to trust, without forethought or apprehension, to the extraordinary success of to-morrow, for the support of their families. Their labour being under ground, liable to subterraneous damps, and attended with strong exertions, they are, almost of necessity, led to the use, in a certain degree, of strong liquors; and thence by a natural progress, too often proceed to habitual drunkenness.

The first and best corrective of these evils, would be a religious education. It is obvious to every one, who visits the counties where colliers and miners abound, that their children have not the fair and ordinary advantages of instruction: that, placed in a situation of life in which they can have very little hope of improving by domestic example, they are so disunited from the other classes of the community, as to be, in a great degree, though living in a Christian and civilised country, excluded from the common benefits of religion and civilisation.

This observation applies to a numerous class of our fellow-subjects: a class, to which education and early habits of religion are particularly necessary; as nothing can have so efficacious a tendency to improve the conduct of men thus circumstanced, as a just sense of revealed religion, and of the rewards and punishments of a future state.

It is likewise of great importance, that colliers and miners, particularly, should be habituated to the desire of acquiring permanent property; and, with the surplus of their profits, be enabled and induced to purchase little spots of ground, as objects of cultivation, and employment for their leisure hours. Those miners, who do this in Cornwall (and there are many who in that county, with the surplus of their gains, purchase little spots of ground, chiefly on a leasehold tenure), are in every respect a better class of men.—They are kept from ale-houses, by finding, in their own little property, amusement and occupation for their vacant time; they acquire habits of fore-thought, because they enjoy the benefit of it; and become orderly and civilised in some measure, because they derive an additional motive to behave aright, and consider

their conduct as more subject to observation, in consequence of their being possessed of property.

MINERALOGY (*Encycl.*). As the pleasing and instructive science of mineralogy, after having made such rapid strides upon the continent, for these ten years, is daily making more and more progress in this island, where our gentlemen farmers, and manufacturers, begin to think it a shame to be ignorant of substances under their eyes, of which a proper knowledge may often turn to good account; we have little doubt but that the following directions for the mineralogical traveller, by the celebrated Saussure, author of the *Journey to the Alps*, in 4 vols 4to. will be acceptable to our readers.

1. The most necessary instrument to take with you, is a miners' hammer. You must have it of at least two sizes: one small, to break the little pieces, and the pebbles, holding them in your left hand, while you strike them with your right; the weight ought to be, including the handle, about 10 oz.: the other, to strike fragments out of the rocks, and to break large pieces, ought to be four times the size of the former. When I travel on horseback I have these two hammers put in my fiddle-bows.

2. Two chisels used by stone-cutters: one small, about a line or a line and a half broad at the point, to detach little crystals, or other minute objects; the second should be about seven or eight lines, that is, three quarters of an inch, in breadth.

3. To try the hardness of fossils, you must have a *steel* briquet; a triangular file, rather fine; and a strong point or needle of tempered steel.

4. Nitrous acid, and the boxes with re-actives (*boîtes à réactifs*) of M. de Morveau.

5. An artificial magnet in a case, with a pivot of steel, upon which it is placed, to try the magnetism of fossils.

6. A magnifying glass of three inches focus, in order to form a general idea of a fossil; another of one inch, to study its separate parts; and one of five or six lines, for a more accurate examination. These three magnifiers ought always to be in the pocket of the traveller; but, besides these, for the cabinet, and any lasting residence, he ought to have a microscope with a micrometer.

7. Perspective glasses to observe the inaccessible heights, and the distant mountains.

8. A pocket-book with leaves of prepared paper, on which to write with a pencil of tin-fool (soudure d'étain, *gr. etain*?) which one is not obliged to be always mending, and the writing is not so easily effaced as of black-lead. In this pocket-book must be entered, on the very spots, the sketch of one's journals, and notes of any observations that may arise; but every evening these notes should be copied with the pen, preserving, nevertheless, the originals, which have always a character of truth, to which one is glad to recur.

9. Some quires of brown paper, of which some sheets should be carried in the pocket, to wrap up, and mark, one by one, and on the spot, the pieces of stone which are collected; they must afterwards be packed with hay in a bag for this purpose, till there be enough to fill a packing case, to be sent home by the carriers as occasion may serve. But in the midst of the journey, as it is fatiguing to load one's pockets, and as the guides often lose them on purpose to get rid of the trouble, I have behind my saddle two leather bags, in which I put them till I come to a resting-place, where I have time to wrap them in hay, and put them into my canvas bag. M. Besson recommends to voyagers to write the tickets with China ink, if the minerals be to be sent from afar, because many accidents may discolour common ink.

10. The blow-pipe and its accompaniments. As I make much use of it, which is fatiguing, though I know very well

to use my cheeks only, without blowing from the bottom of my breast, I make use of portative bellows, *a deux vents*, each side being sixty-two square inches in surface. These bellows may be hung on the side of any table; and I put them in motion by pressing the handles between my knees, which again separate by a spring. This apparatus is easily carried, and very convenient.

11. A femicircle, traced, and graduated, upon a thin plate of copper, of a form exactly rectangular, with a plummet hung in the centre of the femicircle. This is the most commodious instrument to measure the inclination of beds, veins, and slopes; and may easily be carried in the pocket-book.

12. A compass, with an *alidade*, to take the direction of mountains, chains, and beds of fossils.

13. A pocket-barometer, with two thermometers, both mercurial; one fixed to the barometer, to measure the temperature of its mercury, the other with a naked bowl, to measure the temperature of the air. Those who are studious of meteorology should also have a hygrometer, and an electrometer; those who understand geometry ought to be provided with a sextant, with its artificial horizon, and a chain to measure a base, and then take the height of an inaccessible peak, of the breadth of a river, &c. With the sextant, latitudes may be taken; but the longitude requires much practice and acquaintance with astronomy.

14. It is necessary to have some tools to repair an instrument, in case it be deranged; as pincers, files, vice, compasses, gimlets, wire, needles, thread, packthread.

15. Some good map, pasted on canvas, of the country proposed to be examined; which must be often compared with the itinerary, and the situation assigned by the compass. The other observations of M. Saussure, relate solely to the clothing and food, &c. &c. necessary in visiting the highest Alps.

MINERAL WATERS (*Encycl.*). The following account of the facitious mineral waters of Citizen Goldschmidt is extracted from the '*Recueil Periodique de la Societe de Medecine de Paris, of Ventose; An. vii. February, 1799*;' translated in the Medical and Philosophical Journal.

Citizens Bouillon La Grange, and Chausfier, reported to the Medical Society of Paris, that they examined three distinct species of artificial mineral waters; namely, those of Seltz, Spa, and Sedlitz.

Their first care was to ascertain the physical properties; they found them very clear and transparent, having a strong acid flavour; and that they gave the tincture of turnsol a deep red colour. By putting them in contact with different re-agents, they obtained, first, by caustic alkalies, neutral salts; secondly, by lime water, an abundant carbonate of lime; thirdly, poured on filings of very pure iron, the artificial waters, in a short time, acquired a ferruginous taste, which, after the properties already discovered, confirmed the presence of the carbonic acid and its action on the iron.

They then proceeded to examine the nature of the salts employed, and the quantity of carbonic acid which each bottle might contain. The methods followed to ascertain the composition of these waters, afford no novelty; the saline substances, however, employed, were similar to those described by Bergmann. Upon the whole it appeared that the author had completely succeeded, and produced an exact imitation of nature.

As to the carbonic acid which these waters possess in solution, experience shews, they have a greater quantity than the natural waters. But in order to ascertain this quantity with the greatest exactness, Citizen Goldschmidt has invented a very ingenious apparatus. (See Pl. 39.) By this apparatus (which may serve to obtain any other gas, and ascertain with the

most scrupulous exactness, the quantity of gas held in a liquid in solution) it was discovered, that the waters contained twice and a half their volume of carbonic acid. The author even went so far as to assert, that he could separate three times their volume. But this superabundant quantity easily disengages itself, not only by being agitated, but by an elevation of temperature. Such an excess of acid is therefore useless, especially in medical practice.

The Medical Society also desired the Citizens Bouillon La Grange, and Chausfier, to examine the differences which existed between the artificial mineral waters of Goldschmidt, and those of Citizen Goffe, of Geneva; but from the impossibility of procuring those of the latter as recently prepared as those of the former, they were unable to make a fair trial. It is certainly very easy to conceive, that water which has been agitated by travelling, or which has been prepared any length of time, whether in a cellar or any other place, will not bear a comparison with water which has been saturated only a few days. The two commissioners, therefore, had recourse to the report made by their colleague, Deyeux, to the School of Medicine, who had carefully examined the artificial water of Citizen Goffe.

"Two pounds," says that chemist, "of this water, placed under mercury, afforded twice and a half their volume of carbonic acid, the half of which was separated spontaneously, and the other half by plunging the bottle into hot water."

It is evident from this, that there exists a great analogy in the result of the two experiments, since each of the waters contain twice and a half their volume of carbonic acid; and it is also evident, that there is no difference between the mineral waters of Goldschmidt and those of Goffe; for, besides the equal quantity of carbonic acid, the chemical examination of the salts in dissolution, afforded the same results as those mentioned in the report of Citizen Deyeux.

This comparison must nevertheless be of great advantage to those who prescribe or make use of these artificial mineral waters, as it will enable them to obtain them of a proper degree of acidity; for it is evident from the experiments of Citizen Goldschmidt, that it is possible to supersaturate the water with the acid.

It appears that these artificial waters have been employed with great success in different maladies by several French physicians; and Bouillon La Grange, and Chausfier, conclude their report by recommending the establishment of a manufactory for them in Paris, in order to insure their being accurately and faithfully prepared, and also by declaring Citizen Goldschmidt deserving both of attention and encouragement.

To this account is annexed the following explanation of the *Gasolitre*, by Citizen Goldschmidt.

"The method hitherto used," says he, "to ascertain the quantity of carbonic acid gas by lime water, appeared to me very troublesome, not only because it at the same time precipitates the iron, the magnesia, and other earthy substances, which we are afterwards forced to separate, and because the operation of filtering always occasions a certain waste, but because the access of atmospheric air contributes, in a great degree, to form carbonate of lime.

"The pneumatic chemical apparatus with mercury, which is at present in use, has the disadvantage of being always in equilibrium with the pressure of the atmospheric air; and is consequently obedient to the laws of the barometer.

"These several difficulties urged me to an endeavour at avoiding those obstacles, which I have overcome by the invention of the *Gasolitre*: this apparatus being fully adapted to calculate with accuracy, and in a short time, the gaseous

parts contained in any body whatever, and to shew the pressure.

"Fig. P is a glass measure containing two centilitres, or two drachms fifty grains: in fitting it with its cock for a double current of air, to the tube G, the cylinder C being full of mercury, the cock B shut, and the apparatus deprived of all possibility of admitting the atmospheric air, we shall find, in opening the cock H, that no vacuum is occasioned in the cylinder C besides that which is formed of the bubbles of air between the glass and the mercury, in filling the cylinder under the pressure of the atmosphere of seventy-five centimetres, or about twenty-eight inches, and that which the difference of the column of mercury in the cylinder C and the volume of air in the measure P under a pressure of seventy-five centimetres, reduced to zero, can produce.

"We shall find this statement accurate in opening the cock Q to communicate the pressure of the atmospheric air into the measure P: in then shutting it opposite Z it will not produce a greater vacuum in the cylinder C than the pressure of the volume of air in P has been able to effect.

"The little pump O, placed on the stand F, serves to graduate the cylinder C. We fill the bladder of gas, which we intend to measure, and open the cock S and T to draw a volume of gas, at all times equal, into the pump; we open the cock T opposite U, shutting it at the same time opposite S, and push forward the piston to introduce the gas into the cylinder C filled with mercury, and shut by the cock B: when the cock H does not supply more mercury, we continue in this manner to introduce at intervals the same volume of gas into the cylinder C, in order to graduate it.

"We shall obtain the first time a greater vacuum on account of the pressure of seventy-five centimetres, where the mercury meets; this pressure ceases the second and following times, when it will be of an equal volume.

"The operation will never be attended with success, if the external air can penetrate: it is, however, easy to ascertain this by the cock H, which, when the hole is well adjusted and shut, does not furnish more mercury, after the effort of the pressure before explained.

"To know the quantity of gas which the gaseous waters contain, we thus dispose the apparatus:

"We shut the cock H and fill the cylinder C with mercury; we shut the cocks B and K, and open the cock A, to ascertain the state of the apparatus; if the apparatus be in proper order, it will not make a vacuum in the cylinder C, further than the first mark; we fill the matsrafs up to the neck with the water we intend to analyse, and carefully fit the matsrafs to the cock K, by a screw provided with a little shield of leather: the whole being well secured, we open the cocks K and H, and heat the water to the boiling point."

The following is an explanation of the figures in the plate:

A is a glass funnel to pour in the mercury; B, iron cock; C, glass cylinder, graduated, shut by the cock, and cemented on the plate D; D, delft plate; E, wooden stand; F, stand to support the apparatus; G, glass tube, the cavity of which is of the diameter of one millimetre, about half a line, and which communicates with the cylinder C; H, tube, of the same diameter, communicating with the cylinder C, and returning into the bottle J by an iron cock; J, bottle and funnel to receive the mercury; K, cock for a double current of air; L, matsrafs containing about twelve centilitres of water (four ounces), secured to the cock by a screw; M, sand bath; N, furnace; O, pump, the cylinder of which is glass, secured by two screws to the stand F; P, glass measure of two centilitres, or six drachms twenty-eight grains; Q, cock for

a double current of air; R, bladder to contain the gas; S, cock; T, cock for a double current of air; U, glass pipe coming from the cock T to K; X, pump; Y, stand on which to fix the pump; Z, index of the second current of air.

MINFELD, a town of Germany, in the duchy of Deux Pouts, eight miles S. of Landau.

MINIATO, Sr. an episcopal town of Tuscany, seated on the Arno, 20 miles S.W. of Florence. Long. 10. 45. E. Lat. 43. 40. N.

MINORBINO, a town of Naples, in Terra di Bari, with a bishop's see, 26 miles N. of Cirenza. Long. 16. 19. E. Lat. 41. 8. N.

MINORI, a town of Naples, in Principato Citeriore, with a bishop's see. It is seated on the gulf of Salerno, between the town of that name and Amalfi.

MINSFELDEN, or **MENSFELDEN**, a town of Germany, in the archbishopric of Treves, 25 miles E. of Coblenz. Long. 7. 57. E. Lat. 50. 26. N.

MINSINGEN, a town of Suabia, in the duchy of Wirtemberg, with a castle. Long. 9. 35. E. Lat. 48. 32. N.

MINSKI, a town of Lithuania, capital of a palatinate of the same name, with two citadels. The country is pretty fertile, and has forests containing vast numbers of bees, whose honey makes part of its riches. Minski is 65 miles N. of Sluck, and 160 S.E. of Wilna. Long. 26. 48. E. Lat. 54. 11. N.

MIOLANS, a fortress of France, in the department of the Lower Alps, seated on a craggy rock, in the valley of Barcelonetta, six miles N.E. of Montmelian. Long. 6. 20. E. Lat. 45. 35. N.

MIOSSE, a lake of Norway, in the province of Hordaland, 80 miles in circumference. It is divided by a large peninsula, and contains a fertile island 10 miles in circumference.

MIRA, a town of Portugal, in Beira, 16 miles N.W. of Coimbra. Long. 8. 25. W. Lat. 40. 20. N.

MIRANDELA, a town of Portugal, in Tra-os-Montes, 30 miles S.W. of Braganza, and 28 N.E. of Lamego. Long. 6. 9. W. Lat. 41. 25. N.

MIRABEAU, a town of France, in the department of Vienne, famous for the beauty and strength of the assés which its environs produce. It is 16 miles N. of Poitiers, and 175 S.W. of Paris.

MIRECOURT, a town of France, in the department of the Vosges, famous for its violins and fine lace. It is seated on the river Madon, 27 miles S. of Nanci, and 30 S.E. of Toul. Long. 6. 4. E. Lat. 48. 15. N.

MIREMONT, a town of France, in the department of Dordogne. Near it is a remarkable cavern, called Cluseau. It is seated near the Vézère, 15 miles E. of Bergerac.

MIREPOIX, a town of France, in the department of the Upper Pyrenées. It was lately an episcopal town, and is seated on the Gers, 15 miles N. of Foix.

MISAGNO, a town of Naples, in Otranto, nine miles S.S.E. of Ostuni.

MISENO, a cape of Italy, W. of the bay of Naples, between Puzzoli and Cuma. On it are the ruins of the ancient Misenum.

MISERDEN, a village in Gloucestershire, six miles N.W. of Cirencester. Here is a park, seven miles in circumference, in a valley of which is a mount of a circular form, now overgrown with trees. This was the site of an ancient castle, built in the reign of King John; and part of the moat, which encompassed the building, is still to be seen.

MISITRA, a celebrated town of Greece, capital of the

Morea, with a Greek archbishop's see, and a castle. It is divided into four parts, the castle, the town, and two large suburbs. The church is one of the finest in the world, and the Turks have turned it into a mosque, near which is a magnificent hospital. There is a great number of Christians, and so many Jews, that they have three synagogues. It was taken by the Venetians in 1687; but the Turks retook it. It is seated on the Vasilipotamo, 100 miles S.W. of Athens, and 90 N. by E. of Lepanto. Long. 22. 30. E. Lat. 37. 6. N.

MISSOURI, a river of North America, whose source is unknown. It joins the Mississippi in lat 39° E. but is a longer, broader, and deeper river, and is, in fact, the principal stream. It has been ascended by the French traders upwards of 1200 miles, and from its depth and breadth at that distance, appeared to be navigable much higher.

MISTRETTA, a town of Sicily, in Val di Demona, with a bishop's see, 50 miles E.S.E. of Palermo, and 64 W. of Messina. Long. 24. 22. E. Lat. 38. 55. N.

MITCHAM, a village in Surrey, eight miles S.W. of London. It is seated on the Wandle, on which are some saw-mills, and two calico-printing manufactures.

MITTENWALDE, a town of Upper Saxony, in the Middle March of Brandenburg, 12 miles S. of Berlin. Long. 13. 28. E. Lat. 52. 19. N.

MITTERBURG, a town of Austrian Istria, the capital of a county, with a castle situate on a rock, 15 miles W. of Fiume, and 30 S.E. of Trieste. Long. 14. 19. E. Lat. 45. 41. N.

MOCAUMPOUR, a town of Hindoostan Proper, in Napaui, situate on the east side of the Nepal, 40 miles S.S.E. of Catmandu, and 120 N. of Patna. Long. 85. 27. E. Lat. 27. 35. N.

MODBURY, a town in Devonshire, with a market on Thursday. It is seated in a bottom, between two hills, 36 miles S.S.W. of Exeter, and 208 W.S.W. of London. Long. 3. 54. W. Lat. 50. 23. N.

MODICA, a town of Sicily, in Val-di-Noto, on a river of the same name, 25 miles S.W. of Syracuse. Long. 15. 9. E. Lat. 36. 48. N.

MODON, a strong town of the Morea, with a safe harbour, and a bishop's see. It is seated on a promontory, projecting into the sea of Spianza, 15 miles E. of Coron, and 95 S.W. of Napoli-di-Romania. Long. 21. 35. E. Lat. 36. 56. N.

MODZIR, a town of Lithuania, capital of a district of the same name. It is seated on the river Prypec, in a fertile country, 85 miles S.E. of Sluzck. Long. 29. 10. E. Lat. 52. 5. N.

MOESKIRCH, a town of Suabia, belonging to the princes of Furstenberg, 18 miles N. of Constance, and 52 S. of Stutgard. Long. 9. 11. E. Lat. 47. 56. N.

MOFFATT HILLS, the highest mountains in the S. of Scotland. They occupy the N. part of Annandale; and from these descend, in different directions, the Tweed, Clyde, and Annan, whose sources are but little distant from each other.

MOGADOR, an island and castle of Africa, in the kingdom of Morocco, near Cape Ozem. There are mines of gold and silver in one of the mountains. Long. 9. 55. W. Lat. 31. 38. N.

MOHATZ, a town of Lower Hungary, in the county of Baraniwar. Here Louis, the last king of Hungary, in 1526, was defeated by the Turks under Soliman II. with the loss of 22,000 men, and after the battle suffocated by the fall of his horse in a muddy brook. In 1687, another battle was fought here, between the Christians commanded by Prince Charles of

Lorain, and the Turks, who were defeated with the loss of 10,000 men, their cannon and baggage. It is seated at the confluence of the Danube and Comite, 17 miles N.W. of Eteck. Long. 19. 56. E. Lat. 45. 46. N.

MOHAWK RIVER, a river of the state of New York, which rises to the north of Fort Stanwix, passes by that fort and Schenectady, and empties itself by two mouths, into Hudson's River, eight miles above Albany. About two miles above its junction with that river it has a cataract, where the stream, 100 yards wide, falls perpendicularly about seventy feet.

MOHILEV, or MOGILEV, a government of the Russian empire, part of Lithuania, dismembered from Poland in 1772.

MOHRUNGEN, a town of Prussia, in the province of Oberland, situate on a lake of the same name, which almost surrounds it. Here is an old castle, formerly a convent, belonging to the knights of the Teutonic order, in consequence of whose wars the town has frequently suffered. It is 56 miles S.S.W. of Konigsberg, and 56 S.E. of Dantzic.

MOISSAC, an ancient town of France, in the department of Lot. It has a great trade in corn and flour, and is seated on the Tarn, near the Garonne, 13 miles N.W. of Montauban. Long. 1. 17. E. Lat. 44. 6. N.

MOLA DI BARI, a town of Naples, in Terra di Bari, on the coast of the gulf of Venice, 12 miles E. of Bari.

MOLA DI GAETA, an ancient town of Naples, in Terra di Bari, seated on the gulf of Venice, 14 miles E. of Bari.

MOLD, a town in Flintshire, where the assizes are held. It is five miles S. of Flint.

MOLE, a mountain of Savoy, which, from its height and fine sloping peak, is an object of great beauty, when seen from the lake of Geneva. At its foot is the town of Bonneville, 20 miles S. of Geneva.

MOLFETTA, a town of Naples, in Terra di Bari, with a bishop's see, seated on the gulf of Venice, 10 miles N.W. of Bari. Long. 16. 52. E. Lat. 41. 28. N.

MOLIERES, a town of France, in the department of Lot, 11 miles N. of Montauban, and 16 S. of Cahors. Long. 1. 30. E. Lat. 44. 10. N.

MOLINA, a strong town of Spain, in New Castile, seated on the Gallo, in a territory abounding in pastures, 35 miles S.E. of Sigüenza, and 88 E.N.E. of Madrid. Long. 1. 53. W. Lat. 40. 50. N.

MOLISE, a territory of Naples, in the form of a triangle, whose sides are 39 miles long, lying between Terra di Lavoro, Abruzzo Citeriore, Capitaneta, and Principato Ulteriore. It is a mountainous country, but fertile in corn, wine, saffron, and silk.

MOLISE, a town of Naples, capital of a territory of the same name, but not populous. It is 50 miles N. of Naples. Long. 14. 43. E. Lat. 41. 36. N.

MOLSHEIM, a town of France, in the department of Lower Rhine, seated on the Bruch, 10 miles W. by S. of Strasbourg, and 228 E. of Paris. Long. 7. 35. E. Lat. 48. 32. N.

MONASTER, an ancient town of the kingdom of Tunis, seated near the sea, 70 miles S.E. of Tunis. Long. 11. 6. E. Lat. 35. 50. N.

MONCALLIER, a town of Piedmont, seated on the Po, five miles S.E. of Turin. Long. 7. 48. E. Lat. 45. 2. N.

MONCALVO, a strong town of Italy, in Monterrat, seated on a mountain, 12 miles S.W. of Caffel. Long. 7. 19. E. Lat. 45. 10. N.

MONCHABOU, a city of the kingdom of Burma, which, in 1755, was the residence of the king. It is 39 miles N. of Ava, the present capital.

MONCONTOUR, a town of France, in the department of Ille and Vilaine, 39 miles S.W. of St. Malo. Long. 2. 36. E. Lat. 48. 15. N.

MONDEGO, a river of Portugal, which has its source near Guarda, and crossing Beira, passes by Coimbra, and falls into the Atlantic, near a cape of the same name.

MONDIDIER, a town of France, in the department of Somme, where the kings of France formerly had a palace. It is seated on a mountain, 24 miles S.E. of Amiens, and 57 N. of Paris. Long. 2. 34. W. Lat. 49. 39. N.

MONDONEDO, a town of Spain, in Galicia, with a bishop's see; seated in a fertile country, on a small river, 60 miles N.E. of Compostella. Long. 7. 10. W. Lat. 43. 30. N.

MONDOUBLEAU, a town of France, in the department of Loir and Cher, with a castle, 13 miles N. of Vendôme.

MONDRAGON, a town of Spain, in Guipuscoa, in the neighbourhood of which are some medicinal springs, and a mine of iron of superior quality. It is 24 miles S.S.W. of St. Sebastian. Long. 2. 4. W. Lat. 43. 9. N.

MONDRAGON, a town of France, in the department of Tarn, 12 miles N.N.W. of Castres.

MONDRAGONE, a town of Naples, in Terra di Lavoro, celebrated for its medicinal waters. It is near the sea, 13 miles N.W. of Capua.

MONFORTE, a town of Portugal, in Beira, 30 miles N. by E. of Portalegra. Long. 7. 21. W. Lat. 39. 32. N.

MONFORTE, a town of Portugal, in Alentejo, 20 miles S. of Portalegra. Long. 7. 31. W. Lat. 38. 47. N.

MONGEARTS, a people of Africa, of whom, and the Mouslemines, we have the following account in Saugnier's travels to the coast of Africa, Morocco, Senegal, Goree, Galam, &c.

The travels of Sparrmann, Gordon, Vaillant, Maffon, Bruce, and Mungo Park, in different parts of Africa, have made us acquainted with only a small portion of the immense kingdoms of that continent; and it may be truly averred, that, though nearest to Europe, the anterior is as yet almost entirely unknown. To become completely acquainted with it, two great journeys must be undertaken: the first to Tombuet, in Abyssinia, either by traversing the Bildulgerid, or by ascending to the source of the Niger; the second would be from Tombuet to the Mosambique, thus traversing the whole interior of Africa. No doubt the society established in London will have intrepidity enough to vanquish all the obstacles which may present themselves either in the climate, or the inhabitants; and from their indefatigable observations, will be derived an acquaintance with countries hitherto only known by incorrect maps, and peopled by nations whose names are uncertain as their existence is doubtful.

The narrative before us is rather an account of Saugnier's misfortunes than a display of discoveries, which he might have made in traversing at large a country entirely new to the observer: he being unfortunately a slave to the Moors, on whose coast his vessel was wrecked, he expected nothing but death, and had to contend with infinite difficulties. Yet his narrative contains many particulars relative to the manners, customs, and character, of the various Arabian hordes among whom he resided.

The horde of Mongearts, who alone were on the coast when he was cast away, did not obtain undivided possession of the wreck: they were obliged to share it with the Moors of the Bildulgerid, a warlike nation, known by the name of Mouslemines. One of these Arabs obtained Saugnier in his partition of the spoil: he made his escape, but fell into the

hands of other Moors, who brought him, after a march of thirty days across the desert, to their camp; for these people are all wanderers. Content in their poverty, and unacquainted with want, they live in a state of perfect tranquillity. The men are occupied in hunting or tending flocks; the women in spinning or cookery; both sexes cover themselves with the skins of goats, or with pieces of cotton when they are able to obtain them from Guinea. The finery of the men consists in carrying handsome arms, such as daggers, sabres, firelocks, and in a wreath of large white crystals: that of the women is in necklaces of amber, coral, and all kinds of glass beads; in ear-rings either of gold or silver, according to the wealth of the individuals; and in a very ample cotton covering, one half of which is red.

Saugnier was employed in supplying the tent with wood, and in keeping the flocks of goats and camels, and saw no probable end of his misfortunes. He was successively sold to different Arabs, and inferred from his own sufferings that the more men are civilised the more cruel they become: every new master treated him with increased severity, and every day brought him nearer to the states of Morocco.

By the course of successive transfers he arrived at Cape Nun, where the French and English merchants at Mogador, having learned the misfortunes of these shipwrecked people, directed a purchase to be made of all who survived that event. Saugnier was among the number. Being brought to Mogador, he fondly hoped that all his sufferings were at end, and that he should be restored to liberty, when the emperor, enraged that the Christians had been more speedily obeyed than himself in his own dominions, broke out in threats, ordered the ransom to be restored to the merchants, and Saugnier and his companions were again made slaves, but they were slaves to the emperor, which entitled them to high consideration among his subjects. On their arrival at Morocco they were well treated, dressed in the French fashion, and discharged from all labour. The emperor, to whom they were presented, received them graciously; he promised they should speedily be sent to France, and in a few days restored them to that liberty which they had not hoped to speedily to enjoy. At Tangiers, by the help of the French vice-consul, they obtained a passage in a Spanish ship, and arrived in safety at Cadiz.

In the journeys which Saugnier made with his various masters in the interior of Africa, he saw all the wandering nations which inhabit the great desert *Saara*, to the Niger; they are indifferently called Nars, Moors, or Arabs. They are divided among themselves: the most considerable tribes are the Mongearts, Trassarts, Bracnarts, and Mouslemines: the last, accustomed to murder and pillage, are the scourge of the neighbouring people. It is impossible but that a people always wandering, always fugitive, and composed of a collection of various nations, should imbibed some of the customs and superstitions of their neighbours; they are Mahometans only in appearance and name. They display in their customs, the principles of natural law; it is imprinted on almost all their actions. The simple impulse of unassisted nature and the effects of example are the only education they receive.

In the *Saara*, hospitality is exercised without restraint; every traveller, on his arrival, is conducted to the tent of the chief, and treated with all the complaisance and attention which can be expected from a half-savage race. The Jew alone must not venture on the territory of the Mongearts; all religions are tolerated except his, but he would be burned alive. The Jews are easily recognised, not only by their features, but by the distinguishing dress they are compelled to

wear in all parts of Barbary, where they form a numerous nation. Among the Arabs, the old are respected in an equal degree with the priests, and with those who have been at Mecca. The aged, like the heads of hordes, are the judges of the people. They are only restrained from pronouncing the punishment of death; several chiefs must be assembled to decide on the nature of a crime and its penalty. War is less terrible, and less sanguinary, among them than predatory attempts, which are, in a certain degree, sanctioned by law. To succeed with impunity depends on the care which is taken not to be caught in the fact: the theft is only a crime if committed by day, in the night the law authorises it, intending, no doubt, to excite a greater degree of vigilance in tending the flocks.

The only mechanics employed among the Mongearts, are farriers and gold-smiths; the people are too indolent to apply to these occupations. The workmen who travel through the Saara, come from the Biledulgerid, and find ample employment. The Mongearts go in search of things absolutely necessary to the Tassarts, who inhabit the northern shore of the Niger. These people are entirely occupied with the care of their cattle; they live on the produce of the dairy, and on grain which they obtain from their neighbours; they are strangers to agriculture, and so indolent, that they do not get their virginals ready till nature requires it, by which means they are often unprovided. The women are engaged in household concerns; the negro slaves and children take care of the flocks; the men go to the places of assembly of the hordes, to market, or to the chase. The wives of the Mongearts are held in a greater degree of consideration than those of their neighbours; yet they are kept in a state of subjection bordering on slavery. Household affairs, spinning the hair of the camels and goats, the providing of wood, and the preparation of virginals, are their concerns: those who have negro-women for slaves have no trouble but that of issuing orders.

Although polygamy is allowed by their religion, few Arabs have more than one wife; when the no longer pleases her husband, or is displeased with him, they separate; the woman retires to her parents: if she resists the solicitations of her husband to return, he is free, and may marry any one else; but if she has a child, especially a boy, she cannot remain separated from her husband more than eight days upon pain of death. When a man beats his wife, it is an unequivocal proof of his affection, and that he does not wish to be separated from her; but if he only reproaches, without beating her, she thinks herself contemned, and retires to her parents. These proofs of friendship, and even of love, though still in use among the lower classes in Russia, would not accord with the taste of females in civilised nations. The fidelity of the Arab women is inviolable; they hope for an equal immortality with their husbands, but expect to attain it by constancy alone; in this they differ widely from the Mahometans. They make frequent visits to each other, and the mode of shewing respect is to permit the guest to do all the work in the tent: she prepares the food, churns the butter, while her friend or relation talks to her on private or public affairs. The cordiality of the reception is estimated according to the quantity of occupations the visitor is permitted to fill.

All these customs are pretty generally prevalent among the inhabitants of the northern bank of the Niger, the variations are so few and trifling as to claim very little notice. The Mouslemine, who are a mixture of real Arabs and fugitive Moors from the empire of Morocco, occupy one part of the Biledulgerid. Their government is republican: more civilised than the other Moors, they are united in societies, and inhabit small towns; more industrious and laborious than their neighbours, they employ themselves in agriculture, and

treasure their grain, half-winnowed, in large holes made in the earth, in the shape of obtuse cones, which they prepare by filling them with wood, and burning it. When they have deposited their grain in these excavations, they cover them with strong planks laid close together, and cover the planks with earth.

This country is very populous, and would be still more so but for the continual wars in which they are engaged with the Emperor of Morocco. The liberty they enjoy encourages them to endure the greatest fatigues; they look upon it as their greatest good, and will fight, even to death, to preserve it. They are rich, because they alone carry on all the commerce of Barbary with the Saara. The women are not more enslaved than in the interior; every man has as many as he can maintain: those are most respected who have the good fortune to bear male children, who are educated with the greatest care.

These people have a general head of their religion, who is respected even to adoration: he is the most powerful individual in Africa; his authority is unlimited; he declares war, makes peace, and though he has no territory of his own, enjoys a most extensive power. He does not, like the Emperor of Morocco, fancy himself inspired by the prophet, nor does he impose such a belief on his people; on the contrary, he avowedly forms his judgment from consultations with wife and experienced men. His authority extends over all the inhabitants of the Biledulgerid and the Saara; and the emperor, powerful as he is, has never dared to attempt a diminution of his influence.

The country of the Mouslemine is very fertile; it produces all the necessities of life, almost without cultivation; it abounds in palm-trees, dates, fig and almond trees, and produces great quantities of oil, wax, and tobacco, which are carried to Mogador. This plenty occasions the people to be better fed than those in the desert, but the inhabitants of the country are often reduced to a state of rigid frugality.

The subjects of the emperor of Morocco are much more unhappy even than those who want the necessities of life. The prejudices and despotic power of their princes, the plunder to which they are incessantly exposed, the necessity they are under of concealing their property that it may not be forcibly taken from them, these circumstances render them unhappy and barbarous. They plunder and pilfer wherever they have an opportunity; and so subject is their submission to the will of a despotic sovereign, that they dare not even utter a complaint. This Moorish nation, which occupies one of the finest spots on the globe, is always miserable, and often in want of the necessities of life. So great is their slavery, that they have no characteristic manners, the caprice of their prince is their only law; they are acquainted with no other.

Plurality of wives is allowed among the Moors; they may have four who bear that name, the rest are called slaves. These women are closely flung up, and have no enjoyment but at the caprice of their lords. When a barbarous husband is displeased with his wives, he maltreats them according to the prevalence of his brutal passion, and they are without hope of redress; often, after a long series of ill usage, he kills them to save the expence of their maintenance: the more humane get rid of them by exchange or sale: the lot of these unhappy persons admits of no solace, unless they are so fortunate as to bear male children.

All Moors are by birth equal; they are distinguished only by offices: when out of place, they return to the ordinary rank. The education of children is very much neglected till they are seven or eight years old: it is not till after circum-

cision that they are fixed either in the study of the Alcoran, in arts, or in arms: the military are favoured by the emperor; they are placed in the horse or foot according to their expertness, and they continue in the corps where they were first admitted, till the emperor is pleased to dismiss them. The sovereign dispenses justice in person, but no one is admitted to an audience unless he comes with a present proportioned to his fortune: the smallest gifts, even two eggs, are not refused. The Moors speak boldly to their sovereign; bashfulness is considered as a symptom of guilt, and the person shewing it would be sure to lose his cause.

The emperor of Morocco, as a defendant of Mahomet, by his pretended relationship with the family of the Sherifs, is the interpreter of the law. The priests, called *Talbes*, are always friendly to him; and his subjects believe him to be inspired by the prophet, and infallible. The respect with which he is regarded is so great, that his people consider it a happiness to die by his hand; it is a favour done to a religious Moor; he is sure to go immediately to Mahomet's bosom, and there enjoy everlasting felicity. Hospitality is partially exercised: the traveller is obliged to pay for his food, but if resorted to as an asylum, the house of a Moor is inviolable.

It is a general belief, that the souls of good men, and zealous observers of the law, are immortal; others suffer for a limited period, and are then annihilated: they consider the doctrine of eternal punishments repugnant to the divine goodness. As to the women, those only are immortal who have been inviolably faithful to their husbands; the others utterly perish. According to their principles, man is not a free agent, every thing having been predestined from all eternity; therefore, if any one commits a crime, he is not the less esteemed: when a Moor is in adversity, he bears it with an heroic courage.

The present reigning prince, according to Saugnier's account, might be taken for one of the Mouflemine nation, for his love of money is equally ardent with theirs. Commerce is an object of his exclusive attention, and procures him immense sums; all nations have liberty to establish commercial houses in his states, but he takes one twelfth part of their cargoes as his right. He often levies immense sums on the merchants, which they are forced to pay or relinquish their trade: the Jews are not spared; the industry of that wandering race is one of the chief resources of the emperor; he gives them every facility in trading, and even advances them a capital, but he knows how to resume it with usury. The Arabs, acquainted with the morality of this sovereign, will not deliver up their prisoners on his word, and the Christians are sufferers by it. The merchants dare not treat for a ransom, till they have purchased the emperor's permission; but on the simple word of these merchants, the inhabitants of the Biledulgerid part with their slaves; they have no fear of losing the stipulated ransom, for there is no example of a Christian at the head of a commercial house breaking his engagement; this makes the Moors observe, that the Christians never lie, because it is forbidden by their religion.

All the dangers which Saugnier had incurred, and all the evils he had undergone, did not discourage him; he ventured to undertake a second voyage, to try whether fortune would be more favourable; he arrived at Senegal without accident. This island is a mere bank of sand in the middle of the river, at three miles distance from its discharge into the sea; sterility is its smallest inconvenience; the air is extremely impregnated with salt, the heat excessive, and increased by the reflection of the sand. Insects abound in such a degree that it is impossible to defend one's self against their stings; the water is bad, meat soon becomes tainted, and fish has a bad flavour. A more dreadful situation cannot be found, nor a place where

it is more difficult to procure the first requisites of life; yet this country has been described by Medieurs Adanson and Dumanet as the abode of enjoyment and delight. These writers, Saugnier observes, "have given the rein to their imagination; but I, who have traversed the greatest part of it, found it in every particular more or less detestable. But when one is heartily tired, it is easy to find a termination of existence without suicide; it is enough either to remain there, or, if the sufferer is not endowed with sufficient patience, let him make a voyage to Galam."

This voyage Saugnier himself undertook, not apprised perhaps of the ills he thus announces, or, perhaps, confiding in the strength of his constitution. Galam is the place known as the depot of African commerce, so far as it consists in articles of exchange. To arrive there he was obliged to ascend 325 leagues up the Niger, and to brave the dangers of a most laborious navigation, the ill effects of a most destructive climate, the hostilities of a most inhospitable race who inhabit the banks of the river, the oppressions of numerous petty sovereigns who govern these people, and finally the insubordination and the robberies of the crew he was obliged to employ. Nothing but the avidity of gain, and an insatiable thirst after riches, can induce a man to face and conquer all the hazards of such a voyage: it requires that gold should be preferred to life.

It is necessary to read the work itself to learn in the detail all the dangers of this perilous commerce. The articles of exchange are guns, gun-powder, coarse cloth manufactured for the purpose, salt, iron, pistols, fables, woollen and linen cloth, small silver bells, coral, crystals, and all kinds of glass; these are bartered for slaves, gold, ivory, and elephant's teeth. The hardy traveller has given a precise and circumstantial account of the articles used in these negotiations, but an extract which must necessarily be mutilated, would be of little use.

At length, after a voyage of five months, constantly annoyed with fatigue and illness, and harassed with a multiplicity of accidents, Saugnier returned from Senegal, having completed only one half of the purpose which cupidity had induced him to undertake. Cheated by white men, cheated by the blacks, exhausted by mental and bodily infirmities, he resolved to return to his country. He notices Goree only to say, that it is merely a melancholy rock, which can produce nothing, and is destitute of water. The air is more wholesome than at Senegal; the inhabitants are a colony of the same nation, called Yofé; there are more inhabitants than the trade of the place requires, for there are not above a hundred negroes sold in a year, and it is necessary to search a space of thirty or forty leagues to obtain even those.

Notwithstanding all the difficulties which Saugnier has encountered, the injuries he has received from men, and the insalubrity of the climate; the knowledge he has acquired, and the sacred character of slave of the emperor, which is equally respected among his numerous subjects at a remote distance as by those near the capital, have influenced him to propose to the French government to undertake, at a very small expence, one of the most extensive journeys ever yet made by land. Seven obstacles of considerable importance present themselves, but he feels in himself sufficient resources to surmount them all.

MONGHIR, a town of Hindoostan Proper, in Bahar, with a fort. It is generally made a station for part of the English troops, and is seated on the Ganges, 110 miles E. by S. of Patna, and 275 N.W. of Calcutta. Long. 86. 30. E. Lat. 25. 20. N.

MONHEIM, a town of Germany, in Bavaria, eight miles N. of Donawert. Long. 11. 12. E. Lat. 48. 53. N.

MONICKEDAM, a sea-port of the United Provinces, in North Holland. In 1515, the whole town (the church of St.

Nicholas excepted) was destroyed by fire. It is seated at the entrance of the Monick into the Zuider Zee, eight miles N.E. of Amsterdam. Long. 4. 56. E. Lat. 52. 29. N.

MONJOY, a town of Westphalia, in the duchy of Juliers, 19 miles S. of Juliers. Long. 6. 7. E. Lat. 50. 39. N.

MONISTROL, a town of France, in the department of Upper Loire, 14 miles S.W. of St. Etienne. Long. 4. 6. E. Lat. 43. 17. N.

MONOMUGI, a region of Africa, lying near the equator, between Abyssinia on the N. Zanguebar on the E. Monomotapa on the S. and Congo on the W. This country is very little known to the Europeans.

MONONGAHELA, a river of North America, which rises in Virginia, and running N. into Pennsylvania, meets the Allegany at Fort Pitt, where their united streams assume the name of Ohio. It is deep and gentle, and navigable for barges 50 miles from its mouth.

MONOPOLI, an episcopal town of Naples, in Terra di Bari, seated on the gulf of Venice, 28 miles S.E. of Bari. Long. 17. 37. E. Lat. 41. 29. N.

MONPAZIER, a town of France, in the department of Dordogne, 18 miles S.W. of Sarlat. Long. 0. 47. E. Lat. 44. 46. N.

MONREALE, a town of Sicily, in Val di Mazara. It was erected into a bishopric in 1183; which has been suppressed, and the revenues appropriated to the marine, and the defence of the island against corsairs. It is three miles W.S.W. of Palermo.

MONSANTO, a strong frontier town of Spain, in Etramadura. Long. 5. 50. W. Lat. 39. 40. N.

MONSARAZ, a town of Portugal, in Alentejo, seated on the Guadiana, 25 miles S.W. of Elvas. Long. 7. 32. W. Lat. 38. 26. N.

MONSTERBERG, or MUNSTERBERG, a town of Silesia, in a province of the same name, 20 miles N.E. of Glatz, and 27 S. of Breslau. Long. 17. 16. E. Lat. 50. 37. N.

MONTABOUR, a fortified town of Germany, in the electorate of Treves, between Coblenz and Limbourg. Long. 7. 50. E. Lat. 50. 30. N.

MONTAGNIAC, or MUDANIA, a town of Natolia, on the sea of Marmora. It carries on a great trade, especially in fruits, and is seated on a bay of the same name, 70 miles S.S.E. of Constantinople. Long. 29. 10. E. Lat. 40. 0. N.

MONTAGUE ISLAND, one of the New Hebrides, in the South Pacific Ocean, near Sandwich Island. Long. 168. 31. E. Lat. 17. 26. S.

MONTAGUE (Mrs. Elizabeth), a lady highly esteemed in the circles of fashion, and of considerable celebrity in the republic of letters, was daughter of Matthew Robinson, esq. of West-Layton, in the county of York, and of Horton in Kent; descended of an ancient and respectable family, nearly allied to Richard, first Lord Rokeby, which title, for default of male issue in the original possessor, devolved to Matthew Robinson, esq. Mrs. Montague's brother. Her mother was Elizabeth, daughter of Robert Drakes, of the town of Cambridge, esq.

The care of Miss Robinson's education was assumed by Dr. Conyers Middleton, the celebrated author of the life of Cicero, and several philosophical and theological works. The pupil was worthy the attention of so great a master, as she joined to an ardent love of literature, and a zealous desire of instruction, a perseverance which alone can insure extensive information, or permanent acquisition; of this quality she is said to have given a remarkable instance by transcribing, before she had completed her eighth year, all the Spectators; there are many reasons to doubt the truth of this story in its utmost extent; but granting the copied those papers which were best

worth the labour, namely, Addison's Contributions, the effort is entitled to applause and admiration.

About the year 1742, she married Edward Montague of Allertorpe, in the county of York, esq. son of Charles, fifth son of Edward; first earl of Sandwich. By him she had one son, who was born in 1743, and died before he had completed his second year. Mrs. Montague was early left a widow, with an ample fortune, and extensive and honourable connections.

When the celebrated Pultney, earl of Bath, and his lady, made a tour in Germany and other parts of Europe, Mrs. Montague was of the party: she maintained an epistolary correspondence with some of the most eminent literary characters of the country, and particularly with the late Dr. Monfey, physician of Chelsea College. Her letters are praised by those who have seen them, as abounding in wit, observation, judgment, and learning; and in those respects are said to excel the letters of her celebrated name-fake Lady Mary Wortley Montague.

George, lord Littleton, was a warm admirer of Mrs. Montague; he was assisted by her in the composition of his *Dialogues of the Dead*, some of the best of which, according to his acknowledgment, were her productions.

In 1769, Mrs. Montague published her only avowed literary composition, *An Essay on the Writings and Genius of Shakspeare*, compared with the Greek and French dramatic Poets; with some Remarks on the Mifrepresentations of M. de Voltaire. This work obtained a great reputation: it was well received in the first literary circles, and passed through several editions. Voltaire's talent in decrying whatever is great, admirable, or venerable, was never shackled by the restraints of truth or morality; his arrogant pretension to triumph over the unrivalled bard of Avon merited reprehension, and his fallacies were completely detected and exposed by Mrs. Montague. Yet, as an essay on the genius and writings of Shakspeare in the most extended sense of the term, her production was not satisfactory: as an apology it was complete, because it demonstrated the futility of the critic; but as an authentic homage to the bard, it was not sufficiently copious or forcible to obviate the attacks of future cavillers, or to prove the claims of her favourite author to universal superiority. Dr. Johnson, who, with great force and inimitable precision, appreciated the extent, and marked the failings of Shakspeare's genius, was not satisfied with Mrs. Montague's essay, of which he always spoke with disrespect, and expressed surprise that Sir Joshua Reynolds honoured it with his admiration. Dr. Johnson conceived that Mrs. Montague's acquaintance with the ancients was not sufficiently profound or extensive to justify the pretensions of her title-page; but, whatever faults may, in this respect, be discovered in her essay, it had at least the good effect of discrediting the presumptuous gabble of the foreign critic and his inane and ignorant echoes. The style is remarkably elegant, and characteristic of a pen formed in the school of Addison.

Mrs. Montague was in habits of friendship with the first wits and scholars of the age, and was the reputed founder of a society known by the name of the *Blue Stocking Club*. This association was founded on the liberal and meritorious principle of substituting the rational delights of conversation for the absurd and vapid frivolities of the card table. No particular attention or respect was paid to her, but the conversation was general, cheerful, and unrestrained: far different from what is insinuated respecting the company by a satirist who accuses them of going

“To barter praise for soup with Montague.”

The name of this club is said to be derived from the follow-

ing circumstance. One of their most distinguishing characters in the early days of the society was Mr. Stillingfleet, who always wore *blue stockings*: his conversation was distinguished for brilliancy and vivacity, inasmuch that when, in his absence, the flock of general amusement appeared deficient, it was a common exclamation, *we can do nothing without the blue stockings*: thus was the appellative acquired which is now become frequently in use for a learned and witty lady, even though the never drank tea in Portman-square.

Mrs. Montague was noticed for another peculiarity; that of giving an annual dinner to the chimney-sweepers of the metropolis. This innocent exercise of charity had not escaped animadversion from those who atone for giving nothing themselves by affecting to prove that the donations of others are not so wise and benevolent as they ought to be. Yet, if the festive treat is now discontinued, the footy sons of labour will undoubtedly look forward with less delight than usual to the calends of May.

This excellent lady died at her house in Upper Berkeley-street, Portman-square, London, on the 25th of August, 1801. In private life, she is said to have been an example of liberal discretion and rational benevolence. Her hand was always extended to the protection of genius and the relief of distress; but she was careful to distinguish the objects, and not to lavish her bounty upon false pretensions. Her magnificent mansion was the resort of the most distinguished characters of her time; and all were emulous to testify their esteem, and pay homage to the endowments of her mind and the amiable qualities of her heart.

MONTAIGU, a town of France, in the department of Vendée, 24 miles west of Mauleon. Long. 1. 30. W. Lat. 47. 0. N.

MONTALVAS, a town of Portugal, in Alentejo, on the borders of Spain, 32 miles N.E. of Lisbon. Long. 6. 24. W. Lat. 39. 30. N.

MONTARGIL, a town of Portugal, in Estremadura, 28 miles S.E. of Santarém, and 33 N.N.W. of Évora. Long. 8. 11. W. Lat. 38. 48. N.

MONTARORO, a town of Naples, in Principato Citeriore, nine miles north of Salerno.

MONTAUPHIN, a town of France, in the department of the Upper Alps, seated on a craggy mountain, almost surrounded by the Durance, eight miles N.E. of Embrun. Long. 6. 45. E. Lat. 44. 40. N.

MONT-DE-MARSAN, a town of France, capital of the department of Landes, seated on the Midoufe, 30 miles N.E. of Dax. Long. 0. 30. W. Lat. 43. 55. N.

MONTIE-CASINO, a mountain of Naples, in Terra di Lavoro, on the top of which is a Benedictine abbey. Long. 43. 44. E. Lat. 41. 39. N.

MONTI-LEONE, a town of Naples, in Calabria Ulteriore. It was ruined by an earthquake in 1638, and is 12 miles N.E. of Nicotera.

MONTILMAR, a commercial town of France, in the department of Drome, with an ancient citadel. The inhabitants, in the 16th century, were the first to embrace the reformed religion. It is seated in a fertile plain, 25 miles south of Valence, and 325 S. by E. of Paris. Long. 4. 55. E. Lat. 44. 33. N.

MONTI-SANTO, a town of Portugal, in Beira, six miles north of Idanha a Velha.

MONTI-VELINO, a mountain of Italy, supposed to be the most lofty part of the Apennines, and 8307 feet above the level of the Mediterranean. It is 46 miles N.E. of Rome.

MONTESQUEIEU, a town of France, in the department of Upper Garonne, 15 miles S.S.E. of Toulouse.

MONTESQUIOU, a town of France, in the department of Gers, 11 miles W.S.W. of Auch.

MONTGOMERY, a county of Pennsylvania, 33 miles long, and 16 broad. In 1790, it contained 22,929 inhabitants. Norristown is the capital.

MONTGOMERYSHIRE, a county of North Wales, 36 miles long, and nearly the same broad; bounded on the north by Merionethshire and Denbighshire, on the N.E. and E. by Shropshire, on the S. by Radnorshire, on the S.W. by Cardiganhire, and on the W. by Merionethshire. It contains five market-towns and 47 parishes, and sends two members to parliament. Though barren and mountainous in many parts, it has a greater mixture of fertile vale and plain, than several of the Welsh counties. Its riches proceed from its sheep and wool; the hilly tracts being almost entirely sheep-walks; and the flocks, like those of Spain, are driven from distant parts to feed on them during the summer. This county also affords mineral treasures, particularly lead; and it abounds with slate and lime; but there is no coal. Its principal rivers are the Severn, Yrnew, and Taunat, which are remarkable for salmon.

MONTIEL, a town of Spain, in New Castile, formerly the see of a bishop. It is 18 miles W.S.W. of Alcazar.

MONTILLA, a town of Spain, in Cordova, 18 miles S.S.E. of Cordova, and 51 N. of Granada. Long. 3. 28. W. Lat. 37. 48. N.

MONTJOY, a town of France, in the department of Lot and Garonne, eight miles S.S.W. of Agen. Long. 0. 49. E. Lat. 44. 11. N.

MONTIVILLIERS, a town of France, in the department of Lower Seine, 95 miles N.W. of Paris. Long. 0. 20. W. Lat. 49. 35. N.

MONTLOUIS, a town of France, in the department of the Eastern Pyrénées. It is the capital of the French part of Cerdagna, and has a regular fortress, on a rock, at the foot of the Pyrénées, built in 1680, by Lewis XIV. for the protection of the frontiers. It is 40 miles W.S.W. of Perpignan, and 430 south of Paris. Long. 2. 5. E. Lat. 42. 30. N.

MONTLUET, a town of France, in the department of Ain, seated on the Seraine, 12 miles N.E. of Lyons, and 205 S.E. of Paris. Long. 5. 8. E. Lat. 45. 49. N.

MONTLUCON, a town of France, in the department of Allier, seated on the Cher, 35 miles S.W. of Moulins, and 150 south of Paris. Long. 2. 45. E. Lat. 46. 22. N.

MONTMELIAN, a town of Savoy, with a castle; taken by the French, in 1705, who demolished the fortifications. It is eight miles S.E. of Chambery, and 27 N.E. of Grenoble. Long. 6. 15. E. Lat. 45. 30. N.

MONTMORILLON, a town of France, in the department of Vienna, seated on the Gartempe, over which is a bridge, 24 miles S.E. of Poitiers.

MONTPENSIER, a town of France, in the department of Puy de Dome, seated on a hill, 20 miles N.E. of Clermont, and 210 S.E. of Paris. Long. 3. 14. E. Lat. 46. 4. N.

MONTREUIL, a strong town of France, in the department of the Straits of Calais, with a castle; seated on a hill, near the river Canche, 10 miles N.W. of Hesdin, and 117 north of Paris. Long. 1. 52. E. Lat. 50. 27. N.

MONTREUIL-BELLAY, a town of France, in the department of Maine and Loire, seated on the Thouet, 12 miles S.S.W. of Saumur, and 155 S.W. of Paris. Long. 0. 9. W. Lat. 47. 6. N.

MONT-RICHARD, a town of France, in the department of Loir and Cher, and late province of Blaisois, with a castle. It is seated near the Cher, 12 miles S.E. of Amboise, and 112 S. W. of Paris. Long. 1. 22. E. Lat. 47. 22. N.

a rivulet, which glides with gentle murmurs amid the valley. On its banks about 100 cottages are built, irregularly, and environed with potatoe-gardens and corn-fields. The population amounts to about 500.

In this remote society, the manners to the ancient Irish are said to have been preserved to the present day, and present to the reflecting mind an interesting portraiture of rustic simplicity.

The glen is about two miles long from east to west, and nearly a mile wide: it produces sufficient potatoes, flax, and corn, for the inhabitants; and their black cattle, sheep, and goats, are fed on the adjacent mountains. The villagers yearly sell a considerable number of sheep and cows in the fairs of Dundalk and Newry, which, with the profits arising from the manufacture of coarse linen, and the sale of butter and poultry, enables them to pay their rents and live in their own plain way. Their houses are small, and, like the Scotch shieltries, very durable. They are chiefly employed in carrying their linen, butter, &c. to market in panniers; for their rugged, steep, and almost impassable paths prevent the use of carriages of any kind. Indeed even their agriculture is mostly effected by the spade, for the soil is so stony that in many places they cannot use the plough.

With respect to the appearance of Glenmore, the village consists of cabins, the walls of which are commonly about ten feet high, built with stone cemented by tough clay, which the rains having washed from between the stones, you would think, on approaching, that the walls were ready to fall, being apparently formed of loose stones; but they are found by experience to be strong enough to resist the winter's storms. The windows are small, being mostly only apertures in the walls, which are occasionally filled with straw to resist the weather, or opened to admit the light and air. A framed glass window moveable in a groove is considered as a mark of elegance in Glenmore, and a few of the richest peasants have white-washed their cabins as a mark of distinction. The roofs of those cottages are composed of rafters interwoven with hazle boughs or branches of the plant willow. They are very neatly thatched with straw, similar to the barns in England.

Their fuel is peat, or, as they call it, *turf*, which is cut into small oblong squares on the summits of the mountains, dried in the sun, and conveyed home on their horses in panniers.

This fuel gives a strong and durable heat, but from the unskilfulness of the peasants in the construction of their chimneys, or rather the action of the wind from the circumjacent hills, the cabins are mostly infested with smoke, which is condensed on the inside of the roof into soot, and sometimes, in wet weather, is dissolved and falls in what the peasants call *soot-drops*, which stain their clothes and utensils.

The furniture of a cabin is commonly one or more bedssteads of fir, containing a bed of chaff with coarse sheets and blankets; two or three old chests and boxes; a few wicker or straw chairs, and low stools. Their utensils are an iron pot, cups of earthen ware, three or four crocks, half a dozen trenchers, the same number of noggins, a clumsy knife, a few horn spoons, a griddle, or circular plate of cast-iron, on which they bake their oat-cakes over the fire, and lastly the ancient and ever-venerated *mather*. This curious vessel is made of wood, its form is an oblong square, it has four handles, and contains two quarts. When a person drinks out of the *mather* he takes it up by two of the handles, and he must be a very thirsty mortal indeed who cannot be satisfied with the contents. The *mather* has been used by the Irish mountaineers time

immemorial, before the introduction of metal or earthen utensils.

Such are the elegances of an Irish mountain-cottage, and indeed many of them are not so well furnished. It is only the more opulent that can boast of such accommodations; for in several of the wretched huts, the beds of the inhabitants are merely straw spread out on the earthen floor, with scarcely any bed-clothes.

Let it be remembered, however, that this faithful picture of almost savage rusticity is not to be confounded with the comfortable habitations of the Irish who live in the fertile plains, where every necessary that contentment can desire is abundantly supplied by the hand of industry, and the polite arts of civilisation polish and adorn a happy people.

This sketch will be principally confined to the mountain villages, and the reasons will be given why their inhabitants have continued so long in a state of indigent but contented ignorance.

The cabins are mostly divided into two apartments; a kitchen, where the women spin, nurse their children, and dress the provisions, and a room appropriated to repose.

Let us enter one of these lowly dwellings. At the further side of the kitchen sit a number of lively young women busy at their spinning wheels, while they sing in concert one of the favourite love-songs of Carolan, or some other Irish ballad. How simple and affecting are those soothing sounds! which are rendered still more harmonious by the hum of the spinning wheels, that, like the bison or bass-viol, softens the clear notes of the female voices. It is now evening, and the labour of the day being finished, the peasant enters his cabin, lays down his spade, and after welcoming us, sits down at a respectful distance. Emboldened by our freedom of conversation, and our enquiries respecting the village, his awe softens into that good-natured air of frankness, which evinces that man was intended to be a social being. Proud of the honour we do him, he is desirous to amuse his visitors, and diverts us with his legendary tales of the Irish giants, and the miracles of St. Patrick. Supper is now brought forward; it consists of potatoes, bread, and milk, and we are earnestly invited to participate the homely fare.

Thus, the inhabitants of Glenmore and the other mountain villages, though a distinct and detached people, are not averse to their lowland neighbours, but seem proud of a visit from strangers. Their characteristic hospitality has remained unimpaired through the lapse of ages; and notwithstanding the pains taken by their priests to prejudice their minds against the heretical protestants as they are called, the mountaineers in general are remarkably officious to their more refined visitors, and appear good-natured and cheerful.

Indeed their contentment is the consequence of their ignorance; and though some of their young men leave their native mountains and mingle in the more active scenes of civilised society, yet by far the greater number voluntarily remain at home.

The mountaineers are somewhat lower in stature than the natives of the low-lands. The men are generally of the middle size; they are well formed, active, and hardy. Their visage is round, their hair black, sometimes long, but most inclined to curl, and their complexion brown, or rather swarthy. The women are more graceful; their complexion is brown, though a few are delicately fair; their eyes are black or brown, and their hair long; they are so plump as to border on corpulence; and their faces are mostly round, smooth, and uninteresting, being rather the image of good-nature than of sensibility. There are a few

exceptions among them—girls whose symmetry of form and beauty of countenance would induce a poet to imagine them the female deities of their native mountains. Those girls are slender, with fair complexions, light brown hair, and eyes of a most enchanting light blue, beaming with the lustre of youthful health. Yet these charming creatures are insensible of their own attractions; and though their unmeaning simplicity of air may delight for a moment, yet on a more intimate acquaintance, the man of refinement is disgusted with the vulgarity of their manners.

“ Full many a flower is born to blush unseen,
And waste its sweetness on the desert air.”

Many of the young women have an amorous archness in their looks, which probably arises from the familiar intercourse of the sexes. This is attended with no immoral effects, for they are remarkably chaste. Perhaps the simplicity of their manners, vegetable diet, and industrious habits, tend to suppress that ardor which in more civilised societies is too often productive of seduction, infamy, disease, and all the dire concomitants of licentiousness. Till within these few years the mountain villagers were unacquainted with the English language, but a circumstance happened, which, fortunately for them, was the introduction not only of that excellent vehicle of knowledge, but of a more lucrative kind of industry than they had practised.

The river of Ravensdale, which flows along in the plains near the western side of the mountains before mentioned, invited enterprising men from Ulster about thirty years ago. They built bleach mills, and by introducing the linen business into the country, they prevailed upon the neighbouring mountaineers to work for a shilling a-day, wages which to them appeared a treasure. Thus by an intercourse with the protestants, the mountaineers gradually learned to converse in English, and many of them can now communicate their ideas in that language with perspicuity.

Their ignorance is owing to the want of education, and the cunning of their priests, who have gained such an ascendancy over their superstitious minds, that they believe whatever nonsense is substituted instead of the pure precepts of Christianity.

Every spring they receive absolution from the priest. On this solemn occasion they exert their recollection to the utmost, in order to render up a faithful account of all the sins they have committed during the last year. Very young boys and girls are exempted from this farcical ceremony, but all those who are arrived at maturity, assemble with the most solemn and penitential looks before the holy father, who gravely hears the confession of each in private, and gives them absolution and his benediction for six pence or a shilling each. The cheerfulness and alacrity with which they return from confession is inexpressible. They have cleared off the old account, and may lay in a new score as soon as they please! Such opinions would have a most pernicious effect in a luxurious community, but in the quiet valleys above mentioned they rather promote the contentment of the ignorant peasant.

During Lent the mountaineers abstain from animal food, and would consider it a crying sin to let it touch their lips:

The mountaineers are accustomed to hardship from their infancy. Their children run barefoot among the tufts of heath, and the rocky mountains, even amid the rigor of winter. This gives them a callousity of nerve, and tends to stupify their mental faculties. The poets may expatiate on the efficacy of frosts in bracing the nerves and clearing the brain, but the experience of mankind proves, that mild cli-

mates, genial suns, and odorous breezes, are more conducive to genius and expansion of mind.

At a very early period, perhaps seven years of age, the boys are employed in leading horses at the plough or harrow, in weeding the potatoes and corn, and several of them are shepherds. The girls are taught to knit, sew, card, and spin. Whatever ideas the children of both sexes acquire from the traditional tales of their parents and neighbours constitute the whole of their knowledge, except the “palpable obscurity” of religion, which their priests think proper to impart. Hence their ideas, like their wants, are few: they are healthy, and the pure air of their native hills gives them a charming vivacity of spirits.

The dress of the mountaineers is coarse and plain. The men are clothed in frieze coats, waistcoats, and breeches, coarse woollen-yarn stockings, brogues (a kind of clumsy shoes), coarse linen shirts, and felt hats. Some of the young men, however, imitate their low-land neighbours by a finer dress, and the women have progressively increased their finery, inasmuch that the plain woollen hood, worn about twenty years ago, is laid aside, and cloaks of good scarlet broad cloth, or in summer of white dimity, are used in their stead. The young women are particularly partial to variegated ribbons, and the more glaring the colours the more they are prized. Their gowns are linsey-woolsey or striped linen, of home manufacture. It is a curious fact, that the fair sex among the most uncivilised nations are fond of brilliant colours, witness the tartan ribbons and petticoats of the highlanders of Scotland; and a similar predilection is shewn by the women of Russia and Tartary for the party-coloured shawls of Kishmyre and India.

Hospitality may almost be said to be instinctive among the mountaineers; and they carry this amiable virtue to so great a height, that there is always a little couch appropriated to the wandering beggars who often visit them. Indeed, the sociability and contentment of their lives have been very naturally portrayed by the poet, in the following lines:

“ Though poor the peasant’s hut, his feast though small,
He feels his little lot the lot of all.
Cheerful at morn he wakes from short repose,
Breathes the keen air, and carols as he goes;
At night returning, every labour sped,
He fits him down the monarch of a shed;
Smiles by his cheerful fire, and round surveys
His children’s looks that brighten with the blaze;
While his lov’d partner, boastful of her hoard,
Displays her cleanly platter on the board.
And haply, too, some pilgrim, thither led,
With many a tale repays the nightly bed.”

Their summer amusements consist of annual festivals, which they call *patrons*, being holidays in honour of tutelary saints. The principal meeting of these mountaineers is held on Midsummer-day. On this occasion the people first hear mass in the morning, and spend the remainder of the day in dancing, drinking, and other amusements. There are booths erected where they assemble, and a multitude of toys brought thither for sale. The young men buy ribbons and gloves, which they present to their sweethearts; and the festival resembles the English country wake.

Besides this amusement, the young people often assemble on Sunday afternoon, on some little green plain or mount, where they form a circle, around which the lads and lasses pursue each other alternately, and whoever is taken forfeits a kiss, similar to the sports of Yorkshire and other northern counties of England. In winter they amuse themselves with dancing,

in barns; or when the young women spin, the young men divert them with stories, or with the music of the flute or violin. Some of them are very expert at playing on the jews-harp, and commonly use two at a time, which they play with their little fingers. It is almost impossible to conceive the cheerfulness which illumines their faces at these social meetings. Their penury, the wintry storms that howl without, and the rumbling torrents that bear fragments of the rocks impetuously along, are unheeded by the lively train. We may well say of the Irish mountaineer, as the poet does of the Swiss—

"—Every good his native wilds impart,
Imprints the patriot passion on his heart;
And ev'n those ills that round his mansion rise,
Enhance the bliss his scanty fund supplies.
Dear is that shed to which his soul conforms,
And dear that hill which lifts him to the forms:
And as a child, when fearing sounds molest,
Clings close and closer to the mother's breast;
So the loud torrent and the whirlwind's roar,
But bind him to his native mountains more."

With respect to superstition, the mountaineers retain a belief in the existence of fairies, whose power they dread. They recount many feats performed by the fairies, or, as they call them, the *gentry*. Tradition has conveyed down the fable of the *banh shea*, an apparition like an old woman, dressed in the ancient Irish habit, with a hood on her head, bound with a kerchief; this spectre was said always to appear under the window where any person lay on the death-bed, and to express several mournful cries as a token of approaching dissolution. The existence of familiar spirits is also believed by this credulous people; and an impostor, called Roger Mulhern, who lived near Carlingford for many years, is yet mentioned by them with the greatest reverence. This man pretended, that by the aid of his invisible friend he could tell the state of the dead. Several people, anxious to know how their relatives fared in the other world, flocked to the house of this sage, who gave them a night's lodging free of expence, and by artful enquiries drew from his visitors a knowledge of such circumstances in the life of the departed friends, as enabled him to decide whether he was happy or miserable. His fame increased, and the priests became alarmed lest his imposture should circumvent theirs. They forbade their parishioners to visit Mulhern, whom they affirmed to be under the influence of the devil. But though the prohibition deterred the people from going publicly to the house of the impostor, yet they visited him, with the greatest secrecy, under the veil of night; and he, as a reward for their faithfulness, presented each person with a shilling, besides giving them the most satisfactory information respecting the deceased. This act of beneficence was so different from the practice of the priests, who always demanded money for any of their good offices, that if death had not removed Mulhern, it is not improbable but he might have produced another heresy in the holy mother-church.

As the young mountaineers approach maturity, the soft passion predominates. The nearest relations of the enamoured pair assemble, and after adjusting the portion to be given with the young woman (commonly two or three cows, and a few sheep), the marriage is solemnised. This is the most expensive festival of the mountaineers. It is common for forty

or more persons to be entertained at the expence of the bridegroom; or if the father-in-law is generous, he sometimes defrays the expence of the wedding dinner.

This feast consists of a superabundance of bread, meat, poultry, butter, and whiskey punch.

Within these few years tea in the afternoon has been introduced; but in general, only the favourite cordial, whiskey*, is circulated with joy-inspiring influence. A musician attends, and the festive party dance till midnight.

When the bride retires, a number of young people of both sexes throng into her bed-chamber, till she complies with the old custom of throwing the stocking. She throws her stocking over her right shoulder, and whoever is so happy as to be hit with it, is supposed to be the next of the company who will be married. This ceremony is accompanied with loud bursts of laughter, after which the lively party retire.

A christening is also attended with much expence in regaling friends, but as the people become more enlightened they will probably be more economical.

By frequent intermarriages in the same village, the mountaineers think that they keep their property among themselves, and are unwilling to form any connubial engagements with others.

On the decease of any person, the fire is instantly extinguished, as symbolical of the extinction of life. If this event happens in spring or summer, flowers are gathered and strewed around the body, which is laid out on a little straw. It is covered to the chin with a sheet, and the face remains bare. For two nights a large table is placed over the corpse, with ten candles upon it; this is called the night-wake, and is emblematic of immortality. A basin filled with cut tobacco, with a number of pipes, are placed for the accommodation of the neighbours, who throng to the house, fill it with the smoke of tobacco, and talk as gaily as if they were at a christening. Nay, several of the young people join in such amusements as hunt the slipper, or blind man's buff; and even courtship makes no inconsiderable progress in this house of mourning. The cheerfulness of the visitors is interrupted at intervals by the exclamations of the mourners.

A female orator begins this ceremony. She recites the former happiness of the deceased; deplores his death in a kind of song, and is joined in different parts of this monody by a chorus of mourners: those who feel least are ever the most noisy, while the nearest female relations prove, by their sighs and tears, that their sorrow is unaffected.

"Alternately they sing, alternate flow
Th' obedient tears, melodious in their woe;
While real sorrow swells in each full heart,
And nature speaks at every pause of art."

This ancient custom might excite risibility in a mind unaccustomed to reflect or feel: but most people are melted by its solemn simplicity. It is difficult to see the gestures of sorrow exhibited by those mourners, and to hear their sweet plaintive voices, without sympathising; and the writer of this account has on many such occasions felt the tear of sensibility bedew his cheek.

After these ceremonies the corpse is carried on a bier to the place of interment, where the priest prays for the repose of the departed soul, and urges his hearers to give him some money for praying the deceased out of purgatory. The credulous people

* The author cannot suppress a wish that the wisdom of the legislature may devise some other mode of taxation, and put an entire stop to the distillation of this pernicious liquor. By this chemical process, nutritious grain is changed into a liquid poison, which ruins the health, and depraves the morals, of myriads of our fellow-subjects.

have paid their clergy for this nonsensical mummerly for many ages, but some of the most intelligent among them are beginning to question its efficacy, and it probably will soon be "a tale of the times of old."

The moral character of the mountaineers has often been misrepresented by satirists, who, as Churchill says, "judged the many by the rascal few." On an impartial and philo-sophic investigation of their qualities of head and heart, it will be found that they are naturally acute; warm in their resentment and affection; hospitable, credulous, and inquisitive; passionately fond of the marvellous in description; very superstitious, and passive to their clergy; communicative and unsuspicious; indolent, till stimulated by the hope of gain or a prospect of pre-eminence; boastful and fond of praise; warmly attached to their relatives and friends, and ferocious to their enemies. Such is the Irish mountaineer in his natural state; but their priests have absolutely perverted this people by inculcating a detestation of the protestants, whom they stigmatise with the name of *heretics*. This hatred is further increased by the idea that they have been dispossessed of their heritage by the first settlers from England and Scotland. Consequently the mountaineers consider themselves as the true proprietors of the island, who have been deprived of their rights by the invasion of others. In consequence of this opinion, many of them hate the protestants; and as in their intercourse they are obliged to behave civilly, nay submissively, they are early taught the low arts of dissimulation, and can disguise their sentiments with wonderful address.

This perversion of the human heart has been productive of the most dreadful effects, witness the massacre of 1641; but as superstition is gradually declining, and a spirit of enquiry is become universal throughout Europe, it is to be hoped that even the Irish mountaineers will soon adopt the benign precepts of Christianity, which teaches us to "love our neighbours as ourselves." The idea that "faith was not to be kept with a heretic," has long prevailed among the mountaineers; hence they were prone to defraud their low-land neighbours, whenever they could do it with impunity; and in their bargains they are yet too cunning for more enlightened dealers.

One virtue of the most amiable kind they practise with un-remitting zeal—filial piety. No nation, not even the Chinese, can pay more respectful attention and implicit obedience to their parents. As there are no parish workhouses in Ireland, except in some of the principal towns, consequently the country would abound with destitute old people, were it not for the gratitude of their progeny. The Irish peasant, but especially the mountaineer, protects his parents in the decline of their years. The mothers assist in nursing, carding, or spinning; the fathers huddle about the farms, directing the young men at their work. At night, the best and easiest seat is appropriated to the ancient father and mother, and the most nutritious food in the house is served up to them. It really is an edifying and lovely sight to behold the respectful attention paid by those peasants to their aged parents, while the grand-children are taught to address them in the most endearing language, nay to crave their blessing, and supplicate the Deity for them in prayer.

Nor does the filial love of the Irish mountaineer expire with his parents. He closes their eyes, attends their remains to the tomb with grateful sorrow, and occasionally visits the grave of those who gave him being, and bedews it with his tears. From such a disposition, what excellent virtues might be produced with proper cultivation! but, alas! ignorance and superstition contract those faculties with lethargic torpor, and many an excellent mind is buried in those remote regions, like the diamond in the mine.

Let us for a moment turn our attention from these wild
Vol. X.

scenes, to another that approaches nearer to the elegance of civilised society, and conclude this account with a short description of the subsequent country.

Ravensdale is a fertile valley, about seven miles north-west of Carlingford. It lies at the bottom of the great chain of mountains whose inhabitants we have described. This lofty and majestic range shelters the vale from the north and east winds. Ravensdale lies open to the southern and western breezes, and is beautified by a large river, which runs from north to south, skirting the fields with the liveliest verdure along the western side. This river empties itself into Dundalk bay, which is about two miles distant.

An excellent road has been made along the bottom of the mountains, on the eastern side of the vale; and there are five bleach-mills on the banks of the river, with several acres around, each covered with whitening linen: here a number of bleachers at work enliven the landscape, and give an air of business to the scene, while several handsome mansions, adorned with gardens and shrubberies, exhibit a charming variety.

This cheerful scene is contrasted by the wild sublimity of the mountains, which swell in natural grandeur, empurpled by the blooming heath, and brightened by the yellow blossoms of furze. Translucent streams flow in many cascades down the sides of the mountains, and appear with peculiar beauty and lustre when the evening sun shines upon them.

Towards the north, Ravensdale park displays a beautiful assemblage of picturesque objects. A variety of trees, particularly fir, oak, and laurel, bloom along the sloping side of the highest mountain, with vistas at different intervals, which give a view of the river winding along amid the level meadows below. A cascade, which falls over a rock, is precipitated about forty feet perpendicular into a basin, where it foams and murmurs away in a stream that joins the river. Several gravel walks conduct the ramblers through the mazes of the wood; and seats painted green, placed at different distances, invite to rest and contemplation. The peak of the mountain above Ravensdale park is crowned with a vast pyramidal cairn or heap of stones, probably raised to perpetuate some great event. This cairn is discoverable at the distance of many miles, and adds greatly to the magnificence of the airy steep.

The rural grandeur of this mountain scene, and the softer features of natural beauty smiling in the sunny meadows, and sparkling on the gliding river below, is contrasted by an opposite mountain, which is so barren that it presents nothing but an irregular mass of rocks and loose stones, which appear in broken curves, with here and there a stunted thorn, vegetating on the surface of the sterile foil.

Such are the primitive manners of the Irish mountaineers of Leinster, and such the rich and picturesque country adjacent, which is inhabited by an industrious and refined race of people, as distinct from the former as if they lived in a distant region of the globe.

MOUNTMELLICK, a town of Ireland, in Queen's County. The wool combing, malting, and tanning businesses; with the cotton manufacture, and bleaching, are carried on here. It is five miles north of Maryborough, and 42 W.S.W. of Dublin.

MOUNTRATH, a town of Ireland, in Queen's County. Iron forges and furnaces have been long erected in its neighbourhood; but from the scarcity of charcoal have not been in regular use: the woollen manufacture forms the principal trade. It is six miles W.S.W. of Maryborough, and 23 north of Kilkenny. Long. 6. 54. W. Lat. 53. 2. N.

MOUNTSBAY, a bay on the south coast of Cornwall, between the Land's End and the Lizard Point. It is so named

from a lofty peninsulated rock, called Mount St. Michael, which rises within it. Among the rocks, on this part of the coast, breeds the Cornish croun, or red-legged crow, noted for stealing and carrying away whatever it finds. In Mountsbay is a considerable pilchard fishery.

MOURA, a town of Portugal, in Alentejo, with an old castle; seated at the confluence of the rivers Ardita and Guadiana, 87 miles S.E. of Lisbon. Long. 5. 59. W. Lat. 38. 0. N.

MOURZOOK, the capital of Fezzan, situate on a small river, and supplied with water from a multitude of springs and wells. The medley which it presents to the eye, of the vast ruins of ancient buildings, and the humble cottages of earth and sand that form the dwellings of its present Arab inhabitants, is singularly grotesque and strange. It is surrounded by a high wall, with three gates, at which is collected a tax on all goods (provisions excepted) that are brought for the supply of its people. A caravan arrives annually from Mesurata at this place; and hence the Fezzaners dispatch, every year, a caravan to Cahna, and another to Bornou. Mourzook is 262 miles south of Mesurata, 650 N.W. of Bornou, and 710 north by east of Cahna. Long. 15. 5. E. Lat. 27. 20. N.

MOUSELEMINCS. See *MONGEARTS, Supp.*

MOUSSY, a river of Hindoostan, which crosses the country of Golconda, and runs into the Kistnah, on the borders of the circar of Palnand.

MOUSTIERS, a town of France, in the department of Lower Alps. It is noted for a manufacture of fine porcelain, and for a once famous pilgrimage, called Our Lady of Beauvezer, seated between two lofty and craggy mountains. It is five miles N.E. of Riez, and 47 W.N.W. of Nice.

MOUTIER, or **MONSTIER**, a town of Savoy, capital of Tarentesia, with an archiepiscopal palace. It is seated on the Isere, 62 miles N.W. of Turin. Long. 6. 23. E. Lat. 45. 30. N.

MOUZON, an ancient town of France, in the department of the Ardennes, with a late rich Benedictine abbey; seated on the Meuse, eight miles S.E. of Sedan, and 110 N.E. of Paris. Long. 5. 10. E. Lat. 49. 37. N.

MOYENVIC, a town of France, in the department of Meurthe, remarkable for its salt pits. It is three miles from Vic, and 10 S.S.E. of Nancy.

MOZCISLAW, a strong town of Lithuania, capital of a palatinate of the same name. It was almost ruined by the Russians in 1660, but is rebuilt. It is seated on the Soz, 22 miles south of Smolenko. Long. 32. 32. E. Lat. 54. 28. N.

MUCHELN, a town of Upper Saxony, in Thuringia. It was burned, in 1621, by the imperialists, under the command of Count Tilly. It is six miles north of Freyburg, and eight S.W. of Merzburg. Long. 11. 39. E. Lat. 51. 15. N.

MUCHELNEY, a village in Somersetshire, two miles south by east of Langport. Here are the remains of a rich and ancient abbey, part of which is now converted into a farm-house.

MUCIDAN, a town of France, in the department of Dordogne, seated on the river Isle, 18 miles S.W. of Perigueux.

MUCKENBERG, a town of Upper Saxony, in the margrave of Meissen, 28 miles north of Dresden, and 22 N.E. of Meissen. Long. 13. 52. E. Lat. 51. 20. N.

MUEHR, a river of Germany, which rises in the archbishopric of Salzburg, crosses Stiria, passing by Judenburgh, Luben, Muchr, and Gratz, and falls into the Drave, near Kaniska, in Hungary.

MUEHR, or **MUEHRHAU**, a considerable town of Germany,

in the duchy of Stiria, on the river Muchr, 25 miles N.W. of Gratz, and 40 S.W. of Neustadt. Long. 15. 4. E. Lat. 47. 16. N.

MUGGIA, or **MUGGLIA**, a town of Italy, in Venetian Istria, with a castle, seated on a gulf of the same name, five miles S.E. of Trieste. Long. 14. 2. E. Lat. 45. 52. N.

MUHLBERG, a town of Upper Saxony, in the margrave of Meissen, with a castle, situate on the Elbe, 19 miles N.W. of Meissen, and 32 N.W. of Dresden. Long. 13. 9. E. Lat. 51. 25. N.

MUHLROSE, a town of Upper Saxony, in the middle marche of Brandenburg, situate on a navigable canal, which forms a communication by water from Hamburg to Breslaw, nine miles S.W. of Frankfurt on the Oder.

MURKIRK, a town in Ayrshire, seated on the river Ayr, and noted for a considerable iron-work.

MULDAU, or **MOLDAU**, a river of Bohemia, which rises on the confines of Moravia, and running by Budweis and Prague, falls into the Elbe, at Melnick.

MULDORF, a town of Germany in the archbishopric of Salzburg, seated on the Inn, 37 miles N.W. of Salzburg, and 40 east of Munich. Long. 12. 25. E. Lat. 48. 10. N.

MULHEIM, a town of Germany, in the electorate of Cologne, seated near the Rhine, three miles from Cologne. Here the few protestants in Cologne are obliged to go to perform divine service.

MULHEIM, a town of Westphalia, in the duchy of Berg, situate on the Ruhr, 14 miles north of Dusseldorf. Long. 6. 51. E. Lat. 51. 26. N.

MULL OF GALLOWAY, a rocky promontory, the most southerly point of Scotland, in the county of Wigton.

MUNDEN, or **GEMUNDEN**, a town of Lower Saxony, in the principality of Calenberg, situate at the confluence of the Werra and the Fulda, where they join to form the Weser. No one who is not a freeman of Munden, is to trade beyond this town, but must consign his goods to a factor here; and whatever is brought in a vessel, must, by virtue of the staple-right granted and confirmed to this town, be unladen and laden again. The Werra may be navigated by Munden and Hessian vessels, but the latter, on coming to Munden, are not to proceed, without a licence, and even then they must have a Munden master and pay a duty to the town. It is 10 miles N.N.E. of Cassel, and 13 S.W. of Gottingen. Long. 9. 47. E. Lat. 51. 40. N.

MUNDER, a town of Lower Saxony, in the principality of Calenberg, situate on the Hamme, 18 miles E.S.E. of Munden. Long. 9. 25. E. Lat. 51. 38. N.

MUNDERKINGEN, a town of Suabia, seated on the Danube, 25 miles S.W. of Ulm. Long. 9. 43. E. Lat. 48. 15. N.

MUNDU, a city of Hindoostan Proper, in the province of Malwa, of which it was anciently the capital. It was then a prodigious city, 22 miles in circuit, and contained many monuments of ancient magnificence; but it is fallen much to decay. It occupies the top of a large and lofty mountain, 46 miles south of Ougein, and 454 N.E. of Bombay. Long. 75. 47. E. Lat. 22. 50. N.

MUNGATS, or **MUNKATS**, a town of Upper Hungary, with a bishop's see, and an impregnable castle, seated on a high rock, 50 miles N.E. of Tockay. Long. 22. 0. E. Lat. 41. 30. N.

MUNGLORE, a town of Hindoostan Proper, in the county of Cabul, 125 miles west of Cashmere, and 135 east of Cabul. Long. 71. 15. E. Lat. 34. 15. N.

MUNIA, or **MEÑIE**, an ancient and considerable town of Egypt, seated on the Nile. The vessels that go down the river are obliged to stop here and pay certain duties. There

are several mosques and a great number of granite pillars. It is 140 miles south of Cairo. Long. 31. 20. E. Lat. 27. 45. N.

MUNNERSTADT, a town of Franconia, in the bishopric of Würzburg, situate on the Lauer, 28 miles N.N.E. of Würzburg, and 31 N.W. of Bamberg. Long. 10. 9. E. Lat. 50. 7. N.

MUNNYPOUR, a town of the province of Meckley, in Asia, 264 miles N.N.E. of Aracan. Long. 95. 0. E. Lat. 24. 40. N.

MUNSINGEN, a town of Suabia, in the duchy of Württemberg, 20 miles west of Ulm, and 26 S.E. of Stuttgart. Long. 9. 20. E. Lat. 48. 23. N.

MUNSTER, a town of France, in the department of Upper Rhine, with 2 late rich Benedictine abbey, 30 miles S.W. of Strasburg. Long. 7. 5. E. Lat. 48. 8. N.

MUNSTER-MEINFELD, a town of Germany, in the electorate of Treves, 12 miles S.W. of Coblenz. Long. 7. 18. E. Lat. 50. 19. N.

MURANO, an island and town of Italy, a mile from Venice, formerly a very flourishing place, and has still some palaces that bear the marks of former magnificence, though now in a state of decay. The island is said to contain 20,000 inhabitants. The great manufacture of looking-glass is the only inducement for strangers to visit this place, which formerly served all Europe with looking-glasses. Long. 12. 5. E. Lat. 45. 26. N.

MURET, a town of France, in the department of Upper Garonne, seated on the Garonne, 10 miles south of Toulouse. Long. 1. 18. E. Lat. 43. 26. N.

MURHART, a town of Suabia, in the duchy of Württemberg, with a Benedictine abbey. It is seated on the river Mur, eight miles south of Halle. Long. 9. 51. E. Lat. 40. 14. N.

MURO, an episcopal town of Naples, in Basilicata, seated at the foot of the Apennines, 12 miles S.E. of Conza. Long. 15. 45. E. Lat. 40. 46. N.

MURRAY FRITH, a considerable inlet of the sea, on the east coast of Scotland, between Tarbetness, in Ross-shire, on the north, and Brough Head, in Murrayshire, on the south.

MUSA, a town of Arabia, in the province of Yemen. It is populous, and surrounded with walls: 18 miles east of Mocha.

MUSACRA, a sea-port of Spain, in Granada, with a strong castle, seated on a mountain, 27 miles N.E. of Almeria, and 62 S.W. of Carthage. Long. 1. 36. W. Lat. 37. 11. N.

MUSIC (*Encycl.*). To what we have already offered under this head we are induced to lay before the reader, from the pen of a scientific and truly ingenious writer who assumes the title of the *LEPTOLOGIST* in the British Magazine for 1800, the following observations on music in general:

The agreeable effect of melodious sounds, not only on the human ear, but on the feelings and on the passions, is so universal and so powerful, as deservedly to excite the attention of the psychological philosopher. For what ultimate end a susceptibility for this peculiar pleasure has been implanted by nature in the mind, is not easy to be ascertained; but, setting aside the well-known pleasing sensation of a delicate titillation, wherever the nerves are possessed of great sensibility, and the affections of an interesting voice, giving expression to poetical and impassioned diction, it is probable that the taste for all complicated and scientific music is wholly acquired.

1. Music may be considered as consisting of three component parts, rhythm, melody, and harmony. Rhythm is an agreeable succession of sounds considered with respect to the time of their whole duration. Melody is an agreeable succession in respect to the pitch, or the frequency of vibrations of each

sound. Harmony is an agreeable combination of several sounds at the same time. It is evident that rhythm and melody are almost inseparable; but that harmony is by no means necessary to the existence of music. In the first place, it is easy to conceive that a love of rhythm, or of the periodical recurrence of the same or similar sensations at equal intervals of time, may be derived from the habit of a certain equality and recurrence in the motions of the body, such as walking, or, in children who cannot yet walk, from the passive motion of gestation: this predilection for the return of customary sensations appears to be an innate and fundamental tendency of the human system, to which physiologists and metaphysicians have been obliged ultimately to refer many properties both of body and mind. But be this as it may, the love of rhythm, which is, perhaps, the lowest ingredient in musical taste, is, if possible, still more universal than the love of harmony and melody. Poetry, or rather metrical composition, is distinguished from prose only by the regularity of its rhythm; and the knowledge of metre and prosody, however high it may rank in the critic's estimation, is a subordinate and comparatively insignificant branch of musical science. The natural fondness for rhythm is the principal foundation of the pleasure of dancing, an amusement intimately connected with music, and no less popular. The rhythm of a musical composition is almost always at least twofold, often three or fourfold, consisting of subordinate divisions or bars, and periodical returns of larger members, either phrases or strains, containing equal numbers of these divisions. All this is perfectly natural, but, perhaps, not so necessary to music as Mr. Walter Young, in his excellent essay, printed in the Edinburgh Transactions, appears to imagine; for those who are already experienced musicians are generally observed to delight in recitative, where the rhythm is almost entirely lost; and still more in fugues, where two or three series of rhythms, almost independent of each other, are carried on at the same time, one part beginning its subdivisions when another has made some progress, and a third is still to follow. But the pleasure derived from such compositions, is, as Kirnberger has observed, more intellectual than sensual, arising in great measure from the consciousness of being able to comprehend that which is "caviar to the general." Rhythm is generally marked in performance by a slight increase of force at the beginning of each subdivision or bar; sometimes, and in some instruments always, the change of sounds, in point of acuteness and gravity, or the interruption of the same sound, is a sufficient distinction; and sometimes, after the rhythm has already been firmly impressed on the mind, neither change of sound nor of strength is perpetually repeated; the imagination alone being sufficient to conceive the continuation of the rhythm: but this constitutes a kind of *tempo rubato*, where the perception of measure is intentionally weakened or suspended. The Æolian harp pleases indeed without rhythm, but the pleasure would soon be exhausted by repetition.

2. The next constituent part of music is melody. Melody may in some sense be said to please on the same principle as rhythm, the partiality of the mind to a regular recurrence of intervals: for though we have it not in our power to count the single vibrations of musical sounds numerically, yet we are evidently able to compare with ease such sounds as are related to each other in the simplest numerical ratios. For instance, if a treble and a tenor voice sing the same part, there is scarcely an ear so inaccurate as not to perceive their resemblance, which is produced by the recurrence of two vibrations of the treble note at the same interval of time with one of the tenor. The same love of order may easily be extended to the comparison of fifths and fourths, where the proportions are as two to three, and as three to four. This is enough to account in

some degree for the pleasure derived from melody, or the succession of sounds bearing certain proportions to each other, in respect to gravity and acuteness: besides, that the same intervals which are most melodious in succession, are found also to form the most pleasing combination of harmony when contemporary; for since the preceding sound is very frequently continued by reflection from surrounding objects, so as to become contemporary with the succeeding, and perhaps always remains fixed in the imagination, it is obvious that sounds, in order to be perfectly melodious, must also be harmonious. Add to this, the impression generally made in infancy by the more or less melodious ditties of the nurse's voice, and the connection of refined and chromatic melodies with the natural expression of the means of grief, or the exclamations of joy; and from the union of all these causes it may easily be conceived from whence the love of melody, as an acquired faculty, may, without much difficulty, be derived.

3. The pleasure arising from harmony is not so simple and universal as that which is produced by a combination of rhythm and melody. Harmony requires for its execution and perception a greater degree of cultivation both in the performer and the hearer than melody alone. Contemporary sounds may, from the due proportion of the times of their vibrations, give a similar pleasure to that of melody, when the mind, considering them in succession, finds them capable of a ready comparison. But the characteristic of harmony is the regular, and at the same time diversified, motion of the air, which arises from the combined vibrations, and which appears to be well calculated to produce the pleasure that the mind derives from the perception of symmetry. In this point of view, a concord may be considered as a single sound distinguished from a discord by a superior quality of tone; in the same manner as the tone of the harmonica is more agreeable than that of a new-man's horn, as the note of a nightingale is sweeter than that of a frog, and a smooth rich voice more pleasing than a hoarse and nasal croaking. Thus the harshness and disagreeable quality of a single sound may also, on a more nice examination, be sometimes found to consist in a want of harmonious proportion in those secondary notes which generally enter into its composition. This quality of sound, sometimes called its tone, register, colour, or *timbre*, might be considered as a fourth component part of music; it depends on the law by which the parts of the sounding body, and the particles of the air, are governed, with respect to the velocity of their progress and regresses in each vibration, or in different successive vibrations. No doubt, much of the pleasure derived from music depends on it; but as it is capable of little diversity on the same instrument, it is seldom considered in treating of the theory of music. The various combinations of the stops of the organ and harpsichord, the use of the harmonies of the harp and violin, the bowing nearer to or further from the bridge, the application of mutes of various kinds, the change of the aperture of the lips in wind instruments, the choice of vowels and consonants more or less adapted to the powers of the voice; and, in full pieces, the judicious introduction of different voices and instruments as subservient to the general effect: all this relates to the quality of sound, and whoever adequately relishes the works of the great modern masters will be fully competent to judge of its practical importance.

Be the causes what they may, natural or habitual, simple or complicated, it is certain that a very great majority of mankind experiences pleasure from music: this pleasure is a social pleasure, and, connected as it is with sentiment and passion, it is a rational pleasure. The pursuit of musical excellence, if properly conducted, amply exercises the faculties, at the same time that it forms a desirable variety when inter-

mixed with literary or professional employments. To call it an amusement only, betrays an ignorance of the nature and difficulty of the study; so far is the science of music from being of a light and superficial nature, that, in its whole extent, it is scarcely less intricate or more easily acquired than the most profound of the more regular occupations of the schools: and even practical perfection in music requires so much intense and laborious application, such a minute accuracy of perception, and so rapid an allocation of various sensitive ideas with other ideas and mechanical motions, that it is inconceivable how men who have no appearance of superior brilliancy in any other accomplishment, should be able to attain a conception and execution which seem almost to require the faculties of a superior order of beings. An intemperate and dissipated attachment to music may indeed often be productive of evils; but probably the same individuals would have been equally idle and irregular if they had been destitute of this accomplishment. A considerable share of the pleasure of practical music arises from causes perfectly distinct from the sensual perceptions: the consciousness of having overcome difficulties, the laudable satisfaction of entertaining others, and the interest and emulation produced by a concurrence of others in the same pursuits: all these entirely outweigh the temporary amusement of the ear, and wholly remove the objection which might be made to the enervating effect of a continual devotion to pleasurable sensations. The ancient philosophers, with all the manliness and dignity of character to which they aspired, were not ashamed to consider music as an indispensable part of a liberal education; and Plato devotes three of the earlier years of his young citizens entirely to the study of the lyre: nor are we without examples in modern times, of philosophers, and princes, and heroes, who have excelled as much in musical performances, as in literature and in arms.

Origin of the scale.—The first lyre, with three strings, is said to have been invented in Egypt by Hermes, under Ormus, between the years 1800 and 1500 before Christ. The second and third string were, perhaps, the octave and fifth of the first, or more probably its fifth and fourth, as it would be easy to sing the octave with the accompaniment of the primitive note only. The melody might be either always in unison with one of the strings, resembling a very simple modern bass part; or the intervals might be occasionally filled up by the voice without accompaniment. We have in modern music, a specimen of a pleasing air, by Rousseau, formed on three notes alone, the key note with its second and third; but there can be little doubt that the earliest melodies must have had a greater compass than this. The trumpet is said to have been invented about the same time: a little experience might have taught the Egyptians to produce from it the octaves, the 12th, 17th, 23d, and other harmonies of the primitive sound, which are related to it in the ratio of the integers from 1 to 9, and the same sounds might have been observed by a delicate ear among the secondary notes of a long chord; and then by descending three octaves from the 23d, and two from the 17th, they might have added to their lyre, the second and major third of the principal note. But it does not appear that this method ever occurred to the ancients: they seem rather to have attended to the intervals of the notes within the octave, than to the union of similar notes in the natural harmonics; and, besides, the series of natural harmonics would never have furnished a true fourth or sixth. It is uncertain when, or by whom, the fourth string was added; but the merit of increasing the number to seven, is attributed to Terpander, about the year 700 before Christ; two centuries after Homer; although some persons asserted that he only brought the improvement from Egypt, and that Hermes was also the inventor.

of the lyre with seven strings. Pythagoras, or Simonides, about the year 500, added an eighth, and Timotheus a ninth string: the number was afterwards extended to two octaves; and Epigonus is said to have used a lyre of forty strings, or rather a harp, as he played without a plectrum: but the theory of the ancient music soon became more intricate than interesting. The lyre of eight strings comprehended an octave, corresponding pretty accurately with the notes of our natural scale beginning with *c*: the key note was *a*, so that the melody appears to have borne usually a minor third, which has also been observed to be the case in the airs of most uncultivated nations: but there was a considerable diversity in the manner of tuning the lyre, according to the great variety of modes and genera that were introduced. These modes were of a nature totally different from the modern modulations into various keys, but they must have afforded a more copious fund of striking, if not of pleasing melodies, than we have at present. In some of the genera, intervals of about a quarter tone were employed; but this practice, on account of its difficulty, was soon abandoned: a difficulty which is not easily overcome by the most experienced of modern fingers; although some great masters have been said to introduce a progression of quarter tones, in pathetic passages, with surprising effect. The tibia of the ancients, as it appears evidently from Theophrastus, although not from the misinterpretations of his commentators and of Pliny, had a reed mouth-piece about three inches long, and therefore was more properly a clarinet than a flute; and the same performer generally played on two at once, and not in unison. Pollux, in the time of Commodus, describes, under the name of the Tyrrhene pipe, exactly such an organ as is figured by Hawkins, composed of brass tubes and blown by bellows: nor does he mention it as a new discovery: it appears from other authors, to have been often furnished with several registers of pipes; and it is scarcely possible that the performer, who is represented by Julian as having considerable execution, should have been contented without occasionally adding harmony to his melody. That the voice was accompanied by thorough bass on the lyre, is undeniably proved by a passage of Plato: and that the ancients had some knowledge of singing in three parts, is evident from Macrobius. Martini, who is one of the strongest opponents of that opinion, which attributes to the ancients a knowledge of counterpoint, observes, that "they allowed no concords but the octave, fourth, and fifth, or at most very rarely the third; yet they were not without a knowledge of concord of harmonious parts. It is known with certainty, that two parts, whether vocal or instrumental, or mixed, besides unison, performed at the same time the same melody, either always in octaves, or probably always in fifths, or always in fourths; which was called a symphony: perhaps also, they changed in the course of the performance from one interval to another, and this might be done by more than two parts at the same time." It is not improbable that this statement may be accurate: nor is it necessary to suppose a very exquisite and refined skill in the intricacies of composition, to produce all the effects that have with any probability been attributed to music. It is well known that Rousseau and others have maintained, that harmony is rather detrimental than advantageous to an interesting melody, in which true music consists; and it may easily be observed, that an absolute solo, whether a passage or a cadence, is universally received, even by cultivated hearers, with more attention and applause than the richest modulations of a powerful harmony.

The minor scale being the most commonly used by the ancients, it was natural for Pope Gregory, who in the year 600 is said to have marked the notes by the Roman letters, to begin with *A*, the key note of that scale: although if, as there

is some reason to suppose, that *B* was originally flat, *A* was not the key note, but its fifth, until the *B* natural was introduced, and denoted by a square *b* instead of a round one. By degrees the chromatic scale was filled up, and the five added intervals were denoted by the letter belonging to the note above them, with the addition of the round *b*, or by the note below, with the addition of four lines crossing each other, implying a half note, as composed of four commas. A simple cross would, however, at present, be much more convenient, as more readily distinguishable from the square *b*, which is used to signify a natural note in opposition to these flats and sharps. This is the historical account of the origin of the scale; but, according to the modern theory and practice of music, the subject may be more easily understood, by beginning with an explanation of the major scale.

Practical application of the scales.—The simplest proportions of two sounds to each other, next to unison, is when the frequency of their vibrations are related as one to two: such sounds bear to strong a resemblance to each other, that when named, they are denoted by the same letter, and are only distinguished by the appellations in alt, in altissimo, on the one side, and double double, on the other. The Germans, with great propriety, make use of small letters or capitals with one, two, or more lines over them. The note marked by tenor

cliff is called $\bar{c}$, the octaves above $\bar{c}$, $\bar{c}$, as far as six lines, which is, perhaps, the highest note used in music: the oc-

taves below $\bar{c}$, are $\bar{c}$, $\bar{c}$, $\bar{c}$, $\bar{c}$: $\bar{c}$ is probably not audible, vibrating but eight times in a second. $\bar{c}$ with six lines, would denote a sound, of which the complete vibrations should last precisely a second. The series of natural notes is thus—*A*, *B*, *C*, *D*, *E*, *F*, *G*, *A*, *B*, *C*, *a*, *b*, *c*, *d*.—The subjoined table will shew the absolute frequency and the dimensions of each vibration of the octaves of *c*, and the length of the simplest organ pipe that produces it; but according to the different temperature of the air, and the pitch of the instruments, these numbers may vary somewhat from perfect accuracy; and it must be observed, that the usual pitch of concerts in London, is higher than this standard; and in Germany, perhaps a little lower.

Sound moves in a second 1130 feet.		
Note.	Vibrations in a second.	Length of open pipe in feet.
$\bar{c}^6$. .	1	565.00
$\bar{c}^5$. .	2	282.50
$\bar{c}^4$. .	4	141.25
$\bar{c}^3$. .	8	70.62
$\bar{c}^2$ audible	16	35.31
$\bar{c}$	32	17.66
$\bar{c}$	64	8.83
$\bar{c}$	128	4.41
$\bar{c}$	256	2.21
$\bar{c}$	512	1.10
$\bar{c}^3$	1024	.55
$\bar{c}^4$	2048	.28
$\bar{c}^5$	4096	.14
$\bar{c}^6$	8192	.07

Any sound may be assumed at pleasure for the primitive or standard note of a piece of music, and is then denominated the key note; and the idea of this note is perpetually im-

pressed on the mind in all simple compositions, both from its frequent recurrence, and from the relation that all the other sounds bear to it. C being the key note of the scale called natural, we shall consider it as the foundation of the scale. The next in importance is the fifth, G, which for various reasons is intimately connected with the key note. The first reason is, that it constitutes the most perfect melody and harmony with C, since every other vibration of C coincides with every third of G; the second is, that an attentive ear may almost always distinguish this fifth, at least its octave, the 12th, whenever any instrument sounds C; it being one of those secondary sounds which are called natural harmonics, and which may generally be observed in the proportion of the natural numbers, as far as twenty or more, but which have not hitherto been completely explained: thirdly, a stopped pipe, if blown forcibly, springs immediately from C to g, and an open pipe first to c, and then to g, the interval between C and G, is most naturally divided by the note E, which answers to the number of 5, when C and G are represented by 4 and 6, and which is found among the natural harmonics both of chords and pipes. These three notes constitute the harmonic triad, or common accord in the major scale, which is the most perfect, or rather the only perfect harmony. But the intervals are still much too large for melody, and require a further subdivision; we now therefore take the fifth below instead of above the key, or its octave, the fourth above F, which is to C as 4 to 3: this found is no-where found among the natural harmonics of C, but C is the most distinguishable of its harmonics, and therefore the relation is nearly the same. The scale is completed by filling up the perfect triads of G and F: the fifth of G furnishing D, the second of the key, which is also the ninth natural harmonic of C; the third of G, the seventh, B, which is the fifteenth harmonic of C; and the third of F being the sixth of the key, A, which is neither among the harmonics of C, nor has c among its harmonics. Hence we have a second table, in which the proportions of the length of a chord, or pipe, producing the various sounds are detailed, and the place among the principal natural harmonics of the key annexed.

Notes.	Proportions.	N. H.
Key C	1	1, 2, 4
2d D	$\frac{8}{3}$	9,
3d E	$\frac{5}{2}$	5, 10
4th F	$\frac{4}{3}$	0, ($\frac{1}{3}$)
5th G	$\frac{3}{2}$	3, 6, 12
6th A	$\frac{8}{5}$	0,
7th B	$\frac{15}{8}$	15,
8th c	$\frac{3}{1}$	2, 4, 8, 16

Now when two or more perfectly harmonious parts are performed together, they must necessarily be found all in the same triad, C, E, G; G, B, D; or F, A, C; and the succession of these triads in various forms, is sufficient for the accompaniment of any simple melody. A regular melody always terminates by an ascent or descent of one degree to the key note: the last note but one must therefore be always B or D; and both of these being in the triad of G, G is called the governing note, or the dominant of C; and E, being in the same manner governed by C, is called its subdominant. And it is usual, in all regular compositions of any length, to depart for a short time from the principal harmony of the key note, and to modulate into the key of the dominant, then to return, and to modulate for a still shorter time into the subdominant, before the final close in the tonic or key note. It is necessary therefore, for greater variety, to complete the scale of the dominant, as well as that of every other note which may be occasionally introduced as a principal key note; but to do this

with mathematical accuracy in the same proportion as has been explained, would be practically impossible, and even theoretically inconvenient: hence arises the necessity of tempering some intervals to make the others more tolerable, without too much increasing the number of sounds. It has been found sufficient in practice, to add five notes to the seven which have been enumerated; but the best proportions of these have not yet been absolutely determined: some have made all the twelve intervals equal: others have left the whole scale of C perfect: others again have taken a middle path, and have introduced a slight imperfection into this key, in order to make the neighbouring ones the less disagreeable. The least circuitous introduction of these notes is shewn in the third table, together with the proportion that they bear to C when thus considered. They are denominated nearly in the German manner—signifying what the English call sharp, and the French *disjé*, and -es, flat, or *bémol*.

Notes.	Relations,	Proportions.
Fis	as 7th of G	$\frac{32}{27}$
Bes	as 4th of F	$\frac{16}{15}$
Cis	as 7th of D	$\frac{128}{125}$
Ees	as 4th of Es	$\frac{256}{243}$
Cis	as 3d of E	$\frac{10}{9}$

But a still greater variety being required than these major scales afford, it has been found that the interval of a fifth may be agreeably, though somewhat less harmoniously, divided, by placing the minor third below, instead of above, the major; so that C may be to E as E was to G, and consequently E to G as C was to E. The *E* thus depressed to $\frac{3}{2}$, differs but by a comma, or the ratio of 80 : 81, from the *E* found above, as the 4th of *Bes*; therefore the same string serves for both notes; and the scale becomes C, D, *Ees*, F, G, A, B, C; which is the ascending minor scale, the A and B being retained as leading best towards the key note, and the major triad of the dominant being therefore necessary to the cadence. But in descending, the triad of the sub-dominant F may conform to the character of the minor mode, and *Aes* is substituted for A; and most frequently *Bes* for B, as dividing the interval from C to *Aes* more equally and more melodiously.

Thus, we have a pretty comprehensive view of the most usual practical relations of all the notes to each other. Their use as discords is somewhat more complicated, and would lead further into the science of music than is consistent with the nature of so summary a view. But it may be remarked in general, that by far the most common discord is the note which constitutes the distinction of the scale of the key from that of its dominant; for instance, F with the triad of G, which is called the accord of the flat seventh of G; and F not being in the scale of G, is considered as a regular preparation to the final accord of C; in which that part or instrument by which the F is introduced, must necessarily descend to E, the third of the key. The second kind of discords are suspended discords, when one or more notes of any preceding accord are continued after the commencement of a different harmony in other parts of the composition. The third, which is rare, and less universally adopted, consists in an anticipation of a subordinate note of an accord which is to follow, as in the case of the added sixth of the French school. The fourth kind are passing discords, where a note forming only a melodious step between two others, is inserted without any regard to its harmonious relations.

Terms expressive of time.—The notation of music, as it has been established for more than two centuries, is in general admirably adapted for its purpose: but there is one great deficiency, which might be very easily remedied, and that is, the total omission of any character expressive of the absolute duration of each note, however accurately the relative value of

the notes may be prescribed. 'Tis true, some little allowance must be made for the execution of the performer, and for the habits of the audience; but this is no reason why time might not be much more accurately noted, than by the vague terms which are usually adopted. It would be easy to prefix to each movement a number, signifying how many bars are to be performed in a minute, which might at first be ascertained by the help of a stop-watch, and would soon become perfectly familiar both to composers and performers, even without this assistance. According to Quanz, the number which should be substituted for *Allegro assai* in common time, is about 40; for *Allegretto*, 20; for *Larghetto*, 10; and for *Adagio assai*, 5. But it is usual to perform modern music much more rapidly than this; or at least the style of composition is so changed that the terms are very differently applied. An allegro, or even an allegretto, in common time, without fermi-quavers, is often performed as fast as 60, seldom slower than 30.

A very superficial attempt to affix a determinate meaning to the words denoting musical time, may be seen in the table subjoined; which, if it were more completely and accurately filled up, might be of considerable use to young musicians; although it will appear from inspection, that composers have hitherto employed those terms in very indefinite significations. But it must be confessed, that much latitude must necessarily be left for the ear and taste of a judicious performer, and that it is impossible for human art to describe on paper every delicacy of finished execution.

Terms.	C	$\frac{2}{2}$	$\frac{3}{4}$	$\frac{6}{8}$	$\frac{3}{8}$
Prestissimo	As fast	as	you	can	
Presto		100		30, H.	
Presto ma non troppo		90, H.			
Allegro assai	40, Q.	80, Pl.	70, H.		
Allegro molto		100, H.			
Allegro vivace			60, Pl.	50, Pl.	
Allegro	{ 25, Ha. 45, M. 40 50, 60, Pl.	{ 100, 120 H. 75. 80, Pl.	65, Pl.		
Allegro non troppo		60, Pl.		50, Pl.	
Allegro moderato	40, H.	70, M.			
Vivace assai		100, H.		60, H.	
Vivace			60, H.		
Spiritoso		90, H.			
Menuetto allegro, molto			75, H.		
— allegro			70, H. Pl.		
— allegretto			55, H.		
— moderato			50, H. M.		
Allegretto	20, Q.				45, Pl.
Allegret. grazioso	50, M.				
Moderato					
Maestoso	10			30, Pl.	
Larghetto	10, Q.				
And. graz.				30, M.	
Andante		{ 35, H. Pl. 50, Pl.		30, M.	
And. cantab.					
Largo cant.			20, 25, M.		
Adag. n. tr.	20, H. 17, H.	27, 30, Pl.			20
Adagio	7, Cor. 15, Scoz.		14 H.	10, 12, M. 10, Pl.	
Adagio molto.					

N. B. In this Table, Cor. denotes Corelli. Ha. Handel. Q. Quanz. H. Haydn. M. Mozart. Pl. Pleyel.

Indian Music. Of the melodies called *Raugs* and *Raungees*, the primary and subordinate modes or tunes of Hindoostani, many equal in sweetness the most favourite Scotch or Italian airs. Sir William Jones derives the word *raug* from a Sanscrit root, signifying a passion, or affection of the mind. The *raugs* are six in number; to each belong five *RAUNGEES*. The most extraordinary and preternatural powers are ascribed to some of these tunes; by the Indians: one has the property of occasioning a fall of rain; another causes a conflagration, &c.; and several strange anecdotes are recorded of rash musicians who suffered the most dreadful agonies, as a punishment for having violated all musical decorum by singing a *night raug* in the day-time, or a *morning raug* in the evening.

These melodies are personified by the Hindoos; and represented in allegorical paintings, the series of which is denominated *Raungmala*: the best account we have yet seen of these personifications is given by the ingenious Mr. Gilchrist in his very excellent and useful *Grammar of the Hindoostanee Language*, p. 276; from which work, as it is unfortunately so rare in this country as not to be procured for any price, we have not hesitated to extract the following descriptions, taken by that learned orientalist from a Persian treatise, called the *Tobful al Hind*, composed by *Mirza Khan*.

I. **FIRST RAUG**, called *BHYROON*.—This must be sung at the dawn of day, in the autumnal season only; it is represented under the figure of the god *Mabadeo*, or *Jupiter Olympius*: face comely, but covered with ashes, and long lock hair; from which the river Ganges flows. The *raug* issues from the mouth of the deity, who holds a trident in his hand, and has a bull by his side, with other emblems of divinity familiar to the Hindoos.

The *raungees* belonging to *Bhyroon* are,
1. *Bhyrouwee*, represented as a beautiful damsel, dressed in scarlet and white, with a garland of *chumpia* flowers round her neck. She is seated on a hill amidst lilies, worshipping the *Mabadeo* (or symbol of Jupiter Genitor), singing a love song, and playing on the cymbal. Time; morning. Season; autumn.

2. *Eyraree*. A handsome nymph, black locks, bracelets on her arm, adorned with leaves; dallying with her lover, and fanning flies from his face. Time; evening. Season; autumn.

3. *Mudebmadd*. A nymph dressed in yellow, with streaks of saffron on various parts of her body, in dalliance with her lover. Time and season as the last.

4. *Sinaburree*. Time; evening. Season; autumn. A lovely female, clothed in red, and armed with a trident; her ears ornamented with noon-flowers. She sits complaining, and expecting her lover, while she runs over her rosary in honour of *Mabadeo*.

5. *Bangal*. Time and season as the last mentioned. A female, with a beautiful face, but obscured by ashes rubbed over it, like that of a *Jognee*, or female mendicant. Her hair coiled up. In her left hand a trident; in the right, a water-lily; her drapery saffron colour, and her body marked with stripes of sandal wood: on her forehead a line of milk.

II. **SECOND RAUG**, named *MALKOOS*, is adapted to the second winter, and the last watch of the night. It proceeds either from the mouth of *Mabadeo* or *Kanb*, the Indian Apollo. The figure is a robust, florid, stately man, in blue garments, armed with a club; his neck adorned with a string of pearls, or human skulls, and he seems in dalliance with many damsels.

The *raungees* belonging to *Malkoos* are,
1. *Tooree*. Time; forenoon. Second winter. A fair and gentle maid, clothed in violet and white; her body covered

with streaks of saffron and camphor: she plays on the *veena*, or Indian lyre, in a verdant plain, where the wild deer are captivated by her melody.

2. *Gource*. Time; late in the afternoon. Second winter. A charming brunette, dressed in white robes, singing with a voice which faulters from the juice of the grape. She has pendants and mango blossoms in her ears, and her songs are amorous.

3. *Goorkulee*. Dawn of day: second winter. A woman, who, in the absence of her lover, by grief and lamentation, has reduced herself to an emaciated state. She is weeping with dishevelled hair at the foot of a *kudum*, or *ball-flower* tree.

4. *Koumbhawatee*. After midnight: second winter. An airy, graceful nymph, sighing constantly, dancing and playing on musical instruments; clad in green and scarlet, with jewels.

5. *Kokuba*. A plump female, with wanton looks and glances, having just left her bed-fellow; her garments are partly rent, and her garland of flowers discomposed.

III. THIRD RAAG, named *HINDOOL*, is intended for the gay season of morning and spring: he is said to have emanated from the navel of *Brabma*, and seems a handsome youth of radiant hue: he is seated on a swing, with lovely nymphs, who toy and dally with him; singing songs of love, and playing on various instruments.

The *raagnes* which belong to him, are,

1. *Ramkulee*. Season; spring. Time; dawn of day. A lovely female; bright complexion, clad in blue, ornamented with jewels; her lover falling at her feet entreats forgiveness for past infidelities.

2. *Deakb*. Morning: spring. A fair Amazon, with a drawn sword; her arms and breasts covered with ashes; her lover close at her side.

3. *Lulin*. Season as above. A beautiful damsel, clad in scarlet, and richly ornamented with jewels: on her neck a garland of flowers.

4. *Bilawal*. Time; morning in spring. A jetty nymph, of slender make, and clad in crimson, decorated with jewels; she sits in expectation of her lover.

5. *Pumunjuree*. Spring: midnight. A forlorn, deserted, love-sick damsel, grieving in the absence of her lover. A garland of withering flowers hangs on her bosom.

IV. FOURTH RAAG, called *DEEPUCK**, is to be sung in the hot weather at noon exactly. He is the offspring of the sun, and of a flame or orange colour, with crimson garments, and a string of large pearls round his neck, riding upon a furious elephant, attended by many females. Others describe him as extinguishing a taper, and darkening his chamber, that the eye of curiosity may not put him to the blush on account of his amours.

The *raagnes* subordinate to him are,

1. *Delee*. Summer season: forenoon. A handsome ruddy young woman, in green robes, decorated with pre-

cious stones, &c. She amorously approaches the couch of her lover.

2. *Kanod*. Time as the last. A graceful female, clad in white above and red below, weeping in the absence of her lover.

3. *Nut*. Afternoon. Summer season. A rosy nymph adorned with jewels, mounted on a steed in a riding habit, with a drawn sword, hewing down her enemies in battle.

4. *Kidara*. Summer: midnight. A mendicant with long matted hair, in pink-coloured garments. A snake entwined in his locks, whence issues the river Ganges. His brow is adorned with a crescent, and he worships *Mahadeo* with closed eyes.

5. *Kanbra*, or *Kurntee*. Summer evening. A handsome fair man, with a sword in his right hand, the left extracts the tooth of an elephant; a bard stands before him repeating his praises: on his forehead is a line of camphor.

V. FIFTH RAAG, named *SKEERAVG*, is restricted to winter's afternoon: he proceeds from the womb of the earth, and is a florid graceful man clothed in white, or red, adorned with a necklace of amethysts and false diamonds. He holds the lotus flower in his hand, and sits on a splendid throne, before which musicians are singing to amuse him.

The *raagnes* belonging to him, are,

1. *Majjinee*. Winter season: forenoon. A rosy dame, with graceful figure, clad in yellow, with a group of damsels, under the shade of a mango grove.

2. *Marwa*. Winter; towards evening. A damsel in gorgeous apparel, with a garland of flowers round her neck, expecting the arrival of her lover.

3. *Dhunnajee*. Winter: forenoon. A love-lorn female, in red garments, weeping alone under a *Mouljee* tree.

4. *Bajunt*. Forenoon: winter. A handsome man, dressed in scarlet; crowned with peacocks' feathers; holding mango blossoms in his hand; incited with passion; a garland of flowers hangs from his neck, and he sports in a garden with singing and dancing girls; in his left hand he holds a pan of *betel*, whilst he plays on a pipe or lute, surrounded with his nymphs.

5. *Ufarworee*. Winter: forenoon. A dark-coloured, delicate damsel, in white garments, her legs and arms entwined by several large snakes. She is seated in water, on a plain at the top of a mountain: according to some, she is quite naked, or only wears an apron of leaves.

VI. SIXTH RAAG, called *MEGH*, is adapted to the wet or rainy season, and the last watch of night. He is said by some to proceed from the head of *Brabma*, and by others from the sky; he is of a dark complexion, but comely. His hand is armed with a sword, and his hair gathered into a knot, and tucked up behind.

The *raagnes* belonging to *Megh*, are,

1. *Tunk*. Midnight: rainy season. A damsel distracted by the absence of her lover; spreading a bed of lotus leaves.

* On the subject of this raag, we shall extract a curious passage from Sir William Ouseley's Essay on Indian Music (Oriental Collections, vol. I. p. 73.) "There is a tradition, that whoever shall attempt to sing the raag *Depuck*, is to be destroyed by fire. The emperor Akber ordered Naik Gopaul, a celebrated musician, to sing that raag. He endeavoured to excuse himself, but in vain; the emperor insisted on obedience; he therefore requested permission to go home, and bid farewell to his family and friends. It was winter when he returned, after an absence of six months. Before he began to sing, he placed himself in the waters of the Jumna, till they reached his neck. As soon as he had performed a strain or two, the river gradually became hot; at length began to boil, and the agonies of the unhappy musician were nearly insupportable. Suspending for a moment the melody thus cruelly extorted, he sued for mercy from the monarch, but sued in vain. Akber wished to prove more strongly the powers of this raag. Naik Gopaul renewed the fatal song. Flames burst with violence from his body, which, though immersed in the waters of the Jumna, was consumed to ashes!!!"

2. *Mular*. Same season: midnight. A lovely maid, pining in the absence of her beloved. Adorned with jessamine flowers, and playing a mournful air on the lute.

3. *Gooree*. Morning: rainy season. A beautiful damsel, slender waited, and skilled in song; the upper part of her drapery is orange coloured; the lower, scarlet; studded with jewels, &c.

4. *Bhopalee*. Evening: rainy season. A charming rosy female, in white garments; her body streaked with saffron; she has a garland of flowers round her neck, and is wholly covered with rich ornaments; she leans upon her lover, and her hands are tinged with *binna*.

5. *Defkar*. Last watch of the night: rainy season. A beautiful fair woman, with a fine mole on her face, which is oval; her breasts rival the pomegranate, and her skin the lily; she wears a string of pearls round her neck, and is adorned with jewels. She sports and amorously dallies with her lover.

Musical GAMES. The following is a specification of the patent granted to Ann Young, of the city of Edinburgh, for an apparatus consisting of an oblong square box, which, when opened, presents two faces or tables; and of various dice, pins, counters, &c. contained within the same, by means of which six different games may be played, which, besides being amusing and interesting, and such as children of eight years old may be taught to play, are at the same time an improving exercise upon, and serve to render familiar, and to impress upon the memory, the fundamental principles of music, particularly all the keys or modulations, major and minor, both with the common and uncommon signatures, musical intervals, chords, discords, with their revolutions, and the most useful rules of thorough bass. It is dated March 16, 1801.

The box is composed of two equal pieces or frames of cabinet-work, united by hinges like backgammon tables. When it is opened, or spread out, the two pieces exhibit different faces. The one presents at each end two musical staves or systems of five lines. In each line and space of these staves, a number of small holes are drilled, in which are occasionally stuck the pieces of turned ivory and wood, which are designed to represent the sharps and flats, that severally belong to the different keys or modulations of music. Under each of these staves there is a drawer, in one of which are contained the dice, pins, &c. which are used in playing with sharps; and, in the other, the corresponding dice, pins, &c. used in playing with flats. These drawers are pulled out from the ends of the frame, and, when in their places, are kept firm by brass pins running through the edge. In the middle space betwixt them are contained two dice boxes; when these are taken out and the game is to be played, this vacant space is covered by a moveable lid, which at other times rests upon one of the ends. The surface of the table is by that means rendered complete and uniform. Upon the outer part of the border round it are written the fundamental letters of all the twelve major keys, according to the order of succession by flats; and, immediately below or within each of these, the fundamentals of their relative minor keys. At each letter there is a small hole for receiving a pin. The other face or table is of one piece. At each end is a delineation of the clavier or finger touches of a piano-forte, in every one of which there is a small hole. Above these are two musical staves, on which are written in crotchets the whole scale of natural notes. In the round head of each crotchet, there is a small hole, for receiving pins or moveable notes; and also immediately below each of them, there is another small hole for receiving the pins, on the heads of which are the characters of sharp, double

sharp, double flat, and natural. Around this table there is a border similar to that which surrounds the other table, on which are marked the fundamental letters of the twelve major keys, according to the order of succession by sharps, with their relative minors below or within each. In the drawer which contains the apparatus for sharps, there is at one end in front a square compartment, in which is an uncovered box or moveable frame, divided by a partition in the middle into two cells, in one of which are contained fourteen pieces of turned ivory, and in the other, ten such pieces of a different shape; the former intended to represent single sharps, and the latter to represent double sharps, and designed to be stuck into the holes in the lines and spaces of the staves upon the table first described, for the purpose of exhibiting the signatures of all the keys of music with sharps. Behind this compartment are two small square cells, in each of which is a cylindrical box, the one containing twelve larger, and the other twelve smaller ivory counters. The remaining part of the front of the drawer is a range, divided into four small square compartments, marked 1, 2, 3, 4, in each of which are four dice, and a smaller one at the end marked 5, in which lie two ivory pins. The first pair of dice in the compartment 1, have upon their faces, the one, the capital letters G, D, A, E, B, F, being the fundamentals of six major keys with signatures in sharps; the other, the small letters c, b, f#, c#, g#, d#, being the fundamentals of six relative minor keys with signatures in sharps. The second pair in the compartment 2 have upon their faces, the one, the capitals C#, G#, D#, A#, E#, B#, being the fundamentals of the six remaining major keys, with uncommon signatures, or according to the order by sharps continued from six to twelve; the other the small letters a#, e#, b#, f#, x#, c#, g#, x, the fundamentals of the six remaining minor keys with uncommon signatures. The four dice in the compartment 3, have each upon their faces respectively in order the very same fundamentals of the keys major and minor with the former, represented in musical notes bass staves, with the signatures proper to each. In the compartment 4, there is 1st, a die having upon its faces C, the same note on a musical staff, A, the same note on a musical staff, and two bass staves without signatures; 2dly, a die having on its faces bass staves, with signatures of 1, 2, 3, 4, 5, and 6 sharps, but without any notes; 3dly, a die having upon three of its faces the letter T, and upon the other three the letter S; 4thly, a die having upon its faces the characters of treble, bass, and tenor clefs. In the 4th compartment are dice with various numeral figures. The space behind this range is divided into two compartments. In one of these, upon a raised surface, are stuck fourteen ivory pins, with small flat heads, on seven of which are marked the musical character #, or sharp, on five the character X, or double sharp, and on two, the character ♮, or natural. Upon the sunk surface beside these are stuck three ivory plates, bearing the marks of the treble, tenor, and bass clefs. In the other compartments are stuck eight black, and two white pins, with small round heads, which are used as musical notes. The other drawer, which contains the apparatus for flats, is, in its divisions and compartments, exactly similar to the one now described. The fourteen and ten pieces of turned work contained in the divided box, or moveable compartment, which represent single and double flats, are exactly of the same form with those for sharps, but for the sake of distinction are made of dark coloured wood. The counters are of ivory stained red. The first pair of dice in the compartment 1, have, the one, the capitals F, Bb, Eb, Ab, Db, Gb, the fundamentals of six major keys, according to the order by flats; and the other, the small letters d,

g, c, f, bb, cb, the fundamentals of the respective minor keys. The second pair have, the one, *Cb, Fb, Bbb, Ebb, Abb, Dbb*, the fundamentals of the other six keys with uncommon signatures, or according to the order by flats continued up to twelve; the other, *ab, db, gb, cb, bbb*, their respective minors. The four dice in the compartment 2, have the very same fundamentals, represented in musical notes upon bass staves, with the proper signatures of one, two, three, four, five, and six flats, but without notes; 2dly, a die having upon its faces one line, one line and a half, two lines, two lines and a half, three and four lines: thirdly and fourthly, a pair, having upon their faces various thorough bass cyphers, and chords upon musical staves. In the compartment 4, there is, first, a die having upon one of its faces the character $\sharp$, upon two, the character $\flat$, and upon the other three, numeral figures: secondly, a die having upon one of its faces the character $\sharp$, upon two, the character $\flat$, and upon the remaining three, numeral figures. Lastly, a pair bearing upon their faces the fundamental letters of all the keys major and minor of the first circular system.

Several games are inferred by way of illustration; but as they extend to too great a length, we must refer for further particulars to the Repository of Arts, &c. vol. XVI.

MUSICAL-INSTRUMENTS. These have been spoken of under their proper names. It is necessary however to notice the patent lately granted to Mr. Becker of Princes-street, Soho, for improvements in the construction of harps and piano-fortes.

Mr Becker says his invention consists in the following improvements in the harp and piano-forte. Of the harp, he observes as follows:—"I produce," says he, "sharps, flats, quarter notes, or any intermediate variation deviating from the natural notes, by causing (what are commonly called) the wrest pins (I mean the pins by which the strings are extended and tuned) to move partly round their centres, and thereby increase or decrease the tension of the strings, more or less, as may be required, to answer the desired change of the notes. To this purpose the said wrest pins are connected with the pedals by an apparatus hereby described, and more clearly expressed by the annexed drawing (see Pl. 39): fig. 1, *a, a*, represents the wrest pin passing through a socket *b*, with a lever *cc*, on which slides a quadrant *d*; on this quadrant are fixed the link *ee*, kept stationary by a regulating screw *f*. These links communicate with the pedals by the interposition of a crank *g*, fig. 2, where are seen all the quadrants *d*, with levers and wrest pins belonging to their respective strings of the same denomination. On the said crank *g* is also a regulating screw *f*, to adjust the whole to the motion of the pedals. Now if any one of the pedals is pressed down, all its appertaining quadrants with the wrest pins must follow, and consequently the tension of the appending strings will be increased accordingly; and as soon as the pedal is left at liberty, the strings will, by their re-action, resume their former degree of tension, and the pedal its former station; hence it follows, that a variety of changes may be effected on each string throughout the instrument by the motion of the pedals. It is obvious that to this end the quadrants and the parts of the wrest pins, round which the strings coil, must, in regard to their circumferences, be so proportioned that by the motion of the pedals each string shall have its tension altered uniformly with the rest of the strings belonging to the same pedals, so as to keep in tune together. If in case new strings are put on, perhaps differing in size or quality, any irregularity should take place, this must be corrected by the regulating screw *f*; for if by this screw the quadrant is moved towards or from the centre of the wrest pin, its motion will be

accordingly more or less. To stop the pedals at four different stations, answering to the natural note, to one quarter, to one half, and to three quarter notes, I apply a kind of rack, as seen in fig. 5; *a, b, c*, are the steps, which being so disposed, preserve the pedal in each situation in a perpendicular line, and thereby prevent them coming too close to one another. To ease the motion of the pedals, having each of them six or seven strings to act upon, I apply a spring to each pedal, to counteract the tension of the strings, and thereby render the motion of the pedals as easy as I please. As in tuning the harp it is generally attended with difficulty to find out the wrest pin belonging to its respective string in the bass, particularly for short persons, I reverse the wrest pin, and form the square for the key, by which the instrument is tuned, at the same end where the string is applied, as fig. 3. To facilitate the tuning of this instrument, I have still another contrivance, viz. instead of turning round the wrest pin in its socket, in which it must move tight, to be capable of sustaining the stress of the string, I fix it into the socket; and to receive the string I apply a separate piece *k*, fig. 4, with a notched rim, to be turned by an endless screw *ff*, which is supported by a collar firmly fixed to the pin. When the former method is made use of, it will be necessary to apply a set of springs, as shewn at fig. 2, to support the levers *c*, belonging to the smaller strings, in the act of tuning, in their proper position; for as the wrest pin in drawing up the string moves in the same direction as it is propelled by the pedals, the lever will be carried along with it if nothing is put in opposition to overcome the friction which subsists between the wrest pin and socket. This friction may be adjusted by the socket *b*, fig. 1, being slit at *b*, and an adjusting screw introduced: besides this, a lining of leather or any other elastic substance within the socket may be of some service. Instead of the spring *f*, fig. 2, several other mechanical contrivances may be made to answer the same end.

"In *piano-forte*, or other stringed instruments, played with keys, I use one or more wheels, to cause the strings to vibrate. These wheels are placed under or above the strings, and put in motion with a pedal or pedals, or any other mechanical power, and the strings are by the touch of keys inclined to the wheels. In the manner of extending and inclining the strings consists the principle of my invention. In the diagram, fig. 6, *a* represents the string fastened by a loop and pin at *b*, and extended by a moveable lever or brace, with two points or knife-edges resting against two props at *cc*: here it may be easily conceived that if the string passes through the direction of the points of motion, *cc*, of the lever, the string has no inclination to either side, but may, without materially altering its tension, be moved up or down a little way by *d*, and very little power will keep it in due bounds. The gravity of the lever, connected with a key, will be sufficient to keep in balance with the string when its direction is a little above those points of motion; hence it is easy to construct an instrument on this principle so as to make the keys with the strings move a little way up and down very freely. Secondly, if the said lever on its extremity instead of two points or knife-edges forms part of a circle, the radius of which is the length of the lever, and rests against two circular surfaces, described by the part of the string *a* to *b*, fig. 7: here it is evident, that by moving the lever at *d* up to *m*, or down to *n*, the tension of the string will not in the least be altered, and yet yield to the slightest touch. The application of this principle is not confined to these two instances, but will admit of a variety of forms and applications. If therefore the string be any-wise extended on any thing moveable, having its prop or fulcrum any-where within the extent of the string, or

its two ends higher or lower, for the purpose of inclining or moving the string to the wheels, or altering the tension of the strings to raise or lower the tone thereof, it will comprise the principle of my invention. Where hammers and dampers are used, I mean to connect both, so as to constitute one piece, by letting one or two slips, of any convenient material, pass through between the strings, which are to be fastened to the hammer below the strings, and likewise to the dampers above them; by that means the mechanism will be simplified, and their gravity is thereby united, and serves each alternately. The hammer may move on a hinge in any of the usual ways, or otherwise, and the damper form part of the said hammer."

MUSK (*Encyel.*) There has been lately discovered an *Artificial Musk*; a chemical preparation, thus denominated on account of its possessing all the essential properties of the genuine musk. It was first invented by Mageraff, and has been lately recommended to public notice by Professor Hufeland: it is prepared in the following manner:—one drachm of rectified oil of amber is first poured into a wine glass, on which a drachm and a half of the concentrated nitric acid, or smoking aquafortis, should be gradually and cautiously dropped. The mixture, on agitating it, grows hot, and emits offensive vapours, against which the nostrils must be guarded: when it has stood twenty-four hours, the compound produces a yellow resinous matter, concreting at the top, and which resembles musk in its smell, while a strong acid liquor remains at the bottom. The resin is now to be repeatedly washed, both in cold and in hot water, till it be totally divested of its four taste. Thus a substance is obtained, which is not only cheaper than the common musk, but is at the same time free from those impurities with which the latter is too frequently adulterated.

Dr. Willich says artificial musk is a more powerful medicine than the natural, and that it has been successfully prescribed by Hufeland, in the epidemic chin-cough, as well as other nervous and spasmodic affections. Nor have its effects been less salutary in cases of diabetes, and difficulty of breathing; having effected a cure when other medicines had failed of success.—As this substance is of a resinous consistence, it will be most conveniently given in emulsions: hence ten or twelve grains of it should be triturated in a mortar, together with a few blanched almonds, and diluted with five or six ounces of distilled water. Of this mixture, two tea-spoonfuls may be given every two hours, to a child between one and two years old; and in progressive doses, so that a youth from twelve to fourteen years of age, will require double, and an adult about three times, the quantity above stated. Without the aid of any other medicine, it generally produces a sudorific effect; diminishes and alleviates the fits of coughing; and often produces eruptions resembling the true nettle-rash;—thus, a favourable change takes place, and the disease speedily disappears.

MUSSELBURG, a sea-port in Edinburghshire, on the frith of Forth, at the mouth of the river Esk. Here a victory was obtained by the English over the Scots, in the reign of Edward VI. It is six miles east of Edinburgh. Long. 3. 5. W. Lat. 56. 0. N.

MUSTAGAM, a sea-port of the kingdom of Algiers,

with a castle, 140 miles west of the city of Algiers. Long. 0. 3. W. Lat. 36. 30. N.

MUSUELA, a town of Spain, in Andalusia, situate on the Guadalquivir, seven miles N.E. of Jaen, and 50 north of Granada. Long. 3. 18. W. Lat. 37. 41. N.

MUSWELL HILL, a village in Middlesex, five miles north of London. It takes its name from a famous well on the hill, which belonged to the fraternity of St. John of Jerusalem, in Clerkenwell; and as this was deemed a miraculous cure for all scrofulous and cutaneous disorders, they here built a chapel, with an image of our lady of Maswel, to which there was a great resort of patients. This well still belongs to the parish of Clerkenwell.

MUTSCHEN, a town of Upper Saxony, in the circle of Leipzig. In the neighbourhood is found a species of crystal to which is given the name of Mutsehen diamond. It is 20 miles east of Leipzig. Long. 12. 50. E. Lat. 51. 14. N.

MUYDEN, a town of Holland, situated on the Vecht, on the south coast of the Zuider-Zee, seven miles east of Amsterdam. Long. 5. 1. E. Lat. 52. 22. N.

MYCONE, an island of the Archipelago, thirty miles in circumference. The harbour is very open, and deep enough for the largest ships, where they may ride secure from the north wind. The soil is dry, and the mountains are of a great height. Water is very scarce in summer; but in the town is a large well, the only one in the island. Here are plenty of partridges, quails, woodcocks, turtle-doves, rabbits, and wheatears; also excellent grapes and figs. Almost all the inhabitants are Greeks, who have fifty churches in all; but many are chapels; and some monasteries. Long. 25. 51. E. Lat. 37. 28. N.

MYSORE, a kingdom in the peninsula of Hindoostan, formerly subject to a prince, named Tippoo Sultan, who styled himself regent of the country. His dominions comprehended, generally, the provinces of Mysore Proper, Bednore, Coimbatore, Canara, and Dindigul; beside the conquests of his father Hyder Ally (who usurped the throne) to the northward, which are Meritz, Soonda, Chittledroog, Harponelly, Sanore, Bancapour, Roydroog, Gootty, Condanore, Canoul, and Cuddapa. The extent of this territory from north to south, is 550 miles; and its breadth, in the widest place (the north part of the peninsula) 330 miles, but proceeding to the south, it diminishes, till it ends in a point. Its area has been compared to that of Great Britain. By the peace of 1762, Hyder Ally was to relinquish all but his ancient possessions. How far his successor fulfilled the terms of that treaty cannot be ascertained; but on the termination of the war in 1792, Tippoo Sultan agreed, over and above a large payment in money, to cede one half of his dominions to the English East-India-Company, and their allies, the Mahrattas and the nizams of the Decan. In 1799 a new war taking place between him and the East-India Company, his capital was taken by the English troops, on the 4th of May, and himself killed in the assault. Mysore, in general, is dry, rugged, mountainous and barren. It lies between 10 and 16° N. lat. The capital is Seringapatam.

MYSORE, a town and fortified post of the peninsula of Hindoostan, the ancient capital of the same name, eight miles south of Seringapatam, the present capital.

N.

NABAL, a town of the kingdom of Tunis, celebrated for its pottery. Near it are several remains of antiquity. It is seated near the sea, 32 miles S.E. of Tunis. Long. 10. 10. E. Lat. 53. 13. N.

NABURG, a town of Germany, in Bavaria, seated on the river Nab, 10 miles S.E. of Amberg. Long. 12. 13. E. Lat. 50. 23. N.

NAFFELS, a town of Switzerland, in the canton of Glaris. In 1388, a celebrated victory was gained near this place, by the inhabitants of this canton over the Austrians. Only about 350 troops of Glaris, assisted by fewer than 50 Schweitzers, withstood 15,000 Austrians, and, after a terrible slaughter, compelled them to retire; in memory of which glorious transaction, a chapel was built on the spot, which was rebuilt in 1779. The inhabitants are Roman-catholics. It is four miles N. of Glaris.

NAGOLD, a town of Suabia, in the duchy of Wurtemberg, with a strong castle, situate on a river of the same name, 10 miles W. of Tubingen. Long. 8. 37. E. Lat. 48. 30. N.

NAGORE, a town of Hindoostan Proper, in the country of Agimere, 40 miles N.W. of Agimere. Long. 74. 10. E. Lat. 27. 8. N.

NAGPOUR, a city of the Deccan of Hindoostan, capital of that part of Berar which is subject to a chief of the Eastern Marhattas. It is extensive and populous, but meanly built; and, excepting a small citadel, is open and defenceless. It is 560 miles W. by S. of Calcutta. Long. 79. 46. E. Lat. 21. 8. N.

NAGYBANJA, a town of Hungary, which is a metal town, and one of the royal free towns. The gold and silver mine-works are of great produce, and the money coined here is distinguished by the mark NB. It is 30 miles N.E. of Zatmar. Long. 22. 54. E. Lat. 48. 10. N.

NAHE, a river of the palatinate of the Rhine, which flows by Birkenfeld, Oberstein, Kreuzenach, and Bingen, and falls into the Rhine.

NAJERA, a town of Spain, in old Castile, 32 miles W. of Calahorra, and 36 E. of Burgos. Long. 2. 39. W. Lat. 42. 10. N.

NAIL (*Encycl.*). Among the different purposes for which nails are employed, is that of firmly securing the shoe of a horse to his hoof. Mr. Coleman, in his work on shoeing horses, recommends a nail with the head formed like a wedge, to fit a corresponding hole, struck in the shoe with a punch. Of both these he has given delineations in his publication. A person of the name of Spencer has obtained a patent for making horse-shoe nails of this form in an expeditious manner. He forms them whilst the iron is of a red heat, by means of a roller with impressions cut off it; or he fays the metal may be formed by casting, which must be varied according to the length of nails intended to be made. "This is," fays the inventor in his specification, "to be run (in forming the iron for the nails) against a plain roll; after the iron has passed these rolls, it will be left according to B (Pl. 38), which is then taken and separated by shears or any other engine for the purpose of cutting at C, which is the thinnest part, the edges of which are, if neces-

sary, thinned by hand or tilt-hammer; the piece, No. 1, is then applied to the bed D, and punch E, which are fixed in a screw press, or any other power fit for the purpose; and when the stroke is made, presses the iron out as F, which is then applied to the bed G, and separator H, in a power similar to that used for the bed and punch D, E, and which then leaves two complete horse-shoe nails I. The punch E may be formed of different shapes so as to suit any fancy, and it may also be formed to punch out only one nail instead of two if found more convenient."

NAIRNE, a borough and sea-port, the county-town of Nairnshire; seated at the entrance of the frith of Murray, 10 miles N. of Inverness, and 104 N. of Edinburgh. Long. 3. 51. W. Lat. 57. 33. N.

NAKSIVAN, a city of Armenia, capital of a province of the same name, with an archbishop's see. It is 90 miles S.E. of Erivan, and 250 E. of Erzerum. Long. 45. 30. E. Lat. 38. 40. N.

NAMARI, a mountain of Sicily, in the Val-di-Demone, between Messina, Taormina, and Melazzo.

NAMSLAW, a town of Silesia, in the principality of Breslaw, with a strong castle, situate among morasses, on the river Weyda, 23 miles S.E. of Breslaw. Long. 17. 38. E. Lat. 51. 33. N.

NANDER, a town of the Deccan of Hindoostan, in the province of Dowlatabad, 132 miles N.W. of Hyderabad.

NANGASACKI, a city of Japan, in the island of Ximofisen, with a well-frequented harbour. The inhabitants carry on a great trade with the Chinese and Dutch. The latter are never suffered to come into the city, unless when their ships arrive, and then they deliver up their guns, helms, and sails, as pledges of their good behaviour. Long. 128. 52. E. Lat. 32. 32. N.

NANGIS, a town of France, in the department of Seine and Marne, 12 miles W. of Provins, and 14 E. of Melun.

NANG-KANG-FOU, a city of China, in the province of Kiang-fi, seated on the lake Po-yang, and containing four cities of the third class in its district.

NAN-NGAN-FOU, a populous city of China, in the province of Kiangfi, containing, in its district, four cities of the third class. It is 200 miles N. by E. of Canton.

NANTUA, a town of France, in the department of Ain, situate at the extremity of a great lake of the same name, 18 miles S.E. of Bourg.

NANTUCKET, an island in the state of Massachusetts, of which it is a county. It lies to the south of Cape Cod, and had once the most considerable whale fishery on the coast; but it was almost ruined by the civil war. As the island is low, sandy, and barren, the inhabitants depend almost entirely on the watery element for subsistence. It has but one town, called Sherburne, which is 83 miles S. of Boston. Long. 70. 30. W. Lat. 41. 0. N.

NAPAU, a province of Hindoostan Proper, bounded on the S. by Bahar, on the W. by Oude, and Rohilcund, on the N.W. by Sirinagur, and on the N.E. and E. by the ridge of mountains called Himmalech, by which it is separated from Thibet. Catmandu is the capital.

NAPOLI-DI-MALVASIA, a sea-port of the Morea, capital of the island of Malvasia, seated on a rock, at the entrance of the bay of Napoli-di-Romania. It is defended by a good citadel; has a fine harbour, and a long wooden bridge, which joins it to the main land. It gives name to that excellent wine, called Malvasie; and was the ancient Epidaurus, famed for the temple of Æsculapius. It is 42 miles S.E. of Napoli-di-Romania. Long. 23. 22. E. Lat. 36. 57. N.

NAPOLI-DI-ROMANIA, a sea-port of the Morea, and an archbishop's see, seated at the bottom of a bay of the same name. It has a large harbour, with a narrow mouth, through which one ship only can enter at a time. It is inhabited by 60,000 Greeks, beside people of different nations, and very strong both by nature and art. It was taken by the Turks in 1715. It is 56 miles S.W. of Athens. Long. 23. 4. E. Lat. 37. 36. N.

NARA, a town of Japan, in the island of Nihon, with a magnificent castle, 25 miles N.W. of Meaco. Long. 134. 15. E. Lat. 35. 30. N.

NARAGANSET BAY, a bay on the coast of the United States, which contains Rhode Island, and several other islands.

NARBARTH, a town in Pembrokeshire, with an old castle, and a market on Wednesday. It is seated on a hill, 12 miles N.E. of Pembroke, and 229 W. by N. of London. Long. 4. 46. W. Lat. 51. 50. N.

NARBOROUGH, an island of South America, on the coast of Chili, where Sir John Narborough refreshed his men, when sent to the South Sea, in the reign of Charles II. Long. 74. 35. W. Lat. 45. 0. N.

NARENTA, a town of Dalmatia, with a bishop's see, seated on a gulf of the same name, 46 miles N.E. of Ragusa. Long. 18. 27. E. Lat. 43. 35. N.

NARNALLA, a town of the Deccan of Hindoostan, in the province of Berar, 33 miles W.N.W. of Ellichpore, and 52 E. of Burhanpore. Long. 77. 34. E. Lat. 21. 25. N.

NARNI, an ancient town in Italy, in Sabina, with a bishop's see. Here are the ruins of a marble bridge, built by Augustus, one of whose arches was 150 feet high, and 200 broad; as also of an aqueduct that brought water from a spring at the distance of 15 miles. It contains a great many noble families, and is seated on the Nera, 20 miles S.W. of Spoleto, and 40 N.E. of Rome.

NAROVA, a river of the Russian empire, which issues from the lake Peipus, and watering Narva, flows into the gulf of Finland, eight miles below that town. It is noted for two cataracts, pompously described by travellers, but they are far inferior to that of the Rhine, at Laufen.

NARSINGAPATAM, a town of the peninsula of Hindoostan, in the territory of Bisnagur. It was the residence formerly of a king, and is situate 400 miles S.E. of Bombay. Long. 76. 10. E. Lat. 15. 30. N.

NARWAR, or **NARWA**, a town of Hindoostan Proper, in the province of Agra, seated near the Sindu, which falls below it into the Jumna. It is 127 miles S. of Agra. Long. 79. 17. E. Lat. 25. 40. N.

NASEBY, a village in Northamptonshire, famous for the decisive victory gained by the army of the parliament over that of Charles I. in 1645. It is 12 miles N. of Northampton.

NASHVILLE, a town of the state of Tennessee, capital of the district of Mero, seated on Cumberland River, 160 miles E. of Knoxville. Long. 87. 20. W. Lat. 36. 2. N.

NASSAU, a county of Germany, in the circle of Upper Rhine; bounded on the N. by Westphalia, on the E. by the county of Solmes, on the S. by the territory of Menz, and

on the W. by the electorate of Treves. It is very fertile, and contains mines of iron, copper, and lead.

NASSAU, a town of Germany, capital of a county of the same name; the house of whose sovereign is divided into several branches. It is seated on the river Lahn, 12 miles S.E. of Coblenz. Long. 7. 42. E. Lat. 50. 18. N.

NASSAU-HADAMAR (*Encehl*), erroneously printed *HASSAU-Hadamer*.

NASSUCK, a town of Hindoostan Proper, in the province of Guzerat, 128 miles W.V. of Aurangabad, and 95 S.W. of Surat. Long. 73. 49. E. Lat. 19. 50. N.

NASTADT, a town in Germany, in the circle of Upper Rhine, 18 miles S.E. of Coblenz, and 22 N.W. of Mentz. Long. 7. 36. E. Lat. 19. 50. N.

NATANA, a sea-port of South America, in the government of Panama, seated in a fertile country, on the bay of Pirata, 70 miles S.W. of Panama. Long. 81. 15. W. Lat. 8. 10. N.

NATAL, a country on the W. coast of Africa, lying N.E. of the Cape of Good Hope, inhabited by the Bothman Hottentots.

NATCHITOCHES, a river of Louisiana, which falls into the Mississippi, at Point Coupee.

NATIONAL INSTITUTE. See *INSTITUTE*.

NATTAM, a town and fortress of the peninsula of Hindoostan, in the country of Madura, 18 miles N. of Madura, and 45 S.W. of Trichinopoly. Long. 78. 18. E. Lat. 10. 10. N.

NAVARINO, a strong and populous town of the Morea, with an excellent large harbour, defended by two forts. It is seated on a hill near the sea, eight miles N.E. of Modon, and 17 N.W. of Coron. Long. 21. 40. E. Lat. 37. 2. N.

NAVARREINS, a town of France, in the department of the lower Pyrenées, seated on the Gave d'Oleron, 26 miles S.E. of Bayonne. Long. 8. 45. W. Lat. 43. 19. N.

NAVIDAD, a sea-port of New Spain, seated on the Pacific Ocean, 350 miles W. of Mexico. Long. 106. 0. W. Lat. 19. 0. N.

NAVIGATORS ISLANDS, a cluster of islands in the South Pacific Ocean. The inhabitants are a strong and handsome race; scarcely a man to be seen among them less than six feet high, and well proportioned. The women are delicately beautiful; their canoes, houses, &c. well constructed; and they are much more advanced in internal policy, than any of the islands in this ocean. Long. 169. 0. W. Lat. 14. 19. S.

NAUEN, a town of Upper Saxony, in the Middle Marche of Brandenburg, 14 miles N. of Potsdam, and 8 W. of Berlin. Long. 12. 52. E. Lat. 52. 37. N.

NAUENHOF, a town of Upper Saxony, in the circle of Leipzig, eight miles E. of Leipzig.

NAUMBERG, a town of Germany, in the electorate of Mentz, situate on the Eder, 14 miles W.S.W. of Cassel, and 36 S. of Gottingen.

NAXKOW, a town of Denmark, in the Isle of Laland, with a harbour commodious for trade, and a plentiful fishery here. It is 60 miles S.W. of Copenhagen. Long. 11. 31. E. Lat. 54. 52. N.

NAZARETH, a town of Palestine, famous for being the residence of Jesus Christ, in the early part of his life. It is now only a village, where the monks of St. Francis have a convent. Long. 35. 20. E. Lat. 32. 30. N.

NAZARETH, a town of the United States, in Pennsylvania. It is a flourishing settlement of the Moravians, and is situate 10 miles N. of Bethlehem, and 65 of Philadelphia.

NAZE, or **CARL LINDENAS**, the most southern promontory of Norway. Long. 17. 20. E. Lat. 57. 30. N.

NEAGH, Lough, a lake of Ireland, situate in the counties of Armagh, Down, Antrim, Londonderry, and Tyrone. It is the largest in Europe, those of Ladoga and Onega in Russia, and that of Geneva in Switzerland, excepted; being 20 miles long, and 15 broad. It is remarkable for a healing virtue, and also for petrifying wood, which is not only found in the water, but in the adjacent soil, at a considerable depth.

NEATH, a corporate town in Glamorganshire, with a market on Saturday, situate on the river Neath, over which is a bridge, where small vessels come to load coal. In the neighbourhood are iron forges, smelting works for copper, and coal mines; and on the other side of the river are the ruins of a fine monastery. It is governed by a portreeve, who is sworn in by the deputy constable of the castle of Neath, and seated near the Bristol Channel, 32 miles N.W. of Landaff, and 200 W. by N. of London. Long. 3. 45. W. Lat. 51. 43. N.

NEATH, a river in Glamorganshire, which runs into the Bristol Channel, below the town of Neath.

NEB, a river in the isle of Man, which runs into the Irish Sea, at Peel Castle.

NEBRA, a town of Upper Saxony, in Thuringia, 12 miles N.W. of Naumburg. Long. 11. 26. E. Lat. 51. 13. N.

NECKAR, a river of Germany, which rises in the Black Forest, crosses the duchy of Wurtemberg, and the palatinate of the Rhine, and falls into the Rhine, at Manheim.

NECKARS-GEMUND, a town of Germany, in the palatinate of the Rhine, seated on the Neckar, 42 miles N. of Stuttgart. Long. 9. 55. E. Lat. 49. 26. N.

NECKARS-ULM, a town of Germany, in the circle of Franconia, seated on the Neckar. It belongs to the grand-march of the Teutonic order. Long. 9. 5. E. Lat. 49. 52. N.

NEDROMA, a town of the kingdom of Algiers, surrounded with magnificent ruins. It is 50 miles W.S.W. of Oran. Long. 0. 38. W. Lat. 35. 40. N.

NEDSJED, an extensive province or district of Arabia; bounded on the N. by the desert of Syria, on the E. by Nachla, on the S. by Hadramaut and Yemen, and on the W. by Hedsjas. The soil is various, in many parts very fertile. The Bedouins inhabit a great part of this province; the remainder is mountainous, and contains a great number of towns, almost every one of which has its own schiech.

NEEHHEHOW, one of the Sandwich islands, five leagues W. of Atoui. The E. coast is high, and rises abruptly from the sea; the rest of it consists of low ground, except a round bluff head on the S.E. point. It produces plenty of yams.

NEERWINDEN, a village of Austrian Brabant, a little N. by W. of Nanden. Hence the two celebrated battles of Nanden are sometimes called by the name of Neerwinden.

NEFTA, a town of the kingdom of Tunis, 250 miles S. by W. of Tunis. Long. 9. 25. E. Lat. 33. 0. N.

NEGRAIS, a sea-port on the E. side of the bay of Bengal, 240 miles W.S.W. of Pegu. Long. 94. 4. E. Lat. 15. 10. N.

NEGRO, Cape, a promontory of Africa, on the W. coast of Angola, being the most southerly country to which the Europeans usually resort to purchase slaves. Long. 10. 40. E. Lat. 15. 54. N.

NEGROES ISLAND, one of the Philippine Islands, between Panay and Zebu.

NEGROPONT, a strong city, capital of an island of the same name, and a Greek archbishop's see. It has a

good harbour, which is commonly the station of the Turkish ships. The walls of the city, in which the Turks and Jews reside, are two miles and a half in circumference; but the suburbs, where the Christians live, are much larger. It was taken in 1469, from the Venetians, who attempted to retake it in 1688, without effect. It is seated on a strait of the same name, 30 miles N.E. of Athens, and 260 S.W. of Constantinople. Long. 24. 8. N. Lat. 38. 30. N.

NEHAVAND, an ancient town of Persia, in Irac Agermi, famous for a battle fought near it, between the califf Omar and Yez Degerd, king of Persia, in 1638, when the latter lost his life and kingdom. It is 170 miles N.W. of Ispahan. Long. 47. 10. E. Lat. 34. 20. N.

NEIDENAU, a town of Germany, in the electorate of Mentz, situate on the Jaxt, nine miles N. of Heilbron, and 23 E.S.E. of Heidelberg.

NEIDENBURG, a town of Prussia, with a castle on a mountain, 75 miles E. of Culm. Long. 20. 20. E. Lat. 53. 22. S.

NEIDENSTEIN, a town of Germany, in the palatinate of Hesse, six miles E. of Naumburg, and nine S.E. of Cassel. Long. 8. 58. E. Lat. 51. 3. N.

NEIFFEN, a town of Suabia, in the duchy of Wurtemberg, 17 miles S.S.E. of Stuttgart. Long. 9. 11. E. Lat. 48. 30. N.

NEILSTON, a village in Renfrewshire, to the S. of Paisley. It is noted for a cotton manufacture.

NEITRA, a town of Hungary, the capital of a district, with a bishop's see. It is situate on a river of the same name, 34 miles N. of Gran. Long. 18. 3. E. Lat. 48. 20. N.

NELISURAM, a town of the peninsula of Hindoostan, on the W. coast, 33 miles N.E. of Mangalore, and 40 N.W. of Tellicherry. Long. 74. 57. E. Lat. 12. 20. N.

NELLENBURG, a town of Suabia, capital of a land-gravate of the same name, 20 miles N. of Constance, and 20 N.E. of Schaffhausen. Long. 9. 8. E. Lat. 47. 50. N.

NELLORE, a town and fortress of the peninsula of Hindoostan, in the Carnatic, near the Pennar river, 85 miles N. of Madras, and 98 N. of Arcot. Long. 79. 57. E. Lat. 14. 26. N.

NELSON, an English settlement in North America, on the W. side of Hudson's Bay, at the mouth of the river. Nelson, 250 miles S.E. of Churchill Fort. It belongs to the Hudson's Bay Company. Long. 92. 35. W. Lat. 57. 7. N.

NEMEA, a village of the Morea, famous for the Nemean games anciently celebrated here.

NEN, the principal river of Northamptonshire, which rises in the W. part of the county, and is made navigable at Northampton. It leaves the county at Peterborough, and crossing the isle of Ely, forms part of the W. boundary of Norfolk, and falls into the Lincolnshire Wash. It likewise communicates, by several channels, with the Great Ouse.

NEOCASTRO, a fort of Turkey in Europe, in Romania, where the Turks always keep a good garrison. It is seated in the middle of the strait of Constantinople, 12 miles from Constantinople. Long. 29. 4. E. Lat. 41. 10. N.

NEOTS, St. See **NEEDS**.

NEPEAN ISLAND, an island of the South Pacific Ocean, opposite Port Hunter, on the south coast of Norfolk Island. It consists entirely of one mass of sand, held together by the surrounding cliffs, which are a border of hard rocks. The surface was covered with a kind of coarse grass, and upwards of 200 fine pines were growing on it.

NEPI, an ancient town of Italy, in the patrimony of St. Peter, with a bishop's see, seated on the Trighia, 20 miles N. of Rome. Long. 13. 34. E. Lat. 42. 14. N.

NERAC, a town of France, in the department of Lot and Garonne, divided by the river Baïse into Great and Little Nerac. In the feudal times, this was the residence and capital of the lords of Albret. Their stupendous castle is now in ruins; but, before the abolition of royalty, no true Frenchman could visit it without sentiments of veneration; for here there once favourite Henry IV. spent part of his youth. Nerac is 20 miles S.W. of Agen, and 380 S. by W. of Paris. Long. 0. 13. E. Lat. 44. 2. N.

NERBUDDA, a river of India, which issues from a lake on the southern confines of the province of Allahabad, forms the boundary between Hindoostan Proper and the Deccan, and falls into the gulf of Cambay, below Baroch.

NERICIA, a province of Sweden Proper; bounded on the N. by Westmania, on the E. by Sudermania, on the S. by East Gothland, and on the W. by West Gothland. Orebo is the capital, and the only considerable place in it.

NERO, an island in the East Indies, the second of the Banda Islands, where the Dutch have a fort called Fort Nassau. Here are large serpents, but not venomous, and the mountains are covered with trees, in which are birds of a very singular kind. Long. 129. 45. E. Lat. 4. 40. N.

NERTCHINSK, one of the four provinces of the Russian government of Irkutsk. Its capital, of the same name, is seated on the Nercha, which falls into the Schilka. Long. 116. 44. E. Lat. 51. 12. N.

NESLE, a town of France, in the department of Somme. It is seated on the Lingon, eight miles N.E. of Royes, and 66 N. by E. of Paris. Long. 2. 59. E. Lat. 49. 51. N.

NESS, Loch, a lake in Invernesshire, 22 miles in length, and, for the most part, one in breadth. It is sheltered on the N.W. by the high mountains of Urquhart and Mealfourvoney, and edged with coppices of birch and oak.

Ness, a river of Scotland, which is the outlet of Loch Ness, and falls into the frith of Murray, below Inverness.

NESTVED, a town of Denmark, in the island of Zealand, situate on the river Nefs, 38 miles S.W. of Copenhagen. Long. 11. 51. E. Lat. 55. 15. N.

NETSCHKAU, a town of Upper Saxony, in the Voigtland, situated on the Golfch, 12 miles S.W. of Zwickau.

NETTLE RASH, in medicine a troublesome cutaneous eruption, of which D. Cullen forms the genus *URTICARIA*. This disease has its English name from the resemblance of its eruption to that made by the stinging of nettles. These little elevations upon the skin in the nettle-rash often appear instantaneously, especially if the skin be rubbed or scratched, and seldom stay many hours in the same place, and sometimes not many minutes. No part of the body is exempt from them; and where many of them rise together, and continue a hour or two, the parts are often considerably swelled; which particularly happens in the face, arms, and hands. These eruptions will continue to infect the skin, sometimes in one place and sometimes in another, for one or two hours at a time, two or three times every day, or perhaps for the greatest part of the twenty-four hours.—In some persons they last only a few days, in others many months; may sometimes the disease has lasted for years with very short intervals.

But though the eruption of the urticaria resembles, as already observed, that produced by the stinging of nettles, it is sometimes accompanied with long wheals, as if the part had been struck with a whip. Whatever be the shape of these eminences, they always appear solid, without having any cavity or head containing either water or any other liquor; and this affords an easy mark whereby this disease

may be distinguished from the itch. For it often happens that the insufferable itching with which this eruption is attended, provokes the patient to scratch the parts so violently, that a small part of the cuticle on the top of these little tumors is rubbed off; a little scab succeeds; and, when the swelling is gone down, there is left an appearance hardly to be distinguished from the itch, but by the circumstance just now mentioned. The nettle-rash also sometimes differs from the itch, in not being infectious.

Dr. Heberden is inclined to ascribe this disease to some mechanical cause outwardly applied to the skin. He observes, that most people suffer in a similar manner from the real stinging of nettles. Cowhage, a sort of *phafolus* or French bean, the pod of which is covered over with a kind of down or hair, and the effect of which upon the skin is much the same as that of nettles; and almost any hairs cut equally short, and sprinkled upon the skin, whenever they happen to stick in it, will make the part itch or smart in such a manner as to give great uneasiness; it is also a considerable time before the skin can be cleared of the finer ones, when once they are strewn upon it.

Reaumer, in the fourth memoir of his History of Insects, describes a species of caterpillar to which belong a sort of hairs almost invisible to the naked eye, which are easily detached, and frequently float in the air round their nests, though it have not been at all disturbed. The touch of these hairs has a similar effect with the cowhage; that is, they occasion intolerable itchings, with little bumps and redness, arising sometimes to a slight inflammation. These he found would continue four or five days, if the animal or the nest had been much handled; and though they had not been touched at all, yet, by only walking near their nests, the same effects would be brought on, but for a shorter time. These hairs affect the skin in this manner by sticking in it, as he could perceive with a glass of a great magnifying power; for with one of a small power they are not visible. The uneasy sensations caused by these small wounds, not only, as he says, last several days, but move from one part of the body to another; so that they will cease upon one wrist, and immediately begin on the other; from the wrist they will go to the fingers or the face, or even to the parts of the body which are covered. He supposes, that the motion of the body, when much of this fine down lies near or upon the skin, may drive it from one part or another, or change what was lying there inoffensively to a situation fit to make it penetrate into the skin. Neither cold water, nor oil, nor spirit of wine, with which the parts affected were bathed, had any effect in removing the itching. He thinks the most efficacious remedy which he tried for this complaint was, to rub the parts strongly with parsley, which instantly lessened the sensations, and after two or three hours, entirely freed the patient from them. It is also well known that many species of caterpillars, by only walking over the hands, will produce something like this effect on the parts which they touch, and undoubtedly from the same cause.

Dr. Heberden asks, Is it impossible that the nettle-rash should arise from the same causes, or from others similar, which we mis by looking too deeply for them in the blood and humours? Such (says he) may have been its origin in some instances, where it has lasted only a few days; but where this affection has continued for some years, in persons who change their linen every day, and who bathe frequently all the time, it can hardly be ascribed to such an external cause. He has observed it frequently to arise from cantharides; but though it has continued many weeks after the removal of the blister, yet it might be sur-

pected that this arose from the fine spiculae of the cantharides sticking all this time about the skin; it being customary to strew much of the dry powder of the cantharides over the blister-plaster, whence it may readily be carried to other parts of the body. But it is certain that similar effects will sometimes follow the internal use of wild valerian root, or the eating of fish not sufficiently dressed; muscles, shrimps, and even honey, and the kernels of fruits, will also sometimes produce symptoms of a similar kind. But whatever be its cause, Dr. Heberden never saw any reason to suppose that the nettle-rash had in any way vitiated the humours to such a degree as to require the use of internal remedies; and if the itching could be certainly and expeditiously allayed, there would be no occasion for any further cure. He concludes this history of the disorder with a case communicated to him by Dr. Monsey, physician of Chelsea College, and in which the disease appeared with uncommon violence.

W. A. aged near 30, of a thin spare habit, was seized with a disorder attended with symptoms of a very uncommon kind. Whenever he went into the air, if the sun shined bright, he was seized with a tickling of his flesh on those parts exposed to the sun: this tickling, by his continuing in the air, increased to a violent itching, attended with great heat and pain: the skin would then be almost as red as vermillion, and thicken like leather; and this remained till he went out of the open air, and then abated in about fifteen or twenty minutes. This happened only when the sun was above the horizon; at other times he was what he called *quite well*.—But it was not owing to the heat of the sun; for the sun in winter affected him full as much, if not more, and the heat of the fire had no such effect. Thus he was confined to the house for ten years. He tried several hospitals, and had advice from many physicians, without the least abatement of his complaints. At last it was agreed in a consultation of physicians, that he should try dipping in salt water; which he did at Yarmouth for thirteen weeks, without any visible amendment. One hot day, having pulled off his clothes and gone into the sea in the middle of the day, the heat diffused itself so violently all over his body, that, by the time he had put on his clothes his eye-sight began to fail, and he was compelled to lie down upon the ground to save himself from falling. The moment he lay down, the faintness went off: upon this he got up again; but had no sooner arisen, than he found himself in the former condition: he therefore laid down again, and immediately recovered. He continued alternately getting up and lying down, till the disorder began to be exhausted, which was in about half an hour; and he was frequently obliged to have recourse to the same expedient.

Having at last accidentally met with Dr. Monsey, this physician questioned him concerning the cause of the disorder; but nothing could be guessed at, excepting that the patient owned he had one winter lived entirely upon bullocks' liver and porter, from inability to purchase better victuals. A comrade lived with him at that time, on the same provisions; and he also was affected in a similar manner, though in a less degree, and had recovered. This patient was then first put upon a course of Dover's sweating powder without any effect, and afterwards tried a course of nitrous ones with the same bad success. At last Dr. Monsey determined to try the effect of mercury, which happily proved effectual in removing this obstinate and uncommon distemper. The patient began with taking five grains of calomel for three nights running, and a cathartic next morning. In this course he went on for near a fortnight, at the end of which he found himself very sensibly relieved. This

encouraged him to go on rather too boldly, by which means a slight salivation ensued; however, that went off soon, and in about six weeks he was quite well.—Some time after, he was threatened with a return of his disorder; but this was effectually relieved by a dose of calomel, which he had afterwards occasion to repeat for the same reason, and with the same success: but at last the disorder seemed to be radically cured, by his having no further symptoms of a relapse.

NEUBURG, a town of Suabia, in the Brisgau, subject to the house of Austria. It is seated near the Rhine, 12 miles N. of Badle, and 12 S. of Baislach. Long. 7. 35. E. Lat. 47. 47. N.

NEUBURG, a town of Lower Austria, with a famous monastery, seated on the Danube, five miles from Vienna, Long. 16. 20. E. Lat. 48. 13. N.

NEUBURG, a town of Germany, in the duchy of Wurtemberg, with a castle, seated on the Editz, 25 miles W. of Stuttgart. Long. 8. 34. E. Lat. 48. 52. N.

NEUBURG, a town of Germany, in the circle of Bavaria, capital of a duchy of the same name, subject to the elector palatine. It is 26 miles N.E. of Augsburg, and 40 S.W. of Ratibon. Long. 11. 18. E. Lat. 48. 45. N.

NEVERS, a considerable town of France, in the department of Nievre, with a bishop's see. It is built in the form of an amphitheatre, and contains several fine buildings; particularly the ancient ducal palace, in which John-Casimir, king of Poland, expired in 1672. The number of inhabitants is estimated at about 8000. It is seated on the Loire, over which is a handsome bridge, 15 miles N.W. of Moulins, and 14 S.E. of Paris. Long. 3. 14. E. Lat. 46. 59. N.

NEUCHÂTEL, a town of France, in the department of Lower Seine, noted for excellent cheese. It is seated on the Arques, 20 miles S.E. of Dieppe, and 75 N.W. of Paris. Long. 1. 30. E. Lat. 49. 46. N.

NEUHÄUS, a strong town of Bohemia, in the circle of Bœhm, with a castle. Long. 15. 13. E. Lat. 49. 8. N.

NEUMÄRS, a town of Lower Saxony, in the duchy of Bremen, situate near the mouth of the Oste. It was once a place of great trade, and had a commodious harbour; but a sand bank arising in it, at the issue of the Oste into the Elbe, it is now much less frequented. It is 19 miles N.W. of Stade. Long. 8. 27. E. Lat. 53. 52. N.

NEUHAUSEN, a strong town of Upper Hungary, seated in a marshy plain, on the river Neitra, 15 miles N.W. of Comora, and 40 S.E. of Presburgh. Long. 18. 10. E. Lat. 48. 1. N.

NEVIN, or NEWIN, a town in Carnarvonshire, with a market on Saturday. It is seated on the Irish Sea, 20 miles S. by W. of Carnarvon, and 240 W.N.W. of London. Long. 4. 25. W. Lat. 52. 52. N.

NEUKIRCHEN, a town of Germany, in the principality of Hesse, 20 miles E.N.E. of Marburg, and 28 S. of Cassel. Long. 9. 15. E. Lat. 50. 40. N.

NEUMAGEN, a town of Germany, in the electorate of Treves, on the south side of the Moselle, 11 miles E.N.E. of Treves, and 42 S.W. of Coblenz. Long. 6. 26. E. Lat. 50. 0. N.

NEUMARK, a town of Transylvania, on the river Merisch, 56 miles N. of Claufenburg. Long. 23. 35. E. Lat. 47. 19. N.

NEUMARK, a town of Bavaria, 30 miles N.N.W. of Ratibon. Long. 12. 25. E. Lat. 49. 18. N.

NEUMARK, a town of Silesia, in the principality of Breslaw, 15 miles W. by N. of Breslaw. Long. 16. 42. E. Lat. 51. 5. N.

NEUS, a river of North Carolina, which enters Pamlico Sound, below Newbern, where it is a mile and a half broad.

NEUSALTZ, a town of Silesia, in the principality of Glogau, 12 miles N.W. of Glogau.

NEUSIDLE, a town of Hungary, situate on a lake of the same name, 24 miles S.W. of Presburg.

NEUSOL, a town of Upper Hungary, with a large castle, in which is a church, covered with copper. Near it are the greatest copper-mines in all Hungary. It is seated on the Gran, 10 miles N. of Chrennitz, and 50 N.E. of Leopoldstadt. Long. 19. 29. E. Lat. 49. 9. N.

NEUSTADT, a town of Lower Saxony, in the duchy of Holstein, seated on the Baltic, 22 miles N.N.E. of Lubeck. Long. 11. 0. E. lat. 54. 10. N.

NEUSTADT, a town of Lower Saxony, in the duchy of Mecklenburg, 15 miles S. of Schwerin. Long. 11. 50. E. lat. 53. 24. N.

NEUSTADT, a town of Lower Saxony, in the duchy of Hanover-Lunenbourg, with a castle, 15 miles N.W. of Hanover. Long. 9. 55. E. Lat. 52. 34. N.

NEUSTADT, a town of Lower Austria, with a bishop's see, a castle, and an arsenal, 30 miles S. of Vienna. Long. 16. 27. E. Lat. 47. 48. N.

NEUSTADT, a town of Franconia, in the bishopric of Wurzburg, seated on the Sale, 12 miles N.E. of Schweinfurt. Long. 10. 25. E. Lat. 50. 24. N.

NEUSTADT, a town of Germany, in the duchy of Wurttemberg, seated on the Koehel, 12 miles N.N.E. of Hailbron. Long. 9. 20. E. Lat. 49. 17. N.

NEUSTADT, a town of Germany, in the palatinate of the Rhine, nine miles N. by W. of Landau. Long. 8. 7. E. Lat. 49. 20. N.

NEUVILLE, a town of Switzerland, in the bishopric of Basle. It is governed by two burghmasters and a small and great council, each consisting of twenty-four members. It is seven miles S.S.W. of Bienne, and nine N.E. of Neuchâtel.

NEUWIED, a flourishing commercial city of Germany, in the circle of Upper Rhine, capital of the principality of Wied. The number of the inhabitants is between 6 and 7000: the Calvinist is the established religion, but all others are tolerated; and the Moravians, in particular, have here a very respectable settlement. Neuwied is 10 miles N.N.W. of Coblenz. Long. 7. 25. E. Lat. 50. 32. N.

NEWARK, a flourishing town of the United States, in New Jersey, with one episcopal and two presbyterian churches. It has the reputation of making the best cider in the world, and is nine miles W. of New York.

NEWBIGGIN, a fishing town of Northumberland, situate on the N. side of a bay to which it gives name, seven miles E. of Morpeth.

NEUBURGH, a corporate town in the Isle of Anglesey, with a market on Tuesday. It is governed by a mayor, and seated on the Brant, 15 miles S.W. of Beaumaris, and 257 N.W. of London. Long. 4. 27. W. Lat. 59. 10. N.

NEWBURN, a village in Northumberland, on the west side of Newcastle, inhabited chiefly by colliers. Here, a part of the army of Charles I. under Lord Conway, was defeated by the Scotch in 1640.

NEWBURY PORT, a town of the United States, in Massachusetts, where the business of ship-building is carried on largely. It is situate on the river Merrimack, two miles from the sea, and 45 E. of Boston. Long. 71. 5. W. Lat. 42. 45. N.

NEWCASTLE, a town in Carmarthenshire, with a market on Friday. It had a fine castle, now in ruins; and is seated on the Tyvy, 17 miles N.W. of Carmarthen, and 219 W.N.W. of Lower. Long. 4. 30. W. Lat. 52. 4. N.

NEWCASTLE, a borough of Ireland, in the county of Dublin, 10 miles W.S.W. of Dublin.

NEWDIGATE, a village in Surrey, five mile S.E. of Dorking. Here is a medicinal spring of the same nature as that of Epsom.

NEWENBERG, a town of Germany, in the county of Feldkirche, three miles N.W. of Feldkirche.

NEWENHAM CAPE, a rocky point of considerable height, on the W. coast of North America, forming the N. extremity of a vast bay called Bristol Bay, of which the promontory of Alaska is the S. boundary. It was discovered by Captain Cook in 1778. Long. 162. 24. W. Lat. 58. 42. N.

NEWENT, a town in Gloucestershire, with a market on Friday, seated near a branch of the Severn, eight miles N.W. of Gloucester, and 114 W.N.W. of London. Long. 2. 20. W. Lat. 51. 56. N.

NEWHAVEN, a town of Suffolk, at the mouth of the river Oule, with a quay on the E. side. It is seven miles S. by E. of Lewes, and 56 S. of London. Long. 0. 5. E. Lat. 50. 48. N.

NEWHAVEN, a town of the United States in Vermont, 75 miles N. of Bennington. Long. 73. 8. W. Lat. 44. 6. N.

NEWHAVEN, a town of the United States, in Connecticut, with a university, consisting of one college, called Yale College. It carries on a considerable trade with New York and the West-India islands; and lies round the head of a bay, four miles N. of the Sound, and 132 N.N.E. of New York. Long. 72. 58. W. Lat. 41. 17. N.

NEWNHAM, a corporate town in Gloucestershire, with a market on Friday. It is governed by a mayor, and seated on the Severn, eight miles S.W. of Gloucester, and 112 W.N.W. of London. Long. 2. 23. W. Lat. 51. 4. N.

NEWPORT, a borough in the Isle of Wight, with a market on Wednesday and Saturday. It is governed by a mayor, and sends two members to parliament. It is seated on the river Cowes, which is navigable for small vessels, 17 miles S. by E. of Southampton, and 91 S.W. of London. Long. 1. 15. W. Lat. 50. 40. N.

NEWPORT, a borough in Cornwall, which has no market, but sends two members to parliament. It is three miles N. of Launceston, and 214 W. by S. of London. Long. 4. 36. W. Lat. 50. 43. N.

NEWPORT, a town in Shropshire, with a market on Saturday, and a handsome free-school, 17 miles E. of Shrewsbury, and 140 N.W. of London. Long. 2. 18. W. Lat. 52. 45. N.

NEWPORT, a town in Monmouthshire, with a market on Saturday, seated on the river Uik, over which is a bridge. It is walled round, and was formerly defended by a castle, considerable remains of which are yet in being. Near it are the vestiges of a camp. It stands 19 miles S.S.W. of Monmouth, and 152 W. by N. of London. Long. 3. 4. W. Lat. 51. 36. N.

NEWPORT, a corporate town in Pembrokeshire, with a market on Saturday, and the ruins of a castle. It is governed by a mayor, and seated at the foot of a high hill, at the bottom of a bay of the same name, 18 miles N.E. of St. David's, and 235 W.N.W. of London. Long. 4. 50. W. Lat. 52. 6. N.

NEWPORT, a sea-port of the United States, in Rhode Island. Its harbour is one of the finest in the world; and to the west of the town is Goat Island, on which is a fort. Newport has a handsome state-house and an elegant public

library. It is 80 miles N.E. of New York. Long. 71. 6. W. Lat. 41. 35. N.

NEWPORT-PAGNEL, a town in Buckinghamshire, with a market on Saturday. It has a manufacture of bone-lace, and is seated on the Ouse, 14 miles E.N.E. of Buckingham, and 51 N.N.W. of London. Long. 0. 43. W. Lat. 52. 4. N.

NEWPORT PRATT, a sea-port of Ireland, situate near the mouth of a river which runs into Clew Bay, eight miles W. of Gallesbar. Long. 9. 21. W. Lat. 53. 53. N.

NEW RIVER, a fine artificial stream, brought from two springs, at Chadwell and Amwell, near Ware, in Hertfordshire, for the supply of the metropolis with water. It was finished in 1613, by Sir Hugh Middleton, a citizen of London, who expended his whole fortune in the undertaking. This river, with all its windings, is nearly 39 miles in length, and is under the management of a corporation called the New River Company.

NEWRY, a borough of Ireland, in the county of Down, situate on the side of a steep hill, at the foot of which is Newry-water, having over it two stone bridges; and there is a third bridge over a navigable canal, by which it has a communication with Lough Neagh and Carlingford Bay. It has suffered greatly by the rebellions in Ulster, and was burnt by the Duke of Berwick in 1689; but it is now so much improved in trade and buildings, that it is the largest town in the county. It is 49 miles N. of Dublin. Long. 6. 20. W. Lat. 54. 15. N.

NEWRY-WATER, a river of Ireland, which separates the counties of Armagh and Down, and watering Newry, enters Carlingford Bay.

NEWSHAM, a village in Durham, situate on the Tees, five miles from Darlington. This being the usual ford over the river from the south, the Bishop of Durham is met here, at his first coming to the see, when the Lord of Stockbora, just below it, being at the head of the country gentlemen, advances into the middle of the river, with his truncheon, and presents it to the bishop, who returns it, and is then conducted along amid the acclamations of the populace. Here was formerly a nunnery.

NEWTON, a borough in Lancashire, with a market on Saturday. It sends two members to parliament, and is five miles N. of Warrington, and 190 N.W. of London. Long. 2. 45. W. Lat. 53. 28. N.

NEWTON, a borough in the Isle of Wight, which sends two members to parliament, but has no market. It is 14 miles S. of Southampton, and 93 S.W. of London. Long. 1. 16. W. Lat. 50. 43. N.

NEWTON, a town of Montgomeryshire, with a market on Saturday, seated on the Severn, seven miles S.W. of Montgomery, and 169 W.N.W. of London. Long. 3. 12. W. Lat. 52. 21. N.

NEWTON-BUSHEL, a town in Devonshire, with a market on Wednesday, seated on the Teign, 15 miles S. by W. of Exeter, and 188 W.S.W. of London. Long. 3. 38. W. Lat. 50. 32. N.

NEWTON-STEWART, a town in Wigtonshire, situate on the Cree, which is navigable for small vessels to within two miles of the town. There is a handsome bridge over this river, whose mouth, in Wigton Bay, affords a valuable salmon-fishery. Several manufactures have been commenced with success in this town, which is indebted for its rise and name to the family of Stewart earl of Galloway. It is 26 miles E. by N. of Port Patrick.

NEWTOWN, a village in Renfrewshire, to the south of Paisley. It is noted for several large print fields.

NEWTOWN, the capital of the county of Bucks, in Pennsylvania, five miles from the Delaware, and 20 N.N.E. of Philadelphia. Long. 75. 1. W. Lat. 40. 14. N.

NEWTOWN ARDES, a town of Ireland, in the county of Down, situate on the northern point of the lake of Strangford. It has a considerable linen manufacture; and is 87 miles N. of Dublin. Long. 5. 45. W. Lat. 54. 40. N.

NEWTOWN BARRY, a town of Ireland, in the county of Wexford, 38 miles S. of Dublin. Long. 6. 30. W. Lat. 52. 35. N.

NEWTOWN LIMAVADDY, a borough of Ireland, in the county of Londonderry, seated near the N. coast of Lough Foyle, 15 miles E.N.E. of Londonderry.

NEWTOWN MOUNT KENNEDY, a town of Ireland, in the county of Wicklow, 17 miles S. of Dublin.

NEW-YEAR'S-HARBOUR, a part of Staten Land, in South America. Long. 64. 11. W. Lat. 54. 48. S.

NEW-YEAR'S-ISLANDS, small islands of South America, on the N. side of Staten Land.

NEYLAND, a town in Suffolk, with a market on Friday, and a manufacture of fays and bays. It is seated on the Stour, over which is a bridge, 16 miles S.W. of Ipswich, and 57 N.E. of London. Long. 1. 5 E. Lat. 52. 1. N.

NGAN-LO-FOU, a rich and populous city of China, in the province of Houquang, containing, in its district, two cities of the second and five of the third class. It is 425 miles W. by S. of Nanking.

NIAS, a small island, near the W. end of the island of Sumatra, remarkable for the beauty of the women, who are purchased as slaves by the Dutch and Portuguese. Long. 97. 0. E. Lat. 1. 10. N.

NIBE, a town of Denmark, in North Jutland, nine miles W.S.W. of Alburg.

NIBIANO, a town of Italy, in the duchy of Piacenza, 16 miles S.W. of Piacenza.

NIBANO, a town of Italy in the duchy of Parma. Long. 10. 0. E. Lat. 45. 5. N.

NICHABURG, a city of Persia, the largest and richest in Korafan, famous for a mine of turquois stones in its neighbourhood. It is 37 miles S. of Meshed. Long. 57. 48. E. Lat. 35. 30. N.

NICHOLAS ISLAND, a small island on the N. coast of the island of Cuba. Long. 79. 40. W. Lat. 33. 50. N.

NICHOLAS, St. a town in France in the department of Meurthe, with a handsome church, dedicated to St. Nicholas, to which pilgrims formerly resorted. It is seated on the Meurthe, five miles S.E. of Nanci, and 265 E. of Paris.

NICHOLAS, St. a sea-port of Russia, in the government of Archangel, seated at the mouth of the Dwina, on the White Sea, six miles S. of Archangel.

NICHOLAS, St. of MALE ST. NICHOLAS, a town, harbour, and cape, of the West Indies, at the N.W. extremity of St. Domingo, commanding the strait called the Windward Passage. The harbour is nine furlongs broad at the entrance; and ships of any burthen may ride at anchor in the basin, even during a hurricane. It was taken by the English, aided by the French royalists, in 1793; and was evacuated in 1798. Long. 73. 20. W. Lat. 19. 15. N.

NICHOLSBURG, a town of Germany, in Moravia, with a castle, 27 miles N. of Vienna.

NICKING the tail of a horse, an operation designed to make him carry it more gently. There are particular machines or pulleys, so contrived as to keep the tail up, which may be better comprehended by seeing the figure

in Pl. 22. vol. III, and referred to in the article FARRIERY. The number of the nicks are to be proportionate to the length of the tail, but generally three are sufficient. When the operation is over, the wounds may be dressed with a mixture of powdered rosin, honey, and spirits of wine; and a doffel of row, dipt in the same mixture, should be laid between the nicks, wrapping the tail up as usual. The next morning the covering should be cut open, down the back part of the tail, and the following morning it should be taken quite off, in order to plait the hair, and set the tail. You should let the tail down every two or three days, and bathe the upper part next the rump with hot vinegar, in which a bit of alum is dissolved, and mixt with honey. If the tail should happen to swell, and the hair come off, it must be fomented and poulticed with a mixture of scalded bran, cow-dung, linseed-meal, and a little lard. When seven or eight days are expired, the horse should be suffered to stand without the machine or pulley for a few hours, that you may see how he carries his tail. He must likewise have his tail kept up a few hours every day, till the wounds are quite healed, or, in other words, till new flesh is formed in the nicks.

Of this practice Mr. John Lawrence speaks in the following terms:—"Of *nicking*," says he, "I shall say but little; in truth if nobody were more attached to it than I am, the art would soon be lost from disuse. At present, I must allow, we set horses' tails in a more natural form, than some years back, when it was the custom to cock them brist upright, in a most burlesque, and preposterous manner, and a young horse, with his blazing meteor displayed *a posteriori*, looked just as naturally and in character, as a young fellow with his head enveloped in the curls of an enormous perriwig. My prejudice in favour of every thing appertaining to the turf, may perhaps warp my judgment; but I am all for broom or racing tails, such as are 'cut square by the Russian standard'; these I think are becoming and natural to all sorts and sizes of horses, but more particularly at this time, now the flow of blood is so universal. As to the art of nicking, every dealer or farrier can perform it."

NICOPOLI, or GLANISH, an ancient town of Armenia, built by Pompey the Great, in memory of a victory gained over Mithridates. It is seated on the Cerauna, 165 miles S.W. of Erzerum. Long. 37. 55. E. Lat. 38. 15. N.

NICOSIA, a strong town, capital of the island of Cyprus, seated between the mountain Olympus and a chain of other mountains. It was formerly well fortified by the Venetians, but now the works are in ruins. It is three miles in circumference; and there are plantations of olives, almonds, lemons, oranges, mulberries, and cypress-trees, interspersed among the houses, which give the town a delightful appearance. The church of St. Sophia is an old Gothic structure, which the Turks have turned into a mosque. It is 100 miles W. of Tripoli, and is 160 S.W. of Aleppo. Long. 34. 45. E. Lat. 34. 54. N.

NICOTERA, a sea-port of Naples, in Calabria Ulteriore, with a bishop's see, 35 miles N.E. of Reggio, and 185 S.E. of Naples. Long. 16. 30. E. Lat. 38. 34. N.

NICOYA, a town of New Spain, on the Pacific Ocean, at the bottom of a bay, 45 miles S.E. of Leon de Nicaragua. Long. 88. 0. W. Lat. 10. 15. N.

NICARA, a town of Turkey in Asia, in Caramania, with an archbishop's see. It is 10 miles N. of Tocat. Long. 36. 0. E. Lat. 39. 25. N.

NIDAU, or NIPOW, a handsome town of Switzerland, capital of a bailiwick of the same name, in the canton of Bern, with a castle. It is situate on the lake of Bienné, 15 miles N.W. of Bern, and 60 S.W. of Zurich.

NIDDA, a town of Germany, in Upper Hesse, 20 miles N.E. of Frankfort, and 38 E.N.E. of Mentz. Long. 8. 58. E. Lat. 50. 17. N.

NIDEBEKEN, a town of Germany, in the duchy of Juliers, situate on a rock, and surrounded by rocks. It is 13 miles S.S.E. of Juliers. Long. 6. 16. E. Lat. 50. 46. N.

NIDIJABAD, a town of Hindoostan Proper, in the province of Oude, 80 miles N.N.E. of Delhi, and 96 N.N.W. of Berilly. Long. 78. 41. E. Lat. 29. 35. N.

NIEBLA, an ancient town of Spain, in Andalusia, seated on the Rio Tinto, 40 miles W. of Seville. Long. 5. 56. W. Lat. 37. 26. N.

NIEDERBIEBER, a village of Germany, in the principality of Wied, three miles from Neuwied. Many valuable antiquities, and the traces of a Roman city, were discovered here in 1791.

NIEMECZ, a strong town of Moldavia, between Soczoway and Brassaw, being 25 miles from each. Long. 26. 16. E. Lat. 46. 48. N.

NIEN CLOSTER, a town of Lower Saxony, in the bishopric of Schwerin, three miles E. of Wismar.

NIENHUIS, or NEUNHAUS, a town of Germany, in the bishopric of Paderborn, seated on the Lippe, 20 miles E. of Lipstadt. Long. 8. 55. E. Lat. 51. 50. N.

NIESTADT, a town of Lower Saxony, in the duchy of Mecklenburgh, 15 miles S. of Schwerin. Long. 11. 46. E. Lat. 53. 59. N.

NIESADT, a town of Germany, in the middle marche of Brandenburg, seated on the Fuyhre, 25 miles N.E. of Berlin. Long. 1. 14. E. Lat. 52. 49. N.

NIEUPORT, a sea-port of Austrian Flanders, seated on the German Ocean, at the mouth of the Yperlee. In 1383, it was burnt by the rebels of Ghent. In 1583, it was taken by the Prince of Parma. In 1626, Prince Maurice gained here a great victory over the Spaniards. It has been taken and retaken in the subsequent wars; the last time by the French in 1794. It is nine miles S.W. of Ostend, and 16 N.E. of Dunkirk. Long. 2. 45. E. Lat. 51. 7. N.

NIGER. See NILE, *Suppl.*

NIGONO, a town of Italy, in the duchy of Modena, 22 miles S.W. of Modena.

NIKOPING, a town of Denmark, capital of the island of Falster, or Hulsler, in the Baltic, with a strong fort, 55 miles S.W. of Copenhagen. Long. 12. 7. E. Lat. 54. 50. N.

NIKOPING, a town of Sweden, in Sndermania, 60 miles S.W. of Stockholm. Long. 16. 40. E. Lat. 58. 40. N.

NILE (*Encycl.*) In the British Magazine for 1800, an opinion is maintained that the Nile and the Niger are one and the same river. Dr. Arthur Browne, Senior Fellow of Trinity College, Dublin, and member in parliament for that University, previous to the union, supports his conjectures in the following way:

"Herodotus heard," says he, "from certain Cyreneans, that on an expedition they made to the Oracle of Ammon, they had conversed with Etearchus, sovereign of the country, who informed them, that some Lamonians (a people who inhabit the Syrtis) had related to him, that certain young men, sons of persons of distinction, had signalled themselves by some extravagance of conduct. Among other things, they deputed by lot five of their companions to explore the solitudes of Africa, and to endeavour at extending their discoveries beyond all preceding adventurers. After a long peregrination they came to a city washed by a great river, which flowed from east to west, and abounded in crocodiles. This Etearchus conjectured to be the Nile,

which, says Herodotus, probability confirms. The Nile, continues he, certainly rises in Lybia, which it divides; and if it be allowable to draw conclusions from things which are well known concerning those uncertain and obscure points, it takes a similar course with the Jeten, that is, from west to south-east.

"In this opinion of Herodotus, that the Nile and the Niger were the same river, the Grecians generally concurred. The Romans formed a different opinion, and the moderns have varied so far as to believe, for many hundred years past, that the Niger ran to the westward, was the same river with the Senegal or Gambia, and ran into the Atlantic Ocean.

"Mr. Park discovered, beyond a doubt, that the Niger ran to the east; and he says it abounds in crocodiles. Every modern discovery has proved, that where Herodotus formed an opinion, or spoke of a fact within his own knowledge, or depending upon testimony of which he could himself judge, that he has been right almost universally. I have the strongest faith in his rational accounts; and as to the irrational, he only reports them as fables. In short, I have scarcely a doubt, I would say not any whatever, if the wonderful ingenuity of Major Rennel would permit me, that the Niger is the Nile.

"Believe me, it will ere long be found to be the case, notwithstanding the very powerful and ingenious arguments of Major Rennel as to the level of the river, and the contemporaneous rise of their waters. Those difficulties, I believe, are capable of solution; and if I had time and leisure I would communicate my reasons here for thinking so. But as I expect every moment to be anticipated by the actual discoveries of some of the later explorers of Africa since Mr. Park's expedition, who, as I have been told, are every day approaching to that opinion, I venture to prophesy now, that they will find it to be the case. It is impossible for any man to have greater respect for Major Rennel than I have, but I cannot conceive a greater difficulty, than to suppose, that the mighty river Niger terminates in morasses, lakes, or sands."

NIMBURG, a town of Bohemia, near the Elbe, 26 miles E.N.E. of Prague, and 70 S.E. of Dresden.

NING-KOUÉ FOU, a city of China, in the province of Kiang-nan, noted for its manufactures of paper, made of a species of reed. Its district contains six cities of the third class.

NINOVE, a town of Flanders, on the river Dender, with an abbey, 13 miles W. of Brussels. Long. 4. 5. E. Lat. 50. 52. N.

NIORT, a town of France, in the department of the Deux Sevres. Here are manufactured druggets, ferges, and other coarse woollen goods; and its dry sweetmeats are much esteemed. It is 28 miles N.E. of Rochelle. Long. 0. 33. W. Lat. 46. 20. N.

NISBEN, or **NESBEN**, a very ancient and celebrated town of Diarbek, now greatly decayed. It is seated in a vast plain, 70 miles S.W. of Diarbekar. Long. 38. 26. E. Lat. 36. 10. N.

NISIDA, a small island on the coast of Naples, very fertile, and would be more so but for the great number of rabbits. It has a harbour, called Porto Pavone, five miles W.S.W. of Naples.

NISSA, or **NESSAVA**, a town of Turkey in Europe, in Servia. It was burnt by the Imperialists in 1689, and is seated on the Morava, 20 miles E. of Precep, and 120 S.E. of Belgrade. Long. 22. 32. E. Lat. 43. 32. N.

NITH, a river in Dumfriesshire, which rises in the mountains to the N.W. and gives the name of Nithdale to

that part of the county through which it flows. A little above Dumfries, it joins the Cairne, and their united streams form a fine estuary in Solway Frith.

NITRIA, a famous desert of Egypt, 37 miles in length, on the coast of the Mediterranean Sea. It had formerly a great number of monasteries, which are now reduced to four; and it takes its name from a salt lake, out of which is procured the natrum of the ancients.

NIXABOUR, a town of Persia, in Chorasan, 80 miles S.E. of Meshed. Long. 61. 32. E. Lat. 35. 40. N.

NIZAMPATAM, a town of the peninsula of Hindoostan, situate at the mouth of the Kistnah, 34 miles S.W. of Masulipatam. Long. 80. 50. E. Lat. 15. 55. N.

NIZNEI NOVOGOROD, a town of Russia, in a government of the same name, with a citadel, and an archiepiscopal see. It is seated on a mountain, at the confluence of the Volga and Occa, 280 miles E. by N. of Moscow. Long. 46. 30. E. Lat. 56. 34. N.

NIZZA-DELLA-PAGLIA, a town of Italy, in Monteferrat, seated on the Belbo, 15 miles S.W. of Alexandria. Long. 8. 36. E. Lat. 45. 15. N.

NOAILLES, a town of France, in the department of Vienne, six miles S.E. of Poitiers.

NOANAGUR, a town of Hindoostan Proper, capital of a district, on the S. coast of the gulf of Cutch, inhabited by a piratical tribe, called Sangarians. It is 300 miles N.W. of Bombay.

NOCERA, an ancient town of Italy, in the duchy of Spoleto, with a bishop's see; seated at the foot of the Apennines, 18 miles N.E. of Spoleto. Long. 12. 49. E. Lat. 42. 1. N.

NOGARA, a town of France, in the department of Gers, 21 miles S.W. of Condom, and 27 W.N.W. of Auch. Long. 0. 9. W. Lat. 43. 46. N.

NOGARCOT, a town of Hindoostan Proper, in the province of Napoul, with a celebrated pagoda, 50 miles N.E. of Catmandu. Long. 85. 12. E. Lat. 28. 40. N.

NOGENT-SUR-SEINE, a town of France, in the department of Aube, seated on the Seine, 25 miles N.W. of Troyes. Long. 3. 40. E. Lat. 48. 30. N.

NOGENT-LE-ROU, a town of France, in the department of Eure and Loire, seated on the Huïsse, 35 miles N.E. of Mans. Long. 9. 50. E. Lat. 48. 26. N.

NOIR, CAPE, a promontory of S. America, at the S. extremity of Terra del Fuego. Long. 73. 3. W. Lat. 54. 32. S.

NOIRMOUTIER, an island of France, near the mouth of the river Loire. It is seventeen miles long and eight broad, full of bogs, and yet there are good pastures. The English made an unsuccessful attack on it in 1795. The principal town is of the same name. Long. 2. 10. W. Lat. 47. 0. N.

NOLA, an ancient town of Naples, in Terra di Lavoro, with a bishop's see, 10 miles N.E. of Naples. Long. 14. 28. E. Lat. 40. 56. N.

NOLI, a town of Italy, in the territory of Genoa, with a bishop's see, and a good harbour, five miles N.E. of Final, and 30 S.W. of Genoa. Long. 8. 41. E. Lat. 44. 18. N.

NOMBRE-DE-DIOS, a town of Terra Firma, in the province of Darien, a little E. of Porto-Bello, to which its once flourishing trade is now transferred. Long. 78. 35. W. Lat. 9. 40. N.

NOMENY, a town of France, in the department of Meurthe, seated on the Selle, 15 miles N. of Nanci. Long. 6. 15. E. Lat. 48. 56. N.

NONTRON, a town of France, in the department of

Dordogne, 21 miles N. of Perigueux, and 30 S.S.W. of Limoges. Long. 0. 33. E. Lat. 45. 32. N.

NOOPOUR, a town of Hindoostan Proper, in the province of Guzerat, 55 miles E. of Surat, and 142 W. of Burhanpour. Long. 73. 50. E. Lat. 21. 11. N.

NOORDEN, a considerable town of Westphalia, 12 miles N. of Embden. Long. 7. 5. E. Lat. 53. 38. N.

NORBERG, a town of Sweden, in Westmanland, near which are the best iron mines in the province. It is 34 miles N. of Stroemsholm. Long. 16. 12. E. Lat. 60. 2. N.

NORCIA, a town of Italy, in the duchy of Spoleto. It is a kind of republic, and seated among the mountains, 20 miles S.E. of Spoleto. Long. 13. 4. E. Lat. 41. 36. N.

NORD. See NORTH, *Suppl.*

NORDBURG, a town of Denmark, at the N. extremity of the isle of Alsen, with a castle, nine miles N.N.W. of Sunderburg.

NORDHAUSEN, an imperial town of Lower Saxony, under the protection of the Elector of Saxony. The inhabitants are Protestants. It is 25 miles S.W. of Halberstadt. Long. 11. 3. E. Lat. 51. 45. N.

NORDKÖPING, a town of Sweden, in E. Gothland. It covers a large space of ground, being 10 miles in circumference; but the houses are scattered, and the inhabitants do not exceed 10,000. The river Motala flows through the town, forms a series of cataracts, and is divided into four principal streams, which encircle several rocky islands, covered with buildings: at the extremity of the town it is navigable for small vessels. Here are manufactures of cloth and fire-arms; some sugar-houses, and a brass foundry. Corn is exported hence in great quantities; and a salmon-fishery gives employment and riches to many of the inhabitants. It is 50 miles S.W. of Stockholm. Long. 15. 50. E. Lat. 58. 28. N.

NORDLAND, a province of Northern Norway, included in the government of Drontheim.

NORDLINGEN, a commercial and free imperial town of Suabia, seated on the Aigre, 38 miles N.W. of Augsburg. Long. 11. 40. E. Lat. 48. 52. N.

NORDSTRAND, an island of Denmark, in the duchy of Sleswig, which was entirely overflowed in 1634. Long. 9. 15. E. Lat. 54. 40. N.

NORHOLM, a town of Norway, in the diocese of Christianland, 16 miles N.N.E. of Christianland.

NORLAND, one of the five general divisions of Sweden, comprehending the provinces of Gestrickeland, Helsingland, Madepadia, Hiemland, Herjedalia, Ongermania, and West Bothnia.

NORRISTOWN, a town of the United States, capital of the county of Montgomery, in Pennsylvania. It is seated on the Schuylkill, 12 miles N.W. of Philadelphia. Long. 75. 24. W. Lat. 40. 7. N.

NORTELGA, or NOR TELGE, a sea-port of Sweden, in the province of Upland. This town suffered much from the ravages committed here by the Russians in 1719: near it is a forge for making fire-arms. It is 30 miles N.E. of Stockholm. Long. 10. 32. E. Lat. 50. 44. N.

NORTH, or NORM, a department of France, including the late French provinces of Hainault, Flanders, and the Cambrésis.

NORTH COAST, a department of France. See COTES DU NORD.

NORTHALLERTON, a borough in the N. riding of Yorkshire, with a market on Wednesday. It sends two members to parliament, and is seated on a small brook, Vol. X.

which, a mile below, runs into the river Wilt. It is a well-built trading place, 30 miles N.N.W. of York, and 223 N. by W. of London. Long. 1. 20. W. Lat. 54. 23. N.

NORTHAMPTON, a county of Pennsylvania, 111 miles long and 35 broad. In 1790, it contained 24,250 inhabitants. Easton is the capital.

NORTHCURRY, a town in Somersetshire, with a market on Tuesday and Saturday, seated on the Tone, 20 miles S.W. of Wells, and 134 W. by S. of London. Long. 3. 0. W. Lat. 51. 0. N.

NORTHFLEET, a village in Kent, seated on the Thames, one mile W. of Gravesend. The church is very large, and contains fragments of monuments as ancient as the fourteenth century. Vast quantities of lime are made, and great numbers of extraneous fossils have been dug up here.

NORTHLEACH, a corporate town in Gloucestershire, with a market on Wednesday, several almshouses, and a free grammar-school. It is seated on the Lech, 25 miles E. of Gloucester, and 80 W. by N. of London. Long. 1. 43. W. Lat. 51. 46. N.

NORTHORP, a town of N. Wales, in Flintshire, near which are large potteries of coarse earthen ware, fire-bricks, &c. It is 11 miles N.W. of Chester.

NORTHUMBERLAND, a county of Pennsylvania, 130 miles long and 80 broad. In 1790, it contained 17,161 inhabitants. Sunbury is the capital.

NORTHUMBERLAND, a town of Pennsylvania, seated in the angle formed by the junction of the W. and E. branches of the Susquehanna, just above Sunbury, and 138 miles N.W. of Philadelphia.

NORTHUMBERLAND ISLANDS, a chain of islands in the S. Pacific Ocean, near the N.E. coast of New Holland. Long. 150. 20. E. Lat. 22. 0. S.

NORTON, or CHIPPING NORTON, a corporate town in Oxfordshire, with a market on Wednesday. Roman coins have been frequently found here, and it formerly sent members to parliament. It is 12 miles S.W. of Banbury, and 74 N.W. of London. Long. 1. 17. W. Lat. 51. 55. N.

NORWICH, a town of the United States, in Connecticut. The executive courts of law are held at this place and New London alternately. Here are made paper of all kinds, stockings, buttons, stone and earthen ware, and all kinds of forge work. It is seated at the head of the Thames, 12 miles N. of New London.

Norwich, a town of the United States, in Vermont, 100 miles N.N.W. of Boston, and 182 N. of New York. Long. 72. 22. W. Lat. 43. 40. N.

NOSSEN, a town of Upper Saxony, situate on the Muldau, 12 miles S.W. of Meissen, and 18 W. of Dresden. Long. 13. 0. E. Lat. 51. 2. N.

NOSTRUM, denotes any medicine the composition of which is supposed to be secret, and confined to the knowledge of one, or a few individuals.

The natural desire of health and longevity, has in all ages afforded a pretext to designing men, to invent medicines, with the absurd pretence of curing every disorder. It is true, that the confidence in *panaceas*, or universal remedies, is gradually declining, among the higher as well as the lower classes of society; but innumerable elixirs, drops, pills, &c. for particular complaints, are daily imposed upon the public by pretenders, whose chemical and medical knowledge is so confined, that they are generally obliged to borrow the recipes for such preparations from printed books. To aggravate the evil, their pernicious compounds

for the most part contain opium, hemlock, or other narcotic drugs, which are rendered still more deleterious by the addition of stimulating gums and aromatic substances.

The duration and extent of such bale practices, it is difficult to determine; though we conceive, that so long as the thoughtless and dissipated indulge in sensual pleasure of every description, the audacity of pretenders to the healing art will continue to increase. Experience has too often evinced, how little efficacy *medicines* possess in a variety of cases, without a strict adherence to a proper regimen; and much less may be expected from any nostrum, however strongly recommended by the dignitaries of church and state. Nay, the excellence and dignity of medical science can neither be supported, nor depreciated, by the illusion of great names.—If a due regard were more generally had to the laws of temperance and sobriety, if the cool dictates of reason were more frequently consulted, there would be fewer diseases, and those who enrich themselves at the expence of a credulous public, would speedily fall into contempt.

NOTCHENGONG, a town of the Deccan of Hindoostan, in the province of Berar, 47 miles S.S.W. of Nagpou, and 75 S.S.W. of Ellichpou. Long. 79. 17. E. Lat. 20. 32. N.

NOTE (*Encycl.*). See **BILL**, *Supp.*

By the act 30 Geo. 3. cap. 107. from and after December 1, 1799, there shall be paid on bills of exchange and promissory notes for small sums, the several duties herein-after mentioned; (that is to say),

For every bill of exchange, promissory note, or other note, draft, or order, whether payable on demand or otherwise, where the sum expressed therein shall be for one pound, and one pound and one shilling each, a stamp duty of two pence.

And where the sum expressed therein shall be five shillings, as herein-after mentioned, one halfpenny.

For every promissory note, or other note for the payment of money to the bearer on demand, payable only at the place where issued, and which may be re-issuable after payment at that place, where the sum expressed therein shall be for one pound, or one pound one shilling, there shall be charged a stamp duty of two pence.

And where the sum expressed therein shall be five shillings, one halfpenny.

For every promissory note, or other note for the payment of money to the bearer on demand, payable at two or more different places, or at any place different from that where it shall have been originally issued, and which may be re-issued after any payment at the same or any other place, where the sum expressed therein shall be for one pound, or one pound and one shilling, there shall be charged a stamp duty of four pence.

And where the sum expressed therein, or made payable thereby, shall be five shillings, one penny. [The five-shilling notes are only issuable in Scotland.]

The duty is payable by the giver of the note.

Draws payable on demand upon a banker residing within ten miles of the drawer, are not liable to duty. And the Bank of England notes are exempted from the duties charged by this act on a composition of 4000l. and from all additional duties imposed since the act 31 Geo. 3. c. 25. on a composition of 8000l. payable half-yearly.

No bill of exchange shall be re-issued. But notes payable on demand, on which a duty of two pence or one halfpenny is respectively imposed, paid by persons giving them at the places where first issued, may be re-issued; but if paid by any other persons, or at any other place, in pur-

suance of appointment expressed therein, shall be cancelled; and if re-issued, or if not cancelled, the party to forfeit 20s. And such notes, not cancelled, but again issued, shall pay the same duty as when first issued.

Notes stamped with the duty of 5s. and 1d. respectively, may be re-issued, though paid by other persons than by whom, and at other places than where, first issued. And notes to be re-issuable shall be the property of the persons holding them.

The acts 15 Geo. 3. c. 51. and 15 Geo. 3. c. 30. so far as they relate to notes payable on demand for one guinea and one pound, to be suspended until and upon November 30th, 1802.

From July 5, 1799, the bank of Scotland and the royal bank of Scotland, the British Linen Company, the Carron Company, and all other banks and banking companies in Scotland, may issue notes payable to bearer on demand for 5s. sterling, as they have heretofore issued notes for 20s. and upwards. And such issue may continue till December 1, 1802; and to the end of the next session.

And from December 1, 1799, no bill of exchange or promissory note shall be issued in Scotland under 5l. sterling, except for five shillings or one guinea, on penalty of 10l. But the banks or companies in Scotland may, on licence, issue or re-issue notes for 5s. sterling, and also 1l. and one guinea, drawn under the regulations mentioned in the act, untamped, upon giving security for payment of the duties.

NOTEBURGH, a town of Russia, in the government of Petchaigh, seated on an island in the lake Ladoga, at the place where the Neva proceeds from this lake. It has a good ciadel, and was capital of Ingria, before Petersburg was built. It is twenty-five miles east of Petersburg. Long. 31. 9. E. Lat. 59. 56. N.

NOTTELEN, a town of Westphalia, in the bishopric of Munster, seven miles west of M. nitr.

NOTTINGHAM, a town of the United States, in Maryland, five miles N.E. of Baltimore.

NOVARA, an ancient and strong town of Italy, in the duchy of Milan, capital of the Novarese, with a bishop's see. It is seated on an eminence, twelve miles N.E. of Verceil, and 25 W. by S. of Milan. Long. 8. 35. E. Lat. 45. 25. N.

NOVA SCOTIA, or **ARCADIA**, a country of British North America, bounded on the W. by the United States, on the N. by the river St. Lawrence, on the E. by the gulf of that name, and on the S. by the Atlantic and bay of Fundy; being so indented by the latter, that its eastern part forms a peninsula. It extends from Cape Sable, its most southern point, in lat. 43. 23. to 49. 30. N. and from 60. 15. to 67. 0. W. long. In 1784, part of this country was formed into a new province. See **NEW BRUNSWICK**. The atmosphere, for a great part of the year, is clouded with a thick fog which renders it unhealthy; and, for four or five months, it is intensely cold. A great part of the country lies in forest; and the soil (except on the banks of the rivers), is thin and barren. Halifax is the capital.

NOVOMIROGOD, a town of Russia, in the government of Cathariensflaf, 136 miles W.N.W. of Cathariensflaf. Long. 31. 44. E. Lat. 48. 40. N.

NOUTRA, a town of Poland, in the palatinate of Cracow, on the frontiers of Hungary, near which are mines of gold and silver. It is 30 miles S. of Cracow. Long. 19. 46. E. Lat. 49. 40. N.

NOYA, an ancient town of Spain, in Galicia, seated on the Tamara, 15 miles W. of Compostella.

NOYERS, a town of France in the department of Yonne.

feated on the Serin, in a valley furrounded by mountains, 17 miles S.E. of Auxerre. Long. 4. 2. E. Lat. 47. 30. N.

NOZEROY, a town of France, in the department of Jura, with a castle, seated on a mountain, 20 miles S.E. of Salines, and 30 S. of Belançon. Long. 6. 13. E. Lat. 46. 47. N.

NUITZ, a town of France, in the department of Côte d'Or, famous for its excellent wines. It is seated at the foot of a mountain, 15 miles S.W. of Dijon, and 150 S.E. of Paris. Long. 5. 0. E. Lat. 47. 10. N.

NUN, or NED DE NUN, a province of Africa, to the S. of Sus, from which it is separated by a sandy desert. The Emperor of Morocco arrogates to himself the sovereignty of this country, but his real authority is extremely feeble. This vast, but desert, province is inhabited by different tribes of Arabs, whose camps are scattered over such interior parts of the country as are capable of cultivation.

NUNDYDROOG, a town and fortrefs of the peninsula of Hindoofan, capital of a considerable district, in the Myfore country. It is built on the summit of a mountain, 1700 feet in height, the greater part inaccessible; but was besieged and taken by the English, under Lord Cornwallis, in 1792. It is 70 miles N. of Seringapatam.

NUNEATON, a town in Warwickshire, with a market on Saturday. It has a manufacture of cambiet cloth; was formerly noted for its nunnery, and is seated on the river Anker, eight miles N. by E. of Coventry, and 99 N.N.W. of London. Long. 1. 25. W. Lat. 52. 36. N.

NUNEHAM, a village, five miles E. by S. of Oxford; remarkable for its spinning feast, an annual festival, instituted by Lord and Lady Harcourt, for the encouragement of virtue and industry.

NUNNY, a village in Somersetshire, two miles S.W. of Frome. It is remarkable for the ruins of a strong castle, the shell of which still remains nearly perfect, and is a fine piece of antiquity. It was taken by the parliament forces in 1645, and probably soon afterward dismantled.

NURTINGEN, a town of Suabia, in the duchy of Wurtemberg. The hospital here, founded in 1481, is said to be the richest foundation in the whole duchy. It is situate on the Neckar, 14 miles S.E. of Stuttgart, and 60 E. of Stralburg. Long. 9. 12. E. Lat. 48. 33. N.

NUSSERPOUR, a town of Hindoofan Proper, capital of a district of the same name. It is situate on the Sinde, 80 miles N.E. of Tatta. Long. 68. 20. E. Lat. 25. 20. N.

NUYS, a town of Germany, in the electorate of Cologne. It was taken by the French in 1794; and is seated on the Erift, five miles S.W. of Dusseldorf, and 20 N.W. of Cologne. Long. 6. 52. E. Lat. 51. 11. N.

NYBORG, a town of Denmark, in the isle of Funen, with the remains of an old palace, in which Christian II. was born. The ships trading to the Baltic that pass through the Great Belt are obliged to pay toll here, for which purpose a man-of-war is always stationed in the Belt. Nyborg is

seated on a commodious bay, 10 miles E. of Odenfee. Long. 10. 40. E. Lat. 55. 30. N.

NYMPHÆA (*Enceyl.*). A remarkable fact, in the department of Natural History, but particularly applicable as a counterpart to the modern rage for *cosmetics*, we shall communicate to our readers, in the author's words, from the first volume of his travels, in German, p. 232 and following:

"On the 20th of August," says M. Pallas, "the commandant of the port of Astrakhan, granted me a barge for an excursion to the mouth of the Volga, a distance from sixty to eighty versts. As I had learned from the late Dr. Lersch, that the *Nymphaea nelumbo* grew there in abundance, I sent a party of my escort, who procured a great number of the flowers and fruits of this plant, in different gradations of growth; some of which had nearly attained perfect maturity. These fruits are by the Russians called *sea-nuts*, or *morfyge orechi*; by the inhabitants of Tybet, *badma*; by the Persians, *dariopasta*; and by the Indians, *pabin* or *lilfar*: they are searched for and eaten with avidity by the last-mentioned nation, who regard them as sacred. According to their mythology and that of Tibet, the perfect divinities are regenerated in the richly scented flowers of this plant, which serve them for a throne. These flowers, indeed, have an agreeable flavour; and the distilled water which the apothecary of this city, Afellor Zettler, had the politeness to prepare for me, contained a pleasant and permanent taste of fine ambra, and when used as a lotion, imparts such a softness and delicacy to the skin of the face and hands, that it deserves to be introduced as an *innocent cosmetic* into all the apothecaries' shops; especially as the flowers may be collected throughout the summer, in the inlets of the Volga and the Bolda. I found the leaves of this plant completely free from zoophytes, and other aquatic insects. The seminal vessels are more conspicuous, and the germ more magnified, in the seed of the *Nymphaea nelumbo*, than in any other plant. When the nuts are inclosed in a lump of clay, and immersed under water, they readily germinate, particularly if a slight incision be previously made in the shell."

NYONS, a town of France, in the department of Drome, seated at the foot of a chain of mountains, on the river Aigues, with a lofty bridge of one arch, the work of the Romans. Here is a mineral spring, named Pontius, and some manufactures of soap and woollen stuffs. It is eight miles N.W. of Buis. Long. 5. 15. E. Lat. 44. 26. N.

NYSTADT, a town of Sweden, in Finland, with a commodious harbour, and a considerable trade in all kinds of wooden vessels. In 1721, a peace was concluded here, between the Emperor of Russia and the King of Sweden. It is seated on a bay of the gulf of Bothnia, 55 miles N.W. of Abo. Long. 21. 1. E. Lat. 61. 10. N.

NYSTED, or NYESTED, a town of Denmark, in the island of Laland, which carries on a considerable trade to the duchy of Mecklenberg and other provinces of Germany. Long. 11. 40. E. Lat. 54. 43. N.

O.

OKHAM. See **OKEHAM.**

OBAN, a village in Argyleshire, seated on the sea-coast, to the S. of Loch Etive. Here is an excellent fishing station, and a custom-house.

OBdach, a town of Germany, in the duchy of Stiria, seated at the confluence of the Achza and Traun, three miles below the lake Chienzee, and 35 W. of Gratz. Long. 14. 43. E. Lat. 47. 3. N.

OBERRICH, a town and castle of France, in the department of Lower Rhine, three miles from Straßburg, to whose late archbishop it belonged. Long. 7. 50. E. Lat. 48. 35. N.

OBERNBERG, a town of Bavaria, with a castle, seated on the Inn, 15 miles S. of Passau, to whose bishop it belongs. Long. 13. 36. E. Lat. 48. 15. N.

OBERNDORF, a town of Suabia, in the Black Forest, subject to the house of Austria. It is divided into the Upper and Lower Town, and seated on the Neckar, 14 miles N. of Rothweil. Long. 8. 45. E. Lat. 48. 22. N.

OBERSSTEIN, a town of Germany, in the palatinate of the Rhine, capital of a county of the same name. It is seated on the Nahe, 30 miles E. by S. of Treves. Long. 7. 26. E. Lat. 49. 42. N.

OBERSWESEL, a town of Germany, in the electorate of Treves, formerly imperial. It was taken by the French in 1794, and is seated on the Rhine, 40 miles E.N.E. of Treves. Long. 7. 48. E. Lat. 50. 1. N.

OBIDOS, a town of Portugal, in Estremadura, with a strong castle on a rock, 13 miles E. of Peniche, and 38 N. of Lisbon. Long. 9. 18. E. Lat. 39. 17. N.

OBOLLAH, a strong town of Persia, in Irac-Agemi, seated on a branch of the Tigris, near Busfarah. Long. 45. 15. E. Lat. 30. 15. N.

OBSKAYA, a bay of the Frozen Ocean, in Asia. Long. 72. 25. E. Lat. 70. 0. N.

OBVINSK, a town of Russia, in the government of Perm, situate on the Kama, 60 miles N. of Perm. Long. 56. 0. E. Lat. 58. 44. N.

OCANO, a town of Spain, in New Castile, seated on a plain, 18 miles E. of Toledo. Long. 2. 50. W. Lat. 39. 52. N.

OCCA, a river of Russia, which falls into the Volga, near Nishnei Novgorod.

OCHSENEURT, a town of Franconia, in the bishopric of Wurtzburg, seated on the Main, 10 miles S.E. of Wurtzburg. Long. 10. 10. E. Lat. 49. 35. N.

OCHSENHAUSEN, a town of Suabia, near which is a princely abbey, founded in 1100. It is 14 miles S. of Ulm, and 40 W.S.W. of Augsburg. Long. 10. 11. E. Lat. 48. 10. N.

OCKER, a river of Lower Saxony, which rises in the S. part of the duchy of Brunswick, runs by Goslar, Wolfenbuttle, and Brunswick, and falls into the Aller, E. of Zell.

ODER, a river of Germany, which has its source near a town of the same name, in Silesia. It runs N. by Ratibor, Oppelen, Breslaw, Glogaw, and Crossen, in Silesia; Franksfort, Lebus, Custrin, and Frinwalt, in Brandenburg; and

Gartz, Stetin, Cammin, Wellin, Usedom, and Wolgast, in Pomerania. Below Stetin it forms a large lake or bay, called Frischen Haif, and afterward falls into the Baltic Sea by three mouths; between which lie the islands of Usedom and Wollin.

ODERBERG, a town of Upper Saxony, in the middle marche of Brandenburg, situate on the Oder, 25 miles N.W. of Custrin, and 35 N.E. of Berlin. Long. 14. 15. E. Lat. 52. 58. N.

ODERBURG, a town of Silesia, near the confluence of the Oder and Elfa, 10 miles S. of Ratibor. Long. 18. 10. E. Lat. 50. 2. N.

ODERNHEIM, a town of Germany, in the palatinate of the Rhine, seated on the Seltz, 20 miles S. of Mentz. Long. 8. 20. E. Lat. 49. 31. N.

ODIHAM, a corporate town in Hampshire, with a market on Saturday, 24 miles N.E. of Winchester, and 42 W. by S. of London. Long. 0. 56. W. Lat. 51. 18. N.

ODONTALGIA (*Encycl.*). The following observations on this disease, with the explanation of an apparatus that has been successfully employed in relieving it (see Pl. 38), are addressed to the editors of the Medical and Physical Journal.

"The tooth-ach (says the author, Dr. Brown), the most frequent and painful disease incident to the human body, is often occasioned by being exposed to a partial current of cold air, or to sudden heat and cold; by residing in a marshy or damp situation; by morbid matter within, by acrid matter attached to the external surface of the teeth, and frequently by the muscles and membranes of the jaw being affected by the same diathesis which produces irritation, gout, and rheumatism, in other parts. Women are more liable than men to rheumatism and to tooth-ach; they are most subject to both in pregnancy, and during obstructions of the menstrual discharge.

"It has also been observed, that mercurial preparations thrown into the system, so as to affect the salivary glands; nervous affections; sipping hot liquors; frequent picking of the teeth with hard instruments; a scorbutic and some other acrimonious state of the fluids; probably often occasion a caries of the teeth; and I have known several families, who seemed particularly liable to their premature loss and decay."

The common people of Aberdeen, it seems, have an idle notion that the cause of the tooth-ach, is a worm, or worms, engendered in the tooth. Just so, in former times, it was generally supposed, that worms contained in the cavity of the affected tooth, by irritating its nerve, occasioned the acute pain that is sometimes productive of watchfulness, fever, loss of appetite, prostration of strength, convulsions in children, and delirium, in persons who have laboured under this exquisitely painful disease.

Hence in *Regimen Sanitatis Salerni*, p. 154:

"Sic dentes ferre porrorem collige grana,

"Ne carcas jure cum infirmiori simul are,

"Siqu; per embotum fumum cape dente remotum."

"To cure the tooth-ach, take the seed of leeks,
When that fell pain annoys and swells the cheeks;
But *seed* of Henbane must be mixt among.
And burn them both, to make the smoke be strong;
Hold thy mouth o'er, and to receive the fume,
The pain it flakes, and worms in teeth confume,
If through a tunnill, you the smoke allowe."

"Sir Hans Sloane gives an instance of the virtues of *scamen hyoscyami*, in alleviating the tooth-ach. A person of quality, tormented with this racking pain, had an empiric recommended to him, who conveyed the smoke of burning seeds of henbane, by means of a funnel, into the hollow tooth, and thereby removed the pain; but, at the same time, there dropped some maggots from the tooth (as the operator pretended) into a pail of water placed underneath for that purpose. Sir Hans procured one of these maggots, which he sent wrapped up to M. Lewenhoeck, at Delft, in Holland, where it arrived safe and alive. Upon examination, M. Lewenhoeck found it to be entirely like those bred in ordinary rotten cheese; therefore he procured some of these latter, and carefully fed them both, and that one Sir Hans Sloane had sent, on the same cheese; and they were all, according to the usual methods of nature, turned into small scarabei, both being returned such to Sir Hans, from Holland. Upon the whole, though the henbane seeds cured the tooth-ach, it is highly probable; that the maggots had been conveyed thither, and let drop into the water by some slight of hand."

"We learn from the writings of Dioscorides and others, that *hyoscyam*, which is a powerful remedy of the narcotic tribe, has been employed as an anodyne by the most illustrious physicians, from the earliest periods of medical history. It appears to have been the favourite sedative of Celsus; he gave it internally to mitigate pain and procure sleep; he used it externally as a collyrium, in cases of ophthalmia; and he employed it topically to allay the pains of the teeth and gums. Accordingly, under the head of "*Dentium doloris varia remedia*," he says, with his usual eloquence and precision, "The tooth-ach is a disorder that may be justly ranked among the greatest torments;" and he tells us, "if the pain be severe, a clyster is useful, with hot cataplasms applied to the cheek, as also some medicinal hot liquor held in the mouth, and frequently changed. For which purpose is used, henbane root, either in vinegar and water, or diluted wine, with the addition of a little salt to either of them, and poppy heads not over dry, and mandrake roots prepared in the same manner, but in these three, care must be taken not to swallow what is in the mouth."

"Mynsicht who has long been respectfully named in our dispensatories, gives, in his *Medico-Chymicum*, the following formula, which are all designed for the use of persons afflicted with painful affections of the teeth and gums, viz. *Tinctura Odontalgica*, *Pilule Odontalgice*, inserted in Dr. Lewis's Dispensatory, p. 330, 5th edit. *Trochisci* de Alumine with *radix Pyrethrum*, *Spiritus Odontalgicus*, in all which he directs a certain portion of the seeds of henbane. Salmon, whose labours seem not to have been duly appreciated by his countrymen, and Etmuller, prescribe them for the same purpose. Boerhaave had his senses disordered by only making a plaster from this plant. Yet, as the various medicines I had myself hitherto employed were of little avail, and as I had some teeth extracted, and obtained in one instance only twelve hours' respite from my sufferings, the pain flying either to another tooth, or attacking the *Anterior Maxillare*, I tried the effect of fumigating with two parts of henbane seed, added to carraway and cummin seeds, of each one part."

"After repeating the operation three times, I remained

near a fortnight exempt from pain: I then had occasion to have recourse to the fumigation again, and was again relieved; and in the mean time a permanent cure was obtained by the use of internal medicines, which had never occurred either to myself or any of the many skilful and experienced practitioners who had been consulted, on what appeared to some of them, as a case equally inveterate and extraordinary."

"In case of a carious tooth, extraction is often the only radical remedy; but as in some cases extraction is improper, and as in many instances it is obstinately avoided, Dr. Brown had a vessel made of copper, of which see an engraving in Pl. 38, fig. 1. The apparatus takes in pieces at the line *a, b*, and also at *c*. "The bottom is fitted into a wooden stand turned with a groove, to prevent its slipping out of the hand of the operator. In the centre of the bottom of this vessel (as the tube at the bottom of a lantern for the reception of a candle), is a piece of metal shaped to receive the bowl of a *large* tobacco-pipe, with an opening large enough to receive the stalk of the pipe opposite to the hole at *b*. The apparatus being taken asunder at *a, b*, the cup or bowl of an iron or common clay tobacco-pipe is made red hot, filled quickly with the seeds, placed in the aperture formed for its reception, the conical or upper part being restored to its place, as in the engraving; the tube *c*, is turned upwards or downwards, as the pain may happen to be seated in the upper or lower jaw; and being placed in contact with it, the operator, applying his mouth to the tube of the pipe, forces by his breath, into the mouth of his patient, the smoke of the burning seeds, which, by their heating, sedative, and salagogue effect (sometimes it being necessary to repeat the process), generally afford the patient considerable relief."

The small tube marked *d*, is intended to be used when pain is seated in the front teeth.

ODYSSEY (*Encycl.*). See some observations on the Geography of Homer's *Odyssey*, under GEOGRAPHY, *Supp.*

OELFELDT, a town, of Lower Saxony, in the duchy of Magdeburg, seated on the Aller, 25 miles E. of Brunswick. Long. 11. 20. E. Lat. 52. 27. N.

OKLS, or Olse, a strong and considerable town of Silesia, with a castle, where the duke generally resides. It is 17 miles N.E. of Breslaw. Long. 17. 26. E. Lat. 51. 10. N.

OELSNITZ, a town of Upper Saxony, in the territory of Voigtland, seated on the Elster, 20 miles S.S.W. of Zwickau, and 72 S.W. of Dresden. Long. 12. 10. E. Lat. 50. 10. N.

OEPEN, or EUPEN, a town of the Netherlands, in the province of Limburg. It has considerable manufactures of cloth, and is situate on the Weze, 12 miles S. of Aix la Chapelle.

OFFENBACH, a town of Franconia, taken by the French in 1796. It is seated on the Main, five miles E. of Frankfurt. Long. 8. 45. E. Lat. 49. 52. N.

OFFENBURGH, an imperial town of Suabia, under the protection of the house of Austria, seated on the Kintzig, 10 miles S.E. of Straßburg, and 20 S.S.W. of Baden. Long. 8. 1. E. Lat. 48. 31. N.

OFFIDA, a town of Italy, in the marquise of Ancona, 26 miles S. of Loreto. Long. 13. 46. E. Lat. 42. 53. N.

OGGERSHEIM, a town of Germany, in the palatinate of the Rhine, with a villa belonging to the elector. It is situate on the Rhine, four miles W.N.W. of Manheim.

OHLAU, a town of Silesia, in the principality of Brieg, with a large castle. Great quantities of tobacco are produced in the neighbourhood. It is situate on the Ohla, eight miles N.W. of Brieg, and 14 S.E. of Breslaw. Long. 17. 29. E. Lat. 50. 56. N.

OHRRDUF, a town of Upper Saxony, in the principality

of Gotha. It has several times been destroyed by fire, but is now in a very flourishing state, from its numerous manufactures. It is eight miles S.S.E. of Gotha, and 15 S.W. of Erfurt. Long. 10. 57. E. Lat. 50. 55. N.

OHRINGEN, a town of Franconia, 34 miles E.S.E. of Heidelberg, and 33 S. of Wertheim. Long. 9. 50. E. Lat. 49. 13. N.

OIGH, Loch, a lake in Invernesshire, extending four miles from E. to W. It contains some little wooded islands; and its waters flow through Loch Ness into Murray Frith.

OIRA, an ancient town of Naples, in Terra d'Otranto, with a bishop's see, and an old castle. It is seated at the foot of the Appennines, 20 miles N.E. of Tarento. Long. 17. 54. E. Lat. 40. 38. N.

OISANS, a town of France, in the department of Isere, 28 miles S.E. of Grenoble. Long. 6. 25. E. Lat. 45. 0. N.

OISE, a department of France, including part of the late province of the Isle of France. It takes its name from a river, which has its source in the Ardennes, and falls into the Seine, near Pontoise. Beauvais is the capital.

OKOTZK, a province of the government of Irkutsk, in Russia. Its capital, of the same name, is seated at the mouth of the Okota, in a bay of the Eastern Ocean.

OLDENBURG, a town of Westphalia, capital of a county of the same name, noted for its horses. The church of St. Lambert contains the tombs of the last counts of Oldenburg, which are very curious. It is seated on the Hunta, 22 miles W. of Bremen, and 45 S.E. of Embden. Long. 8. 8. E. Lat. 53. 7. N.

OLDENBURG, a town of Lower Saxony, in the duchy of Holstein, seated near the Baltic, 30 miles N. of Lubeck. Long. 10. 47. E. Lat. 54. 22. N.

OLDENDORF, a town of Lower Saxony, in the duchy of Lunenburg, seated on the Wenaw and Elica. Long. 10. 35. E. Lat. 53. 16. N.

OLDENDORF, a town of Westphalia, in the territory of Schawenburg, seated on the Weser, 28 miles S.W. of Hanover. Long. 9. 31. E. Lat. 52. 16. N.

OLDENZEEL, a town of the United Provinces in Overysel, 30 miles E. of Deventer. Long. 6. 57. E. Lat. 52. 20. N.

OLDESLOHE, a town of Lower Saxony, in the duchy of Holstein, seated on the Trave, 17 miles W. of Lubeck, and 25 N.E. of Hamburg. Long. 10. 18. E. Lat. 53. 52. N.

OLERON, an isle of France, five miles from the coasts of Aunis and Saintonge. It is 12 miles long and five broad; is populous and fertile, and defended by a castle. In the reign of Richard I. this island was part of the possessions of the crown of England; and here that monarch compiled the code of maritime laws, called the Laws of Oleron, which are received by all nations in Europe, as the ground and substruction of all their marine constitutions. Long. 1. 20. W. Lat. 46. 3. N.

OLESKO, a town of Poland, in Red Russia, 38 miles E.N.E. of Lemberg. Long. 25. 10. E. Lat. 50. 23. N.

OLIKA, a town of Poland, in Volhinia, with a citadel, 20 miles E. of Lucka. Long. 26. 8. E. Lat. 51. 15. N.

OLINDA, a town of Brazil, seated on the Atlantic, with a very good harbour. It was taken by the Dutch, in 1630, but retaken by the Portuguese. Long. 35. 0. W. Lat. 8. 13. S.

OLITA, a town of Spain, in Navarre, where their kings formerly resided. It is seated in a fertile country, 20 miles N. of Tudela. Long. 1. 46. W. Lat. 42. 22. N.

OLIVA, a sea-port of Western Prussia. Here is a celebrated monastery, which contains several tombs of the dukes of Pomerania, and in it a peace was concluded in 1660, be-

tween the emperor of Germany and the kings of Sweden and Poland. It is situate on a bay of the gulf of Dantzic, three miles W. by N. of Dantzic. Long. 18. 32. E. Lat. 54. 24. N.

OLIVENCA, a strong town of Portugal, in Alentejo, seated near the Guadiana, 13 miles S. of Elvas, and 40 E. of Evora. Long. 7. 4. W. Lat. 38. 30. N.

OLMEDO, a town of Spain, in Old Castile, seated on the Adaja, 30 miles S. of Valladolid. Long. 4. 29. W. Lat. 41. 20. N.

OLNEY, a town in Bucks, with a market on Monday, and a considerable manufacture of bone lace. It is seated on the Ouse, 12 miles S.E. of Northampton, and 56 N.N.W. of London. Long. 0. 54. W. Lat. 52. 5. N.

OLONE, an island, town, castle, and harbour of France, in the department of Vendee, 30 miles N.W. of Rochelle, and 258 S.W. of Paris. Long. 1. 43. W. Lat. 46. 30. N.

OLONETZ, a government of Russia, included formerly in the government of Novogorod. In this district are some considerable iron-works.

OLONETZ, a town of Russia, in a government of the same name, famous for its mines of iron, and its mineral water. It is situate on the river Olonza, which falls into the lake Ladoga. Long. 34. 20. E. Lat. 61. 26. N.

OLPE, a town of Westphalia, 37 miles E. of Cologne, and 50 E.S.E. of Dusseldorf. Long. 7. 38. E. Lat. 50. 59. N.

OLTEN, a town of Switzerland, capital of a bailiwick, in the canton of Soleure; It is dependent on the Bishop of Basle, and is seated a little to the N. of the Aar, between Arberg and Araw. Long. 7. 45. E. Lat. 47. 16. N.

OLTREI, a town of Italy, in Friuli, 24 miles E. of Cadore, and 38 N.W. of Friuli. Long. 12. 25. E. Lat. 48. 26. N.

OMAN, a province of Arabia, bounded on the N. by the Persian Gulf, on the E. by the ocean, and on the S. and W. by extensive deserts. It is possessed by a number of petty sovereigns, the most considerable of whom is the imam of Oman, the capital of the province, which is situate 60 miles N.W. of Mafcat. Long. 57. 20. E. Lat. 24. 0. N.

OMAGH, a town of Ireland, in the county of Tyrone, where the alizies are held. It is 20 miles N.E. of Inniskilling.

OMBO, a town of Egypt, on the E. bank of the Nile, 26 miles N. of Syene. Long. 31. 58. E. Lat. 24. 26. N.

OMBRONE, a river of Italy, which rises in the Siennese, and falls into the Mediterranean.

OMEGNA, a town of Italy, in the Milanese, with a castle, situate on the N.E. side of the lake Orta, 25 miles N.N.W. of Novara. Long. 8. 20. E. Lat. 45. 40. N.

OMMEN, a town of the United Provinces, in Overysel, seated on the Vecht, 17 miles N.E. of Deventer. Long. 6. 10. E. Lat. 52. 32. N.

OMMENBURG, a strong town of Germany, in the electorate of Mentz, seated on the Othern, nine miles S.E. of Marburg, and 45 N.E. of Francfort. Long. 9. 13. E. Lat. 50. 30. N.

OMMIRABIH, a river of Africa, which rises in Mount Atlas, separates the kingdom of Morocco from that of Fez, and entering the Atlantic, forms a capacious bay on the E. side of Azamor.

OMZK, a town and fortress of Russia, in the government of Tobolsk, situate at the confluence of the Om and Irutsh, 260 miles S.E. of Tobolsk. Long. 74. 54. E. Lat. 55. 4. N.

ONADAGO, a lake and river, in the state of New York, The river flows W. from the lake till it meets the Seneca,

when its course turns N. to Oswego, where it enters Lake Ontario. It is navigable for boats from its mouth to the head of the lake, except one fall which causes a portage of 20 yards. See ONEIDA.

ONANO, a town of Italy, in the patrimony of St. Peter, seated between Acquapendente and Petigliano, five miles from each.

ONE, a cape of Barbary, in Africa, near the mouth of the river Mulvia.

ONEG, a town of Russia, in the government of Archangel, situate on the Onega, near the White Sea, 80 miles S.S.W. of Archangel. Long. 37. 24. E. Lat. 63. 35. N.

ONEGLIA, a principality of Italy, surrounded by the territory of Genoa, but subject to the King of Sardinia. It abounds in olive-trees, fruits, and wine.

ONEIDA, or ONONDAGO, a lake of N. America, in the state of New York. It is 20 miles W. of Fort Stanwix, and extends westward about 25 miles, where its outlet, the Onondago River, runs into Lake Ontario, at Oswego. At the E. extremity of the lake, is Wood Creek, on the banks of which live a tribe of Indians, called Oneidas; and the Onondagos, another tribe, occupy the country S. of the lake and river.

ONEZKOE, a lake of Russia, in the government of Olonetz, 120 miles long, and 40 broad. It contains several islands.

ONGAR, or CHIPPING ONGAR, a town in Essex, with a market on Saturday, 12 miles W. of Chelmsford, and 21 E.N.E. of London. Long. 0. 16. E. Lat. 51. 43. N.

ONGOLE, a town of Hindoostan, in the Carnatic, seated on a river, not far from its entrance into the bay of Bengal, 150 miles N. by W. of Madras. Long. 79. 50. E. Lat. 15. 30. N.

ONORE, a sea-port of Canara, on the coast of Malabar, 110 miles N.N.W. of Mangalore. Long. 74. 45. E. Lat. 14. 20. N.

ONOTI, a town of Hungary, 50 miles N.E. of Buda. Long. 19. 22. E. Lat. 48. 10. N.

ONRUST, a small island, at the mouth of the harbour of Batavia, where the Dutch build and careen their ships.

ODEADURGAM, a town of the peninsula of Hindoostan, which gives name to a pafs, in the Myfore country. It is 31 miles S.E. of Bangalore, and 73 S. of Seringapatam.

OODOOANULLAH, a town of Hindoostan Proper, in Bengal, seated on the W. bank of the Ganges, at the foot of a chain of hills. The situation is esteemed unhealthy, on account of the forests in its vicinity. It was the seat of the government of Bengal, under Sultan Sujah, till he fell in the contest for empire with his brother Aurungzeb. The numberless ruins here, and in the neighbourhood, afford a proof of his magnificence; and there still remains a part of the palace, which, in his time, was nearly destroyed by fire. Here is an elegant bridge over the Ganges, built by the same prince, famous for the victory gained over Meer Cossim, in 1764, by Major Adams. Oodoanullah is 82 miles N. by W. of Moorshedabad. Long. 87. 55. E. Lat. 24. 58. N.

OOSTBORCH, a town and fort of Dutch Flanders, in the isle of Cadland, four miles N.E. of Sluys. Long. 3. 29. E. Lat. 51. 22. N.

OOSTENBY, a town of Sweden, in the isle of Oeland, 27 miles S. of Borkholm.

OOTATORE, a town of the peninsula of Hindoostan, in the Carnatic, 22 miles N.W. of Tanjore, and 80 S.W. of Pondicherry. Long. 78. 57. E. Lat. 11. 2. N.

OPHEIM, a town of Norway, in the province of Bergen, 45 miles N.N.E. of Bergen. Long. 5. 15. E. Lat. 60. 41. N.

OPIUM (*Encycl.*). The following observations on opium, and its component principles, with an account of various processes for obtaining it from the white poppy (*papaver somniferum* Linn.), are published by Citizen Dubuc, senior, in the *Annales de Chimie*.

"The natural history of opium," says Citizen Dubuc, "does not appear to be hitherto generally well understood. It is doubted whether there exists any drop-opium (*de l'opium en larmes*); all that seems to be fully established as a fact is, that this singular substance is extracted by the inhabitants of the east from the white somniferous poppy; but the following questions respecting it still remain to be resolved. What are the processes used for obtaining it? What degree of maturity must this plant have arrived at, in order to produce opium such as that of commerce? Finally, Is this vegetable subjected to any particular kind of preparation, before the opium is extracted?"

"None of these questions have been satisfactorily determined by any of the writers who have treated of this subject.

"Several natural historians, and especially Lemery, in his Dictionary of simple Drugs, asserts positively that *there exists no drop-opium*, and that the opium of the Levant is obtained from the leaves and heads of the poppy. The most celebrated chemists who have treated of the subject, such as Fourcroy, Chaptal, Beaumé, Bouillon-Lagrange, &c. are not agreed amongst themselves, whether it is extracted from the leaves, stalks, and capsules, whilst still fresh and green, or whether it is obtained directly from the heads of the poppy when arrived at its last stage of growth and maturity, by making the extract in the ordinary manner.

"This difference of opinion, which exists amongst authors whose knowledge in natural science cannot be called in question, determined me, two years ago, to occupy myself with the investigation of the nature of this substance, by cultivating, with this view, a great number of white poppies; (*Papaver album* & *somniferum* Linn.)

"But before I give an account of the various experiments which I have made in order to obtain opium, it will be proper that we should establish our opinion concerning two facts relative to this substance, such as it is brought to us from the Levant in the ordinary course of commerce.

"It is certain that the oriental opium contains impurities amounting at least to one fourth of its weight. I have frequently examined these heterogeneous substances, and, after different washings, I have easily discovered, that they were nothing else than the stalks, leaves, peduncles, capsules, and seeds of the poppy, in a state of very minute division.

"I shall shew hereafter that the addition of these substances contributes in a very great degree to give the opium that acrid and nauseous smell which it is known to possess.

"It is also known, that this acrid odour is extremely volatile, and that frequently it is not found to exist any longer at the surface of the cakes of opium, whether in consequence of the length of time that they have been kept, or owing to some artificial means that have been employed for that purpose; whilst the lower part of the same cake, which is still viscous, is thoroughly imbued with it, and emits an intolerable smell when cut through the middle: hence it appears, that this volatile principle, or *aroma*, is only an accidental property of the opium.

"The following experiments will elucidate what I have advanced, both with respect to the two last-mentioned facts, and the solution of the questions which I have proposed at the commencement of this memoir.

" *Experiment 1.* If we dry viscous opium, in a temperature not exceeding 40—50 degrees of Reaumur's thermometer, till it becomes pulverulent, it will lose its acrid narcotic smell, and assume that of laudanum, or the purified opium of the shops, from which it differs only in the impurities which it contains. The vapours which arise from it, when collected in a convenient apparatus, become there in part condensed into a liquid, which at first is almost colourless, but in the space of a few days assumes a slight yellowish tinge. This *aroma*, or distilled spirit, is accompanied by an ætiform fluid, which is not altogether miscible with water, and both diffuse an odour resembling that of opium cakes when cut in half, but so extremely strong as very speedily to suffocate animals exposed to an atmosphere of this gas.

" Last year I made the extract of white poppies, gathered at different periods of their growth, without ever having been able to obtain a substance that had the smell of opium, or even that of laudanum. I only perceived that a heap of poppy leaves that had been thrown away, exhaled an aromatic principle very analogous to that which was obtained in the preceding experiment. This led me to make the following experiments:

" *Experiment 2.* On the 3d Prairial (22d May) last, twelve leaves of the white poppy, which had attained to one-third of their full growth, were well pounded in a marble mortar, without adding any liquid. The juice was very abundant, of a brown colour, slightly mucilaginous, and had but little of a bitter taste. The whole was put into a vessel of stone-ware, and exposed to the atmosphere. The temperature of the atmosphere was between 10 and 12 degrees Reaumur.

" On the 4th I observed a slight swelling in the mafs. On the morning of the 5th it puffed up prodigiously, and already exhaled an acrid odour, very similar to that of the *aroma* obtained by the deficcation of the opium. On the 6th the vapour was exhaled in such large quantity, that it was impossible to approach it without becoming affected with a violent head-ach. On the 7th, I exposed the vessel to the sun for a space of twelve hours. The fermentation became still more vehement: I agitated the mafs from time to time, attending to what happened. I soon perceived that the exhalation of the narcotic odour abated, and was partly replaced by another, which had much analogy with azotic gas; the plant and the juice acquired a deeper colour; at length they became oxydated at the expence of the surrounding air, which probably gave birth to the nitric radical, which, combined with the *aroma* of the plant, produced that peculiar odour of which I have been speaking.

" *Experiment 3.* On the 24th of the same month, twelve pounds of poppy, that had arrived at about three-fourths of its growth, after having been prepared like those in the preceding experiment, were also exposed in a vessel to the air. On the 26th, the mafs began to ferment, and the acrid narcotic vapour was developed in a very perceptible manner; but this time I did not expose the mafs to the sun. On the 28th the smell peculiar to opium was very perceptible: I then pressed out the juice, filtrated it cold, and evaporated it, with a very moderate heat, to the consistence of an extract.

" I thought I had the best grounds to expect that I should obtain real opium as the result of this experiment; but I was disappointed; for, in proportion as the juice gradually thickened, it lost its narcotic odour, and the extract which I obtained had no other smell than that peculiar to the extract obtained from inodorous plants: hence I drew the further conclusion, that this *aroma* was of the same nature as that obtained in experiment 2.

" *Experiment 4.* On the 14th of Messidor (2d July) following, I exprest two pounds of juice from poppies partly in bloom, and partly ready to blossom. This juice was of a dirty yellow colour, nearly resembling that of the *Chelidonium majus*; it had a very slight smell of laudanum, and a marked bitterness, and left a very considerable roughness upon the tongue. I exposed it to the air in a vessel of earthen-ware, in which it fermented rapidly, so that, on the 17th, it exhaled an odour similar to that of the opium of Egypt. This juice I filtrated cold, and, hoping to preserve its odour, I thickened it by exposing it in plates to the heat of the sun. The extract which I obtained still resembled that of the preceding experiment.

" *Experiment 5.* On the 19th Messidor, I extracted about one kilogramme of the juice of poppy heads, partly in flower, and partly after the leaves had fallen off, and the capsules had become very large. This juice was more bitter than that obtained in the preceding experiments. I reduced it to one-half of its quantity by the application of a very gentle heat, hoping that the mafs being more dense, and its particles in closer contact with each other, I should obtain, after fermentation, a substance whose odorous principle would be more coercible.

" The juice thus inspissated did not begin to ferment till the 25th, though the heat of the atmosphere was greater than during the preceding experiments. On the 30th it had the desired odour, and the experiment seemed very promising.

" Again was I disappointed: I reduced half of the mafs to an extract, which perfectly resembled that obtained in experiments 3 and 4: the other half I kept in a well-corked flask, to be used in another experiment.

" *Experiment 6.* On the 28th of Messidor, four hectogrammes of capsules, sufficiently green, but arrived at their full size, and twelve decagrammes of the leaves and stalks pulled off near to the peduncle of the plant, were well bruised and pounded in a mortar. They yielded a thick viscous mafs, and the juice was deeper coloured, and more bitter, than that obtained in the preceding experiments. The whole being exposed to the air in an earthen vessel, it soon fermented, and four days were sufficient to produce the evolution of an odour like that of the true oriental opium.

" Of this mafs I preserved one-part, to be used afterwards, and inspissated the other in a temperature not exceeding 40 degrees. This extract retained a very tight smell of laudanum; it was a mixture nearly similar to the opium of commerce, excepting that the *aroma* had been evaporated by the heat.

" It would be superfluous to describe here the numerous experiments which followed the two last mentioned: the result in each of them was an inodorous extract, or one almost so. It is, however, proper to observe, that the pounded leaves, stalks, capsules, &c. of the poppies, always exhaled, after fermenting, for a longer or shorter period, the narcotic odour, or that of the *aroma*, obtained in experiment 1; but they lost it again after being exposed ten or twelve days to the air.

" Before I proceed to relate other experiments, I ought to mention several remarks which I have made upon poppies, from the period at which they blossom till that when the capsule begins to grow yellow, after which they exude no more juice.

" During a period of fifteen days, I made incisions, both upon the peduncle and upon the lower part of a great number of very fine poppy heads, from whence there issued a whitish yellow juice, almost inodorous, but very bitter, which filled up the incision, and assumed a blackish colour in a very short

space of time: its taste was not changed by exposure to the air, but it first acquired the acid colour, which, in the preceding experiments, was developed by fermentation: this, however, was soon evaporated by exposure to the sun, and the juice retained only that of laudanum.

"I also remarked in my bed of poppies, that some of the capsules were of a form almost entirely spherical, whilst others affected the oval figure.

"The first naturally produced opium without any incision being made into them. This juice collected itself in two, three, and sometimes four futures, which are found in the peduncle, where it concretes, and in a very short time acquires the smell and colour of laudanum. I have collected small masses of it, some of which weighed eight grains. I took two grains of this opium, which procured me a very tranquil and protracted sleep.—*This was drop-opium.*

"All these poppies were sowed on the 10th of Germinal last (March 30), in a very rich and well-manured soil, defended against the north and north-east winds, by a building and a wall. The finest plants were at the distance of a foot from each other.

"Nature having completed her work, I imagined also, according to the result of experiment 6, that it would be possible for me to attain my object, and make opium with poppies arrived at their last degree of maturity.

"*Experiment 7.* For this purpose I took twelve fine poppy heads, six of which were oval and six globular. I pounded them together with their seeds, with twenty-four decagrammes of rain-water. Having exposed them to the air, in an earthen vessel, I was very much surprised, four days afterwards, to observe spots of mold upon them. I repeatedly stirred the whole mass, but none of the phenomena of the preceding experiment took place: the mass, left to itself, was destroyed in the manner usual with all vegetables.

"*Experiment 8.* I made an extract, according to the usual method (by decoction), from a considerable quantity of poppies. The decoction was saturated, and became slightly mucilaginous as it cooled, without however emitting any thing of the odour of laudanum. I gave the extract a pulverulent consistence: it differed essentially from those of the inodorous plants, possessing a degree of cohesion which is not usual with those, and which I attribute to the resin contained in it, &c.

"*Experiment 9.* A portion of the dried extract obtained in the preceding experiment was well triturated with a sufficient quantity of the viscous residuum that had been laid by in experiment 5, in order to obtain a mass having the same consistence as the opium of commerce. This mixture much resembled the laudanum of the shops in colour, taste, and smell.

"*Experiment 10.* The other portion of the extract obtained in experiment 8, was likewise reduced to the consistence of opium with the residuum that had been laid by in experiment 6. Three days after its formation, this mass might, by its impurities, viscosity, colour, and taste, have been confounded with the opium of the Levant, excepting that it was not wrapped, and in some measure kneaded, with poppy leaves *.

"To sum up the results of my observations, I am induced, by the experiments above related, to believe:

"1. That the opium of commerce is not merely the extract or inspissated juice of the stalks, leaves, or green capsules of the poppies; for, were that the case, it would not contain so large a quantity of impurities, which are diffri-

buted in an almost uniform manner throughout the whole mass.

"2. That this same juice or extract, if prepared with the intervention of heat, however moderate, would not have the acid nauseous odour, which the oriental opium retains as long as it preserves its viscosity, as is demonstrated by experiments 3, 4, 5, and even 6.

"3. That the opium of the East is not mere extract prepared by the infusion or decoction of the heads of the white poppy after it arrives at the stage of maturity; since that which was obtained by experiment 8 was by no means odorous, and was also exempt from impurities.

"I should add, that I have had in my possession capsules of the white poppy of Egypt, between which and those cultivated in France there appeared to me to be no difference.

"4. That it appears to be made out by experiments 9 and 10, that the opium of the East is the inspissated extract of every kind of the white poppies, gathered from the time when they begin to flower till they have arrived at maturity, and afterwards mixed together, and reduced to the consistence which is observed in the acid odorous mass, obtained from the stalks, leaves, and green capsules, of the same kind of poppies, pounded and fermented till the moment when the acid nauseous odour is evolved, as appears by the result of the above-mentioned experiments, and particularly experiment 6; and, finally, that this mass is divided into cakes, which are wrapped and kneaded at their surface with poppy leaves, in part dried, and thus sent to foreign nations.

"5. That it appears, by the observations inserted between experiments 6 and 7, that there does really exist drop-opium, and that the substance which is thus termed by some natural historians, naturally exudes from that variety of the white poppy, the capsules of which affect the spherical form.

"This opium differs from that of commerce by its being almost entirely soluble in water, by its purity, by its taste, which is less bitter and acid than that of the latter, and by its odour, which is less narcotic and nauseous.

"This investigation is not so complete as might be wished; and I am well aware of numerous objections that might be made against what I have advanced, such as the analysis of my opium compared with that of commerce, its medicinal properties, &c. &c. I have not the vanity to imagine that I have completed the work which I have undertaken, but its deficiencies may still be supplied. I did not think it necessary to enlarge upon the medicinal virtues of this substance. This part of the investigation is the province of the medical writer: I only assert, that the drop-opium which I obtained produced a perfect tranquillity in the system, without occasioning vertigo.

"However, I do not doubt the possibility of procuring good opium from poppies cultivated in the temperate zone; and the reader is also requested to observe, that those upon which I made my experiments were raised in one of the northern departments of France. I wish that the same experiments might be repeated with poppies raised in the south of the Republic. I keep a considerable number both of the spherical and oval kind, and shall with pleasure procure them for any person, who may be inclined to occupy himself with this kind of labour, and to bring to perfection a work of which I have only sketched the outlines. When this shall be accomplished, we shall cease to be tributary to the foreign nations who sell us this substance at a very high price."

* "I have observed that poppy leaves, when half dry, contract the narcotic smell, which leads me to believe, that they are used in the East, thus prepared, for wrapping the cakes of opium in them."

That similar attempts have been made to produce this valuable drug in our own country will appear from the following account of a method of preparing opium from poppies grown in Great Britain, equal in quality to the best foreign opium, by Mr. Thomas Jones, of Fifth-street-hill, London. For this the Society for the Encouragement of Arts, Manufactures, and Commerce, voted Mr. Jones a premium of fifty guineas.

"In the summer of 1794," says he, "I cultivated a considerable number of white poppies (entitled in the New London Pharmacopœia, *papaver fomiferum*, and, in another place, *papaver hortenfe*, *femine albo*), when a few of the heads or capsules having been broken off by the wind, I observed at the extremity of the stalks a substance in every respect resembling Turkey opium. This accidental circumstance bringing to my recollection its method of production, as related in the Encyclopædia and elsewhere, I wounded a considerable number of them with my penknife, and, in the course of the day, collected a small quantity of the above-mentioned substance. As this circumstance took place while we were cutting lavender, it happened that an old experienced servant, who was afterwards to distil it, was directing and assisting, and we agreed that it was probably in effect equal to, and was certainly more pure than, any we had ever seen.

"From this period I have never entirely lost sight of the object I am now to consider; but, on account of various avocations, and particularly my rhubarb plantation, which at this time required all the attention I could well spare, it was not in my power to engage in an undertaking of such magnitude; and more especially on a scale so extensive as that which I had already determined to adopt, under a persuasion that experiments, when more confined, are for the most part fallacious.

"As preparatory, however, I have not failed every year to repeat the operation, at once establishing its practicability, and availing myself of many advantages which can only be derived from observation and experience.

"The inclosed certificates will inform the Society that at length my plan has been carried into execution, but not with the degree of success that ought, and might have been expected to attend so large and expensive an experiment.

"It must be confessed, that had I been at all aware what an almost Herculean labour I was about to encounter, I really suspect whether my resolution would have been equal to the task. Left, however, this should discourage others from prosecuting this object, it is necessary to be more explicit.

"Difficulties, and such indeed as are considerable, must necessarily attend most undertakings which have been hitherto unattempted; but the disappointments I sustained, though more numerous than generally fall to the share of a person under such circumstances, and more aggravated, did not all arise out of the undertaking itself, but from causes, some of which may be easily guarded against in future, while others may never again occur.

"Two years have passed, in producing what, I flatter myself, the Society will consider deserving their premium, particularly if I am enabled to render the operation much more simple than may at first sight be supposed.

"The claimant, I observe, is required to submit to the Society his particular method of cultivating the poppies. As the mode adopted in the present instance arose rather from necessity than choice, I must go back as far as the autumn of 1797, to shew how it happened,

"Five acres of ground and upwards, situated in the parish of Enfield, in the county of Middlesex, I appropriated to this experiment, at the period above mentioned; which, being ploughed several times previous to the following March, were then sown broad-cast; and the weather proving favourable, the seed soon vegetated, and appearances were very promising. From the neglected state of the land, however, to which I was unfortunately a stranger, such a profusion of weeds sprang up among them, that, after many fruitless efforts at recovery, I was under the mortifying necessity of ploughing them all up together. This circumstance not taking place till the latter end of April, the season for sowing was elapsed; and as to cropping my field with oats or barley, a measure very strongly recommended to me, I considered it as a deviation from my original purpose, and therefore, without paying any attention to it, gave the field a summer-fallowing, conceiving the poppies might be sown with equal and perhaps greater advantage in autumn.

"Finding that the broad-cast method of sowing precluded the possibility of hoeing where the land is much infested with weeds, I now adopted a different mode, and drilled in the seed with a very simple yet efficient machine, which I purchased of Mr. Macdougall, of Oxford-street: but, as the weather began to be very severe so early as November, and continued so with few intermissions, the succeeding March found me very little forwarder. Yet still I persevered, and once more resolved to drill the whole five acres: they came up extremely well, and, as I expected, accompanied with innumerable weeds; but these by well-timed application were eradicated, though not without considerable difficulty.

"I now thought myself secure; for nothing could assume a better appearance, till the beginning of May. Alas! I could not foresee the cold and remarkably dry weather that ensued, and prevailed, I believe, for six weeks successively. Hence the growth of some became stunted, and others were entirely destroyed; but happily some warm refreshing showers fell just time enough to rescue the remainder.

"From these I have procured upwards of twenty-one pounds of opium, five of which, in compliance with the Society's requisition, I have sent for their inspection and examination.

"At one time I began to despair of even procuring this, comparatively speaking, small quantity, though it is not a fifth part of what I ought to have had, owing to the extraordinary rains and winds which we experienced through the whole of the summer months.

"This recital, as I have before observed, ought on no account to intimidate others from a co-operation; for it is obvious, that the former inconveniences originated in my own ignorance, whilst the latter depended upon causes that in all probability may never happen again.

"Mr. Ball, in a letter published in one of the volumes of the Society's Transactions, advances an opinion which I consider as very fallacious, respecting the quality of land adapted to the growth of poppies. He seems to be very little concerned about this point, and hints the probability of their being cultivated almost every-where. I well know that poppies, like many other vegetables, will grow in soils of any description; but of this I am fully assured, that, like the rest, they have their particular and favourite soil, viz. a sandy loam, and that the better this is, the more advantages will accrue to the cultivator. For it should be considered, that, in bad as well as good ground, the same expences of cultivation, scarification, and collecting, will be incurred, for perhaps a fourth share of the produce.

"There is also another error in the same communication,

which, having a tendency to mislead, ought to be pointed out. He tells us, to use his own words, "That, by a calculation he has made, supposing one poppy growing in one square foot of earth, and producing only one grain of opium, more than fifty pounds (I suppose he means, of course, apothecaries weight) will be collected from one statute acre of land." Now, as there are no more than 43,560 square feet in an acre, and allowing one grain for each, the produce can be no more than ninety ounces and six drachms. This calculation appears to be as much in the extreme one way, as that of Mr. Ball is in the other. The medium is most probably nearest the truth; but upon this point I cannot at present speak with any degree of precision, on account of the scattered situation of my crop, and the extraordinary intemperance of the last season. Judging, however, from the number of heads we perceived, and comparing them with the total quantity, they seem to have yielded three fourths of a grain each, upon an average, large and small.

I shall now lay before the Society some general remarks on the cultivation of poppies, and then conclude, with submitting a few hints and directions respecting the preparation of opium.

"Having a tap-root, their size will consequently be proportionate to the depth of earth they are enabled to penetrate. Hence the necessity of land that will admit of deep ploughing. The fineness of the surface too is very essential. As the seed is so small, and the plants, on their first coming up, so exceedingly tender, the bush-harrow should always be used after those which are commonly employed. By this means a greater number are likely to vegetate, and their roots being better protected are less liable to injury.

"Poppies (and when I use this name, I mean that particular kind before specified) may be cultivated both by the drill and broad cast mode of husbandry; at the same time it must be remembered, that the land for each requires a different disposition. In the former this is not so material, the sowing-machine, regulating the distances of the rows according to the will of the operator; these ought to be nine inches or a foot asunder, and in beds containing four rows, allowing a foot and a half between each. But, with respect to the latter, this point must be strictly attended to: the ridges should never exceed four feet in breadth; so that the furrows will answer the double purpose of preserving the land throughout the winter, and, in the season for collecting the opium, serve as paths for the workmen.

"Besides two chances of a crop, I am decidedly in favour of autumnal sowing; and the first week in September seems to be the most favourable period for this purpose. If the weather continues open, they will make such progress as to be capable of resisting the severity of an inclement winter, without on the other hand being too forward; a circumstance highly dangerous, as the first severe frost is inevitably destructive.

"On this account, whether by the drill or otherwise, a large proportion of seed should be sown at this season, for the plants will defend each other; and as all the plants will not be equally forward, so, let the winter prove as it may, provided the seed has vegetated freely, there will be great probability of a good appearance in spring. If unfortunately, however, such a winter as the last should again occur, and the whole plantation fail, a circumstance which has happened to myself, the spring sowing ought not to be deferred longer than the first week in March.

"I do not, without sufficient reason, recommend that this operation should be performed in autumn. The poppies are not only generally larger, but even, when this is not the case, I know from experience, that they will yield a much larger proportion of opium: for it seldom happens that a spring poppy will bleed, as we term it, more than twice, while the others will bear scarifying till they are nearly ripe. This I imagine can only arise from the length of time the one has been in the ground in comparison with the other. Indeed, the difference is so striking, that if the present winter destroys my plants, I shall be almost tempted to dispose of my spring sowing to other purposes. In drilling, the necessity of covering the seed by harrowing is suspended by the operation of the machine; and, in the broad-cast method, a shower of rain will have all the effect without further trouble or expence.

"Excepting great additional care, turnip and poppy hoeing are similar, and in every respect may be conducted in the same manner. I believe the turnips are rather benefited, they certainly are not injured by being shaken, and will recover from the effects of a wound; but if the poppies are accidentally touched, they will either exhaust themselves by bleeding, or dwindle so as to be of no value. But it is high time to proceed to the last point I purposed to consider, namely, the production and preparation of opium.

"In ordinary seasons, the heads or capsules of the autumnal poppies will be large enough for our purpose in the month of June; for at this time they will have attained about half their growth, or be equal in size to a small tea-cup. I have invented a variety of instruments as scarificators; but as only two kinds were actually used, I am unwilling to trouble the Society with a description of any other *.

"Seven, and sometimes eight, boys were employed, from eight to twelve years of age, together with a man as a superintendent. The children's book, which accompanies the instrument, contains only an account of six, as the eldest, being the son of my gardener, is included in another book. To the youngest I gave three pence per day, and, if tractable and well disposed, an additional penny for every additional year.

"The steel instrument was used by the latter, and the others by the former. I have great reason to be satisfied with their construction; for, notwithstanding their simplicity, they

* Mr. Jones has since added the following description of the instruments, and their mode of application. They remain in the Society's Repository for inspection.

"The first of these instruments consists of two thin steel blades fixed by a wedge in a wooden handle, so as to make incisions about one-fourth of an inch from each other.

"The other is made entirely of steel, and resembles in form the tuning-fork of a harpsichord. It consist of four bars, proceeding from a handle of a convenient length, a quarter of an inch wide, and two and a half long, each terminating with a bolster, through which a screw passes that fixes the scarificators. The centre bars should be so elastic as to yield to the curvature of the capsule, while, upon the outer ones being pressed by the finger and thumb; and by this means four incisions are made three quarters in width; but, from the two outer blades, only an inch and a quarter. The bolsters are a quarter of an inch in diameter, and the scarificators a proportionate length, namely three eighths. The wedge in the former, and a longitudinal aperture in the scarificators, or blades, of the latter, will regulate the depth of the incisions, at the will of the operator. It is of the utmost importance that these should not be made through the inner coat of the capsules."

proved themselves fully equal to my purpose; and so considerable a trial has not suggested any other improvement, than that in the largest the two inner bars only should be elastic; for the continual pressure of the finger and thumb on the two outer ones, which is absolutely necessary for the others to act, would be avoided, and consequently much fatigue and inconvenience prevented.

"It is of very little consequence whether the first incisions are made horizontally or vertically, with this instrument; for, however luxuriantly the milk may flow, by making four at one time, it so divides the stream that seldom any escapes. With the smaller ones we most commonly made them horizontally, beginning as near the top of the head as possible, and for this reason—all the juices, if the first incision was made at the bottom, would be naturally attracted by the aperture, and render every other completely fruitless, besides occasioning the certain loss of a considerable quantity, by falling on the surrounding leaves; whereas, on the other hand, a proportion of milk will exude from each, and the opium be equally distributed over the whole surface of the head.

"No particular directions seem necessary for repeating this operation, any further than at each time it should be performed in a contrary direction, and continued till no more will exude, at intervals of four or five days or more, according to circumstances: for, as the weather proves very rainy or fair, they will be shorter or longer, the heads being sooner replenished in the one than the other.

"Each of the children being provided with a tin eup, having one handle, so contrived as to fix itself to a girdle fastened round his waist, with a common gardening knife they scraped off the opium that appeared upon the heads in a soft ash-coloured substance. Dewy mornings are best calculated for this purpose, and it should be discontinued so soon as the sun has gained a sufficient power to dissipate it; for, if persevered in throughout the day, some of the opium will recede into the interstices, and more, in defiance of every endeavour, will remain upon the heads. The principal quantity exudes in the course of the night, and, uniting with the dew, it is taken off as readily and completely as with a sponge.

"Several regulations were adopted to excite, as much as possible, a spirit of emulation. The name of each boy was written upon his cup, so as to ascertain, on their return from collecting, who had been the most active. And although, in consequence of the unsettled state of the weather, this part of our process continued so long as from the 6th of July to the second week in September inclusive, the good effects were felt to the last. And as, for the reason already mentioned, an hour in the morning became so invaluable, those who appeared in the ground at five o'clock, at the most busy period, became entitled to an additional penny to their daily pay. This measure succeeded at first only with a few; but the remainder, overcome by shame, at length attended equally well. In addition to this encouragement, I am under an engagement (in case I succeed with the Society), to such whose behaviour has been uniformly good, to celebrate the circumstance by a public dinner.

"The interval from breakfast time to sun-set, if the weather assumed a settled appearance, was occupied by scaring. And here I again felt the good effects of stimulating measures: certain places were allotted to particular children, according to their ability, so as to discover who scarified the most and the best; the superintendent occasionally following all of them, to observe whether any work was left unfinished, and, if there were any, to complete it. If, in our progress, any one proved refractory, which happened in more instances than one, rather than have recourse to severity, and for the sake of example, he was immediately discharged.

I had numerous applications, and the first on the list always had the preference as his successor.

"Upon the whole, considering it was the first attempt of the kind, every thing proceeded very regularly; and had the summer been propitious, notwithstanding my former disappointments, I should have had great cause for satisfaction. The largest quantity that my man, seven children, and myself, were able to procure in one morning, from five to nine o'clock, was one pound and a half: this happened when the dew was remarkably great, and succeeded one of the warmest days in the summer.

"From the experience I have had, the precariousness of our climate appears to me the only obstacle to the production of opium in this kingdom. It may be said that the same inconveniences attend every other agricultural pursuit; and that hay, and a variety of productions, particularly hops, are much prejudiced from the same cause. I allow that they are so; but the evil produced by a sudden alteration in this case is irreparable; for, should it happen after a fine scaring day, we do not only lose the labour of that day, but all its produce. It becomes obviously necessary, therefore, to be particularly circumspect; and this is the only remedy we are able to procure. The poppies will receive no damage from remaining entire; while, on the other hand, impatience may be injurious, if not destructive.

"As my notes furnish me with no further particulars, I have very little more to add. The opium, when first collected, from its union with the dew, is much too soft to be so formed as the Society will receive it.

"To reduce it to a proper consistence, taking nature for our guide, it should be thinly spread in shallow dishes, and exposed, under glasses, to the rays of the sun. My opinion is, that Turkey opium suffers considerably from the operation of fire; certain it is, that, with respect to its effluvia, it undergoes a complete alteration. I have covered it with its own leaves, thinking this a very convenient mode of package, and conceiving it to be important, in every new undertaking, by studying appearances, to yield to the general prejudices which naturally prevail in favour of the article to which we have been accustomed."

The following testimony of the quality of the opium is extracted from a letter from Dr. Woodville to Mr. Jones.

"I have examined the opium collected by you from the capsules of the white poppy; and I have no doubt, from its taste, smell, colour, and purity, but that it is more powerful and efficacious than the best foreign opium imported into this country."

OPPELEN, a strong town of Silesia, capital of a duchy of the same name, with a castle. The chief tribunal of justice, and the first consistory of Silesia, were settled here in 1742. It is seated on the Oder, in a pleasant plain, 35 miles S.E. of Breslaw, and 40 N. of Troppaw. Long. 17. 50. E. Lat. 50. 41. N.

OPPIDO, an episcopal town of Naples, in Calabria Ulteriore, seated at the foot of the Appennines, 25 miles N. of Reggio. Long. 16. 21. E. Lat. 38. 19. N.

ÖPPURG, a town of Upper Saxony, in the circle of Neustadt, four miles W.S.W. of Neustadt.

ORACH, a town of Turkey in Europe, in Bosnia, near the river Drino, 60 miles S.W. of Belgrade.

ORANIENBAUM, a town of Upper Saxony, in the duchy of Anhalt Dessau, six miles S.E. of Dessau.

ORANIENBAUM, a town of Russia, in the gulf of Finland. Here is a royal palace, built by Prince Menzikoff, afterward converted into an hospital; but much used as a residence by Peter III. It is 20 miles W. of Peterburg. Long. 29. 26. E. Lat. 59. 52. N.

ORANIENBURG, a town of Upper Saxony, in the middle marche of Brandenburg. It was anciently called Bretzow, and takes its present name from a villa built by the elector. In 1699, a colony of the Vandois was established here, after being driven from their country on account of their religion. It is situate on the Havel, 18 miles N. of Berlin, and 28 N.N.E. of Potsdam. Long. 13. 26. E. Lat. 52. 50. N.

ORATAVIA, a town of Teneriff, one of the Canary Islands. It is seated at the bottom of an amphitheatre of mountains, out of which rises the Pike of Teneriff. Its port is at three miles distance. Long. 16. 20. W. Lat. 28. 23. N.

ORBARESAN, a town of Piedmont, between Turin and Pignerol. Long. 7. 30. E. Lat. 45. 2. N.

ORBE, an ancient town of Switzerland, in the Pays de Vaud, capital of the bailiwick of Echallens, the sovereignty of which is divided between the cantons of Bern and Friburg. Its romantic situation, and the boldness of its single-arched bridge projecting over the Orbe, are the admiration of all travellers. It is 24 miles W. of Friburg, and 40 W. by S. of Bern. Long. 6. 43. E. Lat. 46. 49. N.

ORBE, a town of Germany, in the electorate of Mentz, celebrated for its salt works. It is 26 miles E. of Frankfort.

ORBITELLO, a strong sea-port of Tuscany, in the Siennese, defended by several forts, and seated near the Albegna, 58 miles S. by W. of Sienna, and 85 S. of Florence. Long. 11. 10. E. Lat. 42. 18. N.

ORBRE, a river of France, which rises in the Cevennes, waters Beziers, and falls into the gulf of Lyons, five miles below that town.

ORCHIES, an ancient town of France, in the department of the North, 14 miles S.E. of Lille. Long. 3. 25. E. Lat. 50. 28. N.

ORCHILLA, an island of the Caribbean Sea, 80 miles N. of the coast of Terra Firma, and 160 E. by S. of Curacao. Long. 65. 20. E. Lat. 12. 0. N.

ORCHIMONT, a town of the duchy of Luxemburg, situate on the Semois, 18 miles N. of Sedan.

ORDINGEN, or **URDINGEN**, a town of Germany, in the electorate of Cologne, 11 miles N. of Dusseldorf, and 32 N.N.W. of Cologne.

ORDUNNA, a sea-port of Spain, in Biscay, seated in a valley, surrounded by high mountains, 20 miles S.W. of Bilbao. Long. 3. 26. W. Lat. 43. 11. N.

OREBRO, a town of Sweden Proper, capital of the province of Nericia, seated near the W. extremity of the lake Hielman. In the middle of the town, on a small island formed by two branches of the Svarf, stands the castle, formerly a royal residence. Here are manufactures of firearms, cloth, and tapestry; and it has a considerable trade with Stockholm, across the lakes Hielman and Maeler, by means of the canal of Arboga; sending iron, vitriol, and red paint, in particular, to that capital. Orebro is 95 miles S.W. of Stockholm. Long. 15. 12. E. Lat. 59. 12. N.

OREGRUND, a sea-port of Sweden, on the coast of Upland, in the gulph of Bothnia, opposite the small island of Ginston, 60 miles N. of Stockholm. Long. 18. 15. E. Lat. 60. 20. N.

OREL, a government of Russia, once a province of the government of Bielgorod. Its capital, of the same name, is seated on the Occa and Orel, 207 miles S.S.W. of Moscow. Long. 35. 20. E. Lat. 53. 0. N.

ORENBURG, one of the two provinces of the government of Ufa, in Russia. Its capital, of the same name, is seated on the Ural, formerly called the Yaik, 480 miles N.E. of Astracan. Long. 55. 0. E. Lat. 51. 46. N.

VOL. X.

ORFORD NESS, a cape of England, on the S.E. coast of Suffex, where a light-house is erected for the direction of ships. Long. 1. 6. E. Lat. 52. 4. N.

ORGAN (*Encecl.*). The following is extracted from the specification of a patent granted to Mr. John Longman, of Penton-street, Pentonville, Middlesex, for certain improvements in the construction of barrel-organs, with a view to prevent them from getting out of order. It is so contrived, also, that another musical instrument may easily be attached to it, and made to play with the same barrel. This invention is shewn by the figures in Pl. 34, which are explained thus: "The part of barrel-organs employed in fixing the tune," says Mr. Longman, "has hitherto been detached from the barrel and key-frame, whence many and continual musical imperfections arise. I therefore attach to the barrel a circular plate or plates, of any metallic or other substance, to which is adapted a proper key-frame (as described in the above drawing) by this is gained a regular, precise, uniform movement of the barrel, without any reverberatory motion whatever. The nice and steady connection of the plate or plates fixed to the barrel with the key-frame is the principle which gives not only variety of mechanical adaptation, but also accuracy of execution to this above all other barrel-organs. A reverse method may be used, by having the wheel A, which is fixed to the barrel, made thick enough to contain a number of grooves cut round it, and the plate B, which before was called a notch-plate, to be a plain piece of metal, to run in the above-mentioned grooves."

"Fig. 2. The spiral barrel is made by cutting one part of the wheel A, and inclining one of the parts one way, so that when the key-frame comes to that part of the wheel, the inclined part gradually draws the key-frame until it receives the next notch in the plate B, and has then passed one round."

"Fig. 3. The exact connection which my discovery gives to all parts of barrel-organs with each other enables me to add, with great advantage, as accompaniments, bells, tambourines, &c. to improve and enlarge the force and beauty of the instrument. The instrument thus improved, with or without accompaniments, is not liable to be injured by change of position or carriage."

The several parts of the machinery are thus described with reference to the plate.

Fig. A, the plates on the barrel. B, notch-plate to receive the plate A. C, a roller, and A, one of the plates, either of which may be used to keep the key-frame a proper distance from the barrel. D, the bell action. E, the bells. F, an index directing to place the tunes.

Fig. 2. A, plate on the barrel. B, notch-plate on the key-frame.

Fig. 3. Side-view of the bell action.

ORGANFORD, a village near Poole, in Dorsetshire, remarkable for the prodigious quantity of pennyroyal, here called *organ*, produced in the neighbourhood.

ORGAS, a town of Spain, in New Cadix, with a castle, 15 miles S. of Toledo. Long. 3. 22. W. Lat. 39. 36. N.

ORGELET, a town of France, in the department of Jura, seated at the source of the Valouse, 30 miles N. by E. of Bourg. Long. 5. 39. E. Lat. 46. 36. N.

ORGIVA, a town of Spain, in the province of Granada, 25 miles S. of Granada. Long. 3. 50. W. Lat. 36. 43. N.

ORIA, a decayed town of Naples, in Terra d'Otranto, with a citadel, and a bishop's see; seated at the foot of the Apennines, 40 miles N.W. of Otranto. Long. 17. 48. E. Lat. 40. 39. N.

ORIO, a town of Spain, in Guipuzcoa, at the mouth of 11 E.

the Orio, eight miles S.W. of St. Sebastian. Long. 2. 19. W. Lat. 43. 23. N.

ORISSA, a province of the peninsula of Hindoostan, bounded on the N. by Bahar and Bengal, on the W. by Berar, on the S. by Golconda, and on the E. by the bay of Bengal. The district of Midnapour, in this province, is subject to the English East-India Company; but all the rest belongs to the Berar Maharatas.

ORKENED, a town of Sweden, in Schonen, 24 miles N. of Christinistadt. Long. 14. 9. E. Lat. 56. 48. N.

ORLAMUND, a town of Upper Saxony, in Thuringia, belonging to the Duke of Saxe Gotha. It is seated on the Sala, opposite the mouth of the Orla, 50 miles S.W. of Leipzig. Long. 11. 24. E. Lat. 50. 53. N.

ORLANDO, a cape on the N. coast of Sicily, 15 miles W. by N. of Patti. Long. 15. 4. E. Lat. 38. 14. N.

ORLEANS, CANAL OF, commences at the river Loire, five miles above Orleans, crosses the forest of Orleans, joins the Loing, near Montargis, and passing by Memours, falls into the Seine. It was finished in 1682, and has 30 locks in its course, which is above 50 miles in extent.

ORLEANS, an island and town of Lower Canada, a little to the E. of Quebec. Long. 69. 50. W. Lat. 47. 0. N.

ORLEANS, New, a city, and the capital, of Louisiana, built during the regency of the Duke of Orleans. In 1788, seven eighths of this city were destroyed by fire. It is seated on the E. side of the Mississippi, 105 miles from its mouth. Long. 89. 53. W. Lat. 30. 2. N.

ORLENGA, a town of Russia, in the government of Irkutsk, situate on the Lena, 132 miles N. of Irkutsk. Long. 105. 40. E. Lat. 56. 0. N.

ORMEA, a town of Italy, in the county of Asti. It was taken by the French in 1794; and is situate on the Tanaro, 10 miles S. of Ceva. Long. 8. 9. E. Lat. 44. 16. N.

ORMYAH, a town of Persia, in the province of Tauris, 120 miles S.W. of Tauris.

ORNANS, a town of France, in the department of Doubs. In its vicinity is a well, which, during the time of the great rains, overflows in such a manner as to inundate the adjacent country; and the fishes which it disgorges are called *umbres*. Ornans is seated on the Louvre, eight miles S.E. of Besançon.

ORNE, a department of France, including the late province of Perche and part of that of Normandy. It takes its name from a river, which falls into the English Channel, eight miles below Caen. The capital is Alençon.

ORNITHORHYNCHUS PARADOXUS, from New South Wales, a singular quadruped, concerning which some anatomical remarks, by Prof. Blumenbach, appear in a periodical work (see Pl. 38): "The most remarkable circumstance in this curious animal," says the author, "is the great similarity of its head with that of a duck, which, however, is still more striking in its internal structure. From the external form of the skull of this animal, one might be more easily led to conclude that it belonged to such an aquatic bird, than to a creature of the mammalia tribe. Both the jaws are as broad and low as in a duck, and the calvaria has, at least in my specimen, no traces of a future, as is generally the case in full-grown birds. There is likewise a singularity in the cavity of the skull (*caverna ancephali*), of which nothing like it is known in any quadruped animal of the mammalia, though there exists something analogous in the clats of birds, viz. a considerable bony falx (*g*), which is situated along the middle of the *os frontis*, and the *ossa pregmatia*. This processus is in general scarcely to be seen in the mammalia, even in those that have a bony

tentorium cerebelli. I know no instance of any animal of that tribe being provided with such a bony falx as the ornithorhynchus [*Ichnebelthier*, as the professor calls it, i. e. *beak animal*, or *beaked animal*], if we except some anomalous formations; as I possess the skull of a woman, in which the tabula vitrea of the *os frontis* has formed a similar bony crista. Amongst the bird tribe, however, in which Willis and others deny the existence of such a crista, I have discovered it in the skull of a cock of the wood (*urogallus*), which surprisingly agrees as well in the situation as in the form with that in the ornithorhynchus. The mandible of this animal is very singular, consisting of a beak, the under part of which has its margin indented as in ducks (*g*), and of the proper instrument for chewing that is situated behind, within the cheeks. This has, at least in my specimen, no teeth, nor even the traces of alveoli, but only two broad processes of a peculiar formation on each side, whose undulated superficies fit one another (*n. o.*). Dr. Shaw says of the specimen he examined, that it had no teeth, "dentium nulla sunt vestigia."—Vide No. 118 of the Naturalist's Miscellany. But Sir Joseph Banks, to whose liberality I am indebted for my specimen, informs me, that Mr. Home has found, in a specimen that belongs to the Society of Natural History at Newcastle, on each side of the jaws, two small and flat molar-teeth. The fore part of this anomalous mandible, or the beak, is covered and bordered with a coriaceous skin, in which three parts are to be distinguished: 1. The proper integument of the beak (*integumentum rostri*). 2. The labiated margins of it (*marginibus labialis*). 3. A curious edge of the skin of the beak (*limbus transversarius*). Into these three parts of that membrane numerous nerves are distributed, of which those in the upper part of the beak arise from the second branch of the fifth pair, viz. in the *limbus transversarius*; that which penetrates through the foramen infraorbitale (*h*), in the margo labialis; that which comes forth behind the *os intermaxillaria* (*i*) and to the *integumentum rostri*, three branches, which run out between the *os intermaxillaria* (*u*). From this quantity of nerves, with which the integument of the beak is provided, no doubt is left of this part being intended as the organ of feeling, a sense which, besides men and the quadrumanes, very few mammalia enjoy, that is to say, few animals possess the faculty of distinguishing the form of external objects and their qualities by organs destined for that purpose; a property that is different from the common feeling, by which every animal is able to perceive the temperature and presence of sensible objects, but without being informed by the touch of them, of their peculiar qualities. Thus, for instance, the skin in the wings of a bat, and its ear, serve probably as organs of common feeling, by means of which they are enabled to flutter, even after being blinded, without flying against any thing. The whiskers (*vibrissæ*) of many animals seem likewise to serve for the purpose of informing them of the presence of sensible bodies, on which account Dr. Darwin compares them with the antennæ of insects; but they are not able to inform themselves of the properties of those objects. It is true that the snout of a mole has been considered by Derham, and the snout and tongue of many other animals likewise by Buffon, as organs of touching; but this seems only to be their secondary use. The fame may be said of the elephant's trunk, which Buffon also conceives to be an organ of touching, although from its manner of living, the necessity of such an organ of touching does not appear. The ornithorhynchus, however, is an animal which, from the similarity of its abode, and the manner of searching for food, agrees much with a duck, on which account it has

been equally provided by nature with an organ for touching, viz. with the integument of the beak, richly endowed with nerves. This instance of analogy in the structure of a singular organ of sense in two species of animals from classes quite different, is highly instructive for comparative physiology, and on this account the ornithorhynchus belongs to one of the most remarkable phenomena in zoology, and may in general be looked upon as one of the most interesting discoveries with which that part of natural history has been enriched during the last century."

ORONSA, a small fertile island of Scotland, one of the Hebrides, seven miles W. of Jura. Here are the ruins of an abbey, with many sepulchral statues, and some curious ancient sculpture.

OROPESA, a town of Spain, in New Castile, 22 miles E. of Placentia, and 50 W. of Toledo. Long. 4. 36. W. Lat. 39. 50. N.

OROPESA, a town of Peru, seated at the foot of the mountains, 150 miles N.E. of Potosi. Long. 63. 30. W. Lat. 18. 0. S.

ORR, a river in Kircudbrightshire, which rises near New Galloway, waters the town of Orr, and enters the Solway Frith.

ORSOVA, a town of Upper Hungary, in the bannat of Temeswar, seated on the N. side of the Danube, almost opposite Belgrade. It is subject to the Turks. Long. 22. 0. E. Lat. 45. 30. N.

ORSOY, a town of Westphalia, in the duchy of Cleves, taken in 1672, by the French, who demolished the fortifications. It is 20 miles S.E. of Cleves. Long. 6. 43. E. Lat. 51. 28. N.

ORTA, a town of Italy, in the patrimony of St. Peter, with a bishop's see. It is seated on the Tiber, 10 miles E. of Witerbo, and 30 N. of Rome. Long. 12. 37. W. Lat. 42. 22. N.

ORTA, a town of Italy, in the Milanese, situate on a lake of the same name, 21 miles N.W. of Novara, and 36 W.N.W. of Milan. Long. 8. 30. E. Lat. 45. 37. N.

ORTA, a town of Naples, in Capitanata, 11 miles N.N.E. of Ascoli.

ORTENBERG, a town in Germany, in the circle of Upper Rhine, and county of Hanau. Munzenberg, situate on the Nidder, 17 miles N.E. of Frankfurt, and 17 S.E. of Gießen. Long. 8. 50. E. Lat. 52. 12. N.

ORTEN URG, a town and citadel of Lower Bavaria, capital of a county of the same name, 10 miles W. of Passau. Long. 13. 25. E. Lat. 48. 20. N.

ORTENBURG, a town of Austria, seated on the S. bank of the Drave, opposite its confluence with the Lifer. Long. 13. 38. E. Lat. 46. 52. N.

ORTHEZ, a town of France, in the department of Lower Pyrenées, seated on the declivity of a hill, on the river Gave de Pau, 17 miles S.W. of Pau. Long. 0. 24. W. Lat. 43. 5. N.

ORTON, a town in Westmoreland, with a market on Wednesday, 12 miles S.W. of Appleby, and 27 N.W. of London. Long. 2. 40. W. Lat. 54. 28. N.

ORTZA, a town of Lithuania, in the palatinate of Witpeik, with a castle, seated on the confluence of the Oresla and Dnieper, 50 miles W. of Smolensko. Long. 31. 5. E. Lat. 54. 45. N.

ORWILL, a river in Suffolk, which runs S.E. by Ipswich, and uniting with the Stour, forms the fine harbour of Harwich. Above Ipswich, it is called the Gipping.

OSACA, a large town of the island of Nippon, in Japan, with a magnificent castle. It has a harbour, and is one of the most commercial places of Japan. The hours of the

night are proclaimed by the sound of different instruments of music. Long. 133. 45. E. Lat. 35. 20. N.

OSCHATZ, a town of Upper Saxony, in the margravate of Meissen, which has some manufactures of cloth. It is 16 miles N.W. of Meissen, and 30 N.W. of Dresden. Long. 13. 24. E. Lat. 51. 24. N.

OSERO, or **OSORO**, an island in the gulf of Venice, belonging to the Venetians, having that of Cherfo to the N. to which it is joined by a bridge. The capital is of the same name, with a bishop's see. Long. 15. 30. E. Lat. 45. 0. N.

OSEY, an island in Blackwater Bay, near Malden, in Essex, it is covered with wild fowl, at certain seasons; and here the coal ships for Malden unload their cargoes.

OSIMO, an ancient town of Italy, in the marquise of Ancona, with a rich bishop's see, and a magnificent episcopal palace. It is seated on the Musone, 10 miles S. of Ancona, and 110 N.E. of Rome. Long. 13. 34. E. Lat. 43. 29.

OSMA, an ancient town of Spain, in Old Castile, with a bishop's see, and an university. It is almost gone to ruin, and is seated on the Douero, 80 miles N. by E. of Madrid. Long. 2. 12. W. Lat. 41. 30. N.

OSORNO, a town of Chili, seated on Rio-Bueno, in a territory where there are mines of gold, 80 miles S. of Baldivia. Long. 73. 20. W. Lat. 40. 58. S.

OSSETIA, the country of the **Ossi**, or **OSSETI**, one of the seven Caucasian nations, between the Black Sea and the Caspian; bounded on the N. by Great Cabarda, on the E. by the Lelguis Tartars, and on the S. and W. by Imeritia. It contains 19 districts, of which one is subject to Imeritia, and the others to Georgia. These districts are of very unequal size; some containing only five, and others 50 villages, each of which comprises from 20 to 100 families. Their language has some analogy with that of the Persian. Their history is entirely unknown. The Circassians and Tartars call them Kutha.

OSSIFICATION (*Enceyl.*). A French surgeon, Citizen Grandchamp, relates two curious instances of preternatural ossification; the first was a bony substance as big as a fist, situated between the bladder and the uterus, and inclosed in a proper sac, formed by the peritonæum. The woman in whose body it was found, had during her life a habitual ischuria, from which the only was relieved by a horizontal situation on the back. This complaint might have been easily mistaken for the stone. The second observation is an uncommon ossification of the gall bladder, found in the body of a woman of sixty-seven years of age. The place at the bladder was occupied by a hard mass as big as the head of a fix or seven months fetus; the ductus cysticus was wanting, and the ductus hepaticus joined the liver immediately with the duodenum; the mass itself cohered to the liver by a small piece of the size of a small coin. On opening it, a glaucy substance was seen, softer in the middle, and harder the more it approached to the periphery, till it gradually became ossified.—*Hufeland's Neueste Annalen.*

OSTAGIO, a town of Italy, in the territory of Genoa, 15 miles N.W. of Genoa. Long. 8. 31. E. Lat. 44. 36. N.

OSTERODE, a town of Lower Saxony, in the principality of Grubenhagen. Here is a manufacture of woollen stuffs, also a magazine for corn, which is delivered out to the miners of the Hartz forest, always at a fixed price. It is 16 miles S.W. of Gollars. Long. 10. 33. E. Lat. 51. 50. N.

OSTERRODE, a town of Prussia, in the province of Oberland, with an ancient castle, situate on the Dribentz, 65 miles S.E. of Dantzic, and 70 S.S.W. of Königsberg.

OSTERWIECK, a town of Lower Saxony, in the principality of Halberstadt. It has several woollen manufactures, and is situate on the Ilse, 13 miles W. of Halberstadt, and 15 N. E. of Goslar. Long. 10. 52. E. Lat. 52. 10. N.

OSTIGLIA, a town of Italy, in the Mantuan, seated on the Po, 15 miles E. of Mantua. Long. 11. 8. E. Lat. 45. 7. N.

OSTINGHAUSEN, a town of Westphalia, situate on the Alst, eight miles W. of Lijfthadt.

OSTROGOTHIA, the eastern part of Gothland, in Sweden.

OSWALD, Sr. a village in Northumberland, on the Ficks' Wall, N. of Hexham, by some called Heavensfield, on account of Oswald's total defeat of Cedwall, a British usurper, who was killed on the first onset. Here Oswald, who was afterward faint, set up the first cross in the kingdom of Northumberland.

OSYTH, Sr. a village in Essex, nine miles S.E. of Colchester. Here are the remains of an ancient monastery, now the seat of the Earl of Rochford.

OTAHU, one of the Society Islands, in the South Pacific Ocean. It lies N. of Ulitea; and is divided from it by a strait, which, in the narrowest part, is not more than two miles broad. This island is smaller and more barren than Ulitea, but has two very good harbours.

OTOQUE, an island of South America, in the bay of Panama. Long. 81. 10. W. Lat. 7. 50. N.

OTTENDORF, a town of Lower Saxony, in the duchy of Saxe Lauenberg, situate on the Mæden, 24 miles N. of Sade. Long. 8. 20. E. Lat. 53. 53. N.

OTTENSHEIM, a town of the archduchy of Austria, on the N. side of the Danube, 5 miles W.N.W. of Linz, and 16 S.W. of Freystatt.

OTTONA, or **ORTONA**, an episcopal town of Naples, in Abruzzo Citeriore, seated on the gulf of Venice, 10 miles N. of Lanciano, and 43 E. of Aquileia. Long. 14. 50. E. Lat. 42. 28. N.

OTTEWILLER, a town of Germany, in the circle of Upper Rhine, and principality of Nassau Saarbruck, with a castle, 40 miles S.E. of Treves.

OUDE, a province of Hindoostan Proper, subject to a nabob, whose dominions lie on both sides of the Ganges, occupying (with the exception of the district of Rampour) all the flat country between that river and the northern mountains, as well as the principal part of that fertile tract lying between the Ganges and Jumna, known by the name of Doab, to within 40 miles of the city of Delhi. Oude and its dependencies are estimated at 360 miles in length from E. to W. and in breadth from 150 to 180. The nabob is in alliance with the British; and a brigade of the Bengal army is constantly stationed on his western frontier; which answers the purpose of covering Oude as well as Bengal, and of keeping the western states in awe; and, in consideration of this, the nabob pays an annual subsidy of 420,000l. His capital is Lucknow.

OUDEH, an ancient city of Hindoostan Proper, in the province of Oude, the remains of which are seated on the Gogra, nearly adjoining Fyzabad. It is said to have been the first imperial city of Hindoostan, and the capital of a great kingdom, 1200 years before the Christian era. It is frequently mentioned in the Mahabaret, a famous Hindoo work in Sanscrit, under the name of Adjudiah. But whatever may have been its former magnificence, no traces of it are left. It is considered as a place of sanctity; and the Hindoos frequently come hither, in pilgrimage, from all parts of India.

OUDENBURG, a town of Austrian Flanders, eight miles S.E. of Ottend, and ten W. of Bruges. Long. 3. 0. E. Lat. 51. 9. N.

OVEN (*Enceps*). By a mistake in the alphabetical arrangement, that article is placed after the article **OVERBAUW**. The ovens used by private families are usually made on a more diminutive scale, of cast or hammered iron, and some are heated by the same fire which serves for the cooking of other provisions.

Among the ovens of this construction, that of Mr. Powers, who obtained for it a patent in 1801, deserves to be noticed. In Pl. 40. it is given to the scale of $\frac{1}{2}$ an inch to the foot, and one foot deep. Fig. 1, represents the oven detached, so constructed as to be used for a laundry, or any other small stove. Fig. 2, represents the oven and hot closet complete. Fig. 3, is the inside view of fig. 2. A, the hot closet, which is gradually heated to any degree, by means of the large valve, in the chimney G. F, is the splitter, so called because it divides equally the heat of the fire, and throws it up the flues a, a, and heats both the oven and hot closet. In case the splitter should retain too great a heat for the oven B; b is a valve, for the reception of air, which may be regulated at option. H, is the small valve (fig. 8), made round, and fixed about two inches from the front of the oven, with holes in the sides, to secure it from the foot falling into the oven; the use of this valve is in case any noxious scent may arise from baking; a current of air passes through the ventilator C, and carries the scent into an open chamber I. The large valve is about twelve inches from the extremity of the oven. K, is the scraper, a piece of iron, carried over the hot closet, which, when pulled out by the two handles d, d, scrapes the foot which adheres to the top, and carries it down the flues into an open chamber L, and is swept out of the doors E, E, by a brush. C, the furnace, which is about eight inches square at bottom, and regularly passed up the sides, front and back. e, e, f, f, are baking fins. D, the cinder-hole. Fig. 4, is a baker's oven, similar in construction to the former one; but with these exceptions, it is four feet long, two deep, and two and a half high, with three ovens, two of which are regulated by ventilators at bottom. LL, is an open chamber, to prevent too great or sudden heat from the splitter. Fig. 6, the ventilator, which is turned by the handle f to enable g to admit or secure any quantity of air. Fig. 7, the large valve, which is placed in the chimney G, and acts as a damper, to graduate the heat to the hot closet; it is made with sheet-iron, like the oven, the size of the oven-pipe, turned by a strong thick wire handle in its centre. Fig. 8, is on the same construction, except being closed at the top, and holes in the sides already specified, and rendered, when down, air-tight by two pieces of iron on each side, i, i. The splitter is formed of sheet-iron, as in fig. 5.

In the year 1800, the Society for the Encouragement of Arts, &c. conferred a bounty of fifteen guineas on Mr. S. Holmes, for his invention of an oven, which is heated without flues. The whole consists of a cast-iron oven, from the side of which a solid piece of that metal projects into the fire, where it constantly remains; and, on becoming red hot, communicates to the whole oven a degree of heat sufficient for baking bread, while it at the same time assists the fire in roasting meat.

In the common iron ovens, the heat is communicated by means of flues, which waste a considerable part of the fire in its passage, and likewise require much labour to keep them of an uniform heat. The contrivance last alluded to, is intended to supply this and other inconveniences; and Mr. Holmes states, that his oven uniformly remains at a baking heat, without any additional expence, or trouble. We understand, however, that such improvement is by no means new; and that a similar method of saving fuel has for several years been practised in the west of England.

Cottage-Oven, a cheap and simple oven of a square form, made of sheet iron, and fixed in brick work; with a closed fire-place beneath, calculated to confine the heat and consume the smallest possible quantity of fuel.

Although we have thought it incumbent on us to give a place in this work to the different inventions of ingenious men, yet we have in general cautiously avoided giving any opinion on their merits. Justice to the public, however, requires that we should caution those who will not take the trouble of *examining for themselves*, at least to rely on the assurances of philosophical, disinterested, and impartial men, who have made *laborious experiments* purely for their benefit, rather than on the boastings of advertising shopkeepers; many of whose ovens and fire-places are certainly constructed on *false principles*.

Count Rumford, in the first part of his tenth essay, has recommended small iron ovens for cottagers, and nests of small ovens for the kitchens of families. "Of these," he says, in the second part, "I have had occasion to know first, that several persons have adopted them. I have likewise been made acquainted with the results of many of the trials that have been made of them, and with the complaints that have been brought against them. 'As I am more than ever of opinion that iron ovens will always be found useful when they are properly constructed and properly managed, I shall in this place add a few observations to what I have already published concerning them.

"And in the first place I must observe, that a small iron oven stands in need of a good door; that is to say, of a door well contrived for confining heat; and the smaller the oven is, so much the more necessary is it that the door should be good.

"The door must not only fit against the mouth of the oven with accuracy, but it must be composed of materials through which heat does not easily make its way.

"An oven door constructed of a single sheet of plate iron, will not answer, however accurately it may be made to fit the oven, for the heat will find its way through it, and it will be carried off by the cold air of the atmosphere, which comes into contact with the outside of it. The bottom of the oven may be made hot by the fire under it; but the top and sides of it cannot be properly heated, while there is a continual and great loss of heat through its door. But an oven, to perform well, must be very equally heated in every part of it.

"If the flame and smoke of the fire be made to surround an oven on every side, and if the fire be properly managed, there can be no difficulty in heating an iron oven equally, and of keeping it at an equal temperature, provided the loss of heat by and through the door be prevented.

"If the door be constructed of sheet iron, it must either be made double, or it must be covered on the outside with a panel of wood. By a double door, I do not here mean two doors, but one door constructed of two sheets or plates of iron, placed parallel to and at a certain distance from each other; and so constructed, that the air which is between the two plates may be shut up and confined. The two plates or sheets of iron, of which the double door of an oven is made, must not touch each other, except at their edges (where they must join, in order to their being fastened together); for, were they to lie one flat upon the other, the heat would pass too rapidly through them, notwithstanding there being two of them; but it is not necessary that they should be further asunder than an inch, or an inch and a half. One of the plates may be quite flat, and the other a little convex. The end of the oven must be made quite flat, or level, so as to be perfectly closed by a flat surface

placed against it. The door is that flat surface; and the greatest care must be taken that it apply with accuracy, or touch the end of the oven in every part, when it is pressed against it; for if any opening be left, especially if it be near the top of the oven, the hot air in the oven will not fail to make its escape out of it.

"It never should be attempted to make the door of an oven or of a closed fire-place fit, by causing it to shut into a rabbet. That is a very bad method; for besides the difficulty of executing the work with any kind of accuracy, the expansion of the metal with heat is very apt to derange the machinery, when the door is so constructed.

"From what has been said of the necessity of causing the door of an oven to fit with accuracy, it is evident that care must be used to place its hinges properly; and I have found, by experience, that such a door is closed more accurately by two turn-buckles, placed at a proper distance from each other, than by a single latch. I beg pardon for repeating what has already been said elsewhere."

The Count adds the following directions as to the management of the fire in heating an iron oven. "If," says he, "a certain degree of attention is always necessary in the management of fire, there is certainly nothing on which we can bestow our care that repays us so amply; and with regard to the trouble of managing a fire in a closed fire-place, it is really too inconsiderable to deserve being mentioned.

"Whenever a fire is made under an iron oven, in a closed fire-place, constructed on good principles, there is always a very strong draft or pressure of air into the fire-place; and this circumstance, which is unavoidable, renders it necessary to keep the fire-place door constantly closed, and to leave but a small opening for the passage of the air through the ash-pit register. The fire-place too should be made very small, and particularly the bottom of it, or the grate on which the fuel burns.

"If any of these precautions are neglected, the consequences will be—the rapid consumption of the fuel—the sudden heating and burning of the bottom of the oven—and the sudden cooling of the oven as soon as the fire-place ceases to be filled with burning fuel.

"It is a fact which ought never to be forgotten, that, of the air that forces its way into a closed fire-place, that part only which comes into actual contact with the burning fuel, and is decomposed by it in the process of combustion, contributes any thing to the heat generated; and that all the rest of the air that finds its way into and through a fire-place, is a thief, that steals heat, and flies away with it up the chimney.

"The draft occasioned by a fire in a closed fire-place being into the chimney and not into the fire, cold air is as much disposed to rush in over the fire, as through it, and it violently forces its way into the hot fire-place by every aperture, even after all the fuel is consumed, carrying the heat away with it up the chimney and into the atmosphere. It even makes its way between the bars of the grate whenever they are not quite covered with burning fuel: hence it appears how necessary it is to make the grate of a closed fire-place small, and to give to that part of the fire-place which is destined for holding the fuel, the form of an inverted truncated cone or pyramid, or else to make it very deep in proportion to its length and width.

"But the prevention of the air from finding its way through the fire-place without coming into contact with the burning fuel, is not the only advantage that is derived from constructing closed fire-places in the manner here recommended; it serves also to increase the intensity of the heat

in that part of the fire-place which contains the fuel, which tends very powerfully to render the combustion of the fuel complete, and consequently to augment the quantity of heat generated in that process.

"To prevent the bottom of the oven (or boiler) from being too much affected by this intense heat, nothing more is necessary than to make the fire-place sufficiently small, and to place it at a sufficient distance below the bottom of the oven. It will be indispensably necessary however with such a (small) fire-place, situated far below the bottom of an oven, to keep the fire-place door well closed, otherwise so much cold air will rush in over the fire, that it will be quite impossible to make the oven hot.

"I have found by recent experiments, that a fire-place in the form of an oblong square or prism, six inches wide, nine inches long, and six inches deep, is sufficient to heat an iron oven eighteen inches wide, twenty-four inches long, and from twelve to fifteen inches in height; and that the grate of this fire-place should be placed about twelve inches below the bottom of the oven. More effectually to prevent the fire from operating with too much violence upon any one part of the bottom of the oven, the brick-work may be so sloped outwards and upwards on every side from the top of the burning fuel to the extreme parts of the sides and ends of the bottom of the oven, that the whole of the bottom of the oven may be exposed to the direct rays from the fire.

"In some cases I have suffered the flame to pass freely up both sides of the oven to the top of it, and then caused it to descend by the end of the oven to the level of its bottom, or rather below it, and from thence to pass off by an horizontal canal into the chimney; and in other cases I have caused it to pass backwards and forwards in horizontal canals by the sides of the oven, before I permitted it to go off into the chimney. Either of these methods will do very well, provided the smoke be made to descend after it has left the top of the oven, till it reaches below the level of the bottom of it, before it is permitted to pass off into the chimney; and provided the canal by which the smoke passes off be furnished with a damper.

"In setting an oven, provision should be made, by leaving holes, to be stopped up with stoppers, for occasionally cleaning out all the canals in which the smoke is made to circulate; and in order that these canals may not too often be choked up with soot, they should never be made less than two inches wide, even where they are very deep or broad; and where they are not more than four or five inches deep, they should be from three to four inches wide, otherwise they will be very often choked up with soot.

"To clean out the flues of an oven, roaster, or large fixed boiler, a strong cylindrical brush may be used, which may have a flexible handle made of three or more iron wires, about one eighth or one hundredth of an inch in diameter, twisted together.

"Holes closed with fit stoppers must of course be left in the brick-work for occasionally cleaning out these flues.

"If the iron door of an oven be made double, the outside of it may with safety be japanned black or white, which will prevent its rusting, and add much to the cleanliness and neatness of the appearance of the kitchen.

"To save expence, small ovens for poor families may be closed with flat stones, or with tiles; and the fire-place door for such an oven, and its ash-pit register, may be made of common bricks placed edgewise, and made to slide against those openings.

"There is a circumstance respecting the iron ovens I am describing, which is both curious and important. The fire-

place for an oven of the smallest size should be nearly as capacious as one which is destined for heating a much larger oven; and I have found by repeated experiments, that a nest of four small ovens, set together, and heated by the same fire, will require but very little more fuel to heat them than would be necessary to heat one of them, were it set alone. An attentive consideration of the manner in which the heat is applied—of the smallness of the quantity, in all cases, that is applied to the heating of the contents of the oven—and the much greater quantity that is expended in heating the fire place and the flues, will enable us to account for this curious fact, in a manner that is perfectly philosophical and satisfactory.

"A *collage-oven*, eleven inches wide, ten inches high, and sixteen inches long, will require a fire-place five inches wide, five inches high, and seven inches long; and for four of these ovens, set together in a nest, the fire-place need not be more than six inches wide, six inches high, and eight inches long.

"I have in my house at Brompton, two iron ovens, each eighteen inches wide, fourteen inches high, and twenty-four inches long, set one over the other, and heated by the same fire; and their fire-place is only six inches wide, six inches high, and nine inches long.

"If the fire-place of an iron oven be properly constructed, and if the fire be properly managed, it is almost incredible *how small a quantity of fuel* will answer for heating the oven, and for keeping it hot. But if the fire-place door be allowed to stand open, and a torrent of cold air be permitted to rush into the fire-place and through the flues, it will be found quite impossible to heat the oven properly, whatever may be the quantity of fuel consumed under it; and neither the baking of bread, nor of pies, nor any other process of cookery, can be performed in it in a suitable manner.

"A very moderate share indeed of ingenuity is required in the proper management of a fire in a closed fire-place, and very little attention; and as it requires no bodily exertion, but saves labour, and expence, and anxiety; and as moreover it is an interesting and amusing occupation, attended by no disgusting circumstance, and productive of none but pleasing, agreeable, and useful consequences; we may, I think, venture to hope, that those prejudices which prevent the introduction of these improvements, will in time be removed."

Count Rumford next shews that ovens may be used in boiling and stewing, and also in warming rooms, it being necessary, in the latter case, merely to leave the door of the oven open.

Roasting-Oven, an invaluable contrivance of Count Rumford's, calculated *either for roasting or baking* in private families.

"Roasters on this simple construction (without blow-pipes—see *ROASTER*), which," says Count Rumford, "I shall call *roasting-ovens*, were at first made with flat bottoms, but of late they have been made cylindrical; and as I think the cylindrical form much the best in many respects, I shall give a description of one of them.

"In Pl. 40. fig. 1, represents a front view of a cylindrical roasting-oven with its door shut. The front end of the large cylinder, which constitutes the body of this oven, instead of being turned over a stout wire, is turned outwards, and riveted to a flat piece of thick sheet iron, which in this figure is distinguished by vertical lines, and which I shall call the front of the oven.

"The door of the oven is distinguished by horizontal lines. The general form of the front of the oven is circu-

lar; but it has two projections on opposite sides of it, to one of which the hinges of the door, and to the other the turnbuckles for fastening it when it is closed, are fastened. There is another projection above, which serves as a frame to the door-way, through which a brush is occasionally introduced for the purpose of cleaning the flues. On one side of this projection there is a small hole, which is distinguished by the letter *a*, through which the handle of projecting axis of the circular register of the vent-tube (which is not seen) passes.

"In the body of the oven, at the distance of half its semi-diameter below its centre or axis, there is an horizontal shelf, which is fixed in its place, not by resting on ledges, or by being rivetted to the sides of the oven, but by its hither end being turned down, and firmly rivetted to the vertical plate of iron, which I have called the front of the oven. This shelf, which should be made double to prevent the heat from passing through it from below, must not reach quite to the farther end of the oven; there must be an opening left, about one inch in width, between the end of it and the further end of the oven, through which opening the air heated below the shelf will make its way upwards into the upper part of the oven.

"From what has been said, it will be evident that the hollow space below the shelf we have just been describing, which I shall call the air-chamber, is intended to serve in lieu of the blow-pipes of a roaster; and this office it will perform tolerably well, provided means are used for admitting cold air into it, from without, occasionally. This is done by means of a register, which is situated at the lower part of the vertical front of the roaster, a little below the bottom of the door. This register is distinctly represented in figure 2.

"Fig. 2, which represents a vertical section of the oven through its axis, shews the (double) door of the roaster shut, and the two dripping-pans, one within the other, standing on the shelf we have just been describing, and a piece of meat above them, which is supposed to be laying on a gridiron placed in the second dripping-pan; The register of the air-chamber, below the shelf, which supplies the place of the blow-pipes, is represented as being open; and a part of the steam-tube is shewn, through which the steam and vapour are driven out of the oven, by the blast of hot air from the air-chamber.

"The cylinder which constitutes the body of the oven, is two feet long, and is supposed to be of cast-iron. It is cast with a flanch, which projects outwards about one inch at the opening of the cylinder, by means of which flanch it is attached, by rivets, to the front of the oven, which, as I have already observed, must be made of strong sheet-iron, which may be near one eighth of an inch in thickness.

"As the shelf is not attached to the sides of the oven, but to its front, the body of the oven need not be perforated, except in one place, namely, where the steam goes off; and as the bottom, or further end of the cylinder, and the flanch at its hither end, and the cylinder itself, are all cast at the same time, and as the form of the oven is such as will deliver well from the mould, it appears to me that the article might be afforded at a low price, especially in this country, where the art of casting in iron is carried to so high a pitch of perfection.

"The shelf might easily be made of cast-iron, as might also the dripping-pans and the double door of the oven; and I should not be surprised if English workmen should succeed in making even the front of the oven, and the register of the air-chamber, and every other part of the machinery, of that cheap and most useful metal.

"If the shelf be made of cast-iron, to save the trouble of rivetting in making it double, it may be covered by an inverted shallow pan of cast-iron, and in the bottom of this pan, which will be uppermost when it is inverted, there may be cast two shallow grooves, both in the direction of the length of the pan, and consequently parallel to each other, in which grooves (which may be situated about an inch from the sides of the inverted pan) two parallel projections at a proper distance from each other, cast at the bottom of the lower dripping-pan, may pass. These projections passing freely in the grooves which receive them, will serve to keep the dripping-pan steady in its proper direction when it is pulled into or drawn out of the oven.

"To increase the effect of the air-chamber when this oven is used for roasting meat, a certain quantity of iron wire in loose coils, or of iron turnings, may be put into the air-chamber.

"The door of the oven, which is very distinctly represented in the figure 2, should be about nineteen inches in diameter, if the oven is eighteen inches in diameter within, or in the clear. In this figure the internal edge or corner of the hither end of the body of the oven is indicated by a dotted circle, and the position of the shelf is pointed out by an horizontal dotted line.

"In fastening the vertical plate, which forms the front of the oven, to the projecting flanch at the hither end of the cylindrical body of the oven, care must be taken to beat down the heads of the rivetting nails in front, otherwise they will prevent the door of the oven from closing it with that nicety which is requisite.

"In siting this roasting-oven, the whole of the thick-nets of the vertical front of it should be made to project forward before the brick-work. The fire-place doors, ash-pit, register-door, damper in the chimney, &c. should be similar in all respects to those used for roasters; and the flues should likewise be constructed in the same manner.

"I have been the more particular in the description of this roasting-oven, because I think it bids fair to become a most useful implement of cookery. As an oven it certainly has one advantage over all ovens constructed on the common principles, which must give it a decided superiority; by means of the air-chamber and the steam-tube it may be kept clear of all ill-scented and noxious fumes, without the admission of cold air."

Count Rumford thus speaks of the difference between a roasting oven and a roaster; (see ROASTER).

"From the account of the roasting-oven that has just been given," says he, "it might be imagined that it possesses all the properties of the roaster, and in the same degree; but this is not the case. The essential difference between them is this; the blow-pipes of the roaster being surrounded by the flame on all sides, they are heated above as well as below, and the air in passing through them is much more exposed to the heat than it is in passing through the air-chamber of the roasting-oven. The particles of air which happen to come into contact with the bottom of the oven will of course be heated; but if, in consequence of their acquired lightness on being heated, they rise upwards to the top of the air-chamber, they will there come in contact with the bottom of the shelf, which, instead of communicating more heat to them, will deprive them of a part of that which they bring with them from below; but circumstances are very different in the blow-pipes of a roaster; in them, the particles of air acquire continually additional heat from every part of the surface with which they come into contact in their passage through the tube.

"From this view of the subject, we see how very essential

it is that the shell of a roasting-oven should be so composed or constructed, that heat may not readily find its way through it; and we see likewise how necessary it is to manage the registers of blow-pipes and of air-chambers with proper care."

We earnestly recommend these and all other inventions which Count Rumford has announced to the public after the most decisive experiments to ascertain their properties: and we add this important caution—*not to devote a title from the instruction given in his admirable essay, as to their form, or the manner of their being placed, which the workmen employed are continually proposing, and often obstinately bent upon.*

OVERFLACKEE, an island of the United Provinces, in Holland, between the mouths of the Maese. Meliland is the principal town.

OVERSEER, a person of authority who superintends those who are employed as labourers in any art or manufacture. The term however is used in other senses, according to the nature of the superintendence.

OVERSEERS OF THE POOR, are persons employed to carry the poor laws into effect in the different parishes wherein they are appointed. Their duties are remarkably well pointed out in the following charge to overseers of the hundred of Stoke, in the county of Bucks, by Thomas Bernard, esq. published in the Reports of the Society for bettering the Condition of the Poor. Addressing the party himself, he says,

"The office, to which you are this day appointed, is of no small importance; inasmuch as the welfare of a considerable part of our fellow-subjects depends upon the due execution of it. It is your duty, fir, to be the Guardian and Protector of the Poor;—and, as such, to provide employment for those who can work, and relief and support for those who cannot; to place the young in a way of obtaining an honest livelihood by their industry, and to enable the aged to close their labours and their life in peace and comfort.

"In the execution of this office, it is your duty to consider how you may best improve the situation of the poor in your parish, so as to lessen the calls for parochial relief, and thereby to diminish your parish rate.—In this respect, much may be done by pecuniary aid and encouragement to parishioners with large families; much, by means of regular employment for children, either at home or in schools of industry; so as to fit them to be placed out in service at an early age;—and much, by a judicious management of your poor-house, if you have one, and by making a proper distinction and separation between the honest and industrious, who are driven thither by age, infirmity, or misfortune, and the idle and profligate, whose loose and vicious habits of life have made them a burden and a disgrace to their parish.

"You are, fir, within the space of 14 days, to receive the books of assessments and of accounts from your predecessors, together with such money and materials as shall be in their hands; and, if any balance is due to them, you are to pay it out of the first monies that come to your hands.

"In conjunction with the church-wardens of your parish, you are, by a parish rate, to raise money, to purchase a sufficient stock of materials for setting the poor to work, and to supply competent sums for the relief of the lame, impotent, old, blind, and such among you as are poor and unable to work, and for putting out poor children apprentices.

"In making the poor's rate, it is necessary that a majority of the church-wardens and overseers should co-operate; and it is your duty, to make an equal and impartial rate, without favour or affection, upon every occupier of lands, houses, tithes, mines, and saleable underwoods in your parish.

When such rate is made, it is to be approved and signed by two justices, dwelling in or near your parish; and, on the Sunday after, to be published in your parish church.

"In case the rates, so made, shall not be regularly paid, you may obtain a summons for the person making default to appear before two neighbouring justices; who may, by warrant, authorize such rates to be raised by distress in your parish; or, if sufficient goods of such person making default be not found in your parish, then, upon application to one justice, to be levied in any other county, or district, where the defaulter may have property.

"With regard to the poor's rate, we know that there are instances, in some parts of England, where it has been levied upon the poor; we mean, by the poor, those who have not the advantage of any profession, trade, property, or income, nor other means of support, except their daily labour; and who have only a cottage, a little garden, and a few articles of furniture, merely such as are necessary for them and their families; and we think it our duty to observe, that, to charge such poor persons to the rate at all, appears to us to be directly contrary to the authority, under which the rate is made; viz. the statute of Elizabeth, which was passed soon after the dissolution of the monasteries, and entitled 'An Act for the Relief of the Poor,' an act, in which, if cottages had been intended to have been included, they would have been expressly named, as well as houses; from which they were then considered as totally different, and distinguishable in point of law.

"It is impossible to read that statute, without perceiving that it was never intended to compel the poor, who are frugal and industrious, to support those who are not so; but that there is, throughout, a distinction made between the class of men, not having income or property, who are to be entitled to relief under it, and those who from the income of their property, profession, trade, or occupation, are to contribute to that relief;—that by the poor are intended the labouring cottagers; who, if out of employment, are, under that act, to have work found them;—if lame, impotent, old, or blind, and unable to work, are to receive pecuniary or other relief;—who, if habitations are wanting, are to have them erected at the charge of the parish;—and whose children, if unemployed, are to be set to work, and, at a fit age, to be placed out apprentices in service, or to a trade.

"But, whatever may be the opinion as to the law, there can be no doubt in point of prudence, that while the day labourer, who has children, is exerting himself to maintain his family without parochial aid, it is a dangerous experiment to attempt to make him contribute to the support of your other poor, with the probable, or even a possible, consequence of driving a large family on the parish.

"There is, however, one class of labouring men, who have still a superior claim to exemption from parish rates;—the Members of Friendly Societies, who are acquiring for themselves, out of the savings of their own industry, an eligible and honourable provision, independent of the poor laws. As these societies, particularly where they enjoy the advantage of having their rules framed and confirmed according to law, have the effect of greatly reducing the poor's rate, it is required of you, as an act, not merely of justice, but of prudence, not to endeavour, in any case, to compel such labouring men, being members of friendly societies established according to law, to contribute to the support of the other poor of their own parish.

"In applying the rate for the relief of the poor, we request that you will attend to the permanent improvement of their condition, rather than to the little expedient or economy of the moment.—If a poor man's family is visited by sickness

Count Rumford's Roasting-Oven.

Fig. 1.

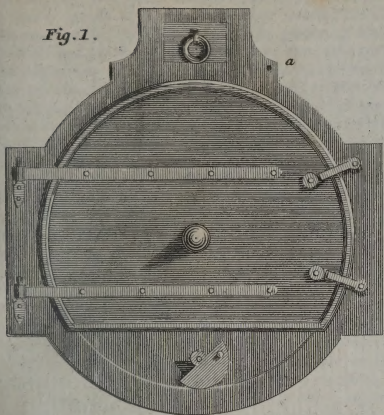
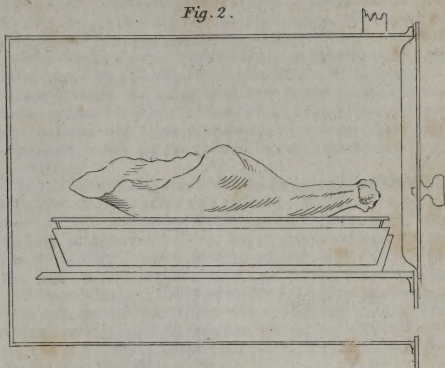


Fig. 2.



Power's Patent Portable Oven.

Fig. 1.

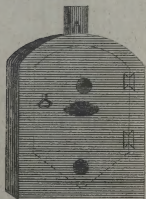


Fig. 2.

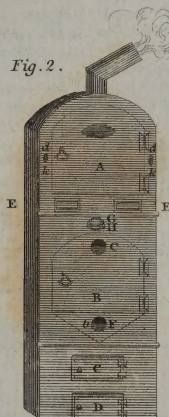


Fig. 3.

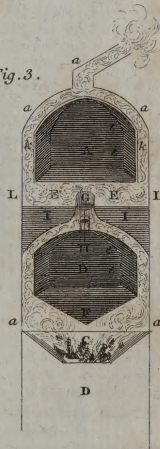


Fig. 4.

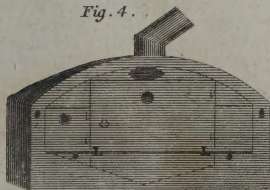


Fig. 5.



Fig. 6.



Fig. 7.



Fig. 8.



or calamity, it is better for your parish that he should receive a timely supply of medical and other necessary assistance at home, and be re-established in the power of maintaining himself and his family by his labour, than that they should be neglected, until it becomes necessary to move them into the poorhouse, where they may probably remain, a burthen to the parish, for many years.—If the poor of your parish want employment, there is more economy in supplying them with instruction, encouragement, spinning-wheels, wool, and other means of earning a livelihood, than in leaving them to be oppressed by poverty, and by that languid and desponding indolence, which is often rather the misfortune than the vice of the poor; with the consequence of being obliged to maintain the family afterwards, at ten times the expence that would have been incurred at first, by a timely supply of relief to themselves. Upon this head, we have one earnest request to make; that whatever is made by their labour, they may have the whole produce of it, without any deduction, on any pretence whatever.—The earnings of the poor should be sacred and inviolate, in order to encourage them to work, and to exempt the character of their employers from the imputation of interested motives.

“Upon the authority of the case of the King and North Shields (20 Geo. III.) we have, where parents have applied for support for their infant children under seven years of age, ordered them relief at home, without removing the parents or children into the parish workhouse; adopting the humane and judicious sentiments, which Mr. Justice Buller delivered on that occasion;—that it would be injurious to parishes, if, “when one of a numerous family wants relief, the whole must go to the parish workhouse;” and that it would be very unjust “that the parish should be entitled to the labour of a whole family, because one of them might want relief.”—Any difficulties, however, that did exist on this subject, have been removed by the act (36 Geo. III. cap. 23.) which enables magistrates to make special orders for the relief of industrious poor persons at home.

“It is your duty, sir, to see that there are proper habitations for the poor of your parish; and if, by the decay of cottages, or by the increase of population, more habitations are wanted for them, you are, with the leave of the lord of the manor, to erect cottages for them at the parish expence, on the waste or common, within your parish.

“After every thing is done for the encouragement and protection of the deserving poor, there remains another class, which it will be necessary to reform by punishment; I mean those drones of society, idle and disorderly persons, whom the law has described, as vagrants, rogues, and vagabonds. It is due to the honest exertions of the industrious cottager, that, while he receives aid and encouragement, they should not escape correction; that every distinction should be made between him and those who wander about, endeavouring to subsist, without labour, on the industry of others; of whom many have deserted their families, and almost all have quitted the place, or situation, where their services might have been useful, and where they ought to have been employed. —In bringing these to punishment, with a view to amendment, it will be prudent for you to apply for directions to this bench, where you have found regular attendance and assistance from the magistrates for the space of nine years; and it will be merciful to select the objects, as that the punishment of few may have its effect in the reform of many.

“As in your conduct towards the poor out of the workhouse, so, in respect of those within its walls, there should be a marked distinction between the industrious and the idle, and between the orderly and the profligate. There is nothing in the internal regulation of this country, more subversive of its credit, or more inimical to its prosperity, than the

uniform and unvaried treatment, which the best and the worst of our fellow-subjects receive in a parish workhouse. In that place it is of the utmost importance, not merely to the poor persons who are driven thither by the tempest of fortune, but to the very well-being of the country itself, that there should be a decisive boundary—a line of separation—drawn between the industrious and honest poor, who are suffering under a calamity from which neither you nor we can presume to be exempt, and those vicious and abandoned characters, which are the pests of society, and the objects of punishment.

“In administering relief, we enquire into the industry and character of the person who applies. We have found no small benefit in adhering strictly to this rule; and we confidently recommend to you, as an encouragement to the energy and good habits of the poor, not to give to the idle the same encouragement, as is due to the honest and industrious labourer, suffering under sickness or misfortune. If it appears that the person who applies has exerted himself honourably and diligently in his situation, it is your duty sir, and it is the interest of your parish, that he be relieved, kindly, and liberally.

“There is an act of parliament, which enables you, if you are so disposed, to farm your workhouse.—It is possible, that a farmed workhouse, confided to a deserving person, like absolute power in the best and most virtuous hands, may be the instrument of good; but there is no instance whatever, in which the duty and interest of the person intrusted are so completely in opposition to each other, as in that of the farmer of a parish workhouse. For, while his duty should direct him to improve the state of the workhouse, it is his interest to keep it in such a condition, as to deter any competitor from offering for it, at the end of the year. The necessary consequence of this is the increase of parochial expences; and we find, from the different returns throughout the kingdom, that, where workhouses have been farmed, though there was some saving at first, yet in a few years the expences thereby have been greatly increased, and the poor-rate accumulated to an alarming amount. Where, indeed, a principal land-owner, or land occupier, of a parish can be induced to contract for the parish workhouse, he has an interest in the permanent improvement of its condition, and in the diminution of the distresses of the poor; but where a vagrant speculating contractor visits your parish, with a view of making his incidental profit by farming your workhouse, we trust you will consider the Christian principle of doing as you would be done by; and that you will not confide the poor, whose Guardian and Protector it is your duty to be, to one, into whose hands you would not trust an acre of your land, or any portion of your own property.

“With regard to your *workhouse*, we have another observation to make, and that respects your parish children.—As you regard your own interest and their welfare, we entreat you to educate them out of the workhouse. You can do it with as little, and even less, expence to the parish; with much less annoyance to the old people in the workhouse, who are too often the sport of those little, unthinking, and uneducated creatures;—and with much more benefit to the children, who get earlier and more advantageous situations in service, and succeed better in life, proceeding from a parochial school or cottage, than from a workhouse.

“With regard to the removal of labourers belonging to other parishes, consider thoroughly what you may lose, and what the individual may suffer, by the removal, before you apply to us on the subject. Where you have had, for a long time, the benefit of their labour, and where all they want is a little temporary relief, reflect whether, after so many years spent in your service, this is the moment and the cause for

removing them from the scene of their daily labour to a distant parish. There are cases, in which removals from one parish to another are proper and justifiable; but, in every instance, before you apply for an order of removal, consider whether it is prudent; and, if prudent, whether it is just.

"Within four days after the appointment of your successors, you are to produce your accounts before two of the neighbourhood justices for examination; and, within fourteen days after such appointment, you are to deliver your books, materials for work, and balance of cash, to the persons appointed to succeed you.—If you shall have executed your office duly and conscientiously, you will then quit it, with the blessings of the poor, the esteem and respect of the other classes of society, and with the approbation of your own conscience."

We earnestly recommend this charge to the notice of all Overseers of the poor, as well as to those who have the means of impressing these *most sacred duties* on their minds.

OVERYSCHÉ, a town of Austrian Brabant, seated on the Ysèbe, six miles N.E. of Brussels, and 9 S.W. of Louvain. Long. 4. 30. E. Lat. 50. 53. N.

OUGEIN, a town of Hindoostan Proper, in the province of Malwa, capital of one of the Western Mahratta chiefs. It is a place of great antiquity, 452 miles S.W. of Poona. Long. 75. 56. E. Lat. 23. 26. N.

OUZLZ, a town of Piedmont, 12 miles W. of Suza. Long. 6. 46. E. Lat. 45. 20. N.

OUNDLE, a town in Northamptonshire, with a market on Saturday; seated on the Nen, over which are two bridges, 26 miles N.E. of Northampton, and 83 N. by W. of London. Long. 0. 42. W. Lat. 52. 26. N.

OUREM, a town of Portugal, in Estremadura, with a castle, on a mountain between the rivers *Leira* and *Tomar*. Long. 7. 40. W. Lat. 39. 34. N.

OURIQUE, a town of Portugal, in Alentejo, remarkable for a victory obtained by Alphonso, king of Portugal, over five Moorish kings, in 1139. The heads of these five kings are the arms of Portugal. It is 32 miles S.E. of Lisbon. Long. 8. 49. W. Lat. 38. 26. N.

OUSSORE, a town of the peninsula of Hindoostan, in the Mysoor country, taken by the English in July, 1792. It is 19 miles S.E. of Bangalore, and 69 E.N.E. of Seringapatam. Long. 77. 47. E. Lat. 12. 50. N.

OUTERIO, a town and fortress of Portugal, in Trallos-Montes, nine miles S.E. of Braganza, and 21 N.W. of Miranda do Douro. Long. 6. 37. W. Lat. 41. 55. N.

OWERRA, or **OWEIRO**, a town and territory of Guinea, in the kingdom of Benin. The air is unwholesome, and the soil dry and lean; but there are several kinds of fruits, such as bananas and cocoa nuts. Long. 6. 0. E. Lat. 6. 0. N.

OX, a general appellation for male black-cattle; but which strictly denotes a castrated bull.

Having already treated, under different heads, of the best mode of feeding and fattening oxen; and shewn their superiority over horses, under *HUSBANDRY*, we shall confine our observations, in the present article, to the most advantageous way of harnessing and managing them, as beasts of burthen, or draught.

The principle of draught depends, as Lord Somerville has justly observed, on the joint power of the neck and base of the horn. This object is effected in Portugal, by a long leather strap, which is wrapped round the yoke; thence round the lower part of the horns; and is again fastened to the yoke. Thus, the heads of oxen become more steady in performing their work, and the animals themselves are rendered more tractable.

Another mode of working oxen, is that termed, by the

head, which is practised in France, and represented in Pl. 38. fig. 1.

To afford a more complete idea of the manner in which the French oxen are fastened to the bow, we have added an accurate front view of the upper part of the animals' heads; as such method, in the opinion of Lord Somerville, is the best preparatory step towards introducing that practised in Portugal. See fig. 2.

This method was a few years since introduced into Ireland, by Lord Shannon, with complete success; two oxen thus harnessed, being able to draw with great ease three tons in weight.

The most valuable breeds of these animals for draught, in this country, are those of Suffex, Devon, Herefordshire, Glamorgan, and Pembrokehire; which, on account of their large size, are well calculated for labour, and justly preferred, in those counties, to cart-horses. The Suffex oxen have benten horses at plough, in the deepest clays; and those of Herefordshire are reputed to be superior in long journeys, for conveying chalk, or similar heavy materials, over a hilly and stony country. Although some prejudiced persons may object that oxen are unfit for draught in mountainous situations, yet let it be remembered, as Mr. Comber pertinently remarks, see his "*Real Improvements in Agriculture*," &c. (8vo. 1772, 1s. 6d.) that in such instances, "no draught can be well used;" and that the descending of steep hills is in all respects as hurtful to horses as to oxen.—The Devonshire cattle walk with uncommon speed; and, if four or five horses can till 100 acres of land, the same work might doubtless be managed equally well by a similar number of the Devonshire or Herefordshire breeds, if they were trained and fed (particularly with a view to speed) with the same care as horses: the farmer would also save a considerable part of the expence in their food. For though, after being very hardly worked, they require a little corn, yet their keep, in all other respects, is much cheaper; and, if well food, they will perform every kind of draught in the same manner as horses: lastly, they will pay for their labour; and, after being moderately worked, for 10 or 12 years, if properly managed, they will leave all the profit of their growth, in clear gain, to their owners. Besides, should an ox, from any unforeseen accident, be lamed, or become blind or old, he may be fattened, and sold at any time for a larger price than he originally cost; because these animals uniformly feed in a more kindly manner, and sooner grow fat, after they have been worked for several years.—On the contrary, the value of a horse decreases, after he attains the age of seven years; and, should any accident happen, he becomes utterly useless.

Oxen, then, being of extensive and permanent utility, deservedly claim every attention from the humane and unbiassed husbandman, particularly with respect to shoeing; as they will thus be enabled to walk and draw, both with greater speed, and with superior effect, when carefully shod. This operation is usually performed by casting them on their backs, when the farrier proceeds to affix the shoes, in a manner similar to that practised on horses. By such attempts, however, they are liable to numerous accidents; for the prevention of which, an ingenious machine has been contrived, in order to secure the animal by means of short posts. On these, the fore or hinder legs are fastened according to circumstances; and thus the shoes are applied, so that it is almost impossible to injure the helpless creature. The curious reader will find two neat engravings of this useful contrivance, in the 26th vol. of *Annals of Agriculture*.

OZWICZIN, a town of Little Poland, 34 miles W. of Cracow. Long. 19. 10. E. Lat. 50. 10. N.

P.

PACEM, a town in the N. part of Sumatra, in the East Indies. Long. 97. 15. E. Lat. 5. 0. N.

PACHUCA, a town of Mexico, famous for its silver mines. Gemelli says, that in the space of six leagues there are not less than a thousand. One of them, called Trinity, is supposed as rich as any in Mexico, there having been taken from it in ten years' time only, above forty millions of silver. It is 45 miles N.N.E. of Mexico. Long. 100. 4. W. Lat. 20. 32. N.

PACY, an ancient town of France, in the department of Eure, seated on the Eure, eight miles S. by E. of Vernon. Long. 1. 41. E. Lat. 48. 58. N.

PADANG, a sea-port on the W. coast of Sumatra, in the East Indies, in the possession of the Dutch. In 1797, it was almost totally destroyed by an earthquake, and upward of 300 lives were lost. Long. 99. 46. E. Lat. 0. 50. S.

PADRON, a town of Spain, in Galicia, seated on the Ulla, 12 miles S. of Compostella. Long. 8. 17. W. Lat. 43. 40. N.

PADSTOW, a sea-port in Cornwall, with a market on Saturday. It has some trade to Ireland, and is seated at the mouth of the Camel, on the Bristol Channel, 30 miles W. of Launceston, and 243 W. by S. of London. Long. 4. 45. W. Lat. 50. 42. N.

PADULA, a town of Naples, in Principato Citereio, 14 miles N. of Policastro. Long. 15. 41. E. Lat. 40. 29. N.

PAEFENHOFFEN, a town of France, in the department of Lower Rhine, seated on the declivity of a mountain, near the river Motter, eight miles W. of Haguenau. Long. 7. 38. E. Lat. 48. 48. N.

PAGLIANO, a town of Naples, in Abruzzo Ulteriore, 15 miles E.S.E. of Aquila. Long. 13. 46. E. Lat. 42. 28. N.

PAINBOEUF, a sea-port of France, in the department of Lower Loire, at the mouth of the Loire. Hence all the ships belonging to Nantes take their departure, and here they anchor on their arrival. It is 20 miles W. of Nantes. Long. 1. 33. W. Lat. 47. 15. N.

PAINSWICK, a town in Gloucestershire, with a market on Tuesday. It has a manufacture of white cloths for the army, and for the India and Turkey trade; and hence is brought a stone, remarkable for its beauty and neatness, for the pavement of floors. Painswick is situate so high, as every way to command extensive views over a vale of vast richness and variety, of the windings of the Severn, Malvern Hills, and parts of the counties of Salop, Hereford, and Monmouth. It is seven miles S.E. of Gloucester, and 101 W. by N. of London. Long. 2. 11. W. Lat. 51. 46. N.

PAINT (*Encycl.*). The preparations employed in painting houses, being principally white-lead, the vapour of which, whether taken into the stomach or lungs, or absorbed by the skin from the surrounding atmosphere, is the most subtle of our domestic poisons, and the grinding of which is also extremely detrimental to health, we shall state the following process, lately invented by M. de Vaux. Should this prove an effectual substitute for the pernicious paint prepared from the oxide of lead, it will be of inestimable service to society. He directs two Paris pints of sweet skimmed-milk (two quarts

English measure), six ounces (6½ ounces English averdupois) of fresh flaked lime, four ounces of nut, caraway, or linseed oil, and three pounds of whiteing, to be used in the composition. The lime must first be introduced into a stone vessel, to which should be added such a proportion of milk as will produce a mixture resembling thin cream. Next, the oil is to be gradually poured in; the whole being gently stirred, and the remainder of the milk added. The whiteing must next be crumbled in, or scattered on the surface of the fluid, which it gradually imbibes, and at length sinks; when the whole should be briskly agitated.

M. de Vaux observes, that the milk ought not to be four; because, in such case, it would form, with the lime, a calcareous acetite, which strongly attracts moisture. Either of the oils above mentioned may be used; but, if white paint be required, that of caraways is preferable, as it is perfectly transparent.—In order to obtain a distemper or size-colour, the paint thus prepared may be tinged with levigated charcoal, yellow-ochre, &c. for painting with which, the most common oils may be used.

The quantity here preferred is, further, stated to be sufficient for the first coat of six toises, or from twenty-four to twenty-seven square English yards: it may be applied in the usual manner; and costs in Paris the sum of nine sols, or 4½d. sterling.

Another and perhaps better substitute for white-lead paint, and one which the public safety demands that we should resort to, is that prepared with the oxide of zinc, for which a patent has been obtained, and which is almost equally cheap, and no less beautiful and durable.

PAISHAWUR, a city of Hindoostan Proper, capital of a district in the country of Cabul. It is situate on the Kameh, 125 miles S.E. of Cabul, and 170 N. of Moultan. Long. 70. 36. E. Lat. 33. 18. N.

PALACIOS, a town of Spain, in Andalusia, 12 miles S. of Seville. Long. 5. 24. W. Lat. 37. 20. N.

PALAIS, a town of France, capital of the island of Belleisle, off the coast of Bretagne. It has a strong citadel, which stood a long siege against the English, in 1761, and then surrendered on honourable terms. Long. 3. 2. W. Lat. 47. 18. N.

PALAIS, St. a town and district of France, in the department of Lower Pyrenées, which, with the town and district of St. John Pied-de-Port, forms nearly the whole of the late province of Lower Navarre. This is only a very moderate portion of the kingdom of Navarre, wrested, in 1512, from John d'Albert, by Ferdinand king of Aragon and Castile. This portion, separated from Upper Navarre by the Pyrenées, made part of the kingdom of France, having been annexed to it by Henry IV. who held it in right of his mother, Jeanne d'Albert. St. Palais is seated on the Bidouze, 15 miles S.E. of Bayonne. Long. 1. 4. W. Lat. 43. 21. N. See NAVARRE.

PALAMCOTTA, or **TINEVELLY**, a town of Hindoostan, in the Carnatic, 410 miles S.W. of Madras. Long. 77. 54. E. Lat. 8. 43. N.

PALAMOS, a strong sea-port of Spain, in Catalonia, seated on the Mediterranean, 47 miles N.E. of Barcelona. Long. 2. 58. E. Lat. 41. 58. N.

PALAMOW, a town of Hindoostan Proper, in the province of Bahar, 210 miles S.S.W. of Patna. Long. 84. 10. E. Lat. 23. 40. N.

PALANKA, a town of Upper Hungary, seated on the Ibola, 37 miles N. of Buda. Long. 18. 23. E. Lat. 48. 9. N.

PALAZZO, a town of Piedmont, in the county of Canavese, five miles E. of Ivrea.

PALAZZUOLO, a town of Sicily, in Val di Noto, 80 miles S. of Messina. Long. 15. 5. E. Lat. 37. 3. N.

PALAZZUOLO, a town of Italy, in the Bresciano, seated on the Oglio, 30 miles N.E. of Milan. Long. 9. 56. E. Lat. 45. 40. N.

PALENO, a town of Naples, in Abruzzo Citeriore, nine miles E. of Solmona.

PALENZUELA, a town of Spain, in Old Castile, 25 miles S.W. of Burgos. Long. 3. 15. W. Lat. 42. 5. N.

PALEIRNO, a town of Naples, in Calabria Citeriore, six miles S.S.W. of Cosenza.

PALICANDCHERRY, a town of the peninsula of Hindoostan, in the country of Calicut, 20 miles S.W. of Coimbatore, and 66 S.E. of Calicut.

PALIMBAM, the capital of a kingdom of the same name, in the island of Sumatra, seated on the E. coast, 120 miles N.E. of Bencoolen, and subject to the Dutch. Long. 103. 31. E. Lat. 3. 30. S.

PALLISER'S ISLANDS, a group of islands, in the South Pacific Ocean. Long. 146. 30. W. Lat. 15. 30. S.

PALMA, a town of Portugal, in Alentejo, seated on the river Cadoan, 20 miles E. of St. Ubes. Long. 8. 40. W. Lat. 38. 37. N.

PALMA, a town of New Granada, 50 miles N.W. of St. Ede-Bogota. Long. 73. 40. W. Lat. 4. 30. N.

PALMARIA, a small island in the Mediterranean, about 15 leagues from the coast of Naples, and three miles W. of the island of Ponza. Long. 12. 45. E. Lat. 40. 58. N.

PALMARIA, a small island in the Mediterranean, near the coast of Genoa, at the entrance of the gulf of Spezzia, seven miles S. of Spezzia. Long. 9. 46. E. Lat. 44. 1. N.

PALMAS, the capital of the island of Canaria. See CANARY.

PALMAS, one of the Philippine Islands, 16 leagues S.E. of Mindanao. Long. 127. 0. E. Lat. 5. 33. N.

PALMAS, CAPE, a promontory of Africa, on the Ivory Coast of Guinea. Long. 5. 34. W. Lat. 4. 26. N.

PALMELA, a town of Portugal, in Efremaadura, with a castle on a rock, seated on the Gadaon, 19 miles S.E. of Lisbon. Long. 8. 56. W. Lat. 38. 29. N.

PALNAUD, a district of the peninsula of Hindoostan, belonging to the Carnatic, but situate toward the river Kistna, to the W. of the Guntoor Circar.

PALOS, a town of Spain, in Andalusia, with a pretty good harbour; remarkable for being the place whence Christopher Columbus sailed on his first adventurous voyage in 1492. It is seated at the mouth of the Rio Tinto, 46 miles S.W. of Seville. Long. 6. 39. W. Lat. 37. 14. N.

PALOS, CAPE, a promontory of Spain, in Murcia, to the S. of a town of the same name, 20 miles E. of Carthagena. Long. 6. 39. W. Lat. 37. 37. N.

PALOTA, a town of Lower Hungary, in the county of Alba Regalis, taken from the Turks in 1687. It is 40 miles S.W. of Buda. Long. 18. 0. E. Lat. 47. 0. N.

PALOTZA, a town of Hungary, situate on the Poprat, 54 miles N. of Caffovia, and 112 N.N.W. of Zatmar. Long. 21. 20. E. Lat. 47. 42. N.

PALTE, a famous lake of Thibet, lying to the S. of Lissa, about three days' journey, and 12 miles S. of the river Sappo or Burrampooter. It is 250 miles in circumference; and in

the middle of it is one large island. On the W. shore of this island, or congeries of islands, is a monastery, and the seat of the Lamiffa Turcepamo, or the Great Regenerate, in whom the Thibetians think that a divine spirit is regenerated, as it is in the Great Lama. The word *Lama* signifies a priest, and *Lamiffa* is the feminine of Lama.

PAMBERS, a town of France, in the department of Arriège, with a bishop's see. It is not so considerable as formerly, nor peopled in proportion to its extent. Near it is a mineral spring, said to cure the gout and obstructions. Pambers is seated on the Arriège, eight miles N. of Foix, and 30 S. of Toulouse. Long. 1. 32. E. Lat. 43. 8. N.

PAMLICO SOUND, a kind of inland sea, of North Carolina, 100 miles long, and from 10 to 20 broad. It is separated, in its whole length, from the Atlantic, by a beach of sand, hardly a mile wide, generally covered by small trees or bushes. It has several inlets; but that of Ocrecock is the only one that will admit vessels of burthen. This inlet is in long. 76. 20. W. Lat. 35. 10. N.

PAMPELONNE, a town of France, in the department of Tarn, 15 miles N. by E. of Alby. Long. 2. 17. E. Lat. 44. 10. N.

PANCERAS, St. a village in Middlesex, a little to the N.W. of London. It has a church dedicated to St. Pancras; and the church-yard is remarkable for being the principal place of interment for the Roman-catholics. At a public-house near the church is a medicinal spring. Here is the Veterinary College, established in 1791, for the improvement of horsemanship, and the treatment of cattle in general.

PANGA, a town of the kingdom of Congo, capital of the province of Bamba. Long. 142. 29. E. Lat. 6. 30. S.

PANJAB, a country of Hindoostan Proper, being that watered by the five greatest branches of the Indus. It was the scene of Alexander's last campaign, and the termination of his conquests. It forms a square of 250 miles, and includes the whole of Lahore, and a great part of Moultan Proper. To the lower part of Moultan it is flat and marshy, and inundated by the periodical rains which fall between May and October.

PANNANACH WELLS, a village in Aberdeenshire, situate a little below the waterfall, called the Lin of Dee, in the valley of Glenmuick. It is noted for its mineral waters; and has a lodge for the accommodation of the company that frequent this place in summer.

PANNIPUT, a town of Hindoostan Proper, situate in an extensive plain between the cities of Delhi and Sirhind. This plain is celebrated for a battle, in 1761, between an army of 200,000 Marhattas, and Abdallah, sultan of Candahar, at the head of 150,000 Mahometans, in which the former were totally defeated. Panniput is 72 miles N.W. of Delhi. Long. 76. 45. E. Lat. 29. 15. N.

PANOMI, a town of Turkey in Europe, in Macedonia, 16 miles S. of Salonichi. Long. 23. 10. E. Lat. 40. 25. N.

PANORMO, a town of Turkey in Europe, in Albania, situate on a gulf of the Adriatic, opposite the island of Corfu, 45 miles S.S.E. of Valona. Long. 20. 2. E. Lat. 40. 0. N.

PANTALARIA, an island in the Mediterranean, between Sicily and the coast of Tunis, 17 miles in circumference. It abounds in cotton, fruits, and wine, and is subject to the king of Naples. Long. 12. 31. E. Lat. 36. 55. N.

PANTFKA, a town of Turkey in Asia, in Natolia, on the N.E. coast of the sea of Marmora, 12 miles S.E. of Constantinople.

PAOOM, one of the New Hebrides, in the South Pacific Ocean, to the S. of Malicollo. Long. 168. 28. W. Lat. 16. 30. S.

PAPER (*Engel.*). Amongst the great variety of vegetable

Substances convertible into paper, barley-straw is, perhaps, the most abundant and profitable material which might, in this respect, serve as a substitute. Dr. Schaeffer, a German physician, whose inventions have not always been acknowledged, obtained a yellowish paper of this straw, after soaking it in boiling water, then steeping it in lime-water, and adding the 20th part of linen-rags.

For manufacturing straw into paper, his majesty's patent, as well as enact of the legislature, have recently been obtained; but the ingenious editor of the *Domestic Encyclopedia* asserts, on the authority of a paper-maker near London, that the processes described were well known previously to both grants, and that he actually procured specimens of paper manufactured of raw vegetable materials, in this country, in 1790. If so, it follows, that the patentee is not entitled to the sole exercise or monopoly of this manufacture, but any paper-maker in the United Kingdom, has a right to make use of the discovery.

In a later volume of the *Annales de Chimie*, we meet with some useful hints, relative to the manner of re-manufacturing the paper of old books (or even new ones of a certain description), or any letters, or other paper already used for writing or printing; by M. M. de Yeux, Pelletier, Molard, and Verhagen.

1. *Process for re-fabricating Printed Paper*:—All paper of the same quality should be collected, and separated from such as may have any writing on the pages; the edges of those leaves which may have become yellow, and also the backs of books, being cut off by the instrument used by book-binders.—One hundred weight of paper is now to be put, sheet by sheet, into vats, sufficiently capacious to contain it, together with 500 quarts of hot water; but which ought to be filled about one-third:—the whole is next stirred by two men for the space of one hour, who are gradually to add as much water as will rise about three inches above the paper; after which it is left to macerate four or five hours; the agitation being occasionally repeated, so as to separate, and at length to form the paper into a kind of paste.

The water is now drawn off by means of pipes, and the pulp conveyed to the mill, where it is to be coarsely ground for one hour; at the expiration of which, it is boiled in a cauldron for a similar space, with a sufficient quantity of water to rise four or five inches above it. A short time before the mixture begins to boil, thirteen quarts of caustic ley of pot-ash are to be added to every cwt. of paper. The ley alluded to, is prepared by dissolving 100 lbs. of pot-ash in 300 quarts of boiling water, to which are to be added 20 lbs. of pulverised quicklime; and the whole must be briskly agitated, till it become of an uniform consistence, when it is suffered to stand for 12 hours; at the end of this time it must be drawn off, and 75 quarts of boiling water added to the sediment, which being stirred for half an hour, and suffered to stand till it become clear, is to be mixed with the liquor first decanted.

When the paste has boiled in this ley for one hour, the fire is to be extinguished, and the matter suffered to macerate for 12 hours; after which it must be taken out, drained, put into bags, and submitted to the action of a strong press for a similar length of time, to deprive it of all moisture; and, if it appear white, so that the printers' ink be properly extracted, it may be re-manufactured in the usual manner.

2. *Process for the re-fabrication of Written Paper*:—The paper must be sorted; the yellow edges cut off; and the whole thrown, leaf by leaf, into a tub half-full of boiling water, where it is to be agitated as before directed. After it has macerated four hours, the water should be drawn off; a fresh quantity of boiling water added; and the mixture stirred for

half an hour; at the expiration of which the paper is again left to dissolve for three hours.

The fluid is now drawn off, and 260 quarts of cold water poured on each cwt. of paper; which being perfectly mixed, 6 lbs. of oil of vitriol are to be gradually added; and the whole strongly agitated for a considerable time, that the paper may thoroughly imbibe the liquor.

This composition is next suffered to macerate for twelve hours, the agitation being occasionally repeated; when the tub is to be filled up with cold water; and the mixture again stirred, to wash the paper, which will now be reduced to a perfect paste. Lastly, after drawing off the water, the pulp must be put into bags, pressed, and ground in a mill; after which it is conveyed to the vat, and worked in the manner practised with linen rags.

In the year 1801, a patent was granted to Mr. Koops, for extracting ink from printed paper, and restoring it to its original state.—His process varies little from that above described; the paper being agitated in hot water, to extract the size, and reduce it into a pulp: next, the adhesion of the ink is to be removed by a caustic alkali prepared of lime and pot-ash, the quantities of which should be proportioned to those of the paper. After discharging the ink, he directs the pulp to be bleached by means of the oxygenated marine acid, in the proportion of 10 or 12 gallons to 140 lbs. of the material; and, when sufficiently whitened, it is re-manufactured in the usual manner.—According to the patentee's account, writing paper does not require so large a proportion, if any, of the caustic alkali; but is bleached by confining it in a wooden box, rendered air-tight, into which the acid gas is thrown directly from the retort wherein it was produced.

In the last volume of the *Repository of Arts*, p. 200, is described the method of *bleaching the pulp* used in manufacturing writing paper, by Citizen Loyel.

PAROUI, St. a town of France, in the department of Ande, seated on the Lembe, eight miles E. of Castlenaudary, and 35 S.E. of Toulouse. Long. 2. 10. E. Lat. 43. 21. N.

PARA, a fort of Brazil, seated near the mouth of the river Amazon, and to the E. of the eastern branch of it. Long. 50. 0. W. Lat. 2. 0. S.

PARACELS, a vast multitude of small islands and rocks, in the China Sea. They form a long cluster, lying N. and S. for near 400 miles, off the coast of Cochin China.

PARADELLA, a town of Portugal, in Beira, 12 miles S.E. of Lamego. Long. 7. 23. W. Lat. 41. 4. N.

PARAGO, or PALAWAN, a large island in the Indian Ocean, between the Philippines and Borneo, which has a king, tributary to Borneo. The Spaniards have a fort here.

PARAGUA, the most westerly of the Philippine Islands, about 180 miles in length and 20 in breadth. Long. 117. 44. E. Lat. 10. 0. N.

PARAMARIBO, the capital of Surinam, in Guiana, and the chief place of the Dutch colonies in South America. It has a small but strong citadel; and a noble road for shipping, where there are seldom less than 80 vessels loading coffee, sugar, cotton, and indigo. The streets are straight, and lined with orange, shaddock, tamarind, and lemon trees, in continual bloom. It surrendered to the English in August, 1799. It is situate on the E. side of the river Surinam, 16 miles from its mouth. Long. 55. 25. W. Lat. 5. 48. N.

PARAIBA, a town of Brazil, on a river of the same name. The Dutch got possession of it, in 1635, and fortified it with a slight rampart; but the Portuguese retook it soon after. The soil is pretty fertile, and produces sugar-canes, and a great number of trees of Brazil wood. Long. 49. 53. W. Lat. 6.

50. S.

PARAMOUSIC, one of the Kurile Islands, lying S. of that of Shoonika. See KURILES.

PARANA, a province of Paraguay, so named from a large river, which uniting with the Paraguay, and afterward with the Uruguay, forms the Rio de la Plata.

PARCHIM, a town of Lower Saxony, in the duchy of Mecklenburg, seated on a small river which falls into the Elbe. It is 20 miles S.E. of Schwerin. Long. 12. o. E. Lat. 51. 34. N.

PARCHWITZ, a town of Silesia, in the principality of Lignitz, with a considerable manufacture of cloth. It is 12 miles W. of Wohlau, and 10 N.E. of Lignitz. Long. 16. 42. E. Lat. 51. 17. N.

PARDOBITZ, a fortified town of Bohemia, in the circle of Chrudim, with a manufacture of knives and sword-blades. It is five miles N. of Chrudim, and 55 E. of Prague. Long. 15. 45. E. Lat. 49. 55. N.

PAEIRA BRAVA (*Encycl.*). Erroneously spelt **PAEIRA BRAVA**.

PARELLA, a town of Piedmont, in the county of Canavez, four miles S.S.W. of Ivrea, and 20 N. of Turin.

PARILLA, or **ST. PARILLA**, a town of Peru, in the audience of Lima, seated at the mouth of the river Santa, 50 miles S.E. of Truxillo, and 230 N.W. of Lima. Long. 77. 50. W. Lat. 8. 36. S.

PARISH-DINNER, a recent mode of supplying the poor with wholesome and cheap food under the superintendence of the parish. Such institutions may be adapted to circumstances in every town and village; as will be seen in the following account of a parish dinner for *poor children*, at Epping, published by Thomas Bernard, esq. in the Reports of the Society for bettering the Condition of the Poor.

At Epping, in the county of Essex, where there is a school of industry for the employment of children, an ordinary was, on the recommendation of Mr. Conyers, opened in October last; and a general dinner has been provided on week days, for any children of that place whose parents desire it, on the following terms:

The price of the ordinary is six pence a-week for each child; they dine at table in a regular manner at one o'clock, in a room which adjoins to, but is unconnected with, the rooms of the workhouse; and which, during the rest of the day, has been used as a spinning school. Grace is regularly and decently said before and after dinner; and a voluntary expression of thanks and obligation to the mistress, for the good dinner she has provided them, generally precedes their quitting the room. Their table of diet is, on Mondays, Wednesdays, and Fridays, baked rice pudding; on Tuesday and Saturday beef stew and soup; and on Thursday pease soup. They are allowed to eat as much as they please; and their healthy countenances and decent behaviour evidence the plenty and comfort of their meal. The same dinner is also given, in another room, to the parish children and the other persons in the poor-house. The number of those who partook of it, in the week, from the 12th to the 17th of the preceding month of February, was 77; the expence of that week's dinner for the materials merely and their bread (but without reckoning for dressing and attendance) being 1*l.* 2*s.* 1*d.* which is less than a penny a-head each day.

A particular account of this dinner may be useful; as it will prove that what is provided for them is good in quality, and sufficient in quantity; and as it will serve to explain to others, how they may, with some attention and very little expence, contribute greatly to the comfort, the health, and the good habits of the children in their own neighbourhoods. The following is an account of the week's fare of 77 persons, from Monday the 12th to Saturday the 17th of

February, 1798, both days inclusive, with the expence of each article.

MONDAY. Baked rice pudding.	s. d.
20 lb. and a half of rice	2 6½
3 lb. of suet	1 6
6 gallons of milk	1 3
Salt and allspice	2½
	5 6

N. B. The rice is soaked in the milk the night before baking, and produces with the other materials about 80 lb. weight of pudding.

TUESDAY. Beef stew and soup.	s. d.
Ox's cheek	1 6
2 quarts of Scotch barley	4½
3 quarts of pease	10½
1 quart of oatmeal	2½
1 peck of potatoes	3
Pepper, salt, and allspice	6½
	3 8½

WEDNESDAY. Baked rice pudding, as on Monday	s. d.
	5 6

THURSDAY. Pease soup.	s. d.
4 lb. of pork	1 8
6 quarts of pease	1 8½
2 quarts of oatmeal	4½
Pepper, salt, and allspice	6½
	4 3½

FRIDAY. Baked rice pudding, as before	s. d.
	5 6

SATURDAY. Beef stew and soup.	s. d.
5 lb. and a half of beef	2 3½
2 quarts of pease	7½
2 quarts of Scotch barley	4½
Pepper, salt, and allspice	6½
	3 9½

Onions, mint, and carrots, for the week	1 0
A quarter of a pound of bread allowed on each of the three soup days, being 58 lb. a-week	4 10

Six days' dinners for 77 persons	1 14 1½
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The children are generally those whose behaviour is approved, and who are paid for by the week; but any others, in cleanly and decent order, are allowed to dine at the same rate, when there is room. In case of sickness, they may send for their dinners home.—The common labourers find they can maintain their children in this manner much better, and a great deal cheaper, than in the usual way of leaving them to consume at home a great deal of white bread, with very little comfort; for example, a labourer who has four children finds that, by appropriating 2*s.* a-week out of his earnings, all his four children have a plentiful, regular, and decent meal, six days in the week; with twice the benefit to them, that they could have possibly derived from 2*s.* worth of white bread, eaten in the usual solitary, uncivilised, and comfortable manner.

The situation of Epping, a large market-town, with a surrounding forest, the scene and object of petty thefts, and a public road through it, was not very favourable to the industry and regular habits of the poor; nor was their usual dinner, of a hunch of bread, part to be swallowed with a little water as they went along (the other part being most frequently thrown away) conducive either to their health, or to habits of economy. It is therefore a most pleasing circumstance to state, that, within one month after this dinner had been regularly pro-

vided at Epping, the appearance and manners of the poor children there were totally altered. Their fallow countenances had acquired a healthy complexion and tone, from the daily and regular supply of a plentiful meal; and their manners, by the habits of an orderly table regularly served and attended, were improved and meliorated. To those, who had been confined by illness, this dinner has proved of particular service; as it has afforded them the means of re-establishment in a state of convalescence; a period when the poor are subject to great disadvantages, and are frequently a long time recovering their health and strength, because they are not provided with regular and nourishing food.—“Four months have now passed,” says Mr. Bernard, “since the children at Epping have been thus assembled once a-day, at a decent and civilized table. I have attended it to-day, and with very great satisfaction have beheld the decency, the cheerfulness, and the general neatness of all the members of this little society; and, being able to add my own testimony to the information I have received, I can say, that such effects appear to have been already produced on the health and good order of these little children, as must be extremely gratifying to every one, who interests himself in the welfare of his fellow-creatures.

“One consequence of this establishment has been, that several labourers, who have large families, and are industrious and deserving, have found themselves exonerated of a great part of the maintenance of their children by their richer neighbours; who each take some of these little ones, in their turn, under protection, and subscribe for them to the public dinner. This contributes to increase that mutual good-will and connection, which ought to subsist between the rich and the poor; and makes the one mindful of his duty, and the other satisfied with his condition.

“The benefits of this establishment are many and various. It converts benevolence to better purposes, and into better channels than those through which it commonly flows; it brings the children of the poor into notice, teaching them regular habits, and the desire of profiting by their own industry; and it not only supplies the persons in the workhouse, but several poor families that are out of it, with sufficient food, comfortably, and at a very cheap rate. Where a labourer requires relief out of the house, the overseer, if he see cause, directs messes of the parish dinner, proportionate to the family, to be sent to his house; and from fifteen to twenty indigent families are supplied in this manner with a good meal at home every day. This affords much more effectual relief, and at less expence to the parish, than the little pittance of money which is usually given, and which they have not means to make an advantageous use of.” See PAROCHIAL, *Supp.*

PARISH-MILL. See MILL, *Supp.*

PARKGATE, a village in Cheshire, 12 miles N.W. of Chester. It is situate on the N.E. coast of the river Dee, and hence packet-boats frequently sail to Ireland.

PARKSTEIN, a town of Bavaria, in the principality of Saltzbach, 16 miles N. of Naburg. Long. 12. 14. E. Lat. 59. 40. N.

PARNASSUS, now called PARNASSO, a mountain of Livadia. It has two heads, one of which was famous for being consecrated to Apollo and the Muses, and the other to Bacchus. It is the highest in Greece, and from the top is a prospect as far as Corinth. Here also is a fine fountain, supposed to be the ancient Castalia. It is eight miles N. of Livadia.

PAROCHIAL, any thing belonging to a parish. (See PARISH.) The mode of affording parochial relief to the necessitous is a most important branch of civil polity, since the commission of errors in distributing the sums raised for the relief of the poor, have the most fatal effects on public in-

dustry. The following account of the mode of parochial relief at Wendover, by the Rev. Joseph Smith, deserves particular attention.

In that place and its neighbourhood, the calculation of the relief of the poor has been made on the presumed and supposed earnings of the labourer, and not on the actual amount of what he does actually acquire by industry and exertion. The object was to render the overseer's duty as easy as circumstances would admit, and to make the labourers contented under the pressure of the times, by giving them the power of exerting every act of superior industry to their own advantage. The sum of nine shillings per week was adopted as an *average of earnings*; to be increased out of the poor's-rate to reach a sum, as would purchase every week, for the cottager, his wife, and every child under 10 years of age, a half-peck loaf each. “If they can earn more,” says Mr. Smith, “we do not enquire the amount; but leave it to them, as an encouragement of industry. If they are indolent, and earn less, it is their own loss; as is the case of those who throw themselves on the parish for work, and are allowed only eight shillings a-week.

“No allowance is, in general, made for children above 10 years of age; they having a regular supply of work, and being deemed capable of earning their own maintenance. Single women and widows unincumbered with any family, are also presumed to be able to earn their own subsistence by lace-making, and therefore are also excluded from the allowance; except in cases of sickness or old age, or where they can shew that they have not the benefit of those means of supply. These, however, are only shades of difference, depending on the peculiar supply of occupation in a country, or upon the particular regulations of a place. Wherever the attention of the parish, or local circumstances, afford a supply of work to women, children, or to any other class of applicants, it would be a dangerous experiment to permit them to confess idleness, and to plead indolence to avail themselves of their means of subsistence; and therefore to allow them to be classed among paupers receiving relief.”

To this account are annexed the following very pertinent observations:

“It is impossible for those who reside at a distance from the metropolis, and act as magistrates in an agricultural country, not to extend their reflections from the present scarcity and temporary pressure, to consequences which may be still more afflictive, and of longer duration; and which, unless removed by exertions beyond the power of mere parochial relief, may be augmented and continued, as a destructive inheritance attached to the landed property;—the consequence of that parochial relief, which, in obedience to the laws, the landed property now affords the labourer, through the medium of the tenantry, to enable him to meet the great advance in the price of every necessary of life.

“In most parishes this has been judiciously calculated to make up with their actual earnings, whatever they might be, a certain allowance for each in family; so that they who have earned least by their own hands, have received most from the parish. A very little consideration will convince any one, that, by such a measure, all spur to industry, and all energy to contend with difficulty, must be entirely destroyed. For, when the habit is acquired of applying to the parish, and the daily earnings of the labourer, without additional resources, are inadequate to the support of his family, no inducement is left for him to exert his best abilities and industry. If the amount is to be the same in all cases, how can it be expected that they will toil, merely to lessen the parish rates? The lamentable fact is, that an indolent habit has been thus superinduced, and labourers do not exert themselves as they did formerly. Their spirit is so broken down by circumstances, that they grow

reconciled to the idea of being paupers, and relying on parish relief, in preference to the more valuable and more honourable exertions of their own industry. The alarming consequence of this is, that the poor's-rates through the country have increased, and are increasing, to a degree that may well excite the fears of all who are interested in the fate of the landed property. The narrow policy of the farmer, operates to augment the evil. The rates, at present, are paid by the occupier: he feels the frequent demand of the overseer, without reflecting upon the increased price which he receives for his commodity at market; and the overseers, in general, being unprovided with other work for the labourers who apply for employment, send them to the farmer. He imagines that he gains some remuneration for his extra rates, by receiving the labourer into his yard from the overseer at an under price; the deficiency being to be made up out of the rates of the parish. But labourers, so employed, never work cheerfully or well. The farmer scarcely ever has more labour performed than he actually pays for; and the money contributed out of the rates is all expended, not only without any return of labour, but with the melancholy consequence of having materially contributed to the extinction of honest industry, and laudable exertion.

"In some parishes in my neighbourhood, the magistrate has been able to introduce a better regulation;—that of affixing an average price of labour, as a standard from which parochial relief shall be calculated; allowing the labourer to employ his extra hours, or extra labour in task-work, for his own exclusive advantage. This, however, is by no means generally adopted; nor, if it were, would it be sufficient to correct the evil of the extinction of that character of independence, which the English labourer did once so pre-eminently possess, and by which the community was so greatly benefited. There is too much reason to fear, that without great exertions from the land-owners to restore the labourer to his former honourable state, either by affixing him with a cow and ground to keep her, or by some other effectual incitement to exertion and industry, they will not remain stationary at their present point of deterioration. Unless they improve, they will become worse. Their inclination to indolence, and to those vices which are connected with it, will increase. Their demands upon their respective parishes will become more urgent: and the poor's-rates will so increase, that tenants will no longer be able to bear the expenses attendant upon the occupation of their farms. The proprietors may then discover, not only the difficulty and disadvantage of occupying their lands themselves, but that, in a parish incumbered with paupers, the land may prove insufficient to the maintenance of the parochial poor."

PARRAMATTA, a town or settlement of English convicts, in New South Wales. It is seated at the head of the harbour of Port Jackson, 11 miles W. of Sydney Cove, between Rose Hill and the landing-place in the creek which forms the head. In 1791, near 1000 acres of land were either in cultivation, or cleared for that purpose; and the soil, in most places, was found to be remarkably good. Long. 151. 39. E. Lat. 35. 50. S.

PARSBURG, a town of Bavaria, in the principality of Neuburg, 18 miles N.W. of Ratibon. Long. 11. 55. E. Lat. 49. 8. N.

PARSCHWITZ, a town of Silesia, in the principality of Lignitz, eight miles N.E. of Lignitz.

PARTHENAY, a town of France, in the department of Two Seves. It carries on a considerable trade in cattle and corn, and is seated on the Thoue, 17 miles S. of Thouars. Long. 0. 19. W. Lat. 46. 44. N.

PARTENIKIRK, a town of Bavaria, 40 miles S.W. of Munich. Long. 11. 0. E. Lat. 47. 36. N.

PARYS, a mountain in the isle of Anglesey, famous for a copper mine, which is not wrought in the common manner of subterraneous mines, but, like a stone quarry, open to day; and the quantity of ore raised is prodigious. The purest part is exported raw to the smelting works at Swansea and other places: the moist impure is first calcined and deprived of most of its sulphur on the spot. Quantities of merely pure copper are obtained from the waters lodged beneath the bed of ore, by the intervention of iron. A lead ore, rich in silver, is also found in this mountain.

PAS, a town of France, in the department of the Straits of Calais, 12 miles S.W. of Arras. Long. 2. 40. E. Lat. 50. 9. N.

PAS DE CALAIS, or **STRAITS OF CALAIS**, a department of France, containing the late provinces of Artois and Boulonnais. Arras is the capital.

PASEWALK, a town of Upper Saxony, in Anterior Pomerania. Near it are some iron-works. It is situate on the Ucker, 21 miles W. of Stettin, and 66 S.S.E. of Stralsund. Long. 13. 57. E. Lat. 53. 27. N.

PASSAROWITZ, a town of Turkey in Europe, in Servia, remarkable for a peace concluded there, in 1718, between Emperor Charles VI. and Achmet III. It is situate near the river Morava, 33 miles E.S.E. of Belgrade, and 44 W. of Orfova. Long. 21. 16. E. Lat. 45. 6. N.

PASSO, a cape of Peru, under the equator, in long. 78. 50. W.

PASSAGE, a sea-port of Spain, in Biscay, between those of Pontarabia and St. Sebastian, and 60 miles E. of Bilbao. Long. 2. 4. W. Lat. 43. 21. N.

PASSARO, a cape on the coast of Ianna, in Greece, between the gulfs of Amiroi and Zeiton.

PASSARVAN, a town of the island of Java, in the East Indies. Long. 114. 15. E. Lat. 7. 0. S.

PASSENHEIM, a town of Prussia, in the province of Oberland, 70 miles S. of Konigsberg. Long. 20. 50. E. Lat. 53. 40. N.

PASSERO, CAPE, anciently called Pachinus, the most southerly point of Sicily. It is a barren island, about a mile round, separated from the rest of Sicily by a strait, half a mile broad. It has a fort, to protect the country from the incursions of the Barbary corsairs, who are often very troublesome on the coast. Off this cape, Sir George Byng, in 1735, defeated a Spanish squadron. Long. 15. 22. E. Lat. 36. 35. N.

PASSIGNIANO, a town of Italy, in the Ecclesiastical State, seated on the lake Perugia, 17 miles N.W. of Perugia. Long. 12. 5. E. Lat. 43. 16. N.

PASTO, or **ST. JUAN DE PASTO**, a town of South America, in Popayan, seated in a fine valley, 120 miles N. by E. of Quito. Long. 76. 55. W. Lat. 1. 50. N.

PASTRANA, or **PATRANA**, a town of Spain, in New Castile, seated between the Tajo and Tajuna, 32 miles E. of Madrid. Long. 2. 46. W. Lat. 40. 26. N.

PATAK, a town of Hungary, with a Protestant college, situate on the Latorca, 25 miles S.S.W. of Caffovia. Long. 21. 35. E. Lat. 46. 35. N.

PATEHUCA, or **PATOCUA**, a town of New Spain, in the audience of Mexico. Near it is a silver mine. It is 70 miles N. of Mexico. Long. 99. 55. W. Lat. 21. 0. N.

PATERNO, a town of Sicily, in Val di Demona, built on the ruins of Hybla, so celebrated for its honey. It is 15 miles W. of Catania. Long. 15. 14. E. Lat. 37. 55. N.

PATHHEAD, a considerable manufacturing village in Fifeshire, a little to the E. of Kirkcaldy.

PATRIA, a town of Naples, in Terra di Livorno, situate near a lake, to which it gives name, 13 miles N.W. of Naples.

PATRIMONY OF ST. PETER, a province of Italy, in the Ecclesiastical State. It is 35 miles long and 30 broad; bounded on the N. by Orvieto, on the E. by Umbria and Sabina, on the S. by Campagnadi Roma, and on the S.W. by the sea. Viterbo is the capital.

PATRINGTON, a town of the E. riding of Yorkshire, with a market on Saturday. Here the Roman road from the Picts' Wall ended. It is seated at the mouth of the Humber, 50 miles S.E. of York, and 191 N. of London. Long. 0. 8. E. Lat. 53. 49. N.

PATTEES, a well-known contrivance, consisting of a sole of wood attached to an iron ring. They are worn by women chiefly, during wet weather, to protect their feet from moisture, and their garments from dirt.

As pattens formed upon the common construction are liable to break, in consequence of which frequent accidents happen, various expedients have been devised by those who manufacture these articles, with a view to prevent such misfortunes. A patent was granted in 1798, to Mr. Jethro Hornblower, of Whitehall, in the county of Cornwall, engineer, for a method of making pattens (to be worn by women); by altering the composition and clumsiness of their shape; preventing them from breaking; and removing the uneasiness they occasion to the feet. A more excellent contrivance, however, has been made public, by a manufacturer at Birmingham, who, by the simple expedient of fixing a spring immediately beneath the hollow of the foot, by which the instep is kept uniformly in contact with the tie or band of the patten, has found means to prevent the clacking noise, and consequent splashing of mud upon the stockings, which usually happen in walking in common pattens.

PATTENSEN, a town of Lower Saxony, in the principality of Calenberg, formerly surrounded with walls, moats, and ramparts. It is six miles S. of Hanover.

PATTI, a town of Sicily, in Val di Demona, with a bishop's see, seated on the gulf of Patti, 28 miles W. of Messina. Long. 15. 22. E. Lat. 38. 11. N.

PATTIARY, a town of Hindooftan Proper, in the country of Oude, 55 miles N.W. of Carogue, and 55 E.N.E. of Agra. Long. 79. 45. E. Lat. 27. 33. N.

PATTUN, or **PUTTAN**, a town of Hindooftan Proper, capital of a Circar of the same name, in the country of Guzerat. It is 48 miles N. of Amedabad, and 132 S.W. of Oudipour. Long. 72. 30. E. Lat. 23. 45. N.

PATUXEN, a river of the United States, which falls into the Chesapeake, 30 miles S. of Annapolis.

PAUL, St. an island in the Indian Ocean.

PAUL, St. a town of France, in the department of the Straits of Calais, 16 miles W.N.W. of Arras. Long. 3. 30. E. Lat. 50. 24. N.

PAUL, St. a town of Brazil, in the province of St. Vincent, surrounded by inaccessible mountains and thick forests. It is a kind of independent republic, composed of the banditti of several nations, who, however, pay tribute to the Portuguese. Long. 45. 52. W. Lat. 23. 25. S.

PAUL-DE-FENOUILLEDES, a town of France, in the department of Gard, seated among mountains, on the river Eglis, 30 miles N. of Montpellier. Long. 3. 58. E. Lat. 44. 7. N.

PAUL-LES-VENTE, St. a town of France, in the department of Var, five miles W. of Nice, and 450 S.E. of Paris. Long. 7. 13. E. Lat. 43. 42. N.

PAUL-TROIS-CHATEAUX, St. an ancient town of France, in the department of Drome, seated on the declivity of a hill, 16 miles S. of Montelimar. Long. 4. 57. E. Lat. 44. 21. N.

VOL. X.

PAULA, a town of Naples, in Calabria Citeriore, seated near the sea, in a fertile and well-cultivated country, 12 miles W. of Cosenza. Long. 16. 9. E. Lat. 39. 24. N.

PAULOGRADE, a town of Russia, in the government of Catharinenski, 32 miles E. of Catharinenski. Long. 35. 54. E. Lat. 47. 10. N.

PAVOASAN, a sea-port of Africa, in the ile of St. Thomas, with a fort, a bishop's see, and a good harbour. It belongs to Portugal, and lies under the equator, in Long. 8. 30. W.

PAUSILIPPO, a mountain of Italy, five miles from Puzzoli, celebrated for a grotto, which is a subterraneous passage, through the mountain, near a mile in length, about 20 feet in breadth, and 34 to 43 in height. People of fashion generally drive through this passage with torches; but the country people find their way, without much difficulty, by the light which enters at the extremities, and at two holes pierced through the mountain, near the middle of the grotto, which admit light from above. On this mountain also is the celebrated tomb of Virgil, overgrown with ivy, and shaded with a bay-tree, shrubs, and bushes.

PAUTZKE, a town of Western Prussia, in Pomerellia, 25 miles N.W. of Dantzic. Long. 18. 41. E. Lat. 54. 44. N.

PAYERNE, a town of Switzerland, in the canton of Bern, 22 miles S.W. of Bern. Long. 6. 55. E. Lat. 46. 38. N.

PAZ, a town of Peru, in the audience of Los Charcos, with a bishop's see; seated at the foot of a mountain, in a valley abounding in wine and fruits, 350 miles S.E. of Cuzco. Long. 68. 50. W. Lat. 17. 0. S.

PAZZY, a town of Turkey in Europe, in Romania, near Gallipoli, with a bishop's see. Long. 26. 59. E. Lat. 40. 33. N.

PEARL-ISLANDS, islands lying in the bay of Panama. The inhabitants of Panama have plantations in them.

PEASANT (*Encycl.*). See the various means of bettering the condition of this useful class of the poor in Britain, under the articles COTTAGER, COTTAGE-GARDENS, INDUSTRY, SOCIETY, &c. in this SUPPLEMENT.

PEAT-BORER, a new-invented augre, calculated for cutting into peat. An account of it is given by T. Eccleston, esq. of Scaresbrick-hall, in Lancashire, in the Transactions of the Society for the Encouragement of Arts, &c.

"The greatest obstacle to the effectual draining of many boggy lands," says Mr. Eccleston, "consists in the earth in the bottoms of the ditches or drains when newly cut, and more especially if made to any considerable depth, rising from the pressure of the waters contained in the bog, by which the new-cut drains and ditches are frequently so nearly filled up, as to impede the flowing of the water they were intended to carry off, and thereby rendering the work comparatively ineffectual.

"There are different layers, or strata, in moss or peat lands, which will not allow the water easily to filtrate through them, and yet are of so soft and spongy a nature as to rise from the pressure of the water contained in the bog.

"It becomes necessary to give a free vent to the above confined water, effectually to drain such lands. This has been most successfully done by the augre, a model of which I have herewith presented to the Society.

"A common augre, or even a pole, will force a passage, and give vent to the water for a short time; but, owing to

the peat being only pressed sideways, and not cut out, the parts soon join again, and the passage of the water, of course, becomes completely obstructed; but by means of this auger, a cylindrical column of peat of six inches diameter will be clearly cut out and taken thence, and a free passage maintained for a very considerable space of time.

"The first experiment made produced a clear auger-hole of the above dimensions, four yards in depth, in one hour; and the water, which had been pent up in the bog, rose above the level of the bottom of the ditch, from four to six inches; and the bottom of the ditch, which was previously very soft, and had begun to swell and rise, in a few days became more firm and solid, and this in so great a degree, that when cleared it remained without swelling or rising in the least. It will considerably reduce the expence of draining such lands, by rendering them so firm as to cause the first end-diams to stand.

"The most proper depth to bore depends on the situation. Where the moss lands lie low, and are in danger of being flooded, no greater depth than what is absolutely necessary for draining the surface should be bored, as by deep boring the land may be sunk so low as to be liable to inundation."

The following are the references to the figure in Pl. 41.—A, the cutter of the borer, which penetrates the peat. B, the body of the borer, six inches in diameter. C, the aperture through which the peat introduced by boring is drawn out. D, a portion of the iron bar of the borer, to the upper part of which a cross handle is to be fixed.

PEATHS, or PEESE, a vast chafin in the mountains of the N.E. part of Berwickshire. It is more than 160 feet deep; and over it is a noble bridge of four arches. From its vast height, it greatly resembles an ancient Roman aqueduct.

PEQUENCOUR, a town of France, in the department of the North, seated on the Scarpe, five miles E. of Bouay. Long. 3. 16. E. Lat. 50. 23. N.

PEDEE, a river of the United States, which rises in North Carolina, and is there called Yaddin River: on entering South Carolina, it takes the name of Pedee, and flows into the Atlantic Ocean, 12 miles below George Town.

PEDENA, an ancient town of Italy, in Venetian Iliria, with a bishop's see, 25 miles S.E. of Capo d'Illiria. Long. 14. 13. E. Lat. 45. 34. N.

PEDEBNEIRA, a sea-port of Portugal, in Esfremadura, 28 miles N.E. of Peniche. Long. 8. 6. W. Lat. 39. 31. N.

PEDIR, a town of Sumatra, in the East Indies, 40 miles E. of Achen. Long. 96. 36. E. Lat. 5. 22. N.

PEDOMETER, (*Encycl.*). The utility of pedometers for the purpose of surveying land being obvious, various instruments of this description have been constructed by ingenious mechanics, in order to facilitate the practice of geometry. Among these, Mr. Edgeworth's late contrivance deserves to be first mentioned, on account of its great simplicity; but, as it is calculated only for level grounds, and is apt to be decaraged by hilly or irregular surfaces, we decline to enter into any detail.

A pedometer, upon a new plan, was a few years since contrived by Mr. W. Frazer, mathematical instrument-maker, of New Bond-street. It is stated to be perfectly correct, and not liable to be out of order. The wheel-work is constructed on the scale of 1000 paces to a mile; and, as it winds itself up, while in motion, being adjusted to pockets of all sizes, it is attended with no trouble to the wearer. It is provided with a compass, by means of which the traveller is enabled to ascertain the different directions which he

takes on his excursion; while he learns the accurate distance which he has walked. Hence it recommends itself to those invalids, who are obliged to take a certain degree of exercise within doors; as they may thus measure the thousandth part of a mile.

Another machine, which deserves more immediate attention, is the pedometer invented by Mr. Lewin Tugwell, of Beverlione, in the county of Gloucester, and which is represented in Pl. 41. where A, is the stock of the pedometer; B, B, B, &c. twelve spokes; one end of which is fastened by means of a screw to the outward ring, or periphery of the wheel, while the other is inserted in the stock. C, the periphery, which is an iron ring fifteen and a half feet, or one pole, in circumference; and which is divided into twenty-five equal parts, corresponding to the links of Gunter's chain for land-measuring, &c. D, D, D, &c. are twelve small plates, representing the separate spokes, and each of which includes two links of the chain above mentioned; the twelfth spoke being divided at its foot, for comprehending the twenty-fifth link. E, an iron axis, being a screw with 320 circumlocutions, each of which is marked separately on an engraved index on one of its flides; and, in order to apply this part of the machine, it is screwed firmly into the stock of the wheel, with which it revolves when in motion. F, a flyle, or alidade, being an expanding screw-nut, that embraces the axis, along which it screws, as the latter revolves with the wheel; and, as each revolution describes an exact longitudinal pole (four of which are computed to a chain), the flyle being pendant, and moving towards its proper figure, denotes the length of ground passed; and it is divided into chains and poles on the index of the axis E, and into links on the periphery C. G, is a small adjusting screw; which being turned, the flyle may be removed to the beginning of the index, after the given line, in surveying or measuring land, has been ascertained in chains, poles, &c. H, represents a cross, or square, with figurs for determining perpendiculars in land-measuring. It is suspended at its ends on the axis, whence it may be occasionally detached by a simple touch of the finger and thumb, when in use. Further, this cross prevents the flyle from being revolved with the axis by any accident. As the 320 divisions marked on the index of the axis E, describe a mile, the flyle F, after having passed over them, will stop; and, as it will now move round with the axis, it will carry with it the standard; which will strike on the wrist of the operator, and thus prevent him from proceeding to any further distance, till he withdraws his hand from between such standard and the axis. Having received this hint, he turns the screw G; puts the flyle F back to the bottom of the index; and continues the revolution of the machine, till he has completed his course.

Mr. Tugwell's contrivance is particularly calculated to prevent error in measuring land; as one person may thus survey with greater accuracy and expedition, than by the use of the chain alone. Besides, no fraud can possibly be committed by labourers, in measuring task-work; a circumstance of the utmost importance to agriculturists.

The last contrivance we shall mention, is that of Mr. Ralph Gout, of Bunhill-row, London; whose new pedometerical patent watch differs from the instrument invented by Mr. Frazer, in this essential circumstance, that the former is connected with a time-piece, while the latter is combined with a compass. Those who live in the metropolis, or visit places, the situation of which is known to the traveller, will perhaps give the preference to Mr. Gout's expanded metal watch with a pedometer, which he manufactures by subscription for 15l. 15s. for the pedometer alone, for

Buchanan's Fire-Engine Pump.

Fig. 1.

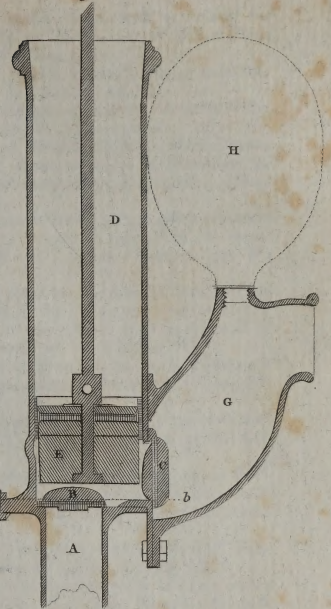


Fig. 2.

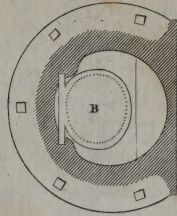
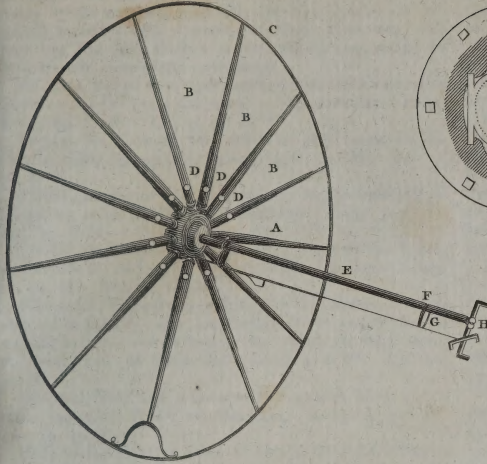


Fig. 3.



M^r. Tugwell's Pedometer.



Cap^t. Bolton's Patent Rudder.

Fig. 1.

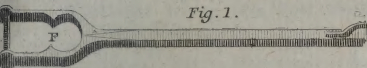
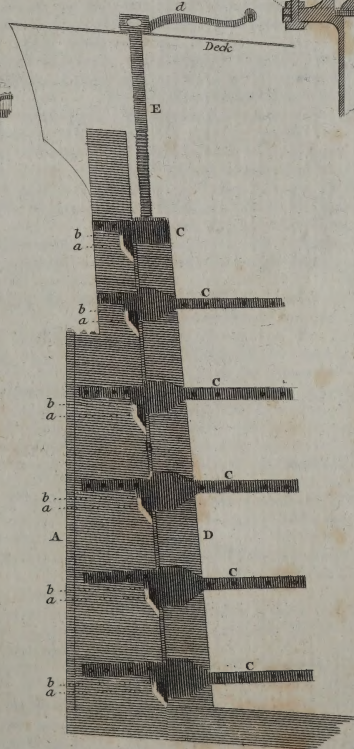
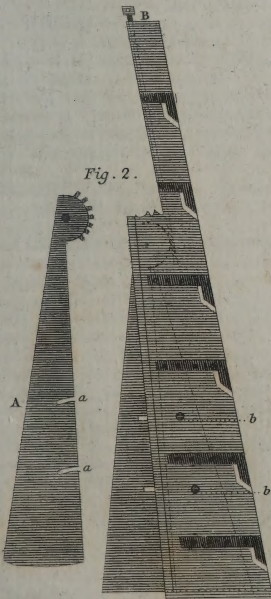


Fig. 2.



Peat-Borer.



8l. 8s.)—on the other hand, we conceive, persons residing in the country, especially sportsmen, who are generally provided with a watch, on their excursions, will probably find Mr. Frazer's pedometer, on account of its compass, the more useful instrument.

PEDRO, POINT, the most northern point of the island of Ceylon, opposite Point Calmyere, on the continent of India. Long. 80. 27. E. Lat. 9. 53. N.

PEDRO, St. one of the islands in the South Pacific Ocean, called Marquesas. Long. 138. 51. W. Lat. 9. 58. S.

PEER, a town of the Netherlands, in the bishopric of Liege, 24 miles N.N.W. of Maestricht. Long. 5. 20. E. Lat. 51. 8. N.

PEGAU, a town of Upper Saxony, situate on the Elster, 10 miles S.W. of Leipzig, and 58 W. of Dresden. Long. 12. 22. E. Lat. 51. 13. N.

PEGNAPHEL, a town of Spain, in Old Castile, remarkable for its palace, castle, and fortifications; and its churches are said to be the best in Spain. It is seated on the Douero, 20 miles S.E. of Valladolid. Long. 4. 0. W. Lat. 41. 41. N.

PEGNA-MACOR, a town of Portugal, in Beira, with a castle, 40 miles N.W. of Alcantara. Long. 6. 32. W. Lat. 39. 50. N.

PEGNARANDA, a town of Spain, in Old Castile, 30 miles S.W. of Oñeda. Long. 4. 8. W. Lat. 40. 59. N.

PEINE, a town of Lower Saxony, in the duchy of Brunswick; famous for a battle fought in 1553, when Maurice, elector of Saxony, and the margrave of Brandenburg, were killed. It is 17 miles W. of Brunswick. Long. 10. 19. E. Lat. 52. 27. N.

PELUS, a large lake of Russia, in the government of Livonia. The river Narova issues from this lake, by which it has a communication at Naiva, with the gulf of Finland.

PEISHORE, or **PEISHOUR**, a considerable city of Hindoostan Proper, in the province of Cabul. It is subject to the King of Candahar, and is 50 miles N.W. of Attock. Long. 66. 54. E. Lat. 32. 44. N.

PELTZ, a town of Upper Saxony, in the Ucker marche Brandenburg. In the neighbourhood are iron mines, and manufactures of pitch and turpentine. It is 30 miles S.S.W. of Frankfurt on the Oder. Long. 8. 35. E. Lat. 52. 5. N.

PELAGNISI, an island in the Grecian Archipelago, about eight miles in circumference. Long. 24. 12. E. Lat. 39. 30. N.

BELLIGRINO MOUNT, a promontory on the N. coast of the island of Sicily, nearly two miles W. of Palermo. The prospect from this mount is beautiful and extensive: most of the Lipari Islands are discovered in a clear day, and also a large portion of Mount Etna, although at the distance of almost the whole length of Sicily. On this mount is a cavern, in which is the image of St. Rosalia, who is said to have died here; and round the cave of this saint (who is the patroness of Palermo) a church is built, where priests attend, to watch the precious relics, and receive the offerings of the pilgrims.

PELISSA, a town of Lower Hungary, capital of a county of the same name. It is seated near the Danube, 15 miles N. of Buda. Long. 18. 20. E. Lat. 47. 40. N.

PELISSANE, a town of France, in the department of the Mouths of the Rhone, 15 miles W.N.W. of Aix. Long. 5. 21. E. Lat. 43. 26. N.

PELLA, a town of Turkey in Europe, in Ionia, 50 miles W. of Salonichi. Long. 21. 53. E. Lat. 40. 42. N.

PELLERIN, a town of France, in the department of

Lower Loire, situate on the Loire, with a harbour for small vessels, 10 miles N. of Nantes, and 13 S.E. of Painboeuf. Long. 1. 44. W. Lat. 47. 23. N.

PELOSO, a town of Naples, in Basilicata, 35 miles W. of Br. Long. 16. 20. E. Lat. 41. 26. N.

PEMBA, a town of Congo, capital of a province of the same name. Long. 18. 25. E. Lat. 7. 30. S.

PEMBA, or **PENDA**, an island in the East-Indian Ocean, near the coast of Africa, about 100 miles in circumference, governed by a king, tributary to the Portuguese. Long. 40. 0. E. Lat. 5. 50. S.

PEMBRIDGE, a town in Herefordshire, with a market on Tuesday, seated on the Arrow, 12 miles N.W. of Hereford; and 145 W.N.W. of London. Long. 2. 42. W. Lat. 52. 14. N.

PENA GARCIA, a town of Portugal, in Beira, with a castle. It was taken by Philip V. in 1704; but he retired from it at the approach of the allies. It is six miles E. of Idanha Velha. Long. 6. 6. W. Lat. 39. 40. N.

PENALVA, a town of Portugal, in Beira, seated on a hill, with a castle, eight miles S. of Coimbra. Long. 8. 17. W. Lat. 40. 4. N.

PENAUTIER, a town of France, in the department of Aude, four miles N. of Carcassonne. Long. 2. 25. E. Lat. 43. 18. N.

PHENMUNDER, a fortress of Upper Saxony, in Prussian Pomerania, seated in the isle of Usedom, at the mouths of the Pene and Oder, in the Baltic Sea. Long. 14. 10. E. Lat. 54. 16. N.

PENGUIN ISLAND and **BAY**, on the coast of Patagonia, 182 miles N. of Port St. Julian. Lat. 47. 48. S.

PENHA GARCIA, a town of Portugal, in Beira, on the borders of Spain, nine miles E. of Castel Branco. Long. 6. 30. E. Lat. 39. 50. N.

PENICHE, a strong town of Portugal, in Estremadura, with a good harbour and a citadel, 34 miles N. of Lisbon. Long. 9. 5. E. Lat. 39. 16. N.

PENICK, a town of Upper Saxony, in Misnia, belonging to the Elector of Saxony. Here is a manufacture of woollen stuffs, and a pottery. It is seated on the Mulde, eight miles E. of Altenburg. Long. 12. 44. E. Lat. 50. 59. N.

PENISCOLA, a town of Spain, in Valencia, seated on a high point of land on the Mediterranean, 60 miles N. of Valencia. Long. 1. 0. E. Lat. 40. 29. N.

PENISHEHR, a town of Hindoostan Proper, capital of a district, in the country of Cabul, 46 miles N. of Cabul. Long. 68. 24. E. Lat. 35. 16. N.

PENKRIDGE, a town in Staffordshire, with a market on Tuesday. It was formerly a large place, but now greatly reduced, and principally noted for its horse fairs. It is six miles S. of Stafford, and 129 N.W. of London. Long. 2. 0. W. Lat. 52. 54. N.

PENKUM, a town of Upper Saxony, in Anterior Pomerania, 15 miles S.W. of Stettin, and 43 N.N.W. of Custrin.

PENNAFLOR, a town of Spain, in Asturias, seated on the Asta, 14 miles S.W. of Oviedo. Long. 5. 56. W. Lat. 43. 15. N.

PENNAFLOR, a town of Spain, in Andalusia, seated near the Xenil, 10 miles N. of Ecija. Long. 4. 12. W. Lat. 37. 44. N.

PENNANT (Thomas), a distinguished naturalist and traveller, was born in 1726, in Flintshire, where his family had lived for some centuries. He received the rudiments of his education first at Wrexham, and afterwards at a seminary at Fulham in Middlesex. At a proper age he was entered at Ox-

ford, and having made a considerable proficiency in the classics, he applied himself, within the walls of that university, to attain a knowledge of jurisprudence; but we do not find that he ever entered himself of any of the Inns of Court, or followed the law as a profession.

The ruling passions of mankind are excited, and the future current of their lives frequently directed, by trivial circumstances. One of the greatest painters of our age was attracted with an irresistible impulse towards his art by the perusal of a treatise on it; and we have the authority of the subject of this memoir for asserting, that a present of Willughby's Ornithology, at an early period, first gave him a turn for natural history, which never once abandoned him through the course of a very long life.

Mr. Pennant commenced his travels with great propriety at home, where he made himself acquainted with the manners, productions, and curiosities, of his native country, before he sallied forth to inspect those of other nations. He then repaired to the continent; and not only acquired considerable additional knowledge relative to his favourite studies, but became acquainted, and established a correspondence, with some of the greatest men of the age.

On his return he married, and had two children, but did not come into the family fortune until he was thirty-seven years of age, at which time he was settled at Downing.

Having lost his wife, he appears to have set out once more for the continent, and to have formed an acquaintance with Voltaire, Buffon, Haller, Pallas, &c. He had by this time acquired considerable reputation as a scientific man, having commenced his career as an author so early as 1750. His British Zoology established his reputation as a naturalist; and this received a fresh accession of celebrity in consequence of his acquaintance with Linnæus, and his intercourse by letters with all the celebrated naturalists in Europe.

Early in life he had undertaken a most interesting tour to Cornwall; and he now entertained an ardent desire to survey the works of nature in the northern extremities of the island. He accordingly set out for Scotland, and in 1771 favoured the public with an entertaining account of his Tour, which was so well received as to pass through several editions. Not content with the main land of Great Britain, he was ambitious to survey the islands in the vicinity, and accordingly penetrated to the Hebrides, and visited Man.

It is not to be supposed that he would leave his own country unexplored; on the contrary, he minutely described all its wonders. He did not fail on this occasion to present the world with the result of his enquiries, for in 1778 he commenced the publication of his *Welch Tour*.

In four years after this (1782) appeared the account of the Journey from Chester to London, in which he refutes the vulgar opinion that it is uninteresting; and in two years more his *Arctic Zoology*, an admirable work, greatly prized both here and in other countries.

In 1790 appeared a quarto volume, simply entitled, "*Of London*;" in which he observes, that this work is composed from observations, originally made without any view of publication; and requests the good inhabitants of London and Westminster not to be offended at his having stuffed their *liad* into a nutshell.

Notwithstanding a parting address, which was annexed, we find Mr. Pennant adventuring once more in the ocean of literature at a late period of his life. He accordingly published the *Natural History of the Parishes of Holywell and Downing*, within the precincts of the latter of which he had resided about half a century. He also presented the public, a very short time before his death, with a splendid work, consisting of 2 vols. 4to. entitled, "*The View of Hindoostan*;" in the pre-

face to which he candidly states his motives for this new attempt. These valuable volumes are drawn up by Mr. Pennant in the manner of his introduction to the *Arctic Zoology*. The plates, 23 in number, are admirably engraved, and one (the Napaul pheasant), is beautifully coloured.

In addition to the list of literary labours already enumerated, is a letter on an earthquake felt at Downing in Flintshire, in 1753; another inserted in the same publication, in 1756, on coralloid bodies (*κοραλλοειδής*) collected by him; his Synopsis of Quadrupeds, published in 1771; a pamphlet On the Militia; a paper On the Turkey; and a volume of Miscellanies.

Mr. Pennant attained academical honours of all kinds, having had the degree of LL.D. conferred on him by the university in which he was educated, he was a Fellow of the Royal Society, and a member of the Society of Antiquaries, a Fellow of the Royal Society of Upsal in Sweden, a member of the American Philosophical Society, an honorary member of the Linnean Society of London, &c.

The ample fortune left him by his father enabled Mr. Pennant to keep an hospitable table, and also to prevent the profits of several of his works to public institutions, particularly the Welsh charity-school in Gray's-inn-lane. He encouraged several engravers by his patronage, and was not a little serviceable to the advancement of the fine arts.

In 1776 he married a second time, on which occasion he became united to Miss Mostyn, sister of his neighbour, the late Sir Roger Mostyn, in Flintshire. The latter part of his life was cheerful, and he scarcely felt the approaches of old age. He died at his seat at Downing in his 72d year.

He has left several works behind him in MS. under the title of, "*Outlines of the Globe*;" and, as a proof that it will be a very voluminous and interesting publication, it is only necessary to observe, that *The View of Hindoostan* composed the 14th and 15th volumes.

Mr. Pennant possessed a well-compacted frame of body, an open and intelligent aspect, an active and cheerful disposition, and a vivacity which rendered him always entertaining, as well in conversation as in writing. Though not without a share of irascibility, his heart was kind and benevolent. He was exemplary in the relations of domestic life, and sensibly felt for the distresses of his poor neighbours, whose relief in seasons of hardship he promoted with great zeal and liberality. His candour and freedom from ordinary prejudices, are sufficiently displayed in his writings; and Scotland was forward to confess, that he was the first traveller from this side the Tweed, who had visited the country with no unfriendly spirit, and had fairly presented it under its favourable as well as its less pleasing aspect. As a writer, his style is lively and expressive, but not perfectly correct. His principles of arrangement in zoology are judicious, and his descriptions characteristic. If in some of his later works a little vanity appears, and a propensity to think that important to the world which was so to himself, it may readily be pardoned to one who has afforded such copious and valuable entertainment to the public.

PENNAR, a river in the peninsula of Hindoostan, which flows by Gooty, Gandiccotta, Cuddapah, and Vellore, and enters the bay of Bengal, at Gangapatnam.

PENNON, a fort of Barbary, seated on a small island before the harbour of Algiers.

PENNON DE VALEZ, a very important sea-port of Barbary, seated on a rock in the Mediterranean, near the town of Velez. It was built by the Spaniards in 1508, taken by the Moors in 1522, and retaken in 1664. It is 75 miles E. of Ceuta. Long. 4. o. W. Lat. 35. 25. N.

PENOBSCOT, a bay of North America, in the district

of Main, at the mouth of the river Penobscot. It is long and capacious; and its E. side is lined with a cluster of small islands.

PENRISE, a sea-port in Glamorganshire, with a market on Thursday; seated on the British Channel, 20 miles S.E. of Carmarthen, and 279 W. of London. Long. 4. 12. W. Lat. 51. 37. N.

PENSFORD, a town in Somersetshire, with a market on Tuesday. It is noted for its hats and broad, and seated on the Chew, seven miles W. of Bath, and 117 W. by S. of London. Long. 2. 30. W. Lat. 51. 23. N.

PENTLAND HILLS, a ridge of mountains in Edinburghshire, extending about ten miles from S.W. to N.E.

PENZA, a government of Russia, formerly a province of Kafan. Its capital, of the same name, is seated on the Sura, where it receives the rivulet Penza; 220 miles S.W. of Kafan.

PENZLEIN, a town of Lower Saxony, in the principality of Mecklenburg, 53 miles E. of Stettin. Long. 15. 36. E. Lat. 53. 30. N.

PEQUIGNY, a town of France; in the department of Somme; remarkable for the interview between Lewis XI. of France and Edward IV. of England, in 1475, on a bridge built for that purpose. It is seated on the river Somme, 15 miles S.E. of Abbeville. Long. 2. 5. E. Lat. 49. 58. N.

PERAY, St. a village of France, in the department of Ardèche, noted for its wines. It is 21 miles N.W. of Privas.

PERCASLAW, a town of Russia, in the government of Kiof, 44 miles S.E. of Kiof. Long. 31. 50. E. Lat. 50. 0. N.

PERECZAS, a town of Upper Hungary, capital of a county of the same name, 50 miles E. by N. of Tockay. Long. 22. 26. E. Lat. 48. 30. N.

PERGA, a town of Turkey in Europe, in Albania, opposite the island of Corfu. Long. 20. 19. E. Lat. 39. 40. N.

PERGAMAR, a town of Turkey in Europe, in Rumania, with a bishop's see; 60 miles S.W. of Adrianople, and 65 N.W. of Gallipoli. Long. 25. 55. E. Lat. 41. 10. N.

PERGAMO, an ancient town of Natolia, with a bishop's see, a palace, and a castle. It is not so considerable as formerly, but has nine mosques, and occupies an oblong circumference of three miles, at the foot of a mountain. Here parchment was invented. It is seated on the Germassi, 15 miles from its mouth, and 37 N. of Smyrna. Long. 27. 27. E. Lat. 39. 5. N.

PERIA, a town of Persia, in the province of Irac, 90 miles W. of Ispahan. Long. 51. 25. E. Lat. 32. 20. N.

PERIAC, a town of France, in the department of Aude, celebrated for its salt-works, six miles S.W. of Narbonne.

PERIAPATAM, a town of the peninsula of Hindoostan, 24 miles S.W. of Seringapatam, and 54 N.E. of Tellicherry. Long. 76. 31. E. Lat. 12. 15. N.

PERINDA, a town of the Decan of Hindoostan, in the province of Dowlatabad, 188 miles N.W. of Hydrabad. Long. 75. 10. E. Lat. 18. 33. N.

PERLEBERG, a town of Upper Saxony, the capital of the marche of Prignitz, 62 miles N.W. of Berlin. Long. 12. 36. E. Lat. 53. 25. N.

PERM, a government of Russia, formerly a province of Kafan. It is divided into two provinces, namely, Perm, the capital of which is of the same name, seated on the river Kama; where it receives the Zegochekha; and Catharinienburg, the capital of which is of the same name, seated near the source of the river Isef.

PERNALLA, a town of the Decan of Hindoostan, in the province of Guzerat, 20 miles W. of Dorampour, and 38 S. of Surat. Long. 72. 53. E. Lat. 20. 35. N.

PERNE, a town of France, in the department of the Mouths of the Rhone. It is the birth-place of the celebrated orator Flechier, bishop of Nîmes, and a little to the W. of Apt.

PERNEAU, a town of Russia, in the government of Livonia, with a castle. It is seated near the mouth of a river of the same name, 35 miles N. of Riga. Long. 23. 37. E. Lat. 58. 26. N.

PERNES, a strong town of France, in the department of the Straits of Calais, seated on the Clarence, 17 miles N.W. of Arras. Long. 2. 31. E. Lat. 50. 29. N.

PERNO, a town of Sweden, in the province of Nyland, on the coast of the Baltic, 36 miles E. of Helsingfors. Long. 25. 40. E. Lat. 60. 30. N.

PERNOV, a town of Russia, in the government of Riga, fortified and defended by a castle. It is 92 miles N. of Riga. Long. 24. 30. E. Lat. 58. 30. N.

PEROUSA, a town of Piedmont, the chief place of a valley of the same name. It is seated on the Cluson, 16 miles S.W. of Turin. Long. 7. 18. E. Lat. 44. 59. N.

PERSAIN, a town of the kingdom of Pegu, near a river of the same name, 132 miles S.W. of Pegu. Long. 94. 55. E. Lat. 16. 45. N.

PERSIA, GULF OF, a gulf between Persia and Arabia Felix. The entrance near Ormis is not above 30 miles over; but within it is 180 in breadth, and the length from Ormus to the mouth of the Euphrates is 420 miles.

PERTHES, a town of France, in the department of Seine and Marne, six miles S.W. of Melun.

PETHES, a town of France, in the department of Upper Marne, six miles N.W. of St. Dizier.

PERTIGI, a town of the island of Sardinia, 19 miles S.E. of Castell Aragonese.

PERTUIS, a town of France, in the department of the Mouths of the Rhine, 10 miles N. of Aix, and 27 of Marfeilles. Long. 5. 36. E. Lat. 43. 44. N.

PERUGIA, an ancient and populous city of Italy, capital of Perugia, with a strong citadel, a university, and a bishop's see. The churches, and many other buildings, public and private, are very handsome. It is seated on a hill, 75 miles N. of Rome. Long. 12. 20. E. Lat. 43. 6. N.

PESCIA, a town of Tuscany, with a bishop's see. The oil made here is much esteemed. It is 10 miles S.W. of Pistoia. Long. 11. 22. E. Lat. 43. 47. N.

PÊSTI, a town of Naples, in Principato Citeriore, seated near the magnificent ruins of the ancient Pæstum, 20 miles S.E. of Salerno. Long. 15. 7. E. Lat. 40. 20. N.

PETAPA, a town of Mexico, in the province of Guatimala, 20 miles S. of Guatimala. Long. 90. 30. W. Lat. 13. 20. N.

PETER AND PAUL, St. of PETROPAWLOSKOJ, a sea-port of Kamtschatka, in the Russian government of Irkutsk. The town consists of some miserable log-houses and a few conical huts. Captain Clerke, who succeeded Captain Cook, and died at sea, was interred here. Long. 158. 43. E. Lat. 53. 0. N.

PETERSBERG, a town of Lower Saxony, in the duchy of Magdeburg, 48 miles S.E. of Magdeburg.

PETERSBURG, a town of the United States, in Georgia, situate at the confluence of the rivers Savannah and Broad, 50 miles N.W. of Augusta. Long. 81. 32. W. Lat. 33. 46. N.

PETERSDORF, a town of Prussia, in the province of Samland, 24 miles E. of Königsberg.

PETERSHAGEN, a town of Germany, in the principality of Minden, seated on the Weser, three miles from Minden, and 37 W. of Hanover. Long. 10. 6. E. Lat. 52. 25. N.

PETHERTON, a town in Somersetshire, with a market on Tuesday; seated on the Parret, 18 miles S. by W. of Wells; and 133 W. by S. of London. Long. 2. 41. E. Lat. 50. 56. N.

PETIGLIANO, a town of Tuscany, in the Siennese, eight miles W. of Castro, and 45 S. E. of Sienna. Long. 11. 42. E. Lat. 42. 23. N.

PETIT GUAUVE, a sea-port of St. Domingo, seated on a bay at the west end of the island. It is 400 miles E. of Jamaica. Long. 72. 52. W. Lat. 18. 27. N.

PETOUNE, a city of Eastern Chinese Tartary, in the Department of Kirin. It has scarcely any inhabitants but Tartar soldiers, and Chinese condemned to exile. It is seated on the Songari, 112 miles N. by E. of Kirin, and 500 N. E. of Pekin. Long. 124. 55. E. Lat. 45. 3. N.

PETRELLA, a town of Naples, in the Molise, 31 miles E. of Molise.

PETRELLA, a town of Turkey in Europe, in Albania, 25 miles S. E. of Durazzo. Long. 19. 36. E. Lat. 41. 35. N.

PETRIKOW, a town of Great Poland, in the palatinate of Siradia, 80 miles S. W. of Warsaw. Long. 19. 46. E. Lat. 51. 12. N.

PETRINA, or **PETRINTA**, a strong town of Austrian Croatia, seated on the Petrina, 27 miles E. of Carlsbad. Long. 16. 0. E. Lat. 49. 0. N.

PETTAPOLLY, a sea-port of Hindoostan, on the coast of Coromandel, where the Dutch have a factory, 42 miles S. W. of Masulipatam. Long. 80. 46. E. Lat. 15. 49. N.

PETTAU, a town of Austria, in the duchy of Silesia. It belongs to the Bishop of Salzburg, and is seated on the Draue, 28 miles S. by E. of Graz. Long. 15. 37. E. Lat. 46. 46. N.

PETTYCUR, a harbour in Fifeshire, one mile from Kinghorn, in the frith of Forth. It is the usual landing place of passengers from Leith, on the opposite shore.

PEVENSEY, a village in Sussex, situate on a small river, which runs into a bay of the English Channel, called Pevensey Harbour, 14 miles W. S. W. of Hastings. Here is an ancient castle, which belonged to Robert earl of Moreton, and is said to be the largest and most entire remain of Roman building to be seen in Britain. Pevensey was anciently a famous haven, though now it is nearly two miles from the sea. Here Swaine landed in 1049, when he carried off his cousin Beorn and murdered him: Godwin, and his son Harold, afterwards ravaged it, and took away many ships: and here William the Conqueror landed, when he invaded England.

PFaffenHOFEN, a town of Upper Bavaria, with a Benedictine monastery at a small distance. It is seated on the Ilm, 10 miles N. W. of Ratibon. Long. 12. 3. E. Lat. 49. 27. N.

PFALGEL, a town of Germany, in the electorate of Treves. Here is a convent, which was formerly a palace of the kings of the Franks. It is three miles N. E. of Treves.

PFIRT, or **FORRETT**, a town of France, in the department of Upper Rhine, 10 miles W. of Basil. Long. 7. 20. E. Lat. 47. 37. N.

PFORTZHEIM, a town of Suabia, in the marquisate of Baden-Durlach, with a castle, seated on the Entz, 15 miles S. E. of Durlach. Long. 9. 45. E. Lat. 48. 57. N.

PFREIMB, a town of Upper Bavaria, with a castle, seated at the confluence of the Pirent and Nab, 10 miles N. E. of Amberg. Long. 12. 21. E. Lat. 49. 21. N.

PFULENDORF, an imperial town of Suabia, seated on

the Andalsbach, 37 miles S. W. of Ulm. Long. 9. 27. W. Lat. 48. 8. N.

PIANAGORIA, a small and beautiful island of Asia, on the E. side of the strait of Cadiz.

PHANTASMAGORIA, an appellation lately given to an exhibition of curious optical illusions in London. Though it will be difficult, we apprehend, to prove any exclusive property in phenomena that every experimental philosopher must have practised on a smaller scale, this has been the subject of a patent granted to Mr. Philipshall, of the Lyceum, in the Strand, who describes his method of representing, in a dark space or scene, human figures, in various characters, proportions, and sizes.

"The apparatus of some of these exhibitions," says he, "consists of two concave glasses, or rather two concave metal reflectors, before which an artificial light, proportionable to their focus, is applied.

"These enlightened concave metal reflectors are secured in a closet or box proportionable to their size, and their requisite light, in such a manner that all the rays of light are directed upon a transparent picture, representing the apparition; which picture reflects, by means of lenses, upon a transparent body, and giving the necessary direction to this apparatus, according to the nature of its circumstances; in such a manner that the apparitions represent themselves to the eye of the spectator arbitrarily, either in a larger or smaller, in a nearer or more distant perspective point of view.

"In the same manner I can likewise represent landscapes and buildings in a very striking and deceiving manner, in a voluntary size.

"Another sort of apparition is produced by the refraction of light, by means of transparent bodies, of various shapes and sizes, which are fixed in a dark closet as aforesaid, and, by means of the refraction of an artificial light, are either made visible or invisible. If those bodies are made to liken deceased persons which are required to be seen, then the apparition is the more striking, and answers fully the ideas commonly formed of a spectre.

"A third sort of these optical deceptions I produce in the following manner, viz. By opaque moveable figures, of various sizes and shapes. These are moderately enlightened by the refraction of a concave metal reflector, fixed in a dark closet; but the rays of light must be properly distributed by the refraction of a lens, of a proportionable focus, in order that the enlightened object may alone represent itself to the eye; if therefore, according to the description, the enlightened figures imitate mechanically the motions of men, and appear in proper dress or draperies, then this becomes the most striking illusion, as one may by this regulation, by giving an easy motion to their drapery, produce various groups, and pantomime scenes, out of the world of spirits.

"A fourth sort of optical illusion is operated in the following manner, in order to produce a multiplicity of apparitions. There is between the transparent body upon which the figures reflect, another dark body slipped in, upon which a fixed number of figures are applied, and are distributed in a symmetrical manner; upon these figures either a greater or less light is directed, according to the disposition of the groups, and gives to the apparatus the necessary direction, in order that those which reflect upon the transparent bodies may move through one another, and form all manner of groups; the positions of which are very comic and striking, and they procure the most agreeable entertainment."

By means of this apparatus and method of working, a thousand different diversions may be produced, only by adapting it to the space and place where it is exhibited, and moderating the rays of light in a suitable manner.

PHARZA, anciently **PHARSALIA**, a town of Turkey in Europe, in Janna, famous for the decisive victory gained by Julius Cæsar over Pompey, in 48 B.C. This town is an archiepiscopal see, and seated on the Enipeus, 10 miles S. of Larissa.

PHILIPPINE, a strong town of Dutch Flanders. It was taken by the French in 1747, restored in 1748, and again taken in 1794. It is seated on an arm of the Scheldt, 12 miles S.E. of Flushing. Long. 3. 51. E. Lat. 51. 16. N.

PHILIPPINES, New, otherwise called **PALAOOS**, and **CAROLINAS**, islands in the North Pacific Ocean, to the E. of the most southern of the Philippine Islands. There are about 32 in all, between the equator and the Ladrões; but they are very little known to the Europeans.

PHILIPPOLI, a town of Romania, with an archbishop's see. It is chiefly inhabited by Greeks, and is seated on the Mariza, 82 miles N.W. of Adrianople, and 188 of Constantinople. Long. 24. 50. E. Lat. 42. 15. N.

PHILIPS-NORTON, a town in Somersetshire, with a market on Thursday, seven miles S. of Bath, and 104 W. of London. Long. 2. 16. W. Lat. 52. 16. N.

PHILIPSBURG, a town of the United States, in New Jersey, situate on the river Delaware, opposite Easton in Pennsylvania, 41 miles N.W. of Trenton. Long. 75. 30. W. Lat. 40. 45. N.

PHILIPSTADT, a town of Sweden, in Wermeland, seated in a hilly and rocky country, abounding in iron mines, between two lakes, and watered by a rivulet. It was built by Charles IX. and called after his son Philip. In 1775, it was destroyed by fire, but has been since rebuilt. It is 20 miles N.E. of Carlstadt, and 140 N.W. of Stockholm. Long. 14. 10. E. Lat. 59. 30. N.

PHILIPSTOWN, a borough of Ireland, capital of King's County, 40 miles W. of Dublin. Long. 7. 3. W. Lat. 53. 18. N.

PHILIPVILLE, a strong town of France, in the department of the North, seated on an eminence, 25 miles S.E. of Mons, and 123 N. by E. of Paris. Long. 4. 24. E. Lat. 50. 7. N.

PHILIP ISLANDS, two islands in the South Pacific Ocean, discovered by Captain Hunter in 1791, and named after the governor of New South Wales. They are five miles asunder, but almost joined by a sandy spit, which reaches, for about two thirds of the distance, from the easternmost island to the most westerly, which last is the smallest. They are covered with shrubs, have few tall trees on them, and the land is low. Long of the eastern island 140. 3. E. Lat. 8. 6. S.

PHILOLOGY (*Encycl.*). Dele the reference to *OSIAN* and *GABRIEL*, lines 1st and 2d of col. 2d.

PHILOSOPHY (*Encycl.*). The appellation of *Critical Philosophy* has been recently given to a system of science, founded by the celebrated Professor Kant of Königsberg, and particularly well received in Germany. Against this system some serious charges have been brought by the learned in different parts of Europe, but more especially by the Abbé Barthelemy; whilst, on the other hand, it has been no less ably defended by its friends and admirers. It is unsuitable for us, on many accounts, but particularly in this advanced state of our undertaking, to enter at great length into a subject so much controverted; for which reason we content ourselves with referring to the article *KANT* (*Suppl.*), where the reader will be gratified with some remarks in defence of the *Critical Philosophy*, drawn up by a gentleman particularly well qualified for the task.

PHOTOMETER, an apparatus for measuring the inten-

sity of light, and likewise the transparency of the medium through which it passes. Count Rumford, when making the experiments which are described in the *Phil. Trans.* was led, step by step, to the construction of a very accurate photometer, in which the shadows, instead of being thrown upon a paper spread out upon the waistcoat, or side of the room, are projected upon the inside of the back part of a wooden box $7\frac{1}{2}$ inches wide, $10\frac{1}{2}$ inches long, and $3\frac{1}{2}$ inches deep in the clear. The light is admitted into it through two horizontal tubes in the front, placed so as to form an angle of 60° ; their axes meeting at the centre of the field of the instrument. In the middle of the front of the box, between these two tubes, is an opening through which is viewed the field of the photometer (see Pl. 42. fig. 1). This field is formed of a piece of white paper, which is not fastened immediately upon the inside of the back of the box, but is pasted upon a small pane of very fine ground glass; and this glass, thus covered, is let down into a groove, made to receive it, in the back of the box. The whole inside of the box, except the field of the instrument, is painted of a deep black dead colour. To the under part of the box is fitted a ball and socket, by which it is attached to a stand which supports it: and the top or lid of it is fitted with hinges, in order that the box may be laid quite open, as often as it is necessary to alter any part of the machinery it contains.

The count had found it very inconvenient to compare two shadows projected by the same cylinder, as these were either necessarily too far from each other to be compared with certainty, or, when they were nearer, were in part hid from the eye by the cylinder. To remedy this inconvenience, he now makes use of two cylinders, which are placed perpendicularly in the bottom of the box just described, in a line parallel to the back part of it, distant from this back $2\frac{1}{8}$ inches, and from each other 3 inches, measuring from the centres of the cylinders; when the two lights made use of in the experiment are properly placed, these two cylinders project four shadows upon the white paper upon the inside of the back part of the box, or the field of the instrument; two of which shadows are in contact, precisely in the middle of that field, and it is these two alone that are to be attended to. To prevent the attention being distracted by the presence of unnecessary objects, the two outside shadows are made to disappear; which is done by rendering the field of the instrument so narrow, that they fall without it, upon a blackened surface, upon which they are not visible. If the cylinders be each $\frac{1}{8}$ of an inch in diameter, and $2\frac{3}{8}$ inches in height, it will be quite sufficient that the field be $2\frac{1}{8}$ inches wide; and as an unnecessary height of the field is not only useless, but disadvantageous, as a large surface of white paper not covered by the shadows produces too strong a glare of light, the field ought not to be more than $\frac{1}{8}$ of an inch higher than the tops of the cylinders. That its dimensions, however, may be occasionally augmented, the covered glass should be made $5\frac{1}{8}$ inches long, and as wide as the box is deep, viz. $3\frac{1}{2}$ inches; since the field of the instrument can be reduced to its proper size by a screen of black pasteboard, interposed before the anterior surface of this covered glass, and resting immediately upon it. A hole in this pasteboard, in the form of an oblong square, $1\frac{1}{8}$ inch wide, and two inches high, determines the dimensions, and forms the boundaries of the field. This screen should be large enough to cover the whole inside of the back of the box, and it may be fixed in its place by means of grooves in the sides of the box, into which it may be made to enter. The position of the opening above mentioned is determined by the height of the cylinders; the top of it being $\frac{1}{8}$ of an inch higher than the tops of the cylinders; and

as the height of it is only two inches, while the height of the cylinders is $2\frac{2}{3}$ inches, it is evident that the shadows of the lower parts of the cylinders do not enter the field. No inconvenience arises from that circumstance; on the contrary, several advantages are derived from that arrangement.

That the lights may be placed with facility and precision, a fine black line is drawn through the middle of the field, from the top to the bottom of it, and another (horizontal) line at right angles to it, at the height of the top of the cylinders. When the tops of the shadows touch this last-mentioned line, the lights are at a proper height; and further, when the two shadows are in contact with each other in the middle of the field, the lights are then in their proper directions.

We have said that the cylinders, by which the shadows are projected, are placed perpendicularly in the bottom of the box; but as the diameters of the shadows of these cylinders vary in some degree, in proportion as the lights are broader or narrower, and as they are brought nearer to or removed further from the photometer, in order to be able in all cases to bring these shadows to be of the same diameter, which is very advantageous, in order to judge with greater facility and certainty when they are of the same density, the count renders the cylinders moveable about their axes, and adds to each a vertical wing $\frac{1}{10}$ of an inch wide, $\frac{1}{10}$ of an inch thick, and of equal height with the cylinder itself, and firmly fixed to it from the top to the bottom. This wing commonly lies in the middle of the shadow of the cylinder, and as long as it remains in that situation it has no effect whatever; but when it is necessary that the diameter of one of the shadows be increased, the corresponding cylinder is moved about its axis, till the wing just described, emerging out of the shadow, and intercepting a portion of light, brings the shadow projected upon the field of the instrument to be of the width or diameter required. In this operation it is always necessary to turn the cylinder outwards, or in such a manner that the augmentation of the width of the shadow may take place on that side of it which is opposite to the shadow corresponding to the other light. The necessity for that precaution will appear evident to any one who has a just idea of the instrument in question, and of the manner of making use of it. They are turned likewise without opening the box, by taking hold of the ends of their axes, which project below its bottom.

As it is absolutely necessary that the cylinders should constantly remain precisely perpendicular to the bottom of the box, or parallel to each other, it will be best to construct them of brass; and, instead of fixing them immediately to the bottom of the box (which, being of wood, may warp), to fix them to a strong thick piece of well-hammered plate brass; which plate of brass may be afterwards fastened to the bottom of the box by means of one strong screw. In this manner two of the count's best instruments are constructed; and, in order to secure the cylinders still more firmly in their vertical positions, they are furnished with broad flat rings, or projections, where they rest upon the brass plate; which rings are $\frac{1}{10}$ of an inch thick, and equal in diameter to the projection of the wing of the cylinder, to the bottom of which they afford a firm support. These cylinders are likewise forcibly pushed, or rather pulled, against the brass plate upon which they rest, by means of compressed spiral springs placed between the under side of that plate and the lower ends of the cylinders. Of whatever material the cylinders be constructed, and whatever be their forms or dimensions, it is absolutely necessary that they, as well as every other part of the photometer, except the field, should be well painted of a deep black dead colour.

In order to move the lights to and from the photometer with

greater ease and precision, the observer should provide two long and narrow, but very strong and steady, tables; in the middle of each of which there is a straight groove, in which a sliding carriage, upon which the light is placed, is drawn along by means of a cord which is fastened to it before and behind, and which, passing over pulleys at each end of the table, goes round a cylinder; which cylinder is furnished with a winch, and is so placed, near the end of the table adjoining the photometer, that the observer can turn it about, without taking his eye from the field of the instrument.

Many advantages are derived from this arrangement: first, the observer can move the lights as he finds necessary, without the help of an assistant, and even without removing his eye from the shadows; secondly, each light is always precisely in the line of direction in which it ought to be, in order that the shadows may be in contact in the middle of the vertical plane of the photometer; and, thirdly, the sliding motion of the lights being perfectly soft and gentle, that motion produces little or no effect upon the lights themselves, either to increase or diminish their brilliancy.

These tables must be placed at an angle of 60 degrees from each other, and in such a situation, with respect to the photometer, that lines drawn through their middles, in the direction of their lengths, meet in a point exactly under the middle of the vertical plane or field of the photometer, and from that point the distances of the lights are measured; the sides of the tables being divided into English inches, and a vernier, shewing tenths of inches, being fixed to each of the sliding carriages upon which the lights are placed, and which are so contrived that they may be raised or lowered at pleasure; so that the lights may be always in a horizontal line with the tops of the cylinders of the photometer.

In order that the two long and narrow tables or platforms, just described, may remain immovable in their proper positions, they are both firmly fixed to the stand which supports the photometer; and, in order that the motion of the carriages which carry the lights may be as soft and gentle as possible, they are made to slide upon parallel brass wires, 9 inches asunder, about $\frac{1}{16}$ of an inch in diameter, and well polished, which are stretched out upon the tables from one end to the other.

The structure of the apparatus will be clearly understood by a bare inspection of Plate 42.: where fig. 1 is a plan of the inside of the box, and the adjoining parts of the photometer; fig. 2, plan of the two tables belonging to the photometer; fig. 3, the box of the photometer on its stand; fig. 4, elevation of the photometer, with one of the tables and carriages.

The count's first attempts with his photometer were to determine how far it might be possible to ascertain, by direct experiments, the certainty of the assumed law of the diminution of the intensity of the light emitted by luminous bodies; namely, that the intensity of the light is every-where as the squares of the distances from the luminous body inversely. As it is obvious that this law can hold good only when the light is propagated through perfectly transparent spaces, so that its intensity is weakened merely by the divergency of its rays, he instituted a set of experiments to ascertain the transparency of the air and other mediums.

With this view, two equal wax candles, well trimmed, and which were found, by a previous experiment, to burn with exactly the same degree of brightness, were placed together, on one side, before the photometer, and their united light was counterbalanced by the light of an Argand's lamp, well trimmed, and burning very equally, placed on the other side over against them. The lamp was placed at the distance of

Count Rumford's Photometer.

Fig. 1.

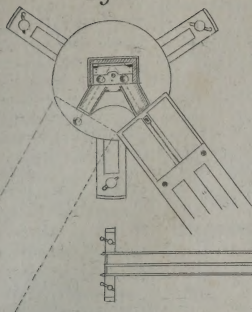


Fig. 2.

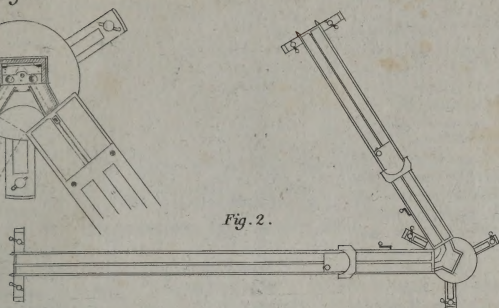


Fig. 3.

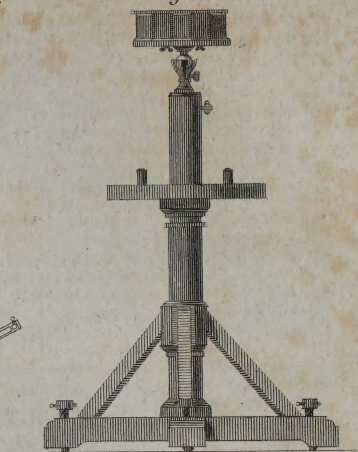
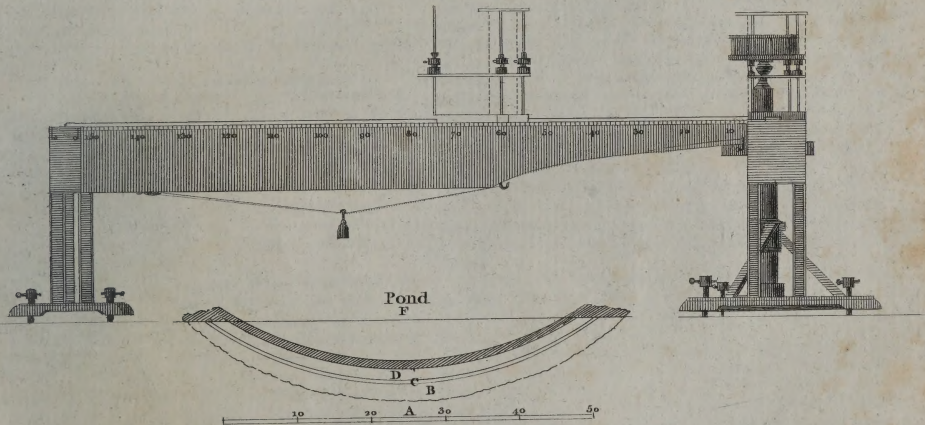


Fig. 4.



The Duke of Bridgewater's under-ground Inclined - Plane.

higher level

Horizontal line of the upper level.

Line of Inclination of the under-ground Plane.

lower level

Nº 1. Fig. 2.

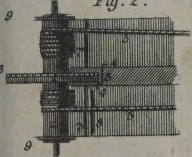


Fig. 1.





100 inches from the field of the photometer, and it was found that the two burning candles (which were placed as near together as possible, without their flames affecting each other by the currents of air they produced) were just able to counterbalance the light of the lamp at the field of the photometer, when they were placed at the distance of 60.8 inches from that field. One of the candles being now taken away and extinguished, the other was brought nearer to the field of the instrument, till its light was found to be just able, singly, to counterbalance the light of the lamp; and this was found to happen when it had arrived at the distance of 43.4 inches. In this experiment, as the candles burnt with equal brightness, it is evident that the intensities of their united and single lights were as 2 to 1, and in that proportion ought, according to the assumed theory, the squares of the distances, 60.8 and 43.4, to be; and, in fact, $60.8^2 = 3696.64$ is to $43.4^2 = 1883.56$ as 2 is to 1 very nearly.

Again, in another experiment, the distances were,
 With two candles = 54 inches. Square = 2916
 With one candle = 38.6 = 1489.96

Upon another trial,
 With two candles = 54.6 inches. Square = 2981.16
 With one candle = 39.7 = 1576.09

And, in the fourth experiment,
 With two candles = 58.4 inches. Square = 3410.56
 With one candle = 42.2 = 1780.84

And, taking the mean of the results of these four experiments,

	Square of the Distances.	
With two Candles.		With one Candle.
In the experiment No. 1. 606.64	—	1883.56
No. 2. 2916	—	1489.96
No. 3. 2981.16	—	1576.09
No. 4. 3410.56	—	1780.84
4) 13004.36	4) 9730.45	

Means 3251.09 and 1682.61
 which again are very nearly as 2 to 1.

With regard to these experiments, it may be observed, that were the resistance of the air to light, or the diminution of the light from the imperfect transparency of air, sensible within the limits of the inconsiderable distances at which the candles were placed from the photometer, in that case the distance of the two equal lights united ought to be, to the distance of one of them single, in a ratio less than that of the square root of 2 to the square root of 1. For if the intensity of a light emitted by a luminous body, in a space void of all resistance, be diminished in the proportion of the squares of the distances, it must of necessity be diminished in a still higher ratio when the light passes through a resisting medium; or one which is not perfectly transparent; and from the difference of those ratios, namely, that of the squares of the distances, and that other higher ratio found by the experiment, the resistance of the medium might be ascertained. This he took much pains to do with respect to air, but did not succeed; the transparency of air being so great, that the diminution which light suffers in passing through a few inches, or even through several feet of it, is not sensible.

Having found, upon repeated trials, that the light of a lamp, properly trimmed, is incomparably more equal than that of a candle, whose wick, continually growing longer, renders its light extremely fluctuating, he substituted lamps to candles in these experiments, and made such other variations in the manner of conducting them as he thought bid fair to lead to a discovery of the resistance of air to light, were it

possible to render that resistance sensible within the confined limits of his machinery. But the results of them, so far from affording means for ascertaining the resistance of the air to light, do not even indicate any resistance at all; on the contrary, it might almost be inferred, from some of them, that the intensity of the light emitted by a luminous body in air is diminished in a ratio less than that of the squares of the distances; but as such a conclusion would involve an evident absurdity, namely, that light moving in air, its absolute quantity, instead of being diminished, actually goes on to increase, that conclusion can by no means be admitted.

The ingenious author's experiments all conspired to shew that the resistance of the air to light is too inconsiderable to be perceptible, and that the assumed law of the diminution of the intensity of light may be depended upon with safety. He admits, however, that means may be found for rendering the air's resistance to light apparent; and he seems to have thought of the very means which occurred for this purpose to M. de Saussure.

From a number of experiments made with his photometer, Count Rumford found, that by passing through a pane of fine, clear, well polished glass, such as is commonly made use of in the construction of looking-glasses, light loses 1073 of its whole quantity, i. e. of the quantity which impinged on the glass; that when light is made to pass through two panes of such glass standing parallel, but not touching each other, the loss is 3184 of the whole; and that in passing through a very thin, clear, colourless pane of window-glass, the loss is only 1203. Hence he infers, that this apparatus might be very usefully employed by the optician, to determine the degree of transparency of glass, and direct his choice in the provision of that important article of his trade. The loss of light when reflected from the very best plane glass mirror, the author ascertained, by five experiments, to be $\frac{1}{3}$ of the whole which fell upon the mirror.

PHYSIOLOGY (*Encycl.*) In that article (p. 51, col. 1, near the bottom), a seeming importance has been given to the imposture of *animal magnetism*. The reader will be pleased to erase the three paragraphs in which that fallacious doctrine occurs.

PIADELLA, a town of Italy, in the duchy of Milan, 20 miles N. of Como. Long. 9. 10. E. Lat. 46. 5. N.

PIANEZZA, a town and castle of Piedmont, seated on the Dora, eight miles from Turin.

PIANOZA, an island of Italy, off the coast of Tuscany, six miles S. of that of Elba. It is level and low, as the name imports. Long. 10. 34. E. Lat. 42. 46. N.

PIARA, a river, which rises in the mountains of Tyrol, and falls into the gulf of Venice, by two mouths, a little north of Venice.

PIAZZA, a town of Naples, in Principato Citeriore, 13 miles E.N.E. of Salerno.

PIAZZA, a town of Sicily, in Val di Noto. It contains 18,000 inhabitants, and is situate almost in the centre of the island, 15 miles N.W. of Calata Girona.

PICIS' WALL, a famous barrier against the Picts, of which some small remains are left. It began at the entrance of Solway Frith, in Cumberland, and running by Carlisle, was continued from W. to E. across the island to Newcastle, and ended at Timmouth.

PIDAUURA, a town of Turkey in Europe, in the Morea, the ancient Epidaurum. It is situate on the W. coast of the gulf of Engia, 25 miles E. of Napoli-di-Romania. Long. 23. 22. E. Lat. 37. 40. N.

PIENZA, a populous town of Tuscany, in the Sienneffe, with a bishop's see; 25 miles S.E. of Sienna, and 56 S. of Florence. Long. 11. 42. E. Lat. 43. 0. N.

PIERRE LE MOUTIER, *Sr.* a town of France in the department of Nievre, seated in a bottom, surrounded by mountains, and near a lake, which renders the air unwholesome, 15 miles N.W. of Moulins, and 150 S. of Paris. Long. 3. 12. E. Lat. 46. 48. N.

PIERRE, *St.* a small desert island near Newfoundland, ceded to the French in 1763, for drying and curing their fish. They were dispossessed of it by the English in 1793. Long. 56. 0. W. Lat. 46. 39. N.

PIETRO, *Sr.* an island in the Mediterranean, near Sardinia, taken by the French in 1793, but retaken soon after.

PIG (*Encycl.*). The following extract from an account of the advantage of a cottager keeping a pig, by the Rev. Dr. Glasse, is published by the Society for bettering the Condition of the Poor, &c.

“ James Bramsgrove, a farmer’s labourer at Greenford, in Middlesex, had saved by his industry the sum of four guineas. With this he purchased a hog, which he put up to fatten in the beginning of April last. In the course of the fattening, he used three quarters and a half of beans, and seven bushels of pease, with which he had been supplied, chiefly upon credit, by his master and his neighbours.—He has a wife and five children; the two eldest, girls; one twelve years old, the other something younger. He, his wife, and his two girls, during the last harvest, earned two guineas a-week, and in one week the sum of 2l. 11s. so that he has continued to maintain his family, and has paid off all that was due from him for beans and pease.—He has since killed his hog, at Michaelmas; the weight was 64 stone 3lb.; part of it he has sold at 7½d. per pound; the rest he has reserved for the use of his own family. Estimating the whole at 7½d. per pound, the value of the hog would have been above 16l.; but, as what he sold consisted of the prime pieces, some deduction ought to be made on that account.”

Where a cottager possesses any property, when he has a garden, a pig, or a cow, his advantage is to be estimated, not merely by the pecuniary profit produced, but by the superior tone of industry and economy which he acquires. In the instance mentioned of James Bramsgrove and his family, the prospect of increased comfort, and of improved means of subsistence, gave an incentive and pleasure to all their labour and exertions, during the late harvest. Perhaps it may be needless to observe, that habits of application and good conduct, when once acquired and enjoyed, continue in almost every instance, through life, a blessing to the possessor; and that where the cottager has acquired at home a pleasurable object of industry, to which his hopes and wishes are directed, it has the effect of attaching him to his situation, of augmenting his energy, and of reconciling him to a life of labour and hardship.

There are situations, in which, on account of the high value and rent of land, or on account of there being very little grass land or common, a cow cannot be kept, with advantage, by the cottager. There, it is probable, no better mode can be suggested of supplying the poor with milk, than that so successfully adopted by Mr. Gibborne, near Lichfield: but a pig may be kept, and a garden cultivated with benefit to the cottager, in every part of the kingdom. See *COTTAGER, COW, and Cottage-Garden, Supp.*

PIGEON ISLAND, a small island, eight miles from the coast of Malabar, and 15 from the town of Onore. Long. 74. 0. E. Lat. 14. 1. N.

PIGNEY, a town of France, in the department of Aube, 12 miles N.E. of Troyes. Long. 4. 25. E. Lat. 48. 20. N.

PILLAU, a sea-port of Prussia, on the Baltic. The harbour is good, and it is well fortified, being considered as the bulwark and key of the kingdom. It is 20 miles W. by S,

of Königsberg, of which it is the port. Long. 20. 20. E. Lat. 54. 38. N.

PILNITZ, a town of Upper Saxony, in the margravate of Meissen, celebrated for a treaty entered into by the princes of Europe against France in 1702. It is seven miles S.E. of Dresden.

PILSEN, a strong town of Bohemia, capital of a circle of the same name. It has often been taken and retaken, and is seated near the confluence of the Mísa and Watto, 47 miles W. by S. of Prague. Long. 13. 55. E. Lat. 49. 46. N.

PILSNA, *PILSNO*, or *PILZOW*, a town of Little Poland, in the palatinate of Sandomir, seated on the Wilake, 30 miles E. of Cracow. Long. 21. 10. E. Lat. 50. 0. N.

PINES, *Isle of*, an island in S. the Pacific Ocean, off the fourth end of New Caledonia. It is 14 miles over in a S.E. and N.W. direction. It is high and remarkable in the middle, being quite a pointed hill, sloping towards the extremities, which are very low. The low land has many tall pine-trees upon it. It was discovered by Captain Cook in 1774. Long. 167. 38. E. Lat. 22. 38. S.

PINHEL, a strong town of Portugal, in Tra-os-Montes, capital of a territory of the same name. It is seated at the confluence of the Coha and Pinnel, 25 miles N. of Guarda. Long. 6. 40. W. Lat. 40. 46. N.

PIN-HIANG-FOU, a city of China, in the province of Chan-shi. Its district contains six cities of the second, and 28 of the third class. It is 240 miles S.W. of Peking. Long. 111. 55. E. Lat. 35. 55. N.

PINNENBURG, a fort and town of Lower Saxony, in the duchy of Haltsen, capital of a county of the same name. It is seated on the Owe, 15 miles N.W. of Hamburg. Long. 9. 40. E. Lat. 53. 46. N.

PINOS, an island of the West Indies, on the south side of Cuba, from which it is separated by a deep strait. It is 25 miles long, and 15 broad, and has excellent pastures. Long. 82. 33. W. Lat. 22. 2. N.

PINSK, a town of Lithuania, on a river of the same name. It was formerly a considerable place, but has been almost ruined by the Cossacks. Long. 26. 20. E. Lat. 52. 18. N.

PIOMBINO, a sea-port of Tuscany, capital of a principality of the same name. It is seated on a bay, 40 miles S. of Leghorn, and 60 S.W. of Florence. Long. 10. 23. E. Lat. 42. 57. N.

PIOMBINO, a principality of Tuscany, lying on the Mediterranean. The island of Elba depends upon it, and has its own prince, under the protection of the King of the Two Sicilies.

PIPE (*Encycl.*). A patent was granted to Mr. Wilkinson, of Broseley, in the county of Salop, for an improved method of making leaden pipes.

It is dated March 13, 1790.—He casts the lead in lengths, as is practised in the common way, *i. e.* put upon a polished rod or round maundrell of iron, or any metal, such maundrells being made of different lengths and diameters, according to the size that is wanted. This rod or maundrell, with the cast-lead upon it, is put repeatedly through or between rollers, with grooves, of different sizes, according to the external diameter required, and extended to the length or thickness ordered; or drawn through metal gauges or collars, of different dimensions, upon the said maundrell, each succeeding collar being less than the former, until the same is extended to the length and thickness required; all of which may be performed with a common water wheel, or any other rotative motion.

PIPERNO, a town of Italy, in Compagna di Roma, 50 miles S.E. of Rome. Long. 13. 36. E. Lat. 41. 39. N.

PIPLEY, a town of Hindoostan Proper, in Bengal, which formerly had English and Dutch factories. It is seated on a

river, 15 miles W. of Balafore. Long. 86. 31. E. Lat. 21. 20. N.

PIQUE MONTVALLIER, the highest mountain of the Pyrenees. It is in the form of a pike. Long. 0. 22. W. Lat. 42. 51. N.

PIRANO, a sea-port of Venetian Istria, on a peninsula, 10 miles S. of Capo d'Istria. Long. 14. 1. E. Lat. 45. 40. N.

PIRITZ, a town of Pomerania, in the territory of Stetin. The ancient dukes of Pomerania often resided here. It is seated near the lake Moldui, 20 miles S.E. of Stetin. Long. 14. 20. E. Lat. 53. 18. N.

PIRNA, a commercial town of Upper Saxony, situate on the Elbe, 11 miles S.E. of Dresden. Long. 14. 0. E. Lat. 50. 54. N.

PISANO, a territory of Tuscany, lying on the Mediterranean. It is 47 miles long, and 25 broad, and one of the best countries in all Tuscany.

PISCATAQUA, a river of New Hampshire, the mouth of which forms the only port in that state, and is 60 miles N. of Boston. Long. 70. 30. W. Lat. 43. 25. N.

PISCO, a town of Peru, in the audience of Lima, with a good road for ships. It is seated in a country fertile in excellent fruits and good wine, 140 miles S.S.E. of Lima. Long. 76. 15. W. Lat. 13. 36. S.

PISSELLO, the most northern cape of Natolia, which projects into the Black Sea, opposite the Crimea.

PITCAITLY WELLS, some remarkable saline springs, near Perth, in Scotland, deemed beneficial in scorbutic cases.

PITHEA, a sea-port of Sweden, in West Bothnia, seated on a small island, at the mouth of the Pithea, in the gulf of Bothnia. It is joined to the continent by a wooden bridge, and is 80 miles S.W. of Tornea. Long. 22. 40. E. Lat. 65. 11. N.

PITSCHEN, or **BITSCHEN**, a town of Silesia, in the principality of Brieg, formerly the see of a bishop, afterwards removed to Breslaw. It is 30 miles N.E. of Brieg, and 42 E. of Breslaw. Long. 17. 55. E. Lat. 51. 5. N.

PITTSBURGH, or **FORT PITT**, a flourishing town of Pennsylvania, capital of the county of Alleghany, situate on the W. side of the Alleghany mountains, on a point of land between the rivers Alleghany and Monongahela. Here was the French Fort du Queine; in an expedition against which, in 1756, General Braddock fell into an ambuscade, and was defeated and slain. This fort was abandoned by the French, in 1758, on the approach of General Forbes; and its name was changed to that of Pitt, in honour to the minister by whom the war was then directed. At this place, the Alleghany takes the name of Ohio. It is 320 miles W. of Philadelphia. Long. 79. 48. W. Lat. 40. 26. N.

PIURA, a town of Peru, capital of a jurisdiction of the same name. This was the first Spanish settlement in Peru, and was founded in 1531. It is 25 miles S.S.E. of Paiza. Long. 81. 0. W. Lat. 5. 55. S.

PIZZIGHETONE, a town of Italy, in the Cremonese, with a strong castle, in which Francis I. of France was kept prisoner. It was taken by the French in 1796, and retaken by the Austrians and Russians in 1799. It is situate on the Adda, nine miles N.W. of Cremona, and 13 S.E. of Lodi. Long. 9. 53. E. Lat. 49. 50. N.

PIZZO, a town of Naples, in Calabria Ulteriore, seated on the gulf of St. Eufemia, four miles from Monte-Leone.

PLACENTIA, a town of Spain, in Estremadura, with a bishop's see, and a castle. It is seated on the Xera, in a delightful plain, almost surrounded by mountains, 80 miles S.W. of Madrid. Long. 5. 0. W. Lat. 39. 45. N.

PLACENTIA, a town of Spain, in Guipulcoa, seated on the Dera, 25 miles S.E. of Bilbao. Long. 2. 40. W. Lat. 43. 10. N.

PLACENTIA, a sea-port of Newfoundland, on a bay on the S.E. part of the island, 40 miles W. of St. John. Long. 53. 43. W. Lat. 47. 15. N.

PLANE (*Encycl.*). The following account of an underground inclined plane, executed at Walkden Moor, in Lancashire, by the Duke of Bridgewater's directions, was presented by the Rev. Mr. Egerton, to the Society for the Encouragement of Arts, &c. who voted his Grace their gold medal.

At Worsley, the Duke of Bridgewater's navigation begins; it goes west to Leigh, and east to Manchester, where it locks up into the Rochdale canal. In its way to Manchester, it turns out, in a western direction, near Longford Bridge, to meet the Grand Trunk Canal, above Preston Brook; and from thence it goes north-west to Runcorn, where it locks down into the Mersey, in the tide-way to Liverpool.

To this navigation above ground, which, in all its directions, is extended through a length of forty miles, upon one level, without tunnel or lock, except the locks at the extremities, at Worsley an under-ground navigation is joined, which goes to the different mines of coal under Walkden Moor, from which mines, by these navigations above ground and under ground, Manchester and various other places are supplied with that valuable article. The canals of this underground navigation lie upon two levels, or stories. The lower is upon the same level with the open navigation, which it joins at Worsley; and consists, in the different lines which it pursues to the different seams of coals, of near twelve miles of tunnelling.

The higher is thirty-five yards and a half perpendicular height above the level of the lower, and varies from thirty-eight to sixty-one perpendicular yards below the surface of the earth, and consists of near six miles of tunnelling.

The tunnelling of each level is ten feet four inches wide, and eight feet six inches deep; and the depth of water, three feet seven inches.

Before a communication was made by an inclined plane, the coals were discharged by hand from the boats on the higher level, and were let down the pits in tubs, by an engine and a break-wheel, into those upon the lower. To convey the boats themselves from the canals of the higher level into that of the lower, was the intent of making this under-ground inclined plane. By the help of this machinery, the whole business is now done at once, without discharging or damaging the coal, and at one fourth of the expence: for the boats of the higher level, are bodily let down the inclined plane, and are floated from the foot of it through nearly three miles, in a straight line, of the lower level canal, into the open navigation at Worsley; and whereas they were before obliged to be drawn up to the surface of the earth at great inconvenience and expence, to be repaired at a work-shop on Walkden Moor, they now come of themselves, in their course of business, to be repaired at the great dock-yard, at Worsley.

The place where the inclined plane is constructed, is adapted in a singular way for the purpose. There is a bed of white rock, or grit, eight yards twelve inches deep, which dips one in four, lying exactly in the direction most convenient for the communication between the two levels; which bed of rock is hollowed into a tunnel, driven upon the rise of the metals, by blasting with gunpowder, and working it down with wedges and hammers. In this tunnel, formed through a rock reaching from the lower to the higher level, the inclined plane is fixed; and, by its being in the heart of a rock, the whole workmanship can be pinned, secured, and compacted together at the top, bottom, and sides, most effectually—an advantage which no inclined plane above ground can have, and which renders this a singular production, no-where perhaps to be imitated.

The run of the inclined plane is one hundred and fifty-one yards, besides eighteen yards, the length of the locks, at the north or upper-end: and the fall is one in four, corresponding with the dip of the rock. Of these one hundred and fifty-one yards, about ninety-four yards are formed into a double waggon-way, in order to let two boats, namely, the empty and the loaded boats, pass up and down; and are divided by a brick wall, supporting the roof, in which are openings for a person to escape out of the way of the boats; which double waggon-way joins in one, about fifty-seven yards from the lower level. The whole width of the double waggon-way is nineteen feet; and of the single waggon-way, after the junction, ten feet. These waggon-ways are supplied with iron rails, or gullies, laid on sleepers, down the whole run; and the height of the roof, above the iron rails, is eight feet.

At the top of the inclined plane there is a double lock, or rather two locks, side by side, formed in the heart of the fame rock, which deliver the loaded boats from the higher level down the inclined plane, and receive the empty boats from the lower. The length of that part of the tunnel in which these are formed, is eighteen yards; the width or diameter, twenty feet six inches; and the height of the roof, at the north end and above the locks, at *d d*, Pl. 42. fig. 1, twenty-one feet, to admit the break-wheel.

The bottom, or fourth end of the inclined plane, is six feet nine inches under the surface of the water, where the loaded boat floats off the carriage upon the canal of the lower level.

The depth of the locks, under water, at the north end, is four feet six inches; at the fourth end it is eight feet.

The wall between the locks is nine inches above the surface of the level water; its breadth is three feet.

The diameter of the horizontal main-shaft, upon which the rope works to let the loaded boats down, and to draw the empty boats up, is four feet eleven inches, and its circumference is fifteen feet five inches. The main rope is two inches and a half in diameter, and seven inches and a half in circumference. It is wrapped round with a small cord of about an inch in circumference, for the length of about one hundred and five yards, to prevent its wearing, which it does chiefly when it drags upon the bottom, when at work, at the place where the waggon-ways unite; and, for the same purpose, rollers of eight inches diameter are fixed at intervals down the run of the inclined plane. Moreover, a hollow cast-iron roller of eight inches and a half diameter is fixed across the west lock, parallel to the upper west lock-gate, and near the north end of the lock, but half a yard higher than the gate, in order to bear up the rope, and to prevent it from swagging.

A hold-fast rope is fastened to the main-rope, to stay each boat upon its wagon, as they go up or down. It is marked *k k*, in Fig. 1, and its uses are more particularly detailed in the table of reference, at *k k*, to that plate.

Upon this horizontal main-shaft is a break-wheel above mentioned, which regulates the motion of the loaded boat going down the inclined plane.

The number of iron teeth, or cogs, in the spur-wheel, which is fastened to the side of the break-wheel, is three hundred and seventy-two; and the little nut-wheel, No. 3, fig. 2, which sets it in motion, contains eleven teeth, or cogs. The nut-wheel is supported by two uprights from the pillar to the roof, and works between them. Two winches or handles, No. 4, fig. 2, on its axis, put the main-shaft, *d d*, fig. 1, or No. 1, fig. 2, in motion. The power of both united, enables a man, who uses a force equal to forty pounds weight, to let forward two tons upon the waggon-road: and this force, multiplied at the winches or handles, may be used to let forward the loaded boat out of one lock, and to bring the empty boat

into the other. The boats being thus put in motion, the little nut-wheel is disengaged from the main-shaft, by a slide drawing the little nut sideways, so as to disengage the teeth, or cogs, from the cogs of the spur-wheel. The weight of four tons going down, bring up about one.

The spur-wheel, however, which is fastened to the break-wheel, No. 2, fig. 2, is seldom used, as it is occasionally only put in motion to regulate the stretch of the ropes when new, and to draw the light boat into the lock, when, at any time, it may happen to be over-weighted with materials, such as mortar, props, slabs, &c. for the use of the higher level collieries, and will not move of itself, upon a balance, out of the lower level.

The length of the carriage, or cradle, is thirty feet; its width is seven feet four inches. It moves upon four solid cast-iron rollers, which run upon cast-iron plates; on one side of each of which there are iron crests, which stand two inches higher than the plates, and prevent the carriage from running off the road.

The weight of neat coal, contained in the loaded boat, is about twelve tons: the boat weighs about four tons; and the carriage, or cradle, in which the boat is placed, when conveyed down the inclined plane, is about five tons:—in all about twenty-one tons.

At this inclined plane, thirty loaded boats are now let down with ease, in about eight hours; that is to say, four boats are let down in a little more than an hour. The boats used in these collieries are of different sizes and dimensions; some will carry seven, some eight and a half, some twelve tons.

The weight of neat coal, independently of the weight of the carriage and boats, which is let down the inclined plane, in twelve-ton boats, in eight hours, will consequently be three hundred and sixty tons. The weight of the carriage, suppose five tons, let down in the same time, will be one hundred and fifty tons; and the weight of the boat, suppose four tons, thirty times down, in eight hours, will be one hundred and twenty tons:—in all six hundred and thirty tons down in eight hours.

The weight of the carriage thirty times up, and thirty boats up, in eight hours, will be

Carriage, at 5 tons,	30 times up =	150 tons
Boat, at 4 tons,	30 times up =	120 tons

In all 270 tons
up in eight hours.

So that there will be 630 tons down
270 tons up.

In all 900 tons moved at the inclined plane, in eight hours, exclusive of an indeterminate quantity of materials occasionally brought up for the use of the higher level collieries.

The various feeders which are loosened by opening the coals in the higher level collieries, as well as three sufficient reservoirs, which may occasionally be reforted to, and used in a dry season, keep the higher level always to its height, and afford a constant supply of water to fill the locks; for the purpose of working the inclined plane.

This inclined plane was begun in September, 1795: it was finished, and in use, in October, 1797.

Of this, as of most of his other great works, the Duke of Bridgewater was himself the planner and contriver:—to project greatly, and to execute completely, are the perfection of genius.

The singularity of the place in which it is constructed; the original boldness of the design; the ingenuity and mecha-

nism displayed in planning and executing it; the dispatch with which it has been finished; the simplicity, beauty, and harmony of its parts, tending to one united whole; and, above all, the perfection to which it is proved to have been brought, now that it is practically in use; render it equally astonishing with any other of the stupendous works which have been so ably planned, and so successfully executed, by the first projector and patriotic father of Inland Navigation.

References to Plate 42. Fig. 1, a to b, dip of the metals and wagon-road on the under-ground inclined plane. From b, on the lower level, to the mouth of the tunnel, is three miles; A, the east lock; B, the west lock; C, represents a section of the lock: the dotted line shews the horizontal depth, and the black line under it, the slope upon which the wagon-wheels run to receive the loaded boat, or to bring the empty boat into the lock; d d, the main-shaft, four feet eleven inches diameter, upon which the ropes work to wind the boats up and down; and here also the break-wheel is fastened on, together with a spur-wheel, and a nut-wheel. See fig. 2, No. 1: e, a passage between the higher level and the locks; f, f, a loaded boat going down, and an empty boat going up the under-ground inclined plane; G, a brick wall, from the sole to the top of the inclined plane, in order to give additional support to the roof; h, h, h, h, openings through the brick wall G, into which a person may step out of the way of the boats at the time they are passing up and down; i, a bell, which is rung by the rope dotted to b, upon the lower level, at the bottom of the under-ground inclined plane, to give notice when the empty boat is upon the wagon, or cradle, and when the men below are ready, that the loaded boat may be let down by the men above; k, k, holdfast-ropes fastened to the main-ropes, and hooked on to a ring at the fourth end of each boat, as it goes up or down, in order to stay the boats upon the wagon or cradle, that they may not swing, or slip off. These holdfast-ropes are spliced on, to the end of the main-ropes, and run above and between the two bridle-ropes when they are fastened to the iron uprights, which are upon each side of the waggon, or cradles; and they run over the north end of the boat, to be hooked on to the fourth end; l, l, the bridle-ropes fastened to the main-ropes at O, and secured to two iron uprights upon each side of the wagon, or cradle; O, O, the places where the main ropes, the bridle-ropes, and the holdfast-ropes, are fastened all together.

No. 1, an open space driven into the side of the lock A, to which a pit is sunk from the higher level, in order to convey the water out of the locks down to the lower level, and also to force a current of fresh air into the lower level collieries; No. 2, a paddle to let the water out of the lock A, into the pit No. 1; No. 3, a paddle to let the water out of the lock B, through a culvert, represented by dotted lines, under the lock A, into the pit No. 2; No. 7, 7, paddles in the lock-gates, to let the water out of the higher level into the locks; No. 8, 8, the two north lock-gates, one to each lock, which turn upon the heels of the gates, and swing round when they are opened or shut; No. 10, 10, two flops or cloughs, one to each lock, which serve as lock-gates to the fourth end, and are raised and let down by a windlass; S, a flop, which is used occasionally when the lock-gates want repairing; T, the place where the boats which are to pass to or from the lower single wagon-way are directed, at pleasure, into either part of the double wagon-way, by a moveable iron sleeper or plate at that point, upon which sleeper or plate the wheels of the boat-carriage or cradle run.

Fig. 2; 1, main-shaft, on which the rope laps; 2, break-wheel, on one side of which the spur-wheel is fastened; 3, nut-wheel, out of gear, but which slides into the spur-wheel, when used to draw the empty boat into the lock occasionally.

and which is supported by two uprights from the pillar to the roof; 4, 4, winches or handles, to work the nut and spur-wheel; 5, 5, the main-ropes fastened to the boats, and which are lapped to prevent their wearing; 6, the spur-wheel, which is fastened on one side of the break-wheel; and on which break-wheel is a strong iron-jointed timber brace, which, according to the pressure given thereto by the man who attends it, will allow the loaded boat to descend quick or slow, or detain it in its passage; 7, 7, paddles in the lock-gates, to let the water out of the higher level into the lock; 8, a hollow cast-iron roller, to prevent the main-ropes from swagging; 9, shroud-wheel, to prevent the ropes going over the end of the main-shaft, slipping off, jerking, or breaking. This stands three inches above the main-shaft.

PLANIEZ, a small island of the Mediterranean, in the road of Marseilles.

PLANO, a small island of the Mediterranean, in the bay of Alicante.

PLATA, an island of Peru, on the coast of Quito, surrounded by inaccessible rocks, and about five miles long and four broad.

PLATA, a rich and populous town of Peru, capital of the audience of Los Charcos, with an archbishop's see. It is seated on the Chimao, 500 miles S.E. of Cusco. Long. 63. 40. W. Lat. 19. 16. S.

PLATA, RIO-DE-LA, a province of Paraguay, on the S.W. of a river of the same name. It is subject to Spain, and at Buenos Ayres, the capital, a new vice-royalty was established in 1776. See PERU.

PLAUEN, a town of Lower Saxony, in the duchy of Mecklenburg, seated on a small river which falls into the Elbe, near a lake of the same name, 17 miles S. of Gustrów. Long. 12. 13. E. Lat. 53. 40. N.

PLAUEN, a town of Upper Saxony, in Voigtland, seated on the Elster, 67 miles S.W. of Dreiden. Long. 12. 17. E. Lat. 50. 12. N.

PLESHEY, a village in Essex, seven miles N. by W. of Chelmsford. It was the seat of the lord high constable of England, from the earliest times of that office to the year 1400. On the site of his castle is now a brick farm-house; and here are the remains of an ancient fortification, consisting of a mound, of an oval form, surrounded by an area that contains about two acres, and is bounded by a rampart and ditch, over which is a brick bridge.

PLESSE, a town of Silesia, with a castle, seated on the Vistula, 36 miles E. of Troppaw. Long. 18. 36. E. Lat. 50. 0. N.

PLETTENBERG, a town of Westphalia, in the county of Mark, governed by its own magistracy. It is situate on the Elfe and Oesfer, 28 miles S. of Ham. Long. 7. 48. E. Lat. 51. 8. N.

PLEYBERG, a town of Germany, in Carinthia, seated on the Peitzitz, at the foot of a mountain, 25 miles E. by S. of Clagenfurt.

PLOERMEL, a town of France, in the department of Morbihan, 27 miles N.E. of Vannes. Long. 2. 30. W. Lat. 47. 57. N.

PLÖTZKAU, a town of Upper Saxony, in the duchy of Anhalt Bernberg, 24 miles W.S.W. of Dessau. Long. 11. 45. E. Lat. 51. 48. N.

PLOUGH (*Encycl.*) Under that head, and also under HUSBANDRY, we have treated fully on this invaluable implement of agriculture. It remains, however, for us to notice the following new inventions which have been since brought forward.

1. The *Kentish turn-wrepl plough* consists of an oak beam, about ten feet in length, five inches in depth, and three

n breadth; to the end of which is *tenoned a foot*, or piece of timber ($3\frac{1}{2}$ feet long, 4 inches thick, and $3\frac{1}{2}$ inches broad), that is mortised at the bottom, to the end of the *chep*. The handles are fixed on the top of the beam, through which, at the distance of two feet five inches from the foot, is passed a *sheath* of oak, seven inches in width, and an inch and a half thick, being mortised into the chep in an oblique direction, so that the point of the share will be two feet ten inches asunder from the beam. The *chep* is five feet in length, four inches in width, and five deep: to this is fixed the share, which weighs about 32 lbs. and is manufactured of hammered iron, being one foot eight inches in length, and from four and a half to seven inches wide at the point. The upper end of the beam is supported on a carriage, furnished with two wheels, that are three feet two inches in height; on the axle-tree of which a gallows is placed, and provided with a sliding bolster, for the purpose of raising or lowering the machine. A clasp-iron likewise enters through the axle, to which a frog chain, or a tow passing over the beam, is fixed in such a manner, that the plough may, by means of notches, or a pin known under the name of a *check*, be let out to a greater length from the axle; and will consequently penetrate more deeply into the earth.

We have been induced to give this description of the Kentish Plough, because it is an instrument of great strength, and eminently calculated for rocky and hilly countries, as it turns the soil to a considerable depth, laying it perfectly level, without making any furrow, or opening; a circumstance of equal advantage and importance, in dry situations.—The price of the whole, with its tackle complete for drawing, is computed to be about five guineas.

2. A valuable implement has very lately been introduced into the county of Lancaster, by Mr. Duckett, jun.—It is denominated a *Trench-plough*, and furnished with two shares, one being directly over the other, so that one narrow superficial furrow may be drawn from the surface of the soil, while another, at a moderate depth, is taken off beneath. This machine is well adapted for ploughing in green crops, or long dung, by way of manure; and, if the surface of the soil be *fowl*, it may be turned under, and fresh soil brought up, from the depth of 10 inches, by employing three horses. The earth being thus loosened, the roots of plants are enabled to strike downwards without any impediment; and, while the land is drained, and exposed to the influence of the air, it is thereby considerably improved.

3. The *Scalp-plough*, or *Extirpator*, as it is generally termed, was lately invented by Mr. Hayward, of Stoke-Ath, in the county of Suffolk. Its beam is seven feet in length, and is furnished with two handles. The shares are eight inches broad, nine in length, and are fixed to *stalks*, about ten inches in height, and eleven inches asunder. This implement may be adapted to the wheels of a common plough, and will penetrate the soil to a greater or less depth, in a similar manner. The object of this contrivance is, the eradication of weeds, and the clearing of ploughed lands for seed; in which respect it is said to be more serviceable than any other instrument. Before the extirpator is employed, the soil ought to be once ploughed; and, if it have lain fallow during a summer, the scalp is passed over it twice; namely, the first time about two inches deep, and the next, in a transverse direction, at the depth of about four inches. This operation, together with harrowing the ground once, will not only destroy all weeds, but will pulverize and prepare the soil for the reception of seed, whether drilled, or broad-cast. Further, if lands, intended for the production of spring-crops, be ploughed in autumn, and the extirpator be afterwards passed over them, they will be rendered fit for immediate sowing.—

This machine may be drawn either by two or by three horses, according to the nature of the soil, and the depth required: it possesses the peculiar advantage, that it may be worked on all arable lands, by any person capable of directing a plough, and that it will turn over an acre of ground, in one hour, without fatiguing either horses or oxen.—Should the soil, however, be overrun with weeds, it will be advisable to plough it with the scalp, twice; and, in some cases, three times; a short space being allowed to intervene, with a view to deprive the weeds of their vegetating power.

4. Among the most valuable implements that have, within a few years, been constructed and adopted in this country, is the *Beveridge-plough*, designed, or at least improved, by the ingenious Mr. Lewin Tugwell, of Beveridge, in the county of Gloucester. See Pl. 43.

In the Domestic Encyclopedia, are given the following dimensions of this useful plough:

	Feet.	Inches.
A to B	2	4
A - C	2	5
C - D	1	4
D - E	2	5
Diameter of the wheel	1	9
D to F	0	11
G - H	0	10 $\frac{1}{2}$
E - I	1	3 $\frac{1}{2}$
K - L	0	9
Breadth at the heel	0	9
Breadth of the fin	0	7
Top of beam at the heel to the ground	0	8 $\frac{1}{2}$
The mould-board projects at the top more than the breadth at the heel	0	6
1 to 3	6	0
3 - 4	3	8
3 - 5	4	3
5 - 6	2	5
7 - 6	2	8
1 - 3	1	5
1 - 8	2	10
1 - 9	4	8
From the heel to the tuck-hole of the share	2	6 $\frac{1}{2}$
From the tuck-hole to the point of the share	0	8 $\frac{1}{2}$

This excellent machine, which considerably varies from the Rotherham, and other valuable ploughs, gained the prize at the *ploughing-match* in 1798, held near Pipers-Inn, Somersetshire, under the patronage of the Bath and West of England Society. It may be easily worked by a pair of oxen, without a driver; and, on account of its simplicity, we believe that the representation given in Pl. 43. will be sufficient to guide a skilful carpenter in the construction of a similar implement.

5. The *double or two-furrow scing and wheel-plough*, demands the attention of every enlightened agriculturist: we have therefore subjoined a representation in the plate, copied from the 2d vol. of *Communications to the Board of Agriculture*.

This machine, we understand, was originally invented by Mr. Duckett, but has lately been materially improved by the patriotic Lord Somerville. The construction of the beam is nearly the same as that of the Beveridge Plough; which his lordship (in his Address to the Board, in 1798) acknowledges to have adopted, from a consciousness of his inability to substitute another more adapted to the purpose. The chief and most important improvement relates to the mould-board, one end of which was formerly cut off; and the deficiency supplied by driving in wedges, to the consequent injury of the mould-

plate. As this expedient, however, was attended with much trouble, it was generally omitted; and, consequently, the land imperfectly tilled. With a view to remedy such inconvenience, Lord S. proposes (after the mould-board is formed, and the plate is fitted in the usual manner) to cut off the parts marked *a, a*, in the delineation before communicated, and to connect them again with the fixed part of the board, by means of flat hinges, or of thin, flexible plates of hard-hammered iron; so that those parts may be easily set to have different inclinations with such fixed part, by the aid of two screws that pass from the inside through the lower parts of the handle of the plough, opposite to the backs of the moveable pieces *a, a*. The screws, he observes, may be so regulated as to keep such pieces at any degree of inclination that may be required, according to the nature of the land intended to be broken up.

The two-furrow plough is best adapted to light and level soils, particularly for stirring *ley-grounds*; and, as these cannot be laid too flat, or *seed-earths* be turned too much on an edge, the plough may be adapted to either purpose with the utmost facility, by this improvement of the mould-board. When the moveable parts, above alluded to, are screwed outwards, a proportionate convexity or elevation will be left at the base of the furrow; and thus more earth will be exposed for covering the seed. Lastly, as the part of the mould-plate, marked with the dotted lines *C, C*, is most liable to wear off by repeated friction, Lord Somerville directs it to be made twice as thick as the other parts of the plate; viz. double the thickness of a new crown-piece, or about one fourth of an inch; in which case it will remain unimpaired, nearly as long as the whole of the machinery.

The chief improvement made by Lord Somerville, being in the mould-plate of his useful plough, we have engraved two figures, representing its internal structure, in different points of view, by which its mechanism may be more clearly understood. See fig. 2 and 3 in the plate.

a, a, *a*, are the screws that advance or withdraw the moveable mould-plate; *b, b*, the moveable plates; *c, c*, ribs, which serve to strengthen the plates; *d*, grooves, sunk in the mould-board for the reception of the ribs, when the mould-plate is withdrawn.

Lord S. observes, that "the principle of this moveable plate may not at first catch the attention of every reader;" but it deserves to be generally adopted, and has indeed met with strong advocates in ploughmen; for it not only relieves their right arm of considerable labour, that must otherwise be performed in wedging and hammering mould-plates; but much exertion is also saved to the right leg, in attempting to tread those furrows flat, which had been left on an edge by the plough. Lastly, these plates are indispensably necessary, in order to qualify two-furrow ploughs for all *broad* work, and particularly breaking up leys; and such implements ought (in the technical phrase) *to work on their own base, close at heel*; or otherwise the furrow will be irregularly laid; and they will be immediately "thrown out of work."

Before we conclude the account of this valuable contrivance, it is but justice to state the result of a trial made at Kew, in March, 1799, on His Majesty's farm, in consequence of a challenge given to Lord Somerville. The quantity of land, till then in a state of nature, amounted to 17½ statute acres, and was worked by this implement, four Devonshire oxen (six years old), and a man, with a boy as drivery, in six days and four hours. The cattle were in good condition when they commenced the task; after the accomplishment of which, they appeared in better order than before. They were allowed no corn; consumed every day, upon an average, about 40 lbs. of hay, during their continuance at Kew; and worked eight hours each day including half an hour for bait.

The land, thus tilled, was viewed by many gentlemen and able agriculturists, who highly approved of it, and were induced to order numbers of these ploughs; which, we trust, will soon be generally adopted.

The two-furrow plough has, indeed, been introduced into some of the midland counties, where it is employed with five horses and one man, in tolerably level soils, which it divides as effectually as two single ploughs. It is also used, together with the single-wheel plough, in Staffordshire; as it requires only a lad to drive the horses, and to turn the plough at the end of the furrow. For breaking up the turf, an iron *flay* is screwed to the coulter; by which the sward is cut off, and turned into the furrow, so as to be covered with earth. Thus, by the aid of an additional horse, the soil will resemble a fallow, and may be harrowed with equal facility.

6. The latest British plough, which merits particular notice, is that invented by Mr. J. Turner, jun. of Bockleton, Warwicks; and of which the figure in the plate will convey an accurate idea.

A, is the iron at the end of the beam, to which the horses are hooked; and which is called, in Staffordshire, the *buck*; in the county of Worcester, the *ear*; *B, B, B, B, B*, the beam; *W, W, W, W, W*, a strong piece of wood, denominated by the inventor a *wing*, that projects in the middle; and in which one of the coulters, *C*, is fixed. This piece of timber is fastened, at a proper distance from the *ear*, to the side of the beam, by means of long screws passing throughout the latter; with the opposite side of which they connect another wing, containing a second coulter, likewise marked with the letter *C*. These two coulters are placed in a parallel direction, and are both strengthened with a piece of iron, called the *flay*; one end of which is fixed about two inches beneath the wing, and the other is inserted in the wing itself. *F*, represents the whole *flay* of the coulter *C*; and *f* delineates part of the other coulter *C*; *T*, denotes part of the *drock*, a piece of wood, that forms the lower extremity of the plough; and which is about six inches in width, three in depth, and rather more than two feet in length. To the top of the *drock* is fastened an erect piece of timber, known by the name of *spindle*, *M, M*; and behind which are two tails, *D, D*. To the upper end of the spindle *M*, is fixed the beam *B*, the end of which is fastened between the tails, by means of an iron pin; *P, I*, and *P, R*, are two *shelve-boards*, combined with the *drock* and spindle; and which meet at the angular point *P*. The ends of both these boards are strengthened by means of a short wooden *flay*, that is fixed in them, as well as in the tails; *g*, represents this *flay*; *K*, a coulter fastened to the plough-share *S*, and which is bent at the end, in order that it may be more easily admitted through a hole in the beam, behind the two coulters *C, C*, when the share is put on the end of the *drock*.

The object of this contrivance is the formation of small drains or gutters in meadows, and pasture-land, with a view to carry off stagnant waters; which, by remaining on the surface, materially injure the soil. To adjust the plough for work, a mark is first made in the middle of that end of the *drock* which is contiguous to the tails; when a straight line is traced on a level spot of ground, on which such mark and the point of the share are put, and made to coincide. Next, the fore-coulters must be equidistant from the line; then let the dotted line, *b, y, p, n*, represent a straight line made on level ground; *p*, the point of the share *S*; *m*, the middle point of the end of the *drock* *T*; and, if *m* and *p* correspond with the line *b, y, p, n*, *x, y*, and *d, d*, will describe the distance from each of the fore-coulters.

The most effectual method of working this plough is, in the opinion of its inventor, to fasten a chain round the axle-

tree of a pair of cart-wheels (the body of which has been taken off); to hook such chain to the ear A, at the end of the beam; and, by lengthening or shortening the chain, this machine may be so regulated as to penetrate the soil to a greater or less depth, according to the nature of the ground. When the plough is at work, the fore-coulters C, C, cut the outside of the gutter.—K, the coulters, divides the ground exactly in the middle: the further shelve-board throws out half the soil on one side, while the near shelve-board removes the other half to the opposite side; and thus a complete gutter is left, which extends from eight to ten inches in width, and is from six to eight inches deep.

One of the most important advantages resulting from this invention, is the saving in manual labour, which is computed at *three-fourths*; as 400 perches of land may thus be drained in one day, by a team of five horses, two drivers, and a holder; the expence of which, the inventor calculates at 16s.; whereas, if the same quantity of land were to be dug by *hand*, the cost would amount to 3l. 6s. 8d.

Mr. Turner's plough may be applied to another valuable branch of agriculture; namely, the *planting of potatoes*. His method is as follows: First, trenches are made with the machine, at the distance of about two feet from each other; and in which the potatoes are set. Some manure is next spread on them in such trenches, and they are covered by drawing the plough through the intermediate spaces; so that each trench is filled by a ridge of soil. When the growing potatoes require an additional covering of mould, the weeds are previously cut, either by a hoe or weeding-hook; and, the two fore-coulters being taken off the plough, the implement is drawn between the ridges; it throws up an additional portion of soil upon them; and thus expeditiously effects the operation of *moulding*.

Beside these, now described, several other ploughs have been contrived for particular purposes; but, having already given an account of the most valuable improvements, under the heads of *DRAINING, DRILLING, &c.* we shall refer the reader to a description of M. Simonde's *Tableau de l'Agriculture Toscane*, for an account of two ploughs, used in Tuscany, and in other parts of Italy, which, from the simplicity of their construction, deserve to be generally known in Britain.

PLUDENTZ, a town of Germany, in the Tyrol, capital of a county of the same name. It is seated in a pleasant plain, on the river Ill, 65 miles W. of Inspruc. Long. 12. 10. E. Lat. 47. 10. N.

P. UVIERS, or **PITHIVIERS**, a town of France, in the department of Eure and Loire, 20 miles N. of Orleans. Long. 2. 0. E. Lat. 48. 14. N.

PLYMOUTH DOCK, a town in Devonshire, contiguous to the royal docks in the harbour of Hamoaze, at Plymouth. It has a chapel in the dock-yard, and a church about a quarter of a mile from the town. The royal hospital is situate on the right, on an elevated spot that is favourable to a supply of wholesome air; and on the left is the governor of Plymouth's house, overlooking the harbour from a rocky eminence, which is fortified with some regular works for the defence of the dock-yards.

PLYNLIMMON HILL, a vast and lofty mountain of Wales, partly in Montgomeryshire, and partly in Cardigan-shire. The Severn, the Wye, and other rivers, have their source in this mountain.

PO, a river of China, in the province of Kiang-si. It empties itself into the lake Poyang-hou, a small distance from Jaocheou-fou.

POCKLINGTON, a town in the E. riding of Yorkshire, with a market on Saturday; seated in a stream that falls into

the Derwent, 14 miles E. of York, and 196 N. by W. of London. Long. 0. 40. W. Lat. 53. 58. N.

PODENSTEIN, a town of Franconia, in the bishopric of Bamberg, seated among forests, near the source of the Putlach, 30 miles S.E. of Bamberg.

PODOLSK, a town of Russia, in the government of Moscow, 28 miles S. of Moscow. Long. 37. 29. E. Lat. 55. 16. N.

PODOR, a fortress of Africa, on the river Senegal, built by the French, but ceded to the English in 1763. It was afterward retaken by the French, and confirmed to them by the peace of 1783.

POGGIBONZI, a town of Tuscany, famous for its excellent tobacco. It had a citadel, now in ruins; and is seated near the Elsa, 16 miles S. of Florence.

POGGIO, a town of Tuscany, near Florence, famous for a handsome palace of the great duke.

POIRINO, or **POVERINO**, a town of Piedmont, 15 miles S.E. of Turin.

POISONS (*Encycl.*). Under that article, we have noticed various vegetable substances of a poisonous nature, and under **EARTH-NUT**, in this Supplement, have alluded to some instances in which a root, resembling the latter in its external form, was eaten by mistake, and proved fatal. The reference, in the latter, should have been to the article **OENANTHE**, *Encycl.*

POISSY, an ancient town of France, in the department of Seine and Oise, seated near the forest of St. Germain, 15 miles N.W. of Paris. Long. 2. 12. E. Lat. 48. 56. N.

POL, St. a town of France, in the department of the Straits of Calais. It is noted for its mineral waters, and is 16 miles N.W. of Arras.

POLA, an ancient and strong sea-port of Italy, in the S. part of Istria, with a citadel, and a bishop's see. Here are the ruins of a Roman amphitheatre and a triumphal arch. It is seated at the bottom of a bay, and has a spacious harbour, 80 miles S.E. of Venice. Long. 14. 9. E. Lat. 45. 13. N.

POLACHIA, or **PODLACHIA**, a palatinate of Poland, 89 miles long, and 30 broad; bounded on the N. by Prussia and Lithuania, on the E. by Lithuania, on the S. by the palatinate of Lublin, and on the W. by that of Malovia. Bialsk is the capital.

POLIGNANO, a populous town of Naples, in Terra di Bari, seated on a bishop's see. It is seated on a craggy rock, near the sea, 16 miles E. of Bari. Long. 17. 24. E. Lat. 41. 25. N.

POLIGNI, a town of France, in the department of Jura, seated on a rivulet, 32 miles S.W. of Belançon. Long. 5. 55. E. Lat. 46. 50. N.

POLINA, an ancient town of Albania, with a Greek arch-bishop's see. It was formerly a considerable place, but is now almost in ruins, and is 12 miles S. of Durazzo. Long. 19. 20. E. Lat. 41. 42. N.

POLITZ, a town of Upper Saxony, in anterior Pomerania, near the Frisch Hoff, celebrated for its hops. It is eight miles N. of Stetin.

POLLOCKSHAW, a manufacturing town in Renfrewshire, seated on the river White Cart.

POLORE, a town of Hindoostan, in the Carnatic, 26 miles S.S.W. of Arcot, and 55 N.W. of Pondicherry. Long. 78. 52. E. Lat. 12. 10. N.

POLOTZK, a government of the Russian empire, formed of part of a palatinate of Lithuania, dismembered from Poland by the treaty of partition in 1772. Its products are chiefly grain, hemp, flax, and pasture; and the forests furnish

Lord Somerville's Two-Furrow Plough.

Fig. 1.

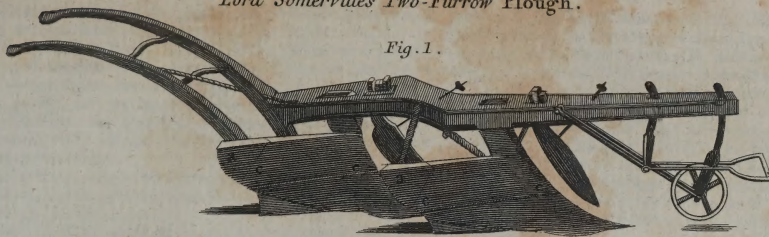
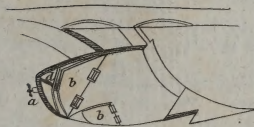


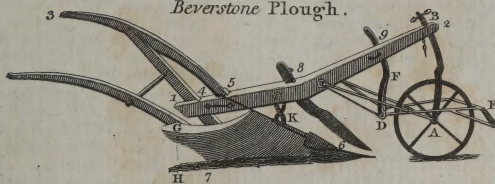
Fig. 2.



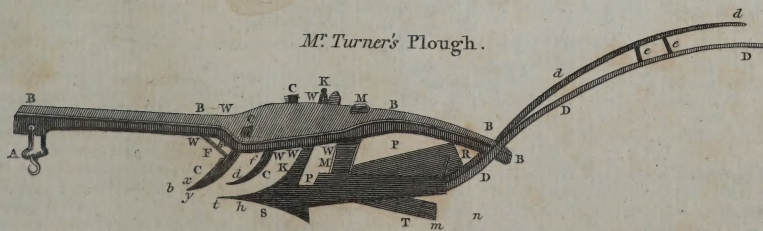
Fig. 3.



Beverstone Plough.



M^r Turner's Plough.



great abundance of masts, planks, oak for ship-building, pitch, tar, &c., which are chiefly sent down the Dwina to Riga.

POLOTZK, a strong town of Russia, capital of a government of the same name, seated on the Dwina, at the mouth of the small river Polota, 50 miles S.W. of Vitepsk. Long. 27. 50. E. Lat. 55. 43. N.

POLTEN, Str. a town of Lower Austria, seated on the Draava, which falls into the Danube, near Hohenburg, eight miles from Vienna.

POMBAL, a town of Portugal, in Estremadura, 16 miles N.E. of Leiria, and 21 S. of Coimbra. Long. 8. 16. W. Lat. 39. 50. N.

POMEGUE, an island in the Mediterranean, near Marseilles.

POMERELIA, a district of Polish or Western Prussia, forcibly seized by the King of Prussia. Dantzic is the capital.

POMESANIA, a large county of Western Prussia, which extends from E. to W. from the Passarge as far as the Vistula, between E. and W. Prussia. It is full of lakes and morasses.

POMONA, the principal of the Orkney Islands. See **MAINELAND**.

POND (*Encycl.*). In the first vol. of the Journal de Physique, we meet with an interesting method of making ponds water-tight, without the aid of masonry, by M. Dambourney. He directs the pit to be dug to a convenient depth; and its sides to be carefully sloped to an angle of about 40 degrees. The cement with which it is to be lined, should then be prepared in the following manner:

A sufficient quantity of brick-clay ought previously to be procured, in a moist state, so that it may be easily worked and incorporated with one-fourth part of quick-lime, slaked the preceding evening, in such a portion of water, as will reduce it to the consistence of cream-cheese; and the whole must be formed into balls, about two feet in circumference. When an adequate stock is collected, the workman descends into the cavity, and an assistant supplies him with a ball, which the former throws with all his strength on the ground, near the centre of the pit: thus, he continues the plastering with other balls, in such a direction that each may come in contact with the next following, till the sides and bottom of the intended pond are perfectly lined. If the whole cannot be finished in one day, the last row laid on in the evening should be moistened, in order that it may be sufficiently adhesive to incorporate exactly with the new part of the work on the subsequent morning. Two or three days after this composition is applied, it should be beaten with a flat piece of wood; and, accordingly as its firmness increases, the beating must be stronger, and the surface occasionally wetted, to prevent cracks, till it become one uniform, solid piece. Lastly, the whole is to be covered with a coat of any cheap oil; and (previously to the admission of water) with gravel, to the thickness of one inch. By this management, the coating will acquire a very remarkable degree of firmness; and, if the pond be constantly full, no repairs will become necessary; as the only injury to be apprehended, may proceed from intense frost, which is apt to damage such parts of the work as are exposed to the air.

In the sixth volume of Annals of Agriculture, an account is given of a simple method of making artificial ponds, in dry soils:—the figure given in Pl. 42. represents an outline of their construction.

The line A describes a circular hole made in the ground, of such size as may be found necessary; and on which a stratum of clay, B, must be carefully beaten, and trodden into a solid, compact body, from four to six inches in thickness; C, represents a layer of quick lime about an inch, or an inch and a half thick; and which should be uniformly spread over the

whole; D, is a second stratum of clay, that ought to be of a thickness similar to that above mentioned, and should be pressed down in the same manner; E, denotes stones, or gravel, either of which must be spread on the second layer of clay, to such depth as may prevent the pond from being injured by the feet of cattle; for otherwise, they will penetrate the stratifications of clay and lime; in consequence of which, the water will be discharged through the pores of the earth. When thus completed, according to the section above given, the pond will remain five feet deep, and forty-five in diameter; at which size these reservoirs are in general constructed; the letter F, representing the line of level, both of the water and of the ground.

This method of forming ponds was contrived in Yorkshire, about 25 or 30 years ago, by a well-sinker: numerous artificial pools have since been made in that, as well as the adjoining counties. The expences attending a work of the dimensions above stated, are computed to be from 4l. to 6l. according to the distance from which the clay is carried. Such a pond will remain unimpaired for a series of years; because the lime prevents worms from striking either upwards or downwards, and consequently from injuring the clay, which naturally refits moisture.

PONDESTURIA, a town of Italy, in Monterrat, seated on the S. side of the Po, 33 miles E. of Turin. Long. 8. 25. E. Lat. 45. 2. N.

PONFERRADA, a town of Spain, in Leon, on the river Sill, 40 miles S.W. of Leon. Long. 6. 6. W. Lat. 42. 30. N.

PONS, Str. a town of France, in the department of Herault. It was a bishop's see before the revolution, and is seated in a valley surrounded by mountains, in which are fine marble quarries. It is 24 miles N. of Narbonne. Long. 2. 47. E. Lat. 43. 29. N.

PONTA DELGADA, a sea-port of St. Michael, one of the Azores. It is defended by a citadel; and contains about 8,000 inhabitants. Long. 25. 40. W. Lat. 37. 45. N.

PONTA-MOUSSON, a considerable town of France, in the department of Meurthe, with a university. There were lately several religious houses, and the premonstratens had a magnificent church here. It is seated on the Moselle, which divides it into two parts, two miles N.W. of Nancy. Long. 6. 16. E. Lat. 48. 43. N.

PONT-ARLIER, an ancient town of France, in the department of Jura, seated on the river Doubs, near Mount Jura. It is a commodious passage into Switzerland, and is defended by a strong castle. Long. 6. 26. E. Lat. 46. 55. N.

PONT AUDEMER, a town of France, in the department of Eure, seated on the Rille, 13 miles E. of Honfleur, and 85 N.W. of Paris. Long. 0. 35. E. Lat. 49. 21. N.

PONT-DE-CE, a town of France, in the department of Maine and Loire, seated on the Loire, three miles from Angers, and 178 S.W. of Paris. Long. 0. 29. W. Lat. 47. 25. N.

PONT-DE-LARCHE, a town of France, in the department of Eure, with a castle. It is seated on the Seine, over which is a bridge, five miles N. of Louviers, and 62 N.W. of Paris. Long. 1. 15. E. Lat. 49. 5. N.

PONT-DE-VAUX, a town of France, in the department of Ain, seated on the Reffouille, 8 miles S. of Macon. Long. 4. 55. E. Lat. 46. 28. N.

PONT-DU-VESLE, a town of France, in the department of Ain. It has a manufacture of stuffs called Augustines, and also of tapestry for the coverings of arm-chairs and sofas, of the same kind as those of Ambouss. It is seated on the Vesle, 12 miles W. of Bourg. Long. 5. 4. E. Lat. 46. 16. N.

PONTE-DE-LIMA, a town of Portugal, in Entre-Douero-e-Minho, with a palace. It is seated on the Lima, over which is a magnificent bridge, 13 miles N.W. of Braga, and 190 N. of Lisbon. Long. 8. 44. W. Lat. 41. 51. N.

PONTEFA, or **PONTAFELLA**, a town of Germany, in Carinthia, seated on the Fella, over which is a bridge that leads to the best passage over the Alps. It is 20 miles N.W. of Friuli. Long. 13. 0. E. Lat. 46. 25. N.

PONTE-STURA, a town of Italy, in Monterrat, seated at the confluence of the Stura and Po, three miles S.W. of Casal.

PONTE-VEDRA, a town of Spain, in Galicia, seated on the Leris, and famous for its fishery of pilchards. It is 10 miles E. of Porto Nova. Long 8. 27. W. Lat. 42. 20. N.

PONT-GIBAUT, a town of France, in the department of Puy de Dome. Near this place is the village of Rore, with a silver mine, and a vinous fountain of mineral water. It is 10 miles W.N.W. of Clermont. Long. 2. 58. E. Lat. 45. 51. N.

PONTIVY, a town of France, in the department of Morbihan, seated on the river Blavet. It was the first town after the revolution of 1789 that set the example of national federations.

PONT-LEVEQUE, a town of France, in the department of Calvados, seated on the Touque, 10 miles N.W. of Liseux. Long. 0. 6. E. Lat. 49. 17. N.

PONTOISE, a town of France, in the department of Seine and Oise. It is seated on an eminence, on the Oise and Vienne, with a bridge over the former, whence it takes its name. In 1435, the English took it by a singular stratagem: the ground being covered with snow, the assailants dressed themselves in white, with ladders painted white, and scaled the walls before the sentinels could perceive their approach. Charles VII. retook it by storm in 1442. The parliament of Paris was transferred to this place in 1652, 1720, and 1753. It is 43 miles S.E. of Rouen, and 27 N.W. of Paris. Long. 2. 11. E. Lat. 49. 3. N.

PONT-ORSON, a town of France, in the department of the Channel, seated on the Coesnon, 20 miles E. of St. Malo. Long. 1. 30. W. Lat. 48. 30. N.

PONT-REMOLI, a town of Tuscany, with a strong castle, seated on the foot of the Apennines, 40 miles E. of Genoa, and 66 N.W. of Florence. Long. 9. 40. E. Lat. 44. 25. N.

PONT ST. ESPRIT, a town of France, in the department of Gard. It is seated on the river Rhone, over which is one of the finest bridges in Europe, consisting of 19 great and 4 small arches. To facilitate the passage of the water in time of floods, apertures are made through each pier, six feet above the common level of the river; and to stem the extreme rapidity of the Rhone, the bridge is not built in a right line, but in the form of a curve. This passage is defended by a citadel, within which is the church of the Holy Spirit, projecting into the river. As the bridge is so slight, the goods are conveyed over in sledges, by way of precaution. Pont St. Esprit is 17 miles S. of Viviers, and 55 N.E. of Montpellier. Long. 4. 46. E. Lat. 44. 13. N.

PONT ST. MAIXENCE, a town of France, in the department of Seine and Oise, seated on the Oise, five miles N. of Senlis. Long. 2. 40. E. Lat. 49. 18. N.

PONT-SUR-SEINE, a town of France, in the department of Aube, with a castle, seated on the Seine, 17 miles N.W. of Troyes, and 55 S.E. of Paris. Long. 3. 40. E. Lat. 48. 28. N.

PONT-SUR-YONNE, a town of France, in the department of Yonne, seated on the Yonne, eight miles N.W. of Sens. Long. 3. 14. E. Lat. 48. 16. N.

PONZONE, a town of Italy, in the duchy of Monterrat, 10 miles S. of Acqui, and 18. N. of Savona. Long. 8. 35. E. Lat. 44. 30. N.

POOLORON, or **POLERON**, one of the Banda Islands, from which the Dutch expelled the English, not for any advantage it afforded, it being a barren spot, but to secure the monopoly of the spice trade, by preventing the English from having any settlement in these parts. It is 100 miles S.E. of Amboyna. Long. 130. 0. E. Lat. 4. 20. S.

POOLWOY, one of the Banda Islands, on which the Dutch have a regular pentagon, called Fort Revenge. Here nutmegs and the most delicious fruits were once abundant.

POONAH, a town of the Decan of Hindoostan, in Vissapour. It is the capital of the Western Mahratta empire; but it is not large, and lies open and defenceless. It is 100 miles S.E. of Bombay. Long. 73. 55. E. Lat. 18. 30. N.

POOR (*Enyel.*). The comforts of the poor lie within a small compass: they should therefore be respected. Mere animal existence is not sufficient for rational creatures. To sweeten the cup of life, to soothe pain, and to relieve labour, man must enjoy comfort here, and his views must be directed to happiness hereafter.

One great source of comfort to the poor man is, his wife and children, if he can but earn means of maintaining them. Humble and insignificant as he may appear abroad, he is of consequence and authority at home. In his own house he finds those who respect him, who obey him; those, to whom he may say, Go, and they go, and Come, and they come. He is not insensible to the charities of father, son, and husband. The parental affection of the poor is increased by imperious necessity, and by the helpless condition of their offspring. When sick and dispirited, it is to them the greatest of comforts to be attended by those who love and regard them;—by those who have an interest and anxiety in their existence. In times of sickness and distress, the stoutest heart may be overcome by the forcible separation of husband and wife, of parent and child; whose mutual attachment (even if humanity could for a moment be silent on so interesting a subject) it would be policy to encourage, as an incentive to virtue, and a surety for conduct.

The poor man, poor as he is, loves to cherish the idea of property. To talk of my house, my garden, my furniture, is always a theme of delight and pleasure. When, therefore, his whole domestic establishment is overwhelmed and destroyed by a removal to the workhouse, can we wonder that he should grieve for the loss of those things, which by use were become precious to him? The apartments of the workhouse may be better than his cottage; but he does not like to exist as a mere lodger, or a permitted guest, though in a finer mansion than his own. The diet of the workhouse may be more wastefully abundant, than any which he possesses or even desires at home; but his cottage diet, though poor and scanty, is his own; he has earned it by his labour; and it is sweeter to him than more costly food, which he is taught to consider as gratuitous and unmerited. His pauper's coat is warm; but it belongs to the community, and not to himself.—And are not these prejudices respectable? Are they not consonant to the energy of a free country?

The poor man is reconciled to poverty, by the possession of liberty. However pressed by narrowness of circumstances,—however impelled by necessity to labour, yet still it is one of his comforts and pleasures, that he is free;—that he may go out or come in, work or play, at his own option. He likes to be the judge of his own wants, and to provide for them after his own manner. He even chooses to have the free and unmolesed determination, whether he shall boil or bake his Sunday's dinner. Under confinement he can enjoy no

comfort; the very thought of being under lock and key is hateful to him: no man, in his opinion, deserves a prison, who has not committed a crime. To be of little consequence in the community, to have no authority beyond the narrow limits of his own cottage and garden, he is reconciled to. Habit, a second nature, has made him easy under it; but he has an unconquerable aversion to arbitrary rule being exercised over all his actions. And is it in England that one would wish to extinguish these feelings?

Some part of the poor man's comfort (often, it must be acknowledged, more than his true friends would wish) is placed in social enjoyment. When, however, the labourer does not carry this indulgence to an excess prejudicial to his own happiness, or to that of his family, who will not say, "Much good may it do him?"—If, after his week's labour, he should love to relax a little in that place which affords "an hour's importance to the poor man's heart," the gratification cannot be very blameable while it does not pass the bounds of discretion. The evening chat at a neighbour's door, the Sunday's church-yard politics, the holiday festivities, the ruffic games, and athletic exercises, are as welcome to the cottager, and afford as much relief after care and labour, as the more costly and fashionable amusements of the rich*. To get drunk, to squander at an alehouse what ought to maintain his family, is worse than wrong or imprudent:—it is unjust and wicked. In this world, it causes the ruin of those who depend upon him, and who look up to him for subsistence;—of that wife, and of those children, to whom he should be attached by every tender tie:—and, as to the next world, we read in holy Scripture (and, "God is not a man, that he should lie") the drunkard shall not inherit the kingdom of God.—If, however, you with the cottager to be more domestic, and thereby to become more happy, aid and encourage him in the comfort and cleanliness of his little mansion;—give him pleasurable occupation at home, in the care of his pigs and cow, and in the cultivation of his garden;—assist him in the education of his children, and in the habits and resources of life. When more interesting objects present themselves at home, the alehouse will soon be forgotten and neglected. Many in all ranks of life take refuge in a public-house, for want of satisfactory occupation at home.

Lastly, the great and essential comfort of the poor, and particularly in old age and in sickness, is religion. In labour and fatigue, in sorrow and anxiety, it is most consoling to the afflicted mind to look up with habitual hope and gratitude to that Being, whose tender mercy is over all his works. It is by confidence in his wisdom and goodness, and by the hope of unfailling happiness hereafter,—by these consolations delivered to us in his revealed will,—and by these only,—that the rugged path of life can be smoothed, the crooked ways of man be made straight, and the rough places plain. It is, therefore, of infinite consequence that the poor should have the full benefit of religion; that they should be taught, in the sanctuary of God, the use of those gradations of rank and wealth, which in infinite wisdom he has thought fit to establish in this transitory life, as stimulants to the industry and energy of man;—and that he should be instructed to look forward to that blessed state, where "they shall hunger no more, neither thirst any more; neither

shall the sun light on them, nor any heat. For the Lamb which is in the midst of the throne shall feed them, and shall lead them unto living fountains of waters: and God shall wipe away all tears from their eyes."—To the aged this comfort is of peculiar importance. At a time, when the power of labour and activity is enfeebled, and the gratification of the senses diminished and exhausted, it is, indeed, true charity to give the poor the advantage and comfort of religious meditation; and to open their eyes, and raise their hopes, to those scenes of bliss, which become brighter, and more enchanting, as we approach the confines of the grave.

Health of the Poor. Under the article *GOLDEN-RULES* (*Suppl.*) will be found some valuable admonition to the poor on the subject of domestic economy. The following extract from a paper written by Dr. Ferriar, of Manchester, contains very useful information for the preservation of their health, particularly in manufacturing and other populous towns.

Avoid living in damp cellars: they destroy your constitutions, and shorten your lives. No temptation of low rents can counterbalance their ill effects. You are apt to crowd into the cellars of new buildings, supposing them to be clean. This is a fatal mistake. A new house is always damp for two years, and the cellars, which you inhabit under them, are generally as moist as the bottom of a well. In such places, you are liable to bad fevers, which often throw the patient into a decline; and you are apt to get rheumatic complaints, that continue for a long time, and disable you from working.

If you cannot help taking a cellar, be attentive to have all the windows put in good repair before you venture into it; and, if possible, get it white-washed. If you attempt to live in a cellar with broken windows, colds and fevers will be the certain consequences.

In many parts of the town you sleep in back rooms, behind the front cellar; rooms, which are dark, and have no proper circulation of air. It would be much more healthy to sleep in the front part: at least, when you have large families, which is often the case, you ought to divide them, and not crowd the whole together in the back cellar.

Keep your persons and houses as clean as your employments will permit: and do not regret the loss of an hour's wages, when your time is occupied in attending to cleanliness. It is better to give up a little time occasionally in order to keep your houses neat, than to see your whole family lying sick, in consequence of working constantly, without cleaning. It would be of great service, if you could contrive to air your beds and bed-clothes out of doors, once or twice a-week.

Always wash your children from head to foot with cold water, before you send them to work in the morning. Take care to keep them dry in their feet, and never allow them to go work, without giving them their breakfast, though you should have nothing for them but a crust of bread, and a little water. Children who get wet feet, when they go out early fasting, seldom escape fevers or severe colds.

If you know that any of your neighbours are in a starving condition, apply to some opulent persons in the neighbourhood; get them recommended to the overseer; or, if they are sick, to the infirmary. Want of necessary food produces bad fevers; and many of you may suffer from

* Much of the preceding part of this paper is taken, though with variation and addition, from *Observations on the Rights and Comforts of the Poor*, inserted in the *Gentleman's Magazine* of the year 1787. It is submitted to the reader, with a view of suggesting to his mind, how greatly the present mode of (what is called) Relief, viz. the removal of the cottager's family from his own dwelling into a parish workhouse, is inimical to the comfort of the poor, and destructive of those feelings, and of that energy, among them, which it is our duty and interest to preserve in full force.

neglecting poor distressed persons, whom timely relief would have preserved from the disease.

Therefore when you know, or have reason to believe, that any of your neighbours are afflicted with fevers, and that they have not taken care to procure the assistance afforded by the infirmary, you ought, both from a regard to them, and to yourselves, to give immediate information.

You ought to be very cautious in purchasing old clothes, or second-hand furniture; as they may be brought from houses infected with fever; and you may introduce the infection with them into your own dwellings. Every article of this kind ought to be stove, or ventilated, before it is admitted into your houses.

Your sick neighbours, when the fever gets into their houses, may often require assistance from you. It would be cruel to refuse them, yet it is hard that you should be obliged to expose your health, and that of your family. You ought never to visit them from idle curiosity. But when they require your help in making their beds, washing, or turning the sick, you may preserve yourselves from being infected (see *FEVER, Suppl.*) by tying a kerchief across your face, just below the eyes; to prevent the exhalations, from the bodies of the sick, from entering your mouth and nostrils. As soon as you return to your own house, wash your hands and face in cold water; and avoid touching any of your family for half or three quarters of an hour.

Your health will always be materially injured by the following circumstances:—living in small back buildings, adjoining to the open vaults of privies;—or in cellars, where the freets are not properly foughed, or drained;—or in narrow bye streets, where sheep are slaughtered, and where the blood and garbage are allowed to stagnate and corrupt;—and, perhaps more than all, by living crowded together, in dirty lodging houses, where you cannot have the common comforts of light and air.

It should be unnecessary to remind you, that much sickness is occasioned among you, by passing your evenings at ale-houses, or in strolling about the streets, or in fields adjoining to the town. Perhaps those who are most apt to expose themselves in this manner, would pay little attention to dissuasive arguments of any kind. However, those who feel an interest in your welfare, cannot omit making the remark.

There is another subject of great importance to you, on which you seem to want information. A great number of children die of the natural small-pox, almost every year. This mortality must be imputed in a great degree to your own negligence; for the faculty at the infirmary offer to inoculate your children, and give public notice of the proper time for making your application, twice a year. The next period for inoculation will be in March; the succeeding period in September. The chance of recovery, from the small-pox received by inoculation, is so much greater than the chance of recovery from the natural kind, that you ought to consider yourselves as performing a duty to your children, and to the public, in bringing those who have not yet had the small-pox, to be inoculated at the infirmary.

You ought to be informed, that there is scarcely any thing more injurious to the health of children, than allowing them to work at night in the cotton-mills. It may not always be in your power to prevent their being employed in this manner; but you should be made acquainted with the danger to which you expose them. There is no hazard

incurred by their working during the day, in clean, well-managed cotton-mills.

It is also proper to inform you, that you may be infected with fevers, by working in the same place with persons who have just recovered from fevers; or by people who come from infected houses, where they are at no pains to keep themselves clean. You had better collect something among yourselves, to support such persons for a fortnight after their recovery, than expose yourselves to the risk of catching a fever, by their returning too early to work.

Management of the Poor. The following is an extract from an account of the management of the poor, in the parish of Shipton Moyne, in the county of Gloucester, by Thomas Bernard, Esq.

On the 27th of February, 1801, a vestry was called in the parish of Shipton Moyne, to consider of regulations for the better management of the poor. Their first object was to provide immediate relief, in such a way as to furnish employment, and to encourage industry. For this purpose it was agreed that, upon any parishioner applying for relief, an account should be taken of the age and occupation of each individual of the family, and an estimate should be made of what they were able to earn; and then, if they could prove that they had earned to that amount, they should receive such relief as would make up the amount of a certain provision, fixed by their rules, for the weekly support of each individual in family; no extra earnings, nor any superior industry, being ever admitted as a ground of deduction from the calculated amount of relief. In addition to this provision, the poor, in case of sickness and of inability to provide medical relief for themselves, were to be allowed whatever the parish surgeon (with the privity of the overseer) should deem proper for them.

The general principle of relief being thus established, the next point was to secure them a regular supply of employment. For the occupation of the men, Mr. Estcourt (who has the honour of being the active promoter of these regulations) has agreed to furnish land for raising potatoes; the produce of which is hereafter to be sold, at a reasonable price, to the poor of the parish. In the cultivation of this ground, every poor man wanting work is to be employed in task-work, or as shall be most useful to him.—For the women and children, the workhouse, by a most extraordinary and incredible metamorphosis, is converted into a real house of industry; and all the women and children of that parish, who are clean and decent in their persons and orderly in their behaviour, are admitted to work in the house (now under the care of an assistant overseer, whose character and conduct have been well approved) during the day-time; they finding their own provisions*, and receiving the whole amount of their earnings, without any deduction whatsoever. The work-rooms (with exception of the time of meals and of cleaning the rooms) are open from six to six in summer, and in winter, from seven to seven; those parents who do not send their children to school, or employ them better elsewhere, being entirely excluded from all parochial relief.

In order to encourage attention to their religious duties, it has also been agreed, that every poor parishioner who has two or more children at home, and who in the ensuing year shall regularly attend the morning service, decent and clean in person, and being in church before the beginning

* A cheap ordinary for the children, and indeed for adults also, where they might get their dinners, if they wished it, might be very useful in this instance; to be paid for by a weekly deduction from their earnings. See *PARISH-DINNER, Suppl.*

of the prayers, shall have an annual allowance of clothing;—for each man, to the value of 20s.; for each woman, of 15s.; and for each boy or girl, of 10s.; a deduction of 6d. being made for each absence from church, unless occasioned by severe illness.

To promote the essential virtue of cleanliness, another encouragement has been proposed: that every poor parishioner, who shall annually whitewash his house in the month of September (being supplied with lime and brushes), and shall have the floors washed clean with water every Saturday in the winter months, shall on every such Saturday in January, February, and March, receive a donation of three pecks of coals. But no such donation of clothing or fuel is to be given to a parishioner, in case, during the preceding year, any member of his family shall have been convicted of any crime, subjecting him or her to fine, whipping, or imprisonment; unless satisfactory information shall be given, that the rest of the family were not privy or concerned, but had used all proper means to prevent the same.

There is, moreover, a regulation, that the village shop, which has been established in the preceding year for selling the most necessary articles to the poor at prime cost, shall be continued; and a list of the articles, and the prices, fixed up every week in a conspicuous part of the shop; and of the work-rooms of the house of industry.

In addition to these, there were added, not only individual encouragement and reward on the part of the rich, but also the supply of potatoe gardens for the benefit of the poor. For the first purpose, a liberal subscription was raised by the principal inhabitants; each subscriber being yearly or half yearly, at his or her option, to distribute, or to direct the distribution of, his or her own subscription publicly after divine service; the distribution being to be impartially made, with a view to their regular a tendency on divine worship—their honesty, sobriety, decency, and industry—their affectionate conduct to their relations and neighbours in sickness or infirmity—the cleanliness of their cottages—their attention to the morals, health, and welfare of their children—and their frugality and domestic management, in making the best use of their means of life. The period of probation is to be for one year (from the 1st of October, 1801); and all candidates for the rewards are required to enter their names, in the form directed, one month, at least, before the time.

The mode in which Mr. Eitcourt has provided for his cottagers' potatoe grounds is also deserving of attention. He has appropriated for this purpose, a field called North Leas; which has been laid out in lots of a quarter of an acre each; the cottagers being each allowed one lot, or two, according to their families, and to their ability and inclination to cultivate it to advantage. The landlord pays the tithes and taxes; manures the land, finds seed-potatoes, and allows the labourer 6d. a perch for his family's subsistence, while he is cultivating the land. For this benefit, the tenant pays the rent of 15s. every quarter of an acre; and undertakes to cultivate the ground, according to his landlord's regulations. He also agrees (in case the money advanced him, together with his rent, is not repaid before the crop is ready* to be taken up) half of the crop shall be set apart to be sold at Christmas, to secure the rent and money advanced him; the cottager receiving the overplus, and retaining the other moiety. And, in case the cottager neg-

lects the cultivation of his land, the landlord may take possession, paying him the full value of his labour thereon.

The subject of the management of the poor, will also be found treated under COTTAGER, GARDEN, LAND, HOUSE, and other heads, in this SUPPLEMENT.

Feeding the Poor. We have, under various heads in this SUPPLEMENT, spoken of the means by which wholesome sustenance may be provided for indigent persons at a cheap rate; but the subject still remains to be systematically treated. The following copy of a letter from Count Rumford to the Rev. Dr. Majendie, of Windsor, will answer this purpose most completely:

"In answer," says the count, "to the questions you have done me the honour to propose to me respecting the means that can be used with the fairest prospect of success, for relieving the distresses to which the poor are exposed, in consequence of the present scarcity of provisions, I would take the liberty to say, that in my opinion the providing of food for them in public kitchens, and selling it to them at such low price as they can afford to pay for it, would be the best method that could be adopted for that purpose; for, besides being an effectual relief to the poor in the moment of difficulty and distress, if in preparing this food care be taken to economize costly and scarce ingredients (which with due attention may be done to a surprising degree), the establishment of these public kitchens would have a direct and very powerful tendency to diminish the consumption of those articles of food, the scarcity of which is most sensibly felt by society at large.

"To this we may add, that the habit which the poor will acquire, in being fed from a public kitchen, of using good and palatable, and very cheap food, such as may at any time be prepared by themselves, in their own dwellings, at a much less expence than the victuals to which they are accustomed can be provided, may lead to a very important improvement in their system of cookery.

"I verily believe that the inhabitants of Great Britain might be well nourished—their hunger perfectly satisfied—their health and strength preserved—and the pleasure they enjoy in eating increased, with two thirds of the food they now consume, were the art of cookery better understood.

"I would beg leave to observe, that I would by no means propose to furnish the victuals from the public kitchens to all poor persons gratis.—The aged and infirm, and young children, cannot earn by their labour enough to defray the expences of their subsistence; but those who are able to work should not be maintained in idleness, at the public expence, and most certainly not in times of general distress. All that they can reasonably expect is, that they and their families be enabled to subsist for as small a sum of money, or for the same quantity of labour, in times of scarcity, as their subsistence usually costs them in times of plenty. To do more for them at any time would be unwise, and in a time of general alarm would be productive of the most fatal evils. It would have a tendency to make them careless, idle, and profligate; and, instead of being grateful for the assistance received, they would soon learn to consider it as their right; and, if it were discontinued, would demand it with clamorous importunity. But if the assistance afforded to the poor be so applied, as to be felt by them as an honourable reward for their good conduct, and as an encouragement to persevere in their industrious habits, in

* This time has a reference to the coming in of harvest work; a period when the cottager, if ever, would be able to make good his payment.

that case, their morals will rather be improved, than injured, by the benefits received.

"In all cases where it is possible, I think that a school of industry for children should be connected with a public kitchen; and it is certainly necessary that measures should be taken, for giving constant employment to the poor of all descriptions, who are able to work. The full amount of their earnings should always be given to them. This is proper, not only to encourage their industry, but also to keep alive in them a spirit of independence, without which they soon become disheartened, and extremely helpless and miserable. Where the poor are paid for their labour, it is evidently just and proper that they should defray, as far at least as it is in their power, the expenses of their maintenance. It sometimes happens, though very rarely, that profitable employment cannot be found for the poor: they should nevertheless be put to work; and even be kept to labour constantly and diligently, under the direction of those who in such circumstances must provide for their subsistence. Were no profitable employment to be found for them; and were there no other way of preventing their being idle, some public work might be undertaken for the sole purpose of employing them.

"But in the neighbourhood of Windsor, the poor can hardly be in want of useful employment. His Majesty has taken care to prevent that evil. It is much to be wished that his opulent subjects in Great Britain and Ireland might be induced to follow his illustrious example!

"As industry and economy are the preventives and the only cure for indigence, and as want is one of the strongest inducements to labour, it is evident that much caution is necessary in supplying the wants of the poor; lest we destroy the effects of those incitements which Providence, in infinite wisdom, has contrived, to rouse mankind from a state of indolence and torpid indifference, and to stimulate them to that constant exertion of their bodily strength and mental faculties, which we know to be necessary to the health of the body and of the mind, and essential to happiness and virtue. It seldom requires much ingenuity to make the assistance, that is given to the poor, operate as an incitement to industry; for rewards are as powerful motives as punishments, and the truly benevolent will always prefer them. But it should never be forgotten, that all that which is given to the poor, or done for them, that does not encourage their industry, never can fail to have a contrary tendency; and consequently must do real harm to them, and to society."

We earnestly hope these traits of the only efficient means by which the wants of the poor can be extensively relieved, and their virtue and happiness promoted, will not fail to sink deeply into the minds of those whose duty it is to attend to the subject. That there are not wanting in the *biggest* classes of society, honourable instances of an *active personal attention* to the welfare of those whom Providence has placed in the *lowest*, has been shewn in various articles relative to the poor in this SUPPLEMENT, and the following account of the manner in which the poor have been supplied with rice and beef at St. Alban's, by the Countess Dowager Spencer, is an additional proof of it:

"I never have found," says that amiable lady, "any supply of food for the poor of so much use, and give such thorough satisfaction, as that which I have lately established at St. Alban's. It is a mode which will not only be of use in times of scarcity, but will be very beneficial every winter when labour is scarce, and the weather severe.—My plan is, merely selling every week, at a low price, rice, and very excellent salt beef, to labourers, in proportion to their fa-

milies.—This is only meant to afford such a supply as shall enable the man's labour, or the parish allowance, with the addition of this cheap and wholesome food, to support their families in the dead time of the year.—The proportions I have allowed are as follow: the rice being sold at 3d. per pound, and the beef at 4d.

Classes.				
1st.	large families with 4, 5, or 6 children	2 lb. of rice 6d. $1\frac{1}{2}$ lb. of beef 6d.	} 17.	per week
2d.	Families with only 2, or 3 children	$1\frac{1}{2}$ lb. of rice 4½d. 1 lb. of beef 4d.		
3d.	A man and woman or one child	1 lb. of rice 3d. $\frac{1}{2}$ lb. of beef 2d.		
4th.	A single person	$\frac{1}{2}$ lb. of rice 1½d. $\frac{1}{4}$ lb. of beef 2d.		
			8½d. ditto.	
			5d. ditto.	
			3½d. ditto.	

"The above is what it costs the poor; but to engage people to subscribe (as I could not supply the whole myself), I have made out a plan, by which subscribers may have tickets at 2d. a pound for the rice, and 2d. a pound for the beef. Thus, if any subscriber wishes to assist any poor family, it will cost them as follows:

Class.	lb.	Per week.	For 6 weeks.	For 12 weeks.	For 18 weeks.
1st.	2 of rice 4d. 1½ of beef 3d.	7d.	3s. 6d.	7s.	10s. 6d.
2d.	1½ of rice 3d. 1 of beef 2d.				
3d.	1 of rice 2d. ¾ of beef 1d.	3	1 6	3	4 6
4th.	¾ of rice 1d. ½ of beef 1d.	2	1 0	2	3 0

"I have fixed upon eighteen weeks for the period of sale, stopping a couple of weeks between each six weeks. This is intended to make the poor feel the advantage which they derive from this supply, and to prevent their growing tired of it. It will likewise prolong the time, till the hay harvest may supply them all with employment, and many vegetables will be coming in.

"I pay a woman a farthing a pound for measuring out the rice, and a halfpenny a pound for cutting and weighing the beef; but this is more than is necessary. If I had been provident, and had bought the rice cheap, the expence would have been trifling. As it is, I am a loser of above a penny in the pound, when the subscribers have paid their 2d. and the poor their 3d. but that regards only myself. Upon the beef there will likewise be some loss, on account of the bones; of these I make soup, which might be sold to supply that loss. We have relieved, in this way, between eight and nine hundred families in the town and its environs; which made it necessary, in order to avoid confusion, that they should come on stated days:—the first class is therefore appointed on Mondays; the second on Tuesdays; the third on Wednesdays; and the fourth on Thursdays. And as the request for these tickets has extended to five, six, and seven miles distant, all which demands cannot be answered, I generally give the poor people who have come so far an occasional ticket for that one day only, that they may not be entirely disappointed.

"I must observe that, besides the expressions of thankfulness from all without exception who have partaken of this charity, several women have been to tell me, that the excellence of the food has restored health and strength to their families: one woman yesterday informed me, that she and her husband had been, from mere poverty, got into so low and weak a state of health, as to be scarcely able to earn any

thing; but that the continuance of this food, for some weeks together, had quite ter it up again."

This mode of feeding the poor is perhaps "*less expensive to the donor, and more acceptable to the receiver*," than any other. If any one was to give a large family half a guinea, or a poor widow three shillings, they would not be surprised at hearing that, in less than a month, the money was gone: while the same sum, by this means, will last from the middle of January to the middle of June."

POOR'S-RATE (*Envel.*). The following most interesting view of this subject is prefixed by Mr. Bernard to the second volume of the Reports of the Society for bettering the Condition of the Poor.

"The *increase of the poor's-rate*," says Mr. Bernard, "has been for some years a just subject of alarm. Complaints have been made, and with too much reason, of the prevalence and magnitude of the evil. Two millions and a half annually expended in parochial relief, and a larger sum in charities and benefactions, producing no improvement in the condition of the poor, but rather prejudicing their means of life by the general effects of the system,—this is a mystery in our internal polity, difficult, but very important, to be explained.

"To some it has appeared the necessary consequence of national prosperity. That, however, must be a very equivocal species of prosperity, which is inimical to the comfort and happiness of the great mass of the people, and tends to diminish their means of life.—By others it has been deemed a symptom of national decline, common to all states which have passed their zenith;—but this opinion is controverted by increase of trade and manufactures, by improvements in agriculture and every art and science, and by the unrivalled energy and glory which attend the British arms in every quarter of the globe.—Others have conceived that speculation in estates, a noxious tribe of land valuers and rent raisers, and the consequent press on the farmer to make his present greatest profit with the least possible out-goings, have given birth to an improvident system with regard to the poor; hostile to any permanent improvement in their condition, and operating to discourage foresight and good habits among them.

"Efforts have not been wanting to check this growing evil. Laws have been made to compel industry and economy; and workhouses have been erected, and farmed to the best bidder, in order to deter the poor from wanting relief: but parishes and parish officers have not as yet been aware that in every instance, in which a poor family is driven by distress and depression of circumstances to take refuge in a workhouse, an incumbrance has been entailed on the funds of the parish, never to be redeemed, even in part, except by a change of system; by encouraging that industry and prudence, which no act of parliament can compel; and by assisting them with increased means and advantages of life, calculated to enable them to support themselves and their families in their own cottages, without parochial relief.

"The poor in some parts of England have been deprived of many of their resources*; and have been reduced, as their sole subsistence, to the purchase of daily bread with the daily spend of their labour. This has gradually deprived them of foresight, and of every effort that looks to fu-

turity; and has left them to proceed in a spiritless continuation of daily labour, until sickness, misfortune, or increase of family, drives them into the workhouse; there to remain the life pensioners of the public, and to leave their widows the nurses and drudges of the house, and their children to acquire idle and unprincipled habits, among the dregs of the parish.

"The land owner should be aware that this is waste committed upon his estate, in the most destructive and irreparable way. It is not the pulling down of an unnecessary hovel, the premature repetition of a crop of wheat corn, or the ploughing up a slip of pasture ground (the usual trivial objects of impeachment of waste), that is the subject of consideration; but it is the relaxation of the nerve of the country, the destruction of the power of cultivating the land, the conversion of the strength and energy of a people into weakness and debility, and the exchange of the means of wealth and prosperity for sources of enormous and increasing expense.

"It is an essential part of political wisdom to give scope and increase to the energy of individuals, by affording to all the opportunity and hope of advancement in life. Where character, conduct, industry, and attention, receive their assured reward, candidates will not be wanting; and the example of a few will be reflected in the virtues of the many. If the child, in proportion to diligence and good conduct, be better fed, better clothed, more favoured, and have that pittance of reward laid up in store, which in their narrow scale of life constitutes wealth, the number of industrious and well-behaved children will increase:—If the young man finds that, by reserving out of his wages a little fund of wealth against his marriage, he can convert these early savings into the means of increased produce and comfort during life, and become the possessor of a cow, a garden, and his own cottage, he will acquire early habits of prudence and economy, and will enter into life with a better and more principled system of conduct:—and if the cottager who exerts himself in bringing up and placing out his family, is encouraged and assisted in his honest endeavours; and, in case of any untoward and unfortunate interruption of his plan of economy, receives timely relief, and is preserved from the apprehension of a workhouse; the thrift and the success of a few will produce many imitators; and the prospect of improved circumstances will awaken the energy of the poor, in every part of the kingdom.

"Many and various would be the advantages of giving to the poor a pleasing, and beneficial employment for their leisure hours, and affording them the means of productive husbandry at home, and within their own cottage and ground;—of supplying them to more advantage with the necessaries of life, and of relieving them from the burthen of their children, by placing them in a course of industry and occupation.—Where measures of this kind can be brought to produce any effect at all on millions, the benefit must be of very great magnitude. We may calculate the number of little hands hitherto idle, and now by a proper system of employment to be brought into action; we may estimate, in part, the benefit of so numerous a class of men being protected from petty extortion and imposition, and being fairly and honestly supplied with the necessaries of life; and we may reckon up, by long arithmetical deduction, the number

* Whoever travels through the midland counties, and will take the trouble of enquiring, will generally receive for an answer, that formerly there were a great many cottagers who kept cows, but that the land is now thrown to the farmers; and if he enquires still further, he will find that, in those parishes, the poor's-rates have increased in an amazing degree. See Cow, LAND, COTTAGER, &c. *Suppl.*

of acres which might be advantageously cultivated, and the myriads of hours which would be added to the amount of national labour, if every cottager was permitted and encouraged to improve the slips of waste land, which still remain in every part of the country, a discredit to the English nation—but it is not within the compass of political arithmetic, to calculate the increase of prosperity and security, which we might derive from the general introduction of such a system."

It is the endeavour of the Society for bettering the Condition of the Poor (see *SOCIETY, Suppl.*) to search for and disseminate useful and practical knowledge with regard to them; to co-operate in every plan that tends to increase their economy and domestic comfort; to hold up the industrious and thriving cottager as an example of imitation; and to promote his good habits, his industry, his welfare, and his happiness. "At the same time," continues Mr. Bernard, "we are not unmindful of the danger of diminishing the inducements to exertion, by theoretical philanthropy, or by injudicious or misapplied liberality; which may habituate the mind to a reliance on regular and periodical assistance, and (making exertion and foresight of less moment) deprive the poor of that best and most honourable relief, which can only be derived from themselves. It is of the utmost consequence that charity be directed to her true end—that of elevating and benefiting the object of her attention, instead of rendering it helpless and without resource; and that she should operate by increasing the energy, the virtue, and the hopes of the poor; so as to attach them to their situation in life, and to give stability and principle to the moral and religious character of so large and so valuable a part of the community."

"Impressed with this idea, the society has proposed that the principle which has directed the researches of the present age, in natural philosophy, in agriculture, in medicine, in every art and science in which the limits of human knowledge have been successfully extended,—that this principle should be adopted in the concerns of the poor; and actual existing facts be made the means of practical and systematic investigation, into what has really augmented their virtue and happiness, and has been sanctioned by use and experience.—After a variety of inefficient attempts, during more than two centuries, to enforce industry and prudence by penal laws and compulsory statutes, the society has ventured to submit to the consideration of the public, whether the same object may not be attained by encouragement, by kindness, by management,—and by giving effect to that master-spring of action, 'the desire implanted in the human breast of bettering its condition.' The influence of this invigorating spirit on commerce, on manufactures, and on agriculture, has been felt and acknowledged with pride and pleasure by every Englishman; and there can remain no doubt but that the same principle, which has produced such beneficial effects among the thriving and active members of the other classes of society, would, if properly encouraged, generate among the poor of the same nation, that degree of industry and prudence, which we have in vain endeavoured to produce by compulsion."

"I am very far from meaning to suggest upon this subject, that nothing is at present done, or that all is practicable. Much, I am convinced, has been recently done; and with such effect in exciting industry, as affords incontrovertible evidence of its utility.—All, I am satisfied, cannot be completely effected; but that, until the corruption of our nature is done away, there will ever be unhappy persons of every rank and order, and in every class of society, suffering under

the consequence of an erroneous course of life, and placed as landmarks to direct the conduct of others.—In fact, in that and in every important undertaking, there is danger from the expectation of too great, or of too rapid a progress. His who advances gently and gradually, and with caution, may have the hope of proceeding surely and successfully; and if, in a work interesting to millions, only part of the object be attained, and every ill consequence avoided, the labour of the individuals employed will be well applied."

"It is not at all essential to my purpose, that I should write a panegyric on the virtues of the poor. The contagion of bad example is generally caught by the lower from the higher orders; and I feel nothing very exemplary in our own conduct, to induce me to doubt but that the poor are as good and as prudent, and as industrious, as we should have been in the same circumstances, and under the same disadvantages. If this be conceded, the vices and faults of the poor must be deemed the vices and faults of an unfavourable situation, rather than of individual delinquency. Remove those disadvantages, and you add as much to moral character as to personal comfort."

"In the Reports of the society (to be had in a cheap form, at Hatchard's, Piccadilly), the rich and the benevolent will find subjects of experiment, methods of procedure, and accounts of expense. In the various details they will meet with something or other to put in action every valuable principle of the human mind. They will only have to employ their discretion, in proportioning the mode and extent of their operations to their means and circumstances. Many benevolent minds (says the Bishop of Durham) suffer their excellent dispositions for doing good to remain unemployed in the great service of christian charity, not for want of means, or of objects, but for want of knowing what good may be done within their own sphere, and how.—To remove this difficulty, to supply the public with details on every subject respecting the poor, to suggest the mode of active and useful charity, which in its effects shall not contribute to the increase of idleness and vice,—these are, and I trust will continue to be, the objects of the society."

"Upon the proposed subjects of enquiry, some information has been already collected; and the society is much gratified to find that it is producing immediate and beneficial effects, not only in this, but in a neighbouring kingdom. (See *DUBLIN and CORK, Suppl.*) As to parish relief, the fact is now pretty well ascertained, that the best and most economical application of the parochial funds, is that which tends to assist and encourage industry (see *OVERSEERS, Suppl.*) and good management among the poor, in their own cottages, in the care and conduct of their own families, and in placing out their children at an early age in a course of employment (see *PARENTS, Suppl.*); and that in those parishes, where the cottager has been supplied with a good cottage and garden, and the means of keeping his cow at a fair and moderate rent, the labourers are the steadiest and most orderly men, the poor's-rate is greatly reduced, and the value of landed estates much improved."

"With regard to protecting the poor from imposition in the purchase of the necessary articles of life, it appears that, with very little cost or trouble, great assistance may be given to them; and that more may be done for their real benefit in this respect, at a very trivial expense, than by millions, either added to our poor's-rates, or dispensed in the present system of pecuniary charity—that, in many parts of England, a weekly sale of coals in small quantities at prime cost, is a relief to the distress, and a preservative to the morals, of the poor; and that a supply of corn; potatoes, milk, cheese,

Bacon, and other necessary articles of food, to the labourer, at the wholesale price, whether by the farmer for whom he works, or from a village shop set up by the land proprietor, produces a very great saving to the labourer, encourages him in habits of thrift and economy, and attaches him to his situation in life.

"The poor have, in general, benefited by the means offered to them much more rapidly and effectually than their most sanguine friends could have expected. All the prejudice against Sours and novel cookery has vanished, wherever the experiment has been fairly made. Upon this subject, and that of village kitchens, a variety of information is submitted to the reader, respecting the village dinners prepared for children and others at Oakham and Epping (see PARISH-DINNER, *Suppl.*); and the several charities recently established, for supplying the poor with soups and other different articles of food, in villages,—in London,—at country mansions,—and in manufacturing towns. It is no small recommendation of these charities, that they tend to shew the poor their real interest, and to instruct them in preparing for themselves a more nourishing and more economical diet, than what they at present possess. They also give a fourfold effect to the operation of charity. In villages, they send comfortable and necessary relief into the houses of many aged and forlorn persons. In London, they supply food to a variety of those objects which the circumstances of such a city, the corruption of human nature, and the vicissitudes of things, too abundantly produce in a great metropolis. In country mansions, at a very trifling expence, they extend relief to a wide circle around; and draw blessings and affection on the proprietor and his family. But their influence is most beneficial among manufactories; in which the contests of nations, the mutability of fashion, and the ebb and flow of prosperity, do perpetually produce objects of distress, beyond any power of adequate parochial relief. The value of these charities can only be appreciated by those who have attended the conduct of them. During the preceding winter above five thousand manufacturers in London, and almost as many more at Birmingham distressed by the pressure of the times, have gratefully received from these soup-shops their daily supply of food for themselves and their families, at a fourth of what it must otherwise have cost them; and have been thereby preserved from want and despair.

"It has been too clearly proved, that by the conversion of many corn mills into mills for manufactories, and by other circumstances, the cottager has been subjected to a grievous monopoly in respect of bread, which is now become his prime necessary of life. The injury to the poor by this alone (if we may estimate from the facts which have come before us) is nearly equal to two-thirds of all the poor's-rates collected in England, and considerably exceeds 1,000,000. a-year. There is no doubt but the establishment of parochial mills (see PARISH MILL, FLOUR, &c. *Suppl.*) throughout the kingdom, would at once correct this monstrous and abominable evil, without any loss of income to the proprietors of the mills; which will afford five per cent. on the expenditure, and leave an annual surplus for charity to distribute, in the encouragement and support of the industrious poor.

"Of FRIENDLY SOCIETIES (see *Suppl.*) the benefit is well known; and it is enough to state what general experience gives testimony to, and what is confirmed by all the information which has been laid before the Society, that their effects, when legally and properly established, are sure and unvaried in promoting industry, economy, philanthropy, and every virtue, among the poor.

"As to COTTAGES (see *Suppl.*), with exception of some

favoured districts, it is too obvious that they are deficient both in number and condition; the inhabitants suffering in health and cleanliness, for want of that accommodation, which in this climate is necessary to life and well-being. It is due to the cottager, to ourselves, and to the general appearance of the country, that neatness and comfort in these habitations, by timely repairs, and by the very trivial expence of frequent WHITE-WASHING (see *Suppl.*), should be allowed to have their full effect in inducing habits of cleanliness, and, in the consequence, of regularity and morality in the possessors.

"Of parish workhouses (see HOUSE, WORKHOUSE, and INDUSTRY, *Suppl.*) it is not too much to say, that, however well managed, yet if they are made the common receptacle of all who apply for relief, they will, in their general effect, be the cause of injustice and unkindness to many individuals, and of prejudice and injury to the parishes. If none were placed there but the aged and infirm, who have no domestic retreat to recur to,—none, who could do better out of them (the disabled cottager, receiving relief in his cottage, the sturdy idler being subjected to legal correction, and the child finding an asylum in a PARISH SCHOOL, *Suppl.*), the poor who, for want of domestic connection and the means of sustenance, are compelled to take refuge in a poorhouse, would find it a decent and well-regulated asylum; while the cottager would preserve his little establishment at home, and not be compelled, by temporary distress, to become a permanent burthen to his parish; the idle and the sturdy would receive merited punishment; the parish-child would be boarded and instructed at less expence by some cottager's widow, from whose care he would go, at an earlier age, and with more character and principle, into service.

"There are several other subjects of enquiry, upon which we must refer the reader to the REPORTS themselves. On one only we shall trouble him with any further remarks; and that is upon county JAILS and houses of correction (see HOUSE, *Suppl.*).—The plan which has been successfully adopted at Dorchester, and in a very few other instances,—that of encouragement and inducement to work, by a liberal share of earnings, and by a distinction of food and treatment between the idle and industrious, and between the profligate and the well-disposed; the plan of sending them forth from the prison with character, and the means and habits of industry and livelihood, is fully developed in the account of the Dorchester jail and house of correction. The detail of the effects produced there, is confirmed by experience in every other instance, to which it has been properly applied. It is congenial to the nature of man, and to our own feelings. Let us not then despair, but that the example will be speedily followed in other counties, for the benefit of the inhabitants, and for the reform and restoration of many wretched and hopeless prisoners, now suffering under the servitude of vicious habits, without the means or prospect of release.

"In almost every establishment for the employment and benefit of the poor, the finding and keeping for them regular and proper work and occupation is one of the greatest embarrassments. This, more than any other cause, has checked the exertions of those who have been at times very anxious to promote the welfare of their poor neighbours. But, before they give up their labour of love, we entreat them to reflect, that, if the obtaining for a few necessitous families, who dwell near them, a regular supply of useful occupation, is difficult for the rich, and for those who possess talents, and leisure, and influence, what must be the nature of the difficulties which will attend the industrious efforts of the poor, the helpless, the ignorant, and the uninstructed. If

we are imposed upon, placed in a situation of embarrassment, when we seek the means of industry for them, what must be their distress and confusion in the same attempt.—Surely this consideration should rouse us to overcome, by activity and perseverance, that which to them may be insurmountable; and to provide those means of industry and thrift, which, in the present state of this country, it is impossible for many of the poor to obtain for themselves.

“The question whether the rich support the poor, or the poor the rich, has been frequently agitated by those who are not aware that, while each does his duty in his station, each is, reciprocally, a support and a blessing to the other. All are parts of one harmonious whole; every part contributing to the general mass of happiness, if man would but endeavour to repay his debt of gratitude to his Creator; and, by a willing habit of usefulness, to promote the happiness of himself and of his fellow-creatures. In this way the higher classes of society may, by superiority of power and education, do more service to the other parts of the community, than what they receive; the welfare of the poor being then, in truth, more promoted and assured by the gradations of wealth and rank, than it ever could have been by a perfect equality of condition; even if that equality had not been in its nature chimerical and impracticable; or (if practicable) had not been hostile and fatal to the industry and energy of mankind.—Rank, power, wealth, influence, constitute no exemption from activity or attention to duty; but lay a weight of real, accumulated responsibility on the possessor.

Is heaven tremendous in its frowns? most sure:
And, in its favours, formidable too.
Its favours here are trials, not rewards;
A call to duty,—no discharge from care;
And should alarm us full as much as woes.

YOUNG.

“If the poor are idle and vicious, they are reduced to subsist on the benevolence of the rich: and if the rich (I except those to whom health and ability, and not the will, is wanting) are selfish, indolent, and neglectful of the conditions on which they hold superiority of rank and fortune, they sink into a situation worse than that of being gratuitously maintained by the poor. They become paupers of an elevated and distinguished class; in no way personally contributing to the general stock, but subsisting upon the labour of the industrious cottager;—and whenever Providence thinks fit to remove such a character, whether in high or in low life, whether rich or poor, the community is relieved from an useless burthen.”

On the motives for co-operation with this excellent Society, Mr. Bernard expresses himself in the following just and forcible terms:—“If,” says he, “there should be among my readers, any one whose views are directed to himself only, I could easily satisfy him, that his means of self-indulgence would be increased, his repose would be more tranquil, his waking hours less languid, his estate improved, its advantages augmented, and the enjoyment permanently secured, by his activity in the melioration of the condition, the morals, the religion, and the attachment, of a numerous and very useful part of his fellow-subjects.—To the patriot, who wishes to deserve well of his country, I could prove that, from the increase of the resources and virtues of the poor, the kingdom would derive prosperity—the different classes of society, union—and the constitution, stability. To the rich, who have leisure, and have unsuccessfully attempted to fill up their time with other objects, I could offer a permanent source of amusement;—that of encouraging the virtues and industry of the poor, with whom by property, residence, or

occupation, they are connected;—that of adorning the skirts of their parks and paddocks, of their farms and commons, with picturesque and habitable cottages, and fruitful gardens; so as to increase every Englishman's affection for an island replete with beauty and happiness;—that of assisting the poor in the means of life, and in placing out their children in the world; so as to attach them by an indissoluble tie, and a common interest, to their country, not only as the sanctuary of liberty, but as an asylum, where happiness and domestic comforts are diffused, with a liberal and equal hand through every class of society.”

POORONDER, a fortress of Vissapour, in the Deccan of Hindoostan. It is seated on a mountain, 18 miles E.S.E. of Poona; is the place of refuge for that capital in case of an invasion; and here the archives of government are kept.

POOTE, a town of France, in the department of the Mayenne, and chief place of a canton, in the district of Villaine: two leagues and a half E.N.E. Villaine, and four W.S.W. Alençon.

POPERINGUE, a town of Austrian Flanders, on a river of the same name. Six miles W. of Ypres. Long. 2. 38. E. Lat. 50. 51. N.

POPO, a kingdom on the Slave Coast of Guinea. The inhabitants have scarcely any houses to dwell in, beside the king's village, which is an island in the midst of a river. Their chief trade is in slaves.

PORCAH, a town of the peninsula of Hindoostan, in the country of Travancore, taken from the Dutch by the English in 1795. It is 75 miles N.W. of Travancore. Long. 76. 30. E. Lat. 9. 15. N.

PORCHESTER, a village in Hampshire, four miles N. of Portsmouth, at the upper end of the harbour, between Fareham and Portsea Island. In has an ancient castle, which has served, of late years, for the reception of prisoners of war.

PORCO, a town of Peru, in the audience of Los Carcos, a little to the W. of Potosi. Long. 64. 60. W. Lat. 19. 40. S.

PORCUNA, a town of Spain, in the province of Juen, eight miles S.S.W. of Anduxar.

PORSELOON, or **PORSELOUC**, a rich and commercial town of the kingdom of Siam, situate on a large river which runs into the gulf of Siam.

PORT AU PRINCE, a sea-port of St. Domingo, seated on a bay on the W. side of the island, of which part it is the capital. It was taken by the English and royalists in 1794. Long. 72. 10. W. Lat. 18. 45. E.

PORT DE FRANCAIS, a harbour on the W. coast of America, discovered by M. de la Pérouse in 1786. It is of a circular form, not to be fathomed in the middle, and bordered by peaked mountains, of an extensive height, covered with snow. The natives on this coast are described as the most complete thieves, possessed of an activity and obsequy capable of executing the most difficult projects. Skins were found here in great abundance, particularly those of the sea otter. In this harbour is a small island. Long. 137. 30. W. Lat. 58. 37. N.

PORT DESIRE, an harbour of S. America, where ships sometimes touch in their passage to the Pacific Ocean. It is 100 miles N.E. of Port St. Julian. Long. 65. 40. W. Lat. 47. 50. S.

PORT LOUIS, a French fortress, on the S.W. coast of Hispaniola, demolished by Admiral Knowles in 1747, but since rebuilt. Long. 73. 16. W. Lat. 18. 18. N.

PORT LOUIS, a town and harbour of the Isle of France, in the Indian Ocean, strongly fortified. Long. 57. 28. E. Lat. 20. 9. S.

PORT PAIX, a town on the N. coast of St. Domingo,

in the West Indies, with a good harbour. Long. 72. 55. W. Lat. 19. 58. N.

PORT PATRICK, a sea-port in Wigtonshire, confined by the sea on one side, and on the other by over-hanging rocks and hills. It is noted for its ferry to Donaghadee in Ireland, from which it is only 20 miles distant; and a packet-boat sails from hence for that place every day. The harbour is good; and has one of the finest quays in Great Britain, with a reflecting light-house. It is 107 miles S.W. of Edinburgh, and 187 N.W. of London.

PORT ROYAL, a town and fort of the island of Martinico, 27 miles S.E. of St. Pierre. Long. 61. 9. W. Lat. 14. 3. N. PORT ROYAL, a town of the United States, in Virginia, on the river Rappahannock.

PORT ST. JULIAN, a harbour on the coast of Patagonia, where ships usually touch that are bound for the Pacific Ocean. Long. 68. 44. W. Lat. 49. 10. S.

PORT ST. MARY, a sea-port of Spain, in Andalusia. The English made a descent here in 1702, with a design to besiege Cadiz, but without success. It is ten miles N.E. of Cadiz. Long. 6. 0. W. Lat. 35. 37. N.

PORT SANDWICH, a harbour in the island of Mallicolo, in the S. Pacific Ocean. Long. 167. 53. E. Lat. 16. 25. S.

PORT VENDRE, a sea-port of France, in the department of the Eastern Pyrenées and late province of Roussillon. It was taken by the Spaniards in 1793, but retaken the next year. It is 25 miles S. by E. of Perpignan.

PORTADOWN, a town of Ireland, in the county of Armagh, with an extensive linen manufacture. It is situate on the river Bann, nine miles N.E. of Armagh, and 16 N. of Newry.

PORTAFERRY, a town of Ireland, in the county of Down, on the rapid ferry of Strongford, 80 miles N. of Dublin.

PORTALEGRE, a strong town of Portugal, in Alentejo, with a bishop's see. It is seated at the foot of a high mountain, in a pleasant country, 30 miles N.W. of Elvas, and 90 N.E. of Lisbon.

PORTARLINGTON, a borough in Ireland, partly in King's and partly in Queen's County. It is seated on the river Barrow, 31 miles N. of Kilkenny, and 36 S.W. of Dublin.

PORTERAGE, the sum paid to a porter who carries home a parcel after its arrival from the country. By the 30 Geo. III. c. 58. the rates of portorage, within the cities of London and Westminster, and the borough of Southwark, and the suburbs and liberties thereof respectively, and other parts contiguous thereto, not exceeding the distance of half a mile from the end of the carriage pavement in the several streets and places within the said cities, borough, and liberties, are as follow, viz.

For any distance not exceeding one quarter of a mile, *three pence*.

For any greater distance than a quarter of a mile, but not exceeding half a mile, *four pence*.

For any greater distance than half a mile, but not exceeding one mile, *six pence*.

For any greater distance than one mile, but not exceeding one mile and a half, *eight pence*.

For any greater distance than one mile and a half, but not exceeding two miles, *ten pence*; and so in the like manner the additional sum of three pence for every further distance not exceeding half a mile.

PORTLAND, a sea-port of the United States, capital of Cumberland County, in the district of Main. It is seated on a peninsula, and has an excellent harbour, 150 miles N.N.E. of Boston. Long. 69. 30. W. Lat. 44. 10. N.

PORTLAND ISLANDS, a cluster of islands in the S. Pacific Ocean. They are low, and covered with wood; and the centre one is in long. 149. 8. E. lat. 2. 33. S.

PORTLAND-POWDER, a particular compound, the recipe for which was imported from Switzerland, by an ancestor of the Duke of Portland. It consists of equal parts of round birthwort (*arifolochia rotunda*, L.); of gentian; of the tops and leaves of germander, ground-pine, and centaury; dried, pulverized, and sifted. These are to be carefully incorporated; and one dram of the composition is to be taken every morning in a glass of wine and water, tea, or any warm liquid; after which the patient should fast an hour and a half. Such course is to be continued for three months without intermission; at the expiration of which, the dose must be reduced to one half, and taken as before, for the space of six months; when it is to be continued every second day, for twelve months longer.—This famous nostrum has long been held in high estimation, for its supposed efficacy in curing the *gout*; and though, in the hands of judicious persons, it undoubtedly forms a powerful alternative, yet it must be classed among those quack-medicines that, by the length of time to which their operation is to be extended, cannot fail of doing frequent mischief. This indeed has been abundantly shewn in a paper lately inserted, by Dr. Fothergill, in the Medical and Physical Journal, where instances are adduced of the fatal result of the trials made with this remedy, even where it has succeeded in removing the *gout*.

PORTO, a small sea-port of Italy, in the patrimony of St. Peter. It is the see of a bishop, who is generally a cardinal, and dependent only on the pope. It is ten miles S.W. of Rome.

PORTO CAVALLLO, a sea-port of Terra Firma, on the coast of Caracaus. Here the English were repulsed, when they attacked it, in 1743. Long. 64. 30. E. Lat. 10. 20. N.

PORTO DEL PRINCIPE, a sea-port on the N. coast of Cuba, with a good harbour. It is seated in a large meadow, where the Spaniards feed a great number of cattle. Long. 78. 15. W. Lat. 21. 52. N.

PORTO GALLETO, a sea-port of Spain, in the bay of Biscay, seated on a small river, eight miles N. of Bilbao. Long. 3. 11. W. Lat. 43. 22. N.

PORTO GRUARO, a town of Italy, in Venetian Friuli, with a bishop's see. It is seated on the Lema, 15 miles W. of Marano.

PORTO HERCOLE, a sea-port of Italy, in the state of Presidii, situate on a peninsula, four miles S. of Orbitello. Long. 11. 12. E. Lat. 42. 14. N.

PORTO NOVA, a sea-port of Spain, in Galicia, seated near the mouth of the Leris, 54 miles W. of Orense. Long. 8. 36. W. Lat. 42. 19. N.

PORTO PEDRO, a sea-port in the Island of Majorca. Long. 2. 41. E. Lat. 39. 37. N.

PORTO PRAYA, a town and bay of St. Jago, one of the Cape de Verd Islands. The town stands on an elevated plain, and is the residence of the Portuguese governor of the islands. Long. 23. 29. W. Lat. 14. 56. N.

PORTO SANTA MARIA, a sea-port of Spain, in the bay of Cadiz, containing nearly 10,000 inhabitants. The principal trade is in salt. It is seven miles N. of Cadiz.

PORTSEA, an island between Chichester Bay and the harbour of Portsmouth, in Hampshire. It is a low tract of considerable extent, separated from the main-land by a creek, over which is a bridge. At the S.W. extremity of it is situate the town of Portsmouth.

PORTSMOUTH, a town of the United States, the largest in New Hampshire, seated on Piscataqua River, two miles from the Atlantic Ocean. Its harbour is one of the finest on the continent, well defended by nature, both against storms

and an enemy; and it has a light-house at the entrance. It is 24 miles N. of Boston. Long. 70. 37. W. Lat. 42. 46. N.

PORTUGALETE, a town of Spain, in the province of Biscay, situate on a bay of the Atlantic, 12 miles N.W. of Bilbao. Long. 3. 18. W. Lat. 43. 40. N.

POSATA, a town of the island of Sardinia, on the E. coast, 45 miles E.S.E. of Castel Aragonese. Long. 90. 30. E. Lat. 40. 36. N.

POSEGA, a strong town of Slavonia, capital of a county of the same name. It was taken from the Turks by the Austrians, in 1687. It is seated in a fertile country, on the river Oriana, 126 miles W. by N. of Belgrade. Long. 18. 59. E. Lat. 45. 36. N.

POSNAIA, or **POSEN**, a commercial town of Great Poland, in a palatinate of the same name, with a good castle, and a bishop's see. The cathedral is magnificent. By the partition of Poland, it became subject to the King of Prussia. It is seated in a pleasant plain, on the river Warta, 27 miles W. of Gnesna, and 127 W. of Warlaw.

POSSINHO, a town of Portugal, in Estremadura, ten miles N.E. of Santarém.

POSTAGE (*Encycl.*). By the act 41 Geo. III. c. 7. for repealing the duties of postage, and granting other duties in lieu thereof, the former rates of postage were, from and after April 5, 1801, to cease, and in lieu of the rates repealed, the following were to take place:

General Post.] A distance not exceeding fifteen measured miles, 3d. double 6d. treble 9d. ounce weight 1s.—Above fifteen and not exceeding thirty miles, single 4d. double 8d. treble 1s. ounce 1s. 4d.—Above thirty and not exceeding fifty miles, single letter 6d. double 10d. treble 1s. 3d. ounce 1s. 8d.—Above fifty and not exceeding eighty miles, single letter 6d. double 1s. treble 1s. 6d. ounce 2s. 6d.—Above eighty and not exceeding one hundred and twenty miles, single letter 7d. double 1s. 2d. treble 1s. 9d. ounce 2s. 4d.—Above one hundred and twenty and not exceeding one hundred and seventy miles, single letter 8d. double 1s. 4d. treble 2s. ounce 2s. 8d.—Above one hundred and seventy and not exceeding two hundred and thirty miles, single letter 9d. double 1s. 6d. treble 2s. 3d. ounce 3s.—Above two hundred and thirty and not exceeding three hundred miles, single letter 10d. double 1s. 8d. treble 2s. 6d. ounce 3s. 4d.—For one hundred measured miles above three hundred miles, single letter a further sum of 1d. double 2d. treble 3d. ounce 4d.—Above three hundred measured miles, and not amounting to one hundred miles, the like further sum for every single letter 1d. double 2d. treble 3d. ounce 4d.—And where the distance above three hundred measured miles shall exceed one hundred miles, and so progressively for any like excess of distance of one hundred miles, the like further sum for every single letter 1d. double 2d. treble 3d. ounce 4d.

Foreign Letters.] Letters to or from any part of the United Kingdom of Great Britain and Ireland, from or to any places out of the said kingdom, not within his majesty's dominions, in addition to all other rates now payable, single letter 4d. double 8d. treble 1s. ounce 1s. 4d.

Rates by the Two-penny Post.] For every letter originally sent by the post known by the name of the penny-post (and not first passing by the general post), the postage whereof shall not be paid on putting the same into the office of the said post, the rates herein-after mentioned shall be paid, viz.

For the conveyance of every letter sent by the said post from any place within the cities of London and Westminster, the borough of Southwark, and the respective suburbs thereof, the sum of 2d.—For the conveyance of every letter put into such last-mentioned post office to be forwarded by the general

post, the sum of 2d.—For every letter or packet first passing by the general post, and then passing by the two-penny post, over and above the general postage, 2d.—Merchants' accounts, bills of exchange, and bills of lading, shall be rated as for many several letters.

The postmaster general may undertake the conveyance of letters to and from places not being post towns, for such sums for extra service as may be agreed upon between the postmaster general and the inhabitants; but the inhabitants of such places may act as heretofore.

Irish Letters.] There shall also be paid for every letter conveyed by packet boats from or to the ports of Holyhead or Milford haven, to or from any ports in Ireland, over and above the rates payable for such letters, a packet postage, viz. for every single letter 2d. treble 6d. ounce 8d.

This act is not to alter the rates of postage upon single letters sent by or to seamen or soldiers, made payable by 35 Geo. III. c. 53. nor the manner of charging for patterns or samples of cloth, &c. under that act.

POST-HORSES (*Encycl.*). By the act 25 Geo. III. c. 51. all postmasters, innkeepers, or other persons, shall pay annually 5s. for a licence. Persons letting post-horses without a licence, forfeit 10l. and keeping more than one inn under one licence, 20l. They are to paint licensed to let post-horses on the fronts of their houses, on pain of 5l. And there shall be paid for every horse hired for travelling post, one penny halfpenny for every mile such horse shall be hired to travel post.

For every horse hired for a day, or less time, if the distance shall be ascertained, one penny halfpenny per mile; and if the distance shall not be ascertained, 1s. 9d. for each horse, to be paid by the person by whom the horse shall be hired.

Every licensed person to paint, on the outside panel of each door of the chaise, his christian and surname, and place of abode, on pain of 5l.

POT-ASH (*Encycl.*). In June, 1801, a patent was granted to Mr. Howard, of Manchester, for a method of making a British barilla and potash, and of obtaining a greater quantity of alkali than by any means hitherto discovered. The inventor's method is by saturating with quick lime the ashes made from bleachers' waste lye, rock salt, soda, natron, common salt, black ashes of the soap-boilers' lye, kelp, tobacco ashes, &c. sal enixum, caput mortuum of the vitriolic and muriatic acid; and also for separating the vitriolic and muriatic acids as they exist in common salt, sea water, bleachers' waste lye, and the lye or salt of soap-boilers' waste lye; these, or any or all of them together, or any other substance, that wholly or in part contains a vegetable mineral or fossil alkali.

"To obtain the alkali," says he, "contained in ashes made from the bleachers' waste lye, rock salt, common salt, soda, natron, black ashes of the soap-boilers' waste lye, kelp, or tobacco ashes, I take of the rock salt, common salt, black ashes from the soap-boilers' waste lye, kelp, or tobacco ashes, or any or all of them, twenty hundred weight; or of ashes made from bleachers' waste lye, soda, or natron, or any or all of them, 10 cwt.; and grind, pound, or roll them sufficiently fine, as to pass through a fine sieve. To which I add 16 cwt. of cokes or cinders, charcoal, small coal, dyers' waste wood, sawyers' dust, or any other combustible, destitute of sulphur, being first ground and sifted. These I mix till they appear of one sameness, and then spread on an even floor a thin layer of them; to which I add a layer of quick lime, on which I sprinkle as much common water, lye, brine, or sea water, as the mass will absorb. This done, I continue the layers until 1600 weight of lime is added: I let them here saturate, and whilst warm I cut down the layers,

and add a sufficient quantity of common water, lye, brine, or sea water, as when ground, beat, or trodden with the feet, or any other mode, it assumes the appearance of mortar; which, when done, and perfectly dried, either upon iron plates or pans, or any other more convenient way, introduce it into the reverberating furnace, and bring the same into a flux, at a moderate temperature, which in two, three, or four hours, or more (according to quantity), being repeatedly stirred, and the same temperature kept up, will produce what I call my British barilla.

"To obtain the alkali contained in *sal enixum* and *caput mortuum* of vitriolic and muriatic acids, I take, if of *sal enixum* or residuum of muriatic acid, 20 cwt. and if of vitriolic acid, 35 cwt.; to each of which quantities separately, or a due proportion of them jointly, I add of natron 10 cwt. of black ashes of the soap-boilers' waste lye, 15 cwt. of kelp, 20 cwt. of salts obtained from the soap-boilers' waste lye, 20 cwt., or any other neutral salt or alkali in proportion to its quality; to which I add 32 cwt. of cokes or cinders, charcoal, or small coal, fawyers' dust, or dyers' waste wood, or any other combustible substance destitute of sulphur. The above, ground, sifted, and well mixed, to be spread on an even floor, as before, until 32 cwt. of quick lime be added, and then proceed as before, which will also produce my British barilla.

"To obtain the separation of the vitriolic and muriatic acids as they exist in common salt, brine, or sea water, the bleachers' waste lye, and the soap-boilers' waste lye, or the salts obtained therefrom, I take of salts obtained from the soap-boilers' waste lye 20 cwt., or of common salt 20 cwt., and 10 cwt. of tobacco ashes. These, either separately or jointly, in the above proportions; to which, if salts obtained from soap-boilers' waste lye is used, add 16 cwt., and if common salt and tobacco ashes, 28 cwt. (or a due proportion, according to the salts used), of cokes or cinders, charcoal, &c. as before, to be ground, sifted, and mixed, as before. These spread in layers, and sprinkled with lye, brine, or sea water, until, if soap-boilers' salts are used, 16 cwt. of quick lime is used; and if common salt and tobacco ashes, then 28 cwt. of quick lime is used, or in that proportion, and then to undergo the aforementioned processes for making the British barilla.

"If to make potashes, I add to every 20 cwt. of the whole mass 20 cwt. of black ashes, salts obtained from soap-boilers' waste lye, or any other neutral salt or alkali, in due proportion, which I treat in the manner before mentioned with the aforesaid mass, or I introduce it in like proportion at the time of charging the reverberating furnace; but I prefer the former: in two, three, or four hours, from the introduction (according to the quantity), it will become a liquid mass, which I then tap, and call my British potash."

Notwithstanding the proportions above prescribed, the writer is aware that great diversity of opinion upon the proportions of each ingredient will be found amongst the consumers: first, on account of the alkaline basis, and secondly, with regard to the causticity desired; but he is of opinion, that the proportions he has laid down are preferable to any other.

POT-ASH-CAKE, a kind of biscuit, much used in the United States of America; and which is baked in the following manner:—Take two pounds of wheat flour, and half a pound of butter; to these must be added half a pound of sugar, that has previously been combined with a pint of milk; and a large tea-spoonful of salt of tartar, crystals of soda, or any other pure pot-ash, which has likewise been dissolved in a small quantity of water. The whole is to be carefully mixed, and kneaded together: when properly rolled, it may

be formed into cakes, which ought to be exposed to a brisk heat of an oven; as their lightness depends much on the expedition with which they are baked.

Pot-ash cake is equally nutritious and wholesome: being speedily prepared, it deserves to be adopted, especially where yeast cannot be easily procured.

POTATOE (*Encycl.*). From vol. II. of the Reports of the Society for bettering the Condition, &c. of the Poor, we shall extract an interesting paper on the preservation of potatoes, by Mr. Millington.—According to his statement, three pounds of potatoes were peeled, raised, and put in a coarse cloth between two boards, in a napkin-press, till they were compressed into a very thin cake, that was placed on a shelf to dry. The roots yielded, on expression, about one quart of juice; which, being mixed with an equal quantity of cold water, deposited in the course of an hour, upwards of one dram of white flour or starch, in every respect fit for making fine pastry.—Mr. M. presented in 1799 to the above-mentioned society, a cake, which had been thus prepared in the year 1797. In bulk, it occupied only one-sixth part of the original roots; and lost about two-thirds in weight by the process. Mr. Millington's second method of preserving these roots, is as follows: Five pounds of potatoes were properly cleaned and pounded in a mortar, without being previously peeled; and then pressed in a small wine-press into a thick cake; the whole being completed in the manner above described. This cake also was sweet and wholesome, but did not possess the clear whiteness of the former; nor does it appear that such as were prepared according to the last process, will remain sweet for the same length of time as those consisting of peeled potatoes.—At all events, this contrivance deserves to be further pursued and improved; for, independently of the immediate advantages that will result from supplying mariners with vegetables, it is an object of the greatest importance, when considered as a mean of preserving so useful, though perishable, an article for years; and of laying up a store in plentiful seasons, against the time of scarcity.

Another mode of keeping potatoes, was lately and successfully tried, by the patriotic Bath and West of England society; and which certainly is less complex than that before described. It consists simply in slicing potatoes, without taking off the rind or skin, and afterwards drying them in an oven or kiln. The roots thus prepared will remain sweet for almost any length of time: the society sent some to Jamaica in a barrel, which had been four years from Britain, and, on their return, were found not to be in the least degree affected.

POTENZA, a town of Naples, in Basilicata, with a bishop's see. It was almost ruined by an earthquake in 1694. It is seated near the source of the Basiento, eight miles S.E. of Naples.

POTOMAC, or **PATOMAC**, a river of Virginia, which falls into the bay of Chesapeake. On the banks of this river is now erecting the city of Washington, the intended metropolis of the United States.

POTTON, a town in Bedfordshire, with a market on Saturday, 12 miles E. of Bedford, and 48 N. by W. of London. Long. o. 18. W. Lat. 52. 11. N.

POUGHKEEPSIE, the capital of Dutchess County, in the state of New York, situate on the E. side of Hudson's River, N. of Wappinger's Creek.

POUGUES, a village of France, in the department of Nievre, noted for its ferruginous mineral waters. It is five miles N.W. of Nevers.

POULTICES (*Encycl.*). These are generally prepared of bread and milk, to which is added oil, lard, or other unctuous matter, to prevent their adhesion to the parts inflamed. **J**

large hospitals, the consumption of these articles for such purpose being very considerable, while the bread and milk are liable to become foul in warm weather, the following ingredients have, by Mr. Payne, surgeon, been proposed as substitutes:—Take, of the finest pollard, three parts; of genuine linseed flour, one part; both by measure; and, of boiling water, four parts: mix these ingredients with a spoon or a broad knife; and they will, in general, form a poultice of a proper consistence, without requiring oil, lard, or other emollient ointment: though, if the inflammation be considerable, a small quantity of oil may be added, to prevent adhesion.

POULTON, a town in Lancashire, with a market on Monday, seated near the mouth of the Wyre, 18 miles S.W. of Lancaster, and 231 N.W. of London. Long. 3. 6. W. Lat. 53. 52. N.

POURSELUC, a town of the kingdom of Siam, 280 miles N. of Siam. Long. 100. 40. E. Lat. 18. 58. N.

PORZAIN, a town of France, in the department of Puy de Dôme, seated on the Sioule, 36 miles N. by E. of Clermont, and 190 S. of Paris. Long. 3. 15. E. Lat. 46. 21. N.

POYANG-HOU, a lake of China, in the province of Kiang-si, formed by the confluence of four considerable rivers. It is 250 miles long.

PRABAT, a town of the kingdom of Siam, 100 miles N. of Siam. Long. 101. 10. E. Lat. 15. 40. N.

PRACHALITZ, a town of Bohemia, capital of a circle of the same name, 66 miles S. of Prague. Long. 13. 55. E. Lat. 48. 56. N.

PRADES, a small handsome town of France, in the department of the Eastern Pyrenæes, seated on the river Tet, in a fine plain, in the middle of mountains, 22 miles S.E. of Mont-louis. Long. 2. 35. E. Lat. 42. 26. N.

PRAGA, or **PRAGUE**, a town of Poland, in the palatinate of Maſovia, seated on the Viſtula, opposite to Warſaw, of which it is considered as a suburb.

PRAGILAS, a town of Piedmont, seven miles W. of Turin. Long. 7. 30. E. Lat. 45. 5. N.

PRATO, a town of Tuscany, seated on the Bifentino, 12 miles N.W. of Florence. Long. 19. 54. E. Lat. 43. 52. N.

PRAYA. See **PORTO PRAYA**, *Supp.*

PRECOP, or **PEREKOP**, a town and fortress of Russia, in the government of Catharinenski, and province of Taurida, seated on the isthmus that joins the Crimea to the continent. Long. 35. 40. E. Lat. 46. 40. N.

PRECOPIA, a town of Turkey in Europe, in Servia, seated on the river Morava, 20 miles W. of Niſſa. Long. 22. 5. E. Lat. 43. 31. N.

PREGEL, a river which issues from a lake in Poland; and crossing East Prussia, falls into the eastern extremity of the Frische Haf (an inlet of the Baltic) below Königsberg.

PREGNITZ, a town of Branconia, in the principality of Calabach, situate on a river of the same name, 10 miles S. of Bareith. Long. 11. 55. E. Lat. 49. 50. N.

PREMESLAW, a populous town of Austrian Poland, with a strong castle, and a Greek and Latin bishop's see. It is seated on the river Sana, 27 miles W. of Lemberg. Long. 21. 0. E. Lat. 49. 0. N.

PRENIO, a town of Germany, capital of the Ucker marche of Brandenburg. It contains six churches, and is seated on the lake and river Ucker, 60 miles N. by E. of Berlin. Long. 13. 52. E. Lat. 53. 25. N.

PRENTICE, or **APPRENTICE** (*Encycl.*). The following extract from an account of a charity for placing out poor children, at Greetham, in the county of Durham, by the Rev. John Brewster, is published by the Society for bettering the Condition of the Poor.

"In November, 1790," says Mr. Brewster, "a fund, arising from a rent charge of 6l. a-year, for apprenticing and placing out poor children at Greetham, fell under my direction. The beneficial effects attending this small institution induce me to make this communication; from which, I trust, it will appear that much good may be done in this way at a small expence.

"The following is a general statement of the trust account for the last seven years.

Receipts from November, 1790, to November, 1797.	
Received the balance remaining in hand, November, 1790	12 10 —
Received rent charge of 6l. a-year for seven years	42 — —
	54 10 —

Payments during the same period.

Paid for putting out nine apprentices, and for clothing two girls for service, at 2l. 19s. 6d. each	32 14 6
Paid for one apprentice, at 7l. 16s. one at 4l. one at 3l. 3s. one at 1l. 14s. 6d. and two at 1l. 1s. each	18 15 6
Paid for clothing one girl for service	1 1 —
Paid for partly clothing one boy for service	10 6 —
	53 1 6
Allowed the overseer of the poor for receiving the rent, at one shilling per annum, for seven years	7 — —
Balance in hand, 7th November, 1797	1 1 6
	54 10 —

"To place the children of the poor, as early as possible, in trades or occupations, answers two useful purposes;—the removing the expence of maintenance from the parent or the parish, and the training of the child in habits of industry and virtue. I have stated the specific sums expended for each child, in order to shew how little is required on such occasions. In one or two instances, the parish added something, to supply the deficiencies of the fund, which could not admit of large deductions; and, with only that aid to this very small fund, fifteen children have been apprenticed, and four clothed for service, in the course of the last seven years.

"Services in husbandry, or menial trades, are the usual destinations of village children. To adapt, therefore, this plan to the use of towns, it will be requisite to enlarge the scale of expence, according to the situation. But, in distributing charitable funds of this nature, it will not be an unnecessary caution, that the overseers of the poor be not entrusted with the *sole* management of them: for though they are often men of real integrity, yet they will sometimes be so far interested, as to wish to confine the effects of the institution to the children of *chargeable* poor only, for the sake of alleviating the burthen of the parish. In all parishes there are many poor persons, who receive no charitable support at all, and yet have large families to send out into the world. These ought to be the first objects of attention: as, in all probability, it is from the exertions of their industry that they have been hitherto enabled to preserve themselves in an independent situation; and with a little aid of this kind, it is most likely that they may be able to go on without any call for parochial relief."

Mr. Brewster, in a subsequent report, transmits an account of the particular trades to which the children were apprenticed; in order that the quantum of apprentice-fee may be better known for different trades calculated for poor children in country situations.

	Sex.	Trade.	Term.	Feet.
No. 1.	male	taylor	6 years	2 19 6
2.	female	service	1 year	2 19 6
3.	male	comb-maker	7 years	2 19 6
4.	female	service	1 year	1 1 0
5.	male	farmer's servant	till 21	2 19 6
6.	ditto	shoemaker	7 years	4 0 0
7.	ditto	ditto	7 years	2 19 6
8.	ditto	{ ditto and farmer's servant }	till 21	7 16 0
9.	ditto	ditto clothed.	ditto	1 1 0
10.	ditto	ditto	7 years	3 3 0
11.	ditto	bricklayer	6 years	2 19 6
12.	ditto	shoemaker	7 years	1 14 6
13.	ditto	tailor	6 years	2 19 6
14.	ditto	stone-mason	7 years	2 19 6
15.	ditto	tailor clothed	ditto	0 10 6
16.	female	service	till 21	2 19 6
17.	male	taylor	7 years	1 1 0
18.	ditto	farmer's servant	7 years	2 19 6
19.	ditto	taylor	till 21	2 19 6

The variation in the apprentice-fee arises from different circumstances; either of health in the child, ability in the parent, or from the nature of the occupation to which the child is placed; and in some instances the child is boarded by the master, and sometimes by the parent.

This plan has been adopted by the trustees of the charity-school at Stockton-upon-Tees; and with good success. The school consists of about forty scholars of different sexes. Seven of these, two boys and five girls, have been discharged in the course of the last year, and placed either at trades or services at an expence of 40s. each: one boy as a writer to an attorney, another as an apprentice to a wool-comber; and one girl as an apprentice to a glover, and four in service.

The adoption of this plan has been attended with the best consequences to the school. It has occasioned a more regular attendance, and better behaviour in the children; as conduct is indispensably necessary, if they expect this reward. The charity-school is, in some measure, supplied with scholars from the Sunday-school; and the master says, this new regulation has a considerable influence even upon that.

In towns, where funds of this nature may be made sufficiently ample, it is likely that the institution may have a further beneficial effect, by relieving from a menial trade or occupation, a child of particular abilities.

PRERAU, a town of Moravia, capital of a circle of the same name. It is 13 miles S.E. of Olmutz, and 126 E.S.E. of Prague. Long. 17. 29. E. Lat. 49. 18. N.

PRESENZANO, a town of Naples, in Terra di Lavoro. It appears by an inscription, that it is the ancient Rufæ, and its territory has the name of Costa Rufaria. It is 28 miles N. of Naples. Long. 14. 20. E. Lat. 41. 20. N.

PRESIDII, STATE OF, a territory of Tuscany, in the Siennese. It includes six fortresses, seated on the coast of Tuscany; and which Spain reserved, when it ceded Sienna

to the grand duke. They were designed to facilitate the communication between the Milanese and the kingdom of Naples. In 1735, they were ceded to the king of the Two Sicilies. Their names are Orbitello, Telemone, Porto Hercole, Porto San-Stephano, Monte Philippo, and Porto Longone.

PRESOVIA, a town of Little Poland, seated on the Vistula, 20 miles E. of Cracow. Long. 20. 16. E. Lat. 50. 10. N.

PRESTIMA, a town of Portugal, in Beira, 11 miles N. of Coimbra.

PRESTON PANS, a village in Haddingtonshire, noted for its salt works, and for the defeat of the royal army by the rebels in 1745. It is four miles W. of Haddington.

PREVESA, a sea-port of Turkey in Albania, with a bishop's see. It stands on the ruins of the ancient Nicopolis, built by Emperor Augustus, in memory of his victory over Antony. It belongs to the Venetians, and was taken by them in 1684. It is seated on a mountain, on the gulf of Larta, 70 miles N.W. of Lepanto. Long. 21. 5. E. Lat. 39. 14. N.

PREUILLY, a town of France, in the department of Indre and Loire. Near it are mines of iron; and to the S.W. is La Haye, a small town on the Creuse, famous as the birth-place of Descartes. Preuilly is seated on the Claise, 18 miles S. of Loches.

PRIAMAN, a sea-port of the East Indies, in Sumatra, where the Dutch have a factory. Long. 98. 0. E. Lat. 1. 0. S.

PRIBODA, a town of Sweden, in the province of Smaland, 16 miles S.S.W. of Carlscrona. Long. 15. 18. E. Lat. 56. 10. N.

PRIEBUS, a town of Silesia, in the principality of Sagan, situate on the Neissa, 15 miles S.W. of Sagan. Long. 15. 12. E. Lat. 51. 32. N.

PRINCE'S ISLAND, a small island on the west coast of Africa, 250 miles S.W. of Loango. Long. 6. 40. E. Lat. 1. 49. N.

PRINCE'S ISLAND, a small island of Asia, at the S.W. extremity of the straits of Sunda, a few leagues from the coast of Java. It is very woody, and not much cleared. The inhabitants are Javanese, whose rajah is subject to the sultan of Bantam; and their customs are very similar to those of the natives about Batavia. The best anchoring place is in long. 105. 17. E. lat. 0. 36. S.

PRINCE OF WALES, CAPE, the most western extremity of all America, hitherto known, discovered by Captain Cook in 1778. Long. 168. 5. W. Lat. 65. 46. N.

PRINCE OF WALES, FORT, the most northern settlement of the Hudson's Bay Company, seated on the west side of Hudson's Bay, at the mouth of Churchill River. Long. 94. 7. W. Lat. 58. 47. N.

PRINCE WILLIAM HENRY'S ISLAND, an island in the Eastern Ocean, lying W.N.W. of Tench's island. It is pretty high, well wooded, and 70 miles in circuit. The natives are quite naked, and seem to be the same sort of people as those on Tench's island, and the canoes of the same construction. It was discovered by Lieutenants Ball and King, in 1750. A high mountain rising in the centre of it, was called Mount Philip. Long. 149. 30. E. Lat. 1. 32. S.

PRINCE WILLIAM HENRY'S ISLAND, an island of the South-Pacific Ocean, discovered by Captain Wallis, in 1767. Long. 121. 6. W. Lat. 17. 0. S.

PRINCESS ANN TOWN, a town of the United States, in Maryland, 114 miles S. of Philadelphia. Long. 75. 48. W. Lat. 38. 10. N.

PRISIDENIA, a town of Turkey in Europe, in Bosnia, with a bishop's see, and a magnificent church. It is seated on the Drin, 32 miles N.E. of Albanapolis, and 195 N. of Belgrade. Long. 21. 3. E. Lat. 42. 0. N.

PRISTINA, a town of Turkey in Europe, in Servia. It was pillaged by the Austrians in 1689; and is seated on the Rufca, 58 miles N.W. of Nida, and 150 S.E. of Belgrade. Long. 22. 5. E. Lat. 42. 43. N.

PRITZWALK, a town of Upper Saxony, in the marche of Prignitz, 44 miles N. of Brandenburg, and 54 N.W. of Berlin. Long. 12. 13. E. Lat. 53. 9. N.

PRIVAS, a town of France, in the department of Ardèche, seated on a hill, near the confluence of three small rivers, 16 miles N. of Viviers. Long. 4. 41. E. Lat. 44. 45. N.

PROCIDA, an island of Italy, in the gulf of Naples, near that of Ichia. It is eight miles in circumference, and very fertile and populous. The capital, of the same name, is a small fortified place, on a high craggy rock, by the sea-side. Long. 14. 8. E. Lat. 40. 43. N.

PRODANO, an island in the Mediterranean, near the west coast of the Morea, formerly called Sphacteria. It is 36 miles S.S.E. of Zante. Long. 21. 24. E. Lat. 37. 15. N.

PROM, a town of the kingdom of Burmah, seated on the Menan, 200 miles N.W. of Pegu. Long. 94. 0. E. Lat. 17. 50. N.

PROSPEROUS, a village of Ireland, in the county of Kildare; it has a considerable manufacture of cotton, and is 16 miles S.W. of Dublin.

PROVIDENCE, an island in the Atlantic, which the English buccaniers fortified, but afterwards abandoned. It is 150 miles E. of the coast of Nicaragua. Long. 80. 44. W. Lat. 13. 25. N.

PROVIDENCE, a river of North America, which rises in the state of Massachusetts, and waters the town of Providence, from whence it is navigable to Narraganset Bay, which it enters on the west side of Rhode Island.

PROVIDENCE, a town of the state of Rhode Island, with a considerable manufacture of cloth, and a large foreign trade. Here is an elegant college, called Rhode Island College. Providence is seated on both sides of a river of the same name, 30 miles N.W. of Newport. Long. 71. 26. W. Lat. 41. 50. N.

PROVINS, a town of France, in the department of Seine and Marne, famous for its mineral waters and excellent conserves of roses. It is seated on the Vouzie, 30 miles S.E. of Meaux, and 47 S.E. of Paris. Long. 3. 22. E. Lat. 48. 34. N.

PRUCK, a town of Austria, seated on the Leita, 22 miles S.W. of Presburg, and 22 S.E. of Vienna. Long. 16. 58. E. Lat. 48. 5. N.

PRUCK, a town of Silesia, seated on the Muehr, 66 miles S.W. of Vienna. Long. 15. 25. E. Lat. 47. 24. N.

PRUTH, a river of Poland, which rises in Red Russia, in the mountain of Crapach, crosses part of the palatinate of Lemberg, runs through all Moldavia, and falls into the Danube.

PSKOF, or **PLESKOF**, a government of Russia, once a republic, subdued by Ivan Vasilvitch, and formerly comprised in the government of Novogorod.

PSKOF, or **PLESKOF**, a lake of Russia, in a government of the same name.

PSKOF, or **PLESKOF**, a town of Russia, capital of a government of the same name, with an archbishop's see, and a strong castle. It is seated on the river Welika, 80 miles S. of Narva, and 150 S. by W. of Peterburg. Long. 27. 52. E. Lat. 57. 58. N.

PUCKHOLI, a town of Hindoostan Proper, in the province of Lahore, 86 miles S.W. of Cathmere, and 145 N.W. of Lahore. Long. 72. 5. E. Lat. 31. 45. N.

PUDDAR, a river of Hindoostan Proper, which rises in the S.W. part of Agimere, divides the provinces of Cutch and Guzerat, and falls into the gulf of Cutch.

PUDOGA, a town of Russia, in the government of Olonetz, situate on the east coast of the lake Oneskoe, 102 miles E. of Olonetz. Long. 36. 30. E. Lat. 61. 36. N.

PUEBLA, a town of Spain, in Galicia, near the Atlantic, 25 miles S.S.W. of Compostella. Long. 8. 7. W. Lat. 42. 34. N.

PUEBLA, a town of Spain, in Extremadura, seated near the Guadiana, 15 miles W. of Merical. Long. 6. 23. W. Lat. 38. 42. N.

PUEBLA DE LOS ANGELOS, a town of New Spain, in the audience of Mexico, and province of Tlaxcala, of which it is the capital, with a bishop's see. It is 62 miles S.E. of Mexico.

PUEBLA-NUOVA, a sea-port of New Spain, in the audience of Guatemala, and province of Veragua. It is seated on a bay of the Pacific Ocean, 200 miles W. of Panama. Long. 82. 28. W. Lat. 8. 48. N.

PUNTE-DEL-ARCOSBISPO, a town of Spain, in Extremadura, which belongs to the Archbishop of Toledo, and is seated on the river Tajo, over which is a handsome bridge, 40 miles S.W. of Toledo. Long. 4. 15. W. Lat. 39. 38. N.

PUEERTO-BELLO, **PUEERTO RICO**, &c. For all names, which, in the Spanish language, signify a port, see **PORTO**; for, although that word is not Spanish, but Italian, it is necessary to adhere to it in this work, in conformity to the English pronunciation.

PUGLIA, the modern name of the ancient Apulia, containing the three provinces of Capitanata, Bari, and Oranto, on the east side of the kingdom of Naples.

PULAON, an island in the Indian Ocean, lying on the west of the Philippines. It is very fertile, and subject to its own king, who is tributary to that of Borneo. Long. 129. 12. E. Lat. 9. 30. N.

PULHELY, a sea-port in Carnarvonshire, with a market on Wednesday. It is seated at the head of an inlet of Cardigan Bay, between two rivers, six miles S. of Newin, and 143 N.W. of London. Long. 4. 15. W. Lat. 53. 52. N.

PULO-CANTON, an island in the Indian Ocean, on the coast of Cochinchina. Long. 109. 35. E. Lat. 15. 10. N.

PULO-CONDOR, the name of several islands in the Indian Ocean, the principal of which is the only one inhabited. It is 13 miles in length, and nine in breadth, but in some places not above a mile over. The soil of these islands is blackish, and pretty deep, but the hills are somewhat stony. The trees are not very thick, but large, tall, and fit for any use. The principal fruits are mangoes, a sort of grapes, and badard nutmegs. The animals are hogs, lizards, and guanas; and there are birds of various kinds, not known in other parts. The inhabitants are small of stature, of a dark complexion, with small black eyes, thin lips, white teeth, little mouths, and black straight hair. Their chief employment is to get tar out of large trees. They are idolaters, and have images of elephants in their temples. Long. 107. 20. E. Lat. 8. 40. N.

PULO-DINDING, an island in the Indian Ocean, on the west coast of the peninsula of Malacca. It belongs to the Dutch.

PULO-TIMON, an island in the Indian Ocean, on the east coast of the peninsula of Malacca. It is often touched at for taking in wood, water, and other refreshments, and there is a great plenty of green turtles. Long. 104. 25. E. Lat. 3. 0. N.

PULO-UBY, an island in the Indian Ocean, at the entrance of the bay of Siam, 20 miles in circumference. It yields good water and plenty of wood. Long. 105. 56. E. Lat. 8. 25. N.

PULO-WAY, an island in the Indian Ocean, near the north point of that of Sumatra. It is the largest of the islands that form the entrance of the channel of Achern, and is peopled by men banished from Achern. Long. 95. 39. E. Lat. 5. 30. N.

PULTAUSK, a town of Great Poland, in the palatinate of Masovia, seated on the Narew, 20 miles N.E. of Warsaw. Long. 21. 47. E. Lat. 50. 30. N.

PULTOWA, a fortified town of the Ukraine, famous for a battle in 1709, between Peter the Great and Charles XII. of Sweden, wherein the latter was totally defeated. It is 100 miles S.W. of Belgorod. Long. 34. 25. E. Lat. 49. 26. N.

PUMP-ENGINE. See **FIRE-ENGINE**; *Supp.*

PUNA, an island in the Pacific Ocean, 35 miles long and 12 broad, lying at the entrance of the bay of Guaiquil, 115 miles N. of Païta. Long. 81. 6. W. Lat. 3. 17. S.

PUNBETE, a town of Portugal, in Estremadura, six miles W.N.W. of Abrantes.

PUNTA-DEL-GUDA, the capital of St. Michael, one of the Azores, with a strong castle, and a harbour. Long. 25. 42. W. Lat. 37. 47. N.

PURBECK, **ISLE OF**, a rough and heathy tract in Dorsetshire, to the south of Poole Bay.

PURCHENA, a town of Spain, in the province of Granada, 60 miles E. of Granada, and 60 W. of Carthagena. Long. 2. 5. W. Lat. 37. 19. N.

PURFLEET, a village in Essex, situate on the Thames, four miles W. of Grays-Thurrock. It has extensive lime-works, and a large magazine of gun-powder.

PURMERENS, a town of North Holland, on a brook of the same name, 10 miles N. of Amsterdarn, and 13 S.E. of Alcmear.

PURRYSBURG, a town of the United States, in Georgia, built by a colony of Swifs. It is seated on the river Savannah, 30 miles N.W. of the town of Savannah. Long. 80. 40. W. Lat. 32. 22. N.

PUSCHIAVO, a town of the country of the Grifons, three miles north from a lake to which it gives name. It is 17 miles W.S.W. of Bormio, and 20 E. of Chiavenna. Long. 9. 40. E. Lat. 46. 20. N.

PUTALA, or **PATELI**, a mountain of Great Thibet, seven miles east of Lassa. On its summit is the palace of the grand lama, the high-priest and sovereign of Thibet.

PUTNEY, a village in Surrey, seated on the Thames, five miles W.S.W. of London. It is the birth-place of the unfortunate Thomas Cromwell, earl of Essex, whose father was a blacksmith here; and of Nicholas West, bishop of Ely, his contemporary, a great statesman, whose father was a baker. On Putney-common is an obelisk, erected in 1786, by the city of London, in commemoration of Mr. Hartley's invention of fire-plates, for securing buildings from fire; and near it is the house in which that gentleman made his experiments, one in particular, in 1776, when his majesty, and some of the royal family, were in a room over the ground floor, perfectly safe, while the room under them was furiously burning.

PUY, a populous town of France, in the department of Upper Loire, seated on the mountain Anis, near the river

Loire. The principal church is famous for a prodigious quantity of relics; and our Lady of Puy is celebrated in the annals of superstition. The late canons of Puy have had kings and dauphins of France at their head. Puy has manufactures of lace and silk stuffs, and is 45 miles N.E. of Mende.

PUYCERDA, a strong town of Spain, in Catalonia, and capital of Cerdagna. It is seated between the Carol and Segra, in a plain, at the foot of the Pyrenées, 53 miles W. of Perpignan, and 67 N.W. of Barcelona. Long. 1. 50. E. Lat. 42. 36. N.

PUY-DE-DOME, a department of France, containing part of the late province of Auvergne, and almost all Limagne, a territory 12 leagues long and six broad, one of the most fertile plains in France. The borders of this circular plain are mountainous, once so many volcanoes, but now covered with habitations, herds, and flocks. Clermont is the capital.

PUY-EN-ANJOU, a town of France, in the department of Maine and Loire, 10 miles S.W. of Saumur, and 160 of Paris. Long. 0. 13. W. Lat. 47. 6. N.

PUYLAURINS, a town of France, in the department of Tarn, eight miles S.W. of Castres, and 23 E. of Toulouse. Long. 1. 57. E. Lat. 43. 35. N.

PUY LEVEQUE, a town of France, in the department of Lot, 14 miles W. of Cahors. Long. 1. 17. E. Lat. 44. 25. N.

PUY MOISSON, a town of France, in the department of Lower Alpes, 15 miles S. of Digne. Long. 6. 10. E. Lat. 43. 55. N.

PUZZOLI, a celebrated, but now inconsiderable town of Italy, on the bay of Naples. Here is a temple of Jupiter Serapis, an interesting monument of antiquity, being quite different from the Roman and Greek temples, and built in the manner of the Asiatics; probably by the Egyptian and Asiatic merchants settled at Puzzoli, which was the great emporium of Italy, till the Romans built Ostia and Antium. The ruins of Cicero's villa, near this place, are of such extent, as to give a high idea of the wealth of this great orator. Puzzoli is 10 miles W. of Naples.

PYRBAUM, a town of the upper palatinate of Bavaria, capital of a lordship of the same name. It is 13 miles S.E. of Nuremberg.

PYRENEES, EASTERN, a department of France, containing the late province of Roussillon. Although great part of the country is mountainous, it is fertile; producing corn, excellent wines, olives, oranges, and leather of a superior quality. Perpignan is the capital.

PYRENEES, LOWER, a department of France, containing the late provinces of Baiques and Bearn. Pau is the capital. See **NAVARRIE**.

PYRENEES, UPPER, a department of France, containing the late province of Bigorre. Here are excellent horses and good partridges. The valleys are very fertile; furnishing rye, millet, Spanish corn, and flax. The mountains have mines of lead, iron and copper, and quarries of slate, marble, and jasper. Tarbes is the capital.

PYRNA, a town of the electorate of Saxony, in Misnia. It has a castle, on a mountain called Sonnenstein, which has been sometimes used as a state prison. Near it is a fine quarry of stone, which is transported to different places by the river Elbe. Pyrna is seated on the Elbe, 10 miles S.E. of Dresden. Long. 13. 50. E. Lat. 51. 6. N.

PYRSTEIN, a town of Bavaria, in the bishopric of Passau, 10 miles N.W. of Linz, and 22 E. of Passau.

PYSECK, a town of Bohemia, in the circle of Prachin, seated on the Attoay, near the Muldaw, 50 miles S. of Prague. Long. 14. 40. E. Lat. 49. 16. N.

of H. R.

Q.

QUACK MEDICINES: vile compounds, calculated to defraud the credulous of their money and health.

By the act 25 Geo. III. c. 79. the quack medicine venders within the limits of the two-penny post are to take out a licence annually, and pay 20s. in any other part of the kingdom, 5s.

And upon every packet, box, bottle, phial, or other inclosure, containing any drugs, oils, waters, essences, tinctures, powders, or other preparation or composition whatsoever, used or applied, or to be used or applied, externally or internally, as medicines or medicaments for the prevention, cure, or relief of any disorder or complaint incident to, or in any wise affecting the human body, which shall be uttered or vended in Great Britain, there shall be charged a stamp duty according to the rates following; (that is to say), where the contents of any such packet, box, bottle, phial, or other inclosure aforesaid, shall not exceed the price or value of 1s. there shall be charged a stamp duty of one penny halfpenny.

Where the contents of any such packet, box, bottle, &c. shall exceed the price of 1s. and not exceed 2s. 6d. there shall be charged a stamp duty of 3d. :—above 2s. 6d. and under 5s. a stamp duty of 6d. :—and if of the price of 5s. or upwards, a stamp duty of 1s.

The above duties not to extend to articles mentioned in the books of rates; nor to unmix'd drugs sold by a surgeon, apothecary, chemist, or druggist, not claiming an exclusive right to the same; and which are not prepared or sold under letters patent, nor by any public notice, or advertisement, or recommended as nostrums.

Persons vending quack medicines without a licence, are to forfeit 5l. Venders are to use stamped labels; and if they vend or expose to sale any medicines without a proper stamp, they are to forfeit 5l. for each box, bottle, or phial. The discount on these stamps, for prompt payment, is, if the duty amounts to 10l. or upwards, 2l. per cent. per annum; and if the duty amounts to 50l. or upwards, 5l. per cent. per annum.

Persons using stamps fraudulently, after they have been once sold or used, forfeit 10l. Buyer or seller may inform. Places of making and of vending are to be entered at the nearest stamp-office, on pain of 10l.

The penalties are recoverable either by action or information in the courts at Westminster, and half are to the informer and half to the king, if the informer prosecutes within six months; afterwards the crown is entitled to the whole, and the informer is to be rewarded at the discretion of the commissioners of stamps, by not exceeding one moiety after deducting the costs.

QUADRA AND VANCOUVER'S ISLAND, an island on the N.W. coast of America, on the W. coast of which Nootka Sound is situate. It was so named by Captain Vancouver in compliment to Senor Quadra, the Spanish commandant at Nootka. It is about 300 miles in length, and 80 in its greatest breadth.

QUADRANT (Enevel). An ingenious paper pointing out an easy and accurate method of adjusting the glasses of Hadley's quadrant on land, for the back-observation, appear in the Transactions of the American Philosophical Society.

"Various methods of adjusting the glasses for the back-observation," says the author of the paper, Mr. Robert Patterson, "have been proposed; but these are either very inaccurate and troublesome, or inapplicable to the common

octant, and require some appendage to the instrument, with which but very few have yet been made.

"The following method of making this adjustment will not, I flatter myself, be found liable to any of the above objections.—It may be made on land, in a few minutes, at any time of the day when the sun shines; requires no additional apparatus; but what any person may readily make for himself; and the adjustment may be relied upon as equally accurate with that for the fore-observation.

"*Description of the necessary apparatus*—Take a piece of plane glass (a piece of looking glass will do very well)—take the polish off one side of it, and cement it, with the rough side down, on the flat side of the segment of a wooden ball. The ball may be about three or four inches in diameter, and the piece of glass of about the same dimensions. Or the glass may be cemented to a piece of board, and this board to a three or four pound shot, or small hand-granade, when either of these may be conveniently had.

"Next take a piece of triangular board, of about four inches on the side. Near the corners of this board let there be inserted three small nails, or pieces of wire, to serve as feet for it to stand on."

Method of making the adjustment, or finding the quantity of the index-error.—"At any time when the sun shines set your triangular board on a table, the sill of a window, or any other convenient stand, exposed to the sun, and place the ball, with the piece of glass, on the triangular mortise; which, touching the ball only in three points, will consequently keep it steady in any position. Turn the ball into such a position that the plane of the glass may be, as nearly as you can judge, parallel to the equator; and then incline this plane, in the direction of the meridian passing through the sun, till the sun be about 45° above it.

"Now take your octant, and, by the fore-observation, bring one of the limbs of the sun's image, seen by a double reflection from the specula of the instrument, exactly into contact with the image of the same limb, seen by a single reflection from the surface of the glass plane, and read off the angle pointed out by the index. Immediately turn round your instrument, and bring the same limbs into contact by the back-observation. If the angle now pointed out by the index be exactly the supplement (to 180°) of the former angle, the horizon-glass for the back-observation will be truly adjusted, or exactly at right angles with the horizon-glass for the fore-observation: but if these two be not equal, then take half their difference, which will be the correction or index-error for the back-observation; supposing the fore-horizon-glass to have been previously well adjusted. This correction will be additive to all angles measured by the back-observation, when the angle pointed out by the index in the first of the above observations is greater than the supplement of the other, and vice versa.

"For the sake of greater accuracy, you may repeat these observations till you have taken two, four, or six sets: observing that if in your first set you begin with the fore-observation, as above directed, then in your second set you must begin with the back-observation; and so on. A mean of the corrections thus obtained may be taken as the true correction of adjustment."

Mr. P. concludes his paper with the following miscellaneous remarks, relative to this subject.

1. "If the arch of excels beyond 90° be but small, as

In some octants is the case, then it may be necessary to place the index one or two degrees before the 0, on the extra arch, and adjust the fore-horizon-glass to this position of the index. You will thus obtain a greater range for the index in adjusting the back-horizon-glass.

2. "When the reflecting glass plane is placed in the position above mentioned, viz. at right angles to the plane of the meridian passing through the sun, then the sun's path in the heavens will, for several minutes, be very nearly parallel to the said plane; and therefore no sensible error is to be apprehended from the increase or decrease of the sun's altitude above this plane during the interval between the first and second observations in the same set. But even if this should be the case, from the glass plane being placed considerably out of the above position, yet, by conducting the observations as above directed, the small errors arising from this source will naturally correct one another.

3. "When the polish is taken off one surface of a piece of glass, then the image of the sun, being reflected only from one surface, will appear single and distinct; whereas the image reflected from both surfaces will, most frequently, appear double or indistinct; arising from the want of parallelism between the surfaces.

4. "The image of the sun seen by a single reflection from one surface of the glass plane, and that seen by a double reflection from the specula of the instrument, will both appear nearly of the same shade or degree of brightness; and this will seldom be so intense as to require any foreign or coloured glass to be interposed between the eye and the image.

5. "In making observations with this instrument, whether for the purpose of adjusting the glasses, or for any other purpose, where great accuracy is required, it is necessary that the point on the index-speculum from which the first reflection is made, that on the horizon-glass from which the second reflection is made, and the eye-hole through which the image is viewed, be all in a plane, parallel to the plane of the instrument. This will be effected by wrapping a piece of tape, or the like, round the index speculum, leaving only a bare strip, of about a quarter of an inch broad, parallel to the plane of the instrument, and at the same height above it as the eye-hole, and transparent part of the horizon-glass.

6. "The eye-hole is generally made too small. In measuring angles on land, as in the practice of surveying (for which purpose this instrument is much preferable to any other in common use), in taking altitudes at sea, in measuring the angular distance of the sun and moon, but especially of the moon and a star, the eye has generally need of all the light that can be admitted from the object seen by direct vision.—The eye-hole, therefore, should, I think, be nearly as large as the ordinary size of the pupil of the eye; nor is any inaccuracy, in this case, to be apprehended from the line of vision not being parallel to the plane of the instrument; the eye being capable of placing itself, with great exactness, opposite the centre of the eye-hole.

"The same objection and remedy are applicable to the slits in the sight-vanes, of the common surveying instruments.

7. "Mr. Maskelyne, and others, recommend the sun itself as the best object by which to adjust the fore-horizon-glass.—There is however considerable difficulty attending this mode of adjustment.—The sun is too bright to be viewed directly without a piece of coloured glass interposed between it and the eye; and even if the eye-piece be furnished with such an appendage (which in the common octant is seldom the case), still the two images will be of very different shades; and either the one seen by direct vision will be too bright, or that seen by reflection will be too faint, for an accurate observa-

tion of their coincidence or contact.—This difficulty may, however, be obviated in the following manner:

"Every octant is furnished with at least two coloured glasses, of different shades:—take the darkest of these out of its frame, and with a thread fasten it on *behind* the horizon-glass, and turn down the other, between this and the index-speculum: the two images of the sun will thus be generally of the same shade, or nearly so, and the adjustment may then be made with the utmost ease and safety to the eye. Or, which is perhaps better, place your eye behind the fore-horizon-glass, and, looking through this towards the centre of the index-speculum, hold the instrument in such a position as that the line of vision may be directed to any point in the heavens, &c. at the angular distance of 90 degrees from the sun; and then, the index being placed at 0, two images of the sun will appear, both by a single reflection, one from the index-speculum, and the other from the back-part of the fore-horizon-glass; and by bringing these images into coincidence or contact, as when you look directly at the sun, the adjustment may be made, or the index-error found, with great ease and exactness. If the images of the sun should be too bright for the eye, one of the coloured glasses belonging to the instrument may be held before the eye. The two images of the sun, thus viewed, will appear nearly of the same shade, since the one, from the index-speculum, which would otherwise appear the brightest, will lose part of its light by passing through the horizon-glass.

"After all, I am of opinion, that this adjustment may be made with equal accuracy, and much more ease, by any well-defined object on land, as the edge of a chimney, the roof of a house, or the like, at a sufficient distance.

"Any one may satisfy himself that this is the case, by repeatedly measuring the error of adjustment in the common way, viz. by moving the index till he produces an apparent coincidence between the object seen directly, and by reflection. If a chimney, or the like, be the object viewed, he will scarce ever find any of these errors to differ from the mean error more than *one minute*; and the difference of such errors, when the sun is used, will not be less, but generally greater.

"If the distance between the index-speculum and the line of direct vision (viz. a line joining the eye-hole and horizon-glass) should not exceed three inches, which it seldom does, then the parallax of the instrument will not amount to a quarter of a minute, and may therefore be safely neglected; provided the object viewed be at the distance of two-thirds of a mile. If a suitable object, at such a distance, cannot be readily found, then you may take one at any given distance, and compute the parallax to be allowed for that distance, thus—multiply the constant number 95 (the nat. tang. of $1'$ to rad. $\frac{1}{2}$) by the distance, in inches, of the centre of the index-speculum above the line of direct vision, and dividing the product by the distance of the object in yards, the quotient will be the parallax of the instrument, or correction of adjustment, for that distance in minutes. For example, if the height of the index-speculum above the line of vision be three inches, and the distance of the object 150 yards:

$$\frac{95 \times 3}{150} = 1.9 \text{ will be the error of adjustment. If,}$$

therefore, you place the index so much behind the 0, on the limb of the instrument, and then adjusting the horizon glass by an object at the above distance, the adjustment will be true for an object considered as at an infinite distance.

"From the above rule it is obvious, that much exactness in measuring or estimating the distance of the object you adjust it by is not necessary, provided that distance be not

very small; for, in the above example, an error in the distance even of ten yards would have produced an error of no more than about $\frac{1}{10}$ of a minute in computing the parallax of the instrument.

8. " In measuring angles by this instrument, when the object seen by direct vision is at no great distance, the parallax of the instrument must be taken into consideration. In such cases it is commonly recommended previously to adjust the horizon-glass by that object; but this, in the back-observation, would be attended with very great difficulty;—it will therefore be best always to keep the back-horizon-glass at the same adjustment, and make the necessary correction, as above directed, for the distance of the object."

QUADRELLA, a town of Naples, in Terra di Lavoro, 20 miles N.E. of Naples.

QUAKENBRUGGE, or **QUAKENBURG**, a town of Westphalia, in the bishopric of Osnaburg, seated on the Hase, 22 miles W. of Osnaburg. Long. 8. 20. E. Lat. 52. 46. N.

QUARTEN, a town of Switzerland, near the lake Walenstadt, five miles E. of Glarus.

QUEAUX, a town of France, in the department of Vienne, 21 miles S.E. of Poitiers. Long. 0. 40. E. Lat. 46. 25. N.

QUENESTADT, a town of Lower Saxony, in the principality of Halberstadt, five miles N.E. of Halberstadt.

QUÉICH, a river of Germany, which passes by Landau, and runs into the Rhine, near Germerheim.

QUENTIN, St. a strong town of France, in the department of Aisne, with a considerable manufacture of lawns and cambrics. Near this place, in 1557, Philip II. of Spain, gained a signal victory over the French, and afterwards took the town by storm. In memory of this, he built the Escorial. The town was restored to France in 1559. It is seated on an eminence, on the river Somme, 21 miles S. of Cambrai, and 83 N. by E. of Paris. Long. 3. 29. E. Lat. 49. 50. N.

QUERFURT, a town of Upper Saxony, capital of a principality of the same name, subject to the Prince of Saxe-Weissenfels. It is 12 miles S.E. of Mansfeldt. Long. 12. 20. E. Lat. 51. 27. N.

QUERGUENECY, an island of the Mediterranean, on the coast of Tripoli. It has a fort and several villages.

QUESNOY, a town of France, in the department of the North, with an old castle. It was taken by the allies in 1711, and retaken the same year. In 1793 it was taken by the Austrians, and retaken the next year. It is seated in an extensive plain, on the little river Ronelle, nine miles S.E. of Valenciennes, and 122 N.E. of Paris. Long. 3. 40. E. Lat. 50. 15. N.

QUIBERON, a peninsula of France, in the department of Morbihan, to the N. of Belleisle. It has a village of the same name, and a fort, on the bay of Quiberon. In July 1795 it was taken by some French regiments in the pay of Great Britain; but owing to the desertion and treachery of some of the soldiers, the republicans retook it by surprise soon afterwards.

QUICARO, an island in the North Pacific Ocean, near the coast of Veragua, in New Spain, about 20 miles long and six broad. Long. 82. 30. W. Lat. 7. 25. N.

QUILLAN, a town of France, in the department of Aude, 11 miles S. of Limoux, and 21 S. of Carcassone. Long. 2. 10. E. Lat. 42. 52. N.

QUILLEBOEUF, a town of France, in the department of Lower Seine, seated on the Seine, eight miles S.W. of Caudebec, and 22 W. of Rouen.

QUILLOTA, a town, and jurisdiction, of Chili. Long. 35. 41. W. Lat. 32. 45. S.

QUILMANCI, a town on the coast of Zanguebar, in the kingdom of Melinda. It is situate at the mouth of a river of the same name, and belongs to the Portuguese. Long. 39. 40. E. Lat. 33. 30. S.

QUILOA, a sea-port on the coast of Zanguebar, with a small citadel. It is tributary to the Portuguese; and is seated in a fertile country, 300 miles N. of Mosambique. Long. 39. 9. E. Lat. 9. 30. S.

QUILON, or **COYLON**, a Dutch factory, on the coast of Malabar, in Travancore, 14 miles N.N.W. of Anjengo. It was taken by the English in 1795. Long. 76. 32. E. Lat. 9. 2. N.

QUIMPER, a town of France, in the department of Finistère, with a bishop's see; seated at the confluence of the Oder and Benaudet, 30 miles S.E. of Brest, and 332 W. by S. of Paris. Long. 4. 2. W. Lat. 47. 58. N.

QUIMPERLAY, a town of France, in the department of Finistère, seated on the Ilotte, seven miles from the sea, and 20. E. by S. of Quimper. Long. 3. 33. E. Lat. 47. 52. N.

QUINGEY, a town of France, in the department of Doubs, seated on the Louve, 12 miles S.W. of Besançon. Long. 6. 5. E. Lat. 47. 5. N.

QUIN-NONG, or **CHIN-CHIN**, a bay on the east coast of the kingdom of Ciampa, much frequented by the vessels of the country, being an excellent harbour. The entrance is very narrow, and ships of burthen can only get in at high water. Long. 109. 15. E. Lat. 13. 52. N.

QUIREÛ, a town of France, in the department of Rhone and Loire, seated on an eminence, near the river Rhone, 12 miles S. of Lyons. Long. 4. 55. E. Lat. 45. 35. N.

QUIRIMBA, the name of several islands on the coast of Zanguebar. They are all fertile in fruits and pastures.

QUIRPON, an island in the North Atlantic Ocean, near the north coast of Newfoundland. Long. 55. 22. W. Lat. 51. 40. N.

QUISAMA, a maritime province of the kingdom of Angola, lying along the river Coanza. It is a mountainous country, and very little cultivated, but the Portuguese get abundance of salt there.

QUITEOA, a town of Morocco, in the province of Drafe, with a castle. Long. 5. 0. W. Lat. 28. 6. N.

QUISTELLO, a town of Italy, in the duchy of Mantua, seated on the Seccia, three miles from its confluence with the Po. It is famous for an action between the French and Austrians in 1733, when Marshal Broglie was surprised in his bed. It is 15 miles S.E. of Mantua. Long 11. 1. E. Lat. 45. 0. N.

QUITO, an audience of Peru, lying between two chains of the high mountains called the Andes. Several districts of this country are occupied almost entirely by Indians; and the city of Quito alone contains between 50 and 60,000 of all the different races. This is the only province in Spanish America that can be called a manufacturing country.

QUIXOS, a province of Peru, in the audience of Quito.

QUIZAMA, a province in the south part of the kingdom of Angola. It is full of mountains, and badly cultivated, but produces honey, wax, and salt. The inhabitants are warlike, and have not submitted to the Portuguese.

QUIZINA, a chain of mountains in the kingdom of Fez, 100 miles in length, extending from the desert of Gret to the river Nocr.

QUOJA, a kingdom on the coast of Guinea, which reaches from Sierra Leone to the Grain Coast.

R.

RAAJEGUR, a town of Hindoostan Proper, in the province of Malwa, 74 miles N.E. of Ougein, and 214 S.S.W. of Agra. Long. 76. 56. E. Lat. 24. 2. N.

RABASTEINS, a town of France, in the department of Tarn, with a decayed castle, seated on the Tarn, 18 miles W. by S. of Alby. Long. 1. 52. E. Lat. 43. 46. N.

RACHORE, or **ADONI-RACHORE**, a city of the peninsula of Hindoostan, capital of a district of the same name, subject to the nizâm of the Deccan. It is seated on the south bank of the Kistna, near its confluence with the Tungabadra, 315 miles N. by . of Seringapatam. Long. 78. 15. E. Lat. 16. 30. N.

RACKERSBURG, a strong town of Austria, in Stiria, with a castle on a mountain. It is seated on an island, formed by the Muehr, 22 miles S.E. of Gratz, and 100 S. of Vienna. Long. 15. 58. E. Lat. 46. 54. N.

RACLIA, a small uninhabited island of the Archipelago, near that of Nio.

RADEBERG, a town of Upper Saxony, in the margravate of Meissen, 10 miles N.E. of Dresden. Long. 13. 56. E. Lat. 51. 5. N.

RADICOFANI, a town of Tuscany, seated on a mountain, and defended by a citadel on an adjacent hill, 56 miles S.E. of Sienna. Long. 11. 40. E. Lat. 42. 42. N.

RADIMPOUR, or **RADUNPOUR**, a town of Hindoostan Proper, in the provinces of Agimere, situate on the Puddar, 175 miles N. of Surat, and 250 S.W. of Agimere. Long. 71. 48. E. Lat. 23. 58. N.

RADMENDORF, a town of Germany, in Carniola, near the source of the river Save, 16 miles West of Crainburg.

RADOM, a town of Little Poland, in the palatinate of Sandomir, capital of a county of the same name. It is seated on a brook that falls into the Vistula, 30 miles N. of Sandomir, and 50 S. of Warsaw. Long. 21. 1. E. Lat. 51. 25. N.

RAGIVOLO, a town of Italy, in the Mantuan, seated between Mantua and Reggio, 42 miles from each.

RAGNITZ, a town of Prussian Lithuania, with a very ancient castle, situate on the Niemen, 56 miles E.N.E. of Königsberg. Long. 21. 30. E. Lat. 55. 30. N.

RAGOOGUR, a town of Hindoostan Proper, in the province of Malwa, 116 miles NE of Oudein, and 256 S. of Delhi. Long. 77. 30. E. Lat. 24. 23. N.

RAGUSEN, or **RAGUSIAN DALMATIA**, a territory of Dalmatia, lying along the coast of the gulf of Venice, about 55 miles in length, and 20 in breadth. It is a republic, under the protection of the Turks and Venetians, to each of whom it pays an annual tribute. Ragusa is the capital.

RAHNIS, or **RANIS**, a town of Upper Saxony, in the circle of Neustadt, 54 miles S.S.W. of Leipsic. Long. 11. 30. E. Lat. 50. 33. N.

RAJAMUNDRY, the capital of one of the Northern Circars, in the peninsula of Hindoostan, 150 miles S.W. of Cicacole. Long. 81. 57. E. Lat. 17. 10. N.

RAJAPOUR, a town of the Deccan of Hindoostan, in

the Concan, seated on a river of the same name, 50 miles N. of Goa. Long. 73. 56. E. Lat. 16. 19. N.

RAJEMAI, a town of Hindoostan Proper, in Bengal, formerly a place of great trade, but now in a ruinous state. It is seated on the west bank of the Ganges, 190 miles N. by W. of Calcutta.

RAIN, a town of Austria, in Stiria, capital of a county of the same name, with a castle. It is seated on the Save, 68 miles S. of Gratz. Long. 15. 32. E. Lat. 46. 20. N.

RAIN LAKE, or **LONG LAKE**, a lake of North America, lying to the east of the Lake of the Woods, with which it communicates by a river, and to the west of the Lake Superior. It is nearly 100 miles long, but in no part more than 20 wide.

RAKESBURG, or **RAKELSPURG**, a town of Austria, in Stiria, which has a considerable trade with Hungary and Croatia. It is situate on an island in the river Muehr, 36 miles S.E. of Gratz, and 90 S. of Vienna. Long. 16. 10. E. Lat. 46. 45. N.

RAKKA, a town of Turkey in Asia, in Diarbek, seated on the Euphrates. It has a castle going to decay, and is an indifferent place; but old Rakka, whose ruins are near it, was a magnificent city. It is 100 miles S.W. of Diarbekar. Long. 38. 55. E. Lat. 36. 1. N.

RAKONITZ, a town of Bohemia, capital of a circle of the same name. It is seated on a river, which falls into the Miza, 30 miles W. of Prague. Long. 14. 5. E. Lat. 52. 4. N.

RAMA, an ancient town of Palestine, now called Ramula by the Turks. The streets are narrow, and the houses contemptible; but there are many fine ruins of Christian churches and other buildings, which shew what it has been formerly. It is 20 miles W. by N. of Jerusalem. Long. 34. 55. E. Lat. 32. 0. N.

RAMADA, a sea-port of New Granada, 100 miles E. of St. Martha. Long. 72. 20. W. Lat. 11. 10. N.

RAMANAD, a town of Hindoostan, in the Carnatic, 54 miles S.W. of Madura, and 88 S. of Tanjore. Long. 78. 56. W. Lat. 9. 20. N.

RAMANANCOR, an island of Asia, lying toward Cape Comorin. It is 23 miles in circumference; is very sandy, and has only a few villages and a temple. Long. 79. 45. E. Lat. 9. 25. N.

RAMBERT-LE-JOUG, St. a town of France, in the department of Ain, seated near a branch of Mont Jura, called le Joug, 18 miles N.W. of Belley. Long. 5. 30. E. Lat. 45. 53. N.

RAMBERVILLIERS, a town of France, in the department of the Vosges, 30 miles S.E. of Nanci. Long. 6. 44. E. Lat. 48. 21. N.

RAMBOUILLET, a town of France, in the department of Seine and Oise. Here was a palace, in which Francis I. died, in 1547, and Lewis XVI. made it a magnificent royal residence; but it was demolished in 1793, by order of the National Convention. It is 27 miles S.W. of Paris.

RAMEHEAD, a promontory of Cornwall, S.W. of

Plymouth, at the entrance of Plymouth Sound. On its summit is a chapel (a sea-mark) belonging to the village of Rame. Long. 4. 20. W. Lat. 50. 18. N.

RAMERA, a town of France, in the department of Aube, seated on the Aube, 18 miles N.E. of Troyes. Long. 4. 30. E. Lat. 48. 32. N.

RAMLA, a town of Palestine, the ancient Arimathea, now in a ruinous state; it is, however, the residence of a Turkish aga, who has about 200 troops under him. Here is a manufacture of soap, which is sent into all parts of Egypt. It is 18 miles N.W. of Jerusalem. Long. 35. 15. E. Lat. 32. 8. N.

RAMMEKENS, a sea-port of the isle of Walcheren, in the Dutch province of Zealand. It was one of the towns put into the hands of the English, as a security for a loan in the reign of Queen Elizabeth. It is four miles S. of Middelburg. Long. 3. 40. E. Lat. 51. 29. N.

RAMMELSBURG, a lofty, steep, and extensive mountain of Germany, in that part of the Hartz Forest which lies within the principality of Grubenhagen. On this mountain are twelve silver mines; and at the foot of it is seated the city of Goslar.

RAMPANO, a town of Turkey in Europe, in the Morea. Long. 20. 17. E. Lat. 36. 54. N.

RANDERAT, a town of Westphalia, in the duchy of Juliers, 10 miles N.W. of Juliers. Long. 6. 30. E. Lat. 51. 5. N.

RANDERSON, or RANDERS, an ancient town of Denmark, in North Jutland, seated near the mouth of the Gude, 25 miles E. of Wiburg. Long. 10. 35. E. Lat. 56. 20. N.

RANNOCH, LOCH, a lake in the north part of Perthshire, 11 miles in length. It receives the waters of Loch Erich, from the north, and communicates with Loch Tummel on the east, and Loch Lidoon on the west. On its south side is an ancient forest of birch and pine.

RANTAMPOUR, a fortress of Hindoostan Proper, in the east quarter of Agimere. It is very celebrated in the Indian histories, and is 120 miles from Agra.

RANTZOW, a town of Lower Saxony, in the duchy of Holstein, 24 miles N. of Lubec. Long. 10. 42. E. Lat. 54. 16. N.

RAOLCONDA, a town of the Decan of Hindoostan, in Golconda, near which is a rich diamond mine. It is 270 miles S.W. of Hyderabad. Long. 76. 40. E. Lat. 14. 30. N.

RAON, L'ETAPE, a town of France, in the department of Meurthe, seated at the foot of Vosges, at the confluence of the Etape and Marte, 30 miles S.E. of Nanci. Long. 6. 47. E. Lat. 48. 26. N.

RAPALLO, a town of Italy, in the territory of Genoa, seated on a gulf of the same name, 20 miles E. of Genoa. Long. 9. 11. E. Lat. 44. 26. N.

RAPÉ (*Encycl.*). The oil which these seeds yield by expression is employed for various useful purposes in domestic life, and particularly for burning in lamps; but, as it is apt to become rancid, M. Thénard has published the following practical method of purifying it. He directs one-half or two parts of concentrated sulphuric acid to be added to 100 parts of oil, and the whole to be perfectly incorporated by agitation: the fluid immediately becomes turbid, assuming a dark green cast; and, in the course of three quarters of an hour, the colouring particles begin to collect in lumps. The agitation must now cease; and double the weight of oil of vitriol, diluted with pure water, should be added;—in order to mingle these different ingredients, the stirring ought to be renewed for the space of half an hour; after which the whole may be left to settle for seven

or eight days. At the end of that time, the oil will be found on the surface; on being gently drawn off, and filtered through cotton or wool, it will be almost entirely divested of colour, smell, and taste; so that it will burn clear, without any interruption. The refuse of rape, after expressing the oil, is known by the name of rape-cake, the economical uses of which are various.

RAPHOE, a town of Ireland, in the county of Donegal, with a bishop's see. The cathedral serves as a parish church. It is eleven miles S.W. of Londonderry, and 2 N.E. of Donegal.

RAPOLLA, a town of Naples, in Basilicata, with a bishop's see, 36 miles W. of Bari, and 70 E. of Naples. Long. 15. 51. E. Lat. 40. 56. N.

RAPPAHANNOCK, a river of Virginia, which rises in the mountains, called the Blue Ridge, and running E.S.E. falls into the Chesapeake, in lat. 35. 30. N.

RARITAN, a river of New Jersey, which, passing by Brunswick and Amboy, enters Arthur Kill Sound, and helps to form the fine harbour of Amboy.

RASEBORG, a sea-port of Sweden, capital of a canton in Nyland. It is seated on the gulf of Finland, 37 miles S.E. of Abo. Long. 23. 18. E. Lat. 60. 16. N.

RASEN. See MARKET RASEN, *Supp.*

RASOCALMO, a cape on the north coast of Sicily, near a town of the same name, W. of Cape Faro, and N. of Messina.

RASTADT, a town of Bayaria, in the archbishopric of Saltzburg, seated on the Ens, 48 miles E. by S. of Saltzburg. Long. 14. 10. E. Lat. 47. 31. N.

RAT (*Encycl.*). Besides the remedies already mentioned, there are many other contrivances for exterminating rats: and, as the subject is of considerable importance to every house-keeper, we shall subjoin an account of some other means, which have been found remarkably successful.

Mr. Charles Taylor, secretary to the Society for the Encouragement of Arts, &c. directs one or two table-spoonfuls of dry oatmeal to be uniformly, but thinly, spread on a tile or plate, in order that the quantity taken away may be more easily ascertained. The rats, if not interrupted, will regularly feed there; and they must be supplied for two or three successive days with fresh meal, when three drops of oil of aniseed are to be mixed with a double portion of oatmeal; and the composition deposited at the usual place, for a similar period of time. On the fourth day, one half only of the usual quantity must be given of the scented preparation, and on the succeeding night, the following mixture must be placed at the hole:—Let four ounces of dry oatmeal, perfumed with six drops of the oil of aniseed, be thoroughly incorporated with half an ounce of carbonated barytes (aerated heavy spar of Derbyshire), which has been previously pulverized, and sifted through fine cambric or muslin. This compound must be spread on the tile or slate, and exposed as usual; all the doors, or other communications, being shut for the space of twenty-four hours, that the vermin may eat it undisturbed by any cats, dogs, or other animals; and also to prevent the possibility of any accident happening to the latter. In the course of a few hours, after the rats have eaten the composition, they will be seen frequently to reel about, as if they were intoxicated, or paralytic; though, at length, they return to their haunts and perish. Mr. Taylor observes that, as they are very cunning, the mixture ought to be left for forty-eight hours, in case a small portion only be eaten; after which time the remainder should be burnt.

Mr. Funke, in his valuable Natural History, calculated for German schools, communicates the following curious

method of expelling, or rather dispersing, rats from dwelling-houses:—Take one or more of these predatory creatures caught alive in a trap, and immerse them to the neck in a mixture consisting of equal quantities of tar and train oil; thus anointed, set the animals at liberty. The offensive smell of this preparation compels them to traverse all the holes of their companions with the most distressing anxiety; in consequence of which they collectively disappear.—Another expedient practised in Germany, is that of confining a live rat in a cage, and feeding it exclusively with living mice or rats. Having been for some time accustomed to such food, the captive animal is, after a short fasting, suffered to return to its former habitation, where it is said to persecute, and indiscriminately devour its own species.

RATENAU, a town of Germany, in the middle marche of Brandenburg, seated on the Havel, 15 miles N.W. of Brandenburg. Long. 13. 49. E. Lat. 52. 46. N.

RATENBURG, a town of Germany, in the Tyrol, with a castle, seated on the river Inn, 15 miles S. by W. of Kufstein. Long. 12. 5 E. Lat. 47. 30. N.

RATINGEN, or **RATTINGEN**, a town of Westphalia, in the duchy of Berg; four miles N.E. of Dusseldorf. Long. 6. 53. E. Lat. 51. 16. N.

RATTENBERG, a town of Germany, in the Tyrol, with a citadel, situate on the Inn, 26 miles E.N.E. of Innspruck, and 44 S.W. of Saltzburg.

RATZIA, or **RASCIA**, the eastern division of Slavonia, subject to the house of Austria. It takes its name from the river Rascia, which falls into the Morave; and its inhabitants are called Rascians.

RAVELLO, a sea-port of Naples, in the Principato Citeriore, with a bishop's see. It has magnificent palaces and fine houses, and is 10 miles W. of Salerno, and 25 S.E. of Naples. Long. 14. 41. E. Lat. 40. 36. N.

RAVENSTEIN, a town of Dutch-Brabant, capital of a county of the same name, with an ancient and strong castle. It belongs to the elector palatinate, but has a Dutch garrison. It is seated on the Maese, 10 miles S.W. of Nimeguen. Long. 5. 35. E. Lat. 51. 46. N.

RAVITZ, a town of Poland, in the palatinate of Posenia, with a considerable manufacture of cloth, 24 miles S. of Posen.

RAUSCHENBERG, a town of Germany, in the principality of Hesse, four miles N. of Marburg, and 32 S.S.W. of Cassel. Long. 8. 46. E. Lat. 50. 32. N.

RAWA, a town of Poland, capital of a palatinate of the same name, 56 miles S.W. of Warsaw.

RAWEE, a river of Hindoostan Proper, one of the five E. branches of the Indus, into which river it falls, about 20 miles W. of Moultan, after having received the united waters of the Chelum and Chunaub. The Rawee is the Hydrates of Alexander.

RAYNAL (Abbé), whose baptismal names were William Thomas, was one of the society of Jesuits, for their extensive learning no less universally known than for the happy talents which its superiors possessed, of assigning to each member his proper employment. Raynal, however, after having acquired among them a taste for literature and science, had probably become refractory, for he was expelled from the order; and the cause of his expulsion, according to the Abbé Barnuel, was his impiety, though our author himself assures us, that he did not utter his atrocious declarations against Christianity till he had ceased to be a member of the order of Jesuits. He then associated himself with Voltaire, D'Alembert, and Diderot, and was by them employed to furnish the theological articles for the *Encyclopédie*. But though his religious opi-

ons were certainly lax, and his moral principles very exceptionable, he could not, even then be what, in a Protestant country, would be deemed a man remarkable for impiety; for he employed the Abbé Yvon, whom M. Barnuel calls an odd metaphysician, but an inoffensive and upright man, to write the articles which he was engaged to furnish. In the conducting of this transaction, he shewed, indeed, that he possessed not a proper sense of honour; for he paid poor Yvon with twenty-five louis d'ors for writing theological articles, for which he received himself six times that sum. This trick was discovered, Raynal was disgraced, and compelled to pay up the balance to Abbé Yvon; but though he had thus shewn himself to be without honour, it is difficult to believe that he had yet proceeded so far as to blaspheme Christ, since he had employed a Christian divine to supply his place in the *Encyclopédie*.

His first work of eminence, and that indeed upon which his fame is chiefly built, is his Political and Philosophical History of the European Settlements in the East and West Indies. That this history is written in an animated style, and that it contains many just reflections, both political and philosophical, is known to all Europe; for it has been translated into every European language. Its beauties, however, are deformed by many sentiments that are irreligious, and by some that are impure. It was followed, we think in 1780, by a small tract, entitled *The Revolution of America*; in which the author pleads the cause of the revolted colonists with a degree of zeal, censures the conduct of the British government with a keenness of asperity, and displays a knowledge of the principles and intrigues of the different factions which at that period divided the English nation, that surely was not natural to the impartial pen of a philosophic foreigner. Hence he has been supposed to have been incited to the undertaking, and to have been furnished with part of his materials, by that desperate faction which uniformly opposed the measures of Lord North, and secretly fomented the rebellion in America. Be this as it may, he propagated, both in this tract and in his history, a number of licentious opinions respecting government and religion, of which he lived to regret the consequences.

A prosecution was instituted against him by the French government on account of his History of the East and West Indies; but it was conducted with so little severity, that he had sufficient time to retire to the dominions of the King of Prussia; who afforded him the protection he solicited, although his majesty's character was treated by the author in his book with no great degree of veneration. Raynal also experienced the kindness of the Empress of Russia: and it is not a little remarkable of this singular personage, that, although he was always severe in discussing the characters of princes, yet the most despotie among these heaped upon him many marks of favour and generosity.

The great trait of Raynal's character was a love of liberty, which, in his earlier writings, he did not properly define; but when he lived to see some of the consequences of this, in the progress of the French Revolution, he made one glorious effort to retrieve his errors. In the month of May, 1791, he addressed to the constituent assembly one of the most eloquent, argumentative, and impressive letters that ever was written on any subject; a letter which, if the majority of them had not been intoxicated with their newly acquired consequence, must have given some check to their mad career. He proved very completely, that it was not the business of the assembly to abolish every ancient institution; that the genius of the French people is such, that they never can be happy or prosperous but un-

der a well-regulated monarchical government; and that, if they wished not the nation to fall under the worst kind of despotism—the despotism of a low faction—they must increase the power of the king. “Alas! (says he) what are my sufferings, when in the heart of the capital, in the centre of knowledge, I see this misguided people welcome, with a ferocious joy, the most criminal propositions, smile at the recital of murder, and celebrate their crimes as conquests!” He had then seen comparatively but little; but he lived to see more—to see his countrymen celebrate, as virtues, crimes, compared with which the atrocities of 1790 appear almost harmless. Being stripped of all his property, which was large, by the robbers of the revolution, he died in poverty in March, 1796, and in the 84th year of his age.

Besides the works which we have already mentioned, he wrote a History of the Parliament of England, and a History of the Stadholderate; but these are both of them more remarkable for a species of style and loftiness of invention than for useful observation or solid argument. He wrote likewise The History of the Divorce of Catharine of Arragon by Henry the Eighth, which is not so much a recital of, and commentary upon, the fact from which he takes the title, as it is an able picture of universal Europe at that period, of the views, interests, and power, of all the different potentates. At the time of his death he was preparing a new edition of all his works, in which were to be made many alterations; and he is said to have left among his manuscripts a History of the Revocation of the Edict of Nantes, in four volumes; but it is very certain, that, during the sanguinary reign of Robespierre, he burnt a great part of his papers.

READING, the capital of the county of Berks, in Pennsylvania, seated on the Schuylkill, 46 miles N.W. of Philadelphia. Long. 75. 54. W. Lat. 40. 22. N.

REALMONT, a town of France, in the department of Upper Garonne, 31 miles N.E. of Toulouse. Long. 2. 0. E. Lat. 43. 50. N.

REALVILLE, a town of France, in the department of Lot, eight miles N.E. of Montauban, and 20 S. of Cahors. Long. 1. 24. E. Lat. 44. 7. N.

REBEL, a town of Lower Saxony, in the duchy of Mecklenburg, seated on the lake Muritz, 30 miles S.E. of Gustrów. Long. 12. 36. E. Lat. 53. 32. N.

REBNICK, a populous town of Turkey in Europe, in Walachia, with a bishop's see, seated on the Aluta, 45 miles S.W. of Targowisco.

RECCANATI, a town in Italy, in the marquisate of Ancona, with a bishop's see. It is a trading place, and has a great fair in September, which continues 15 days. The tomb of Pope Gregory VII. is in the cathedral. It is seated on a mountain, near the river Munsone, 14 miles S. of Ancona, and 110 N.E. of Rome. Long. 13. 34. E. Lat. 43. 24. N.

RECEIPTS (*Encycl.*). The following duties have been laid on receipts by the act 31 Geo. III. c. 25.—For every piece, &c. upon which shall be written, &c. any receipt, discharge, or acquittance for money, amounting to 40s. and not amounting to 20l.—two pence.

Amounting to 20l. and not 50l.—four pence.

Amounting to 50l. and upwards—six pence.

And by 35 Geo. III. c. 55. from and after July 5, 1795, if amounting to 100l. and not amounting to 500l. an additional six pence. Total one shilling. If amounting to 500l. or upwards, a further additional duty of one shilling. Total two shillings. To be paid by the person by whom such receipts shall be required; by salaries, pensions, debts, or

other sums payable from the crown, excepted; in which case the duty shall be paid by the person giving such receipts.

The following exemptions from the above duties are allowed.—Nothing in the above acts shall extend to any receipt for any legacy, or share of a personal estate, or to any receipt given by the treasurer of the navy, for money received for the service of the navy; or to the receipt of any agent for money impressed to him on account of the pay of the army or ordnance; or to any receipt by any officer, seaman, or soldier, for wages, pay, or pension, due from the navy, army, or ordnance; nor to any receipt to be given for the consideration of the purchase of any share in any public stock or fund; or in the stocks of the bank, East-India, or South-Sea companies, or for the dividends thereof; nor to any receipt given for money deposited in the banks of England or Scotland, or in the house of any banker; nor to any receipt on the back of any bill of exchange, promissory or other note; nor to any release by deed.

Nor shall this act extend to any receipt to be given upon any bill or note of the bank of England; or to any letter acknowledging the receipt of any bills, notes, or securities for money; or to any receipt for the consideration of money on or in any deed, bond, mortgage, or instrument; nor to any receipt for drawbacks or bounties; nor to any certificates of over-entry of customs.

The following new regulations respecting receipts have been established by the act 35 Geo. III. c. 55.—The full sum, and the true date, shall be inserted; and all notes, memorandums, or writings whatever, whereby any money shall be acknowledged to have been paid, settled, received, accounted for, balanced, discharged, released, or in any manner satisfied, or which shall in any manner signify such acknowledgment, and whether the same shall or shall not be signed, shall be deemed a receipt, and liable to the duties. *f. 5.*

Every receipt, discharge, or acquittance, note, memorandum, or writing, which shall express any general acknowledgment of any debt, claim, account, or demand, being paid, settled, received, accounted for, balanced, discharged, released, or satisfied, or whereby any money shall be acknowledged to be in full, and whether signed or not, shall be deemed a receipt for 500l. and be liable to the duty of two shillings; and no such receipt, &c. shall be available in law or equity for any other money than the sum therein expressed, unless the same shall be stamped with the stamp of two shillings. *f. 6.*

Every note, memorandum, or writing whatever, which shall signify any acknowledgment of any part of any debt, claim, account, or demand, being paid, settled, received, accounted for, balanced, discharged, released, or satisfied, whether signed or not, shall be deemed a receipt, and liable to duty. *f. 7.*

And every person who shall write or sign, or cause to be written or signed, any receipt, discharge, or acquittance, liable to duty, without the same being first duly stamped, or upon which there shall be a stamp of lower denomination than is charged in respect thereof, shall forfeit 10l. if the sum paid shall not amount to 100l.—and 20l. if it amounts to 100l. or upwards. *f. 8.*

And any person who shall give any receipt, discharge, or acquittance, or any note, memorandum, or writing, acknowledging the payment of money, in which a less sum shall be expressed than the sum actually paid, or who shall separate the sum paid into divers sums with intent to evade the duties, or shall, with the like intent, write off any part

of any debt, claim, or demand, or who shall be guilty of or concerned in any fraudulent contrivance whatever with intent to defraud his majesty of any of the duties, shall forfeit 50*l.* *f.* 9.

Receipts on unstamped paper, brought to the stamp-office within 14 days after given, may be stamped on payment of 5*l.* over the duty; and if brought to be stamped after 14 days, and within one calendar month after given, may be stamped on payment of 10*l.* above the duty; and in that case the parties are not to be liable to any of the penalties above mentioned.

One moiety of all penalties shall, if sued for within three months, be to his majesty; and the other, with full costs, to the person who shall inform, &c. and which may be recovered in any of the courts at Westminster, within England; and in the exchequer at Edinburgh, within Scotland.—But one justice may hear and determine any offence which subjects the offender to any pecuniary penalties—and persons aggrieved may appeal to the quarter-sessions.—The justice may mitigate penalties, not less than one moiety besides costs.—Witnesses refusing to attend the justices, &c. to forfeit 40*s.*—and if the penalties are not prosecuted for within the limited time, they are only recoverable by the crown; and if the whole penalty is recovered by the crown, the informer is to be rewarded by the commissioners of stamps, at their discretion—not exceeding one moiety.

RECHLINGHAUSEN, a town of Germany, in the archbishopric of Cologne, capital of a county of the same name, with a strong citadel, and a chapter of noble ladies. It is seated on the Lippe, 20 miles W. of Ham. Long. 8. 36. E. Lat. 51. 27. N.

RECULVER, a village in Kent, the regulium of the Romans, seated near the mouth of the Thames, 12 miles W. of Margate. It is noted for its church, which was anciently collegiate, and has two spires, which serve for a sea-mark, and are called by mariners the Two Sisters.

RED (*Encycl.*). The following observations on dyeing with madder, followed by a simple and invariable process for obtaining, in its greatest beauty and solidity, the colour known by the appellation of *Levant* or *Adrianople* red, by Citizen Haussman, were sent to the editor of the *Annales de Chimie*, by the celebrated Chaptal, who is minister of the interior of the French Republic.

“I have already shewn,” says Citizen Haussman, “in the *Annales de Chimie* and *Journal de Physique*, that metallic earths and oxids possess neither in a greater nor less degree the property of attracting or retaining the colouring parts of vegetable and animal substances; alum and oxid of iron possess it more powerfully than oxid of tin, the power of attraction of the latter, nevertheless, far surpasses that of other metallic earths and oxids, as far as regards the colouring parts of the said substances.

“Alum, as well as metallic oxids, does not retain with the same power of adhesion the colouring parts of all vegetable and animal substances indiscriminately; those of madder adhere more strongly than of other colouring substances, which may be classed in the following order: grains of kermes, cochineal, campeachy wood, yellow India wood, quercitron, fernambuc wood, red India wood, Avignon nuts, &c. gall nuts, sumach, and other astringent, colouring substances act principally by means of the gallic acid, and may, with regard to their degree of solidity, be placed immediately after madder: it is not the same with Prussian acid, which colours different metallic oxids, from which it may be extracted, when cold, by alkaline liq*ues*.

“To judge of the solidity of the colours produced by Vol. X.

vegetable and animal substances, the best method is to make use of a liq*ue* of oxygenated muriate of pot-ash, or of soda with alkaline carbonate. The longer or shorter resistance which the colours make in this liq*ue* will shew what they will do, if acid, alkaline, soapy and other counter-agents are employed.

“In the art of dyeing and manufacture of printed calico, by staining with madder (*garancage*), is understood the process whereby the colouring particles of the madder are transferred by the alum or oxid of iron, and attached to any kind of stuff by means of water assisted by heat.

“The brightness and solidity of colours obtained from madder, depend not only on the management, but likewise on the state of the purity of the water, as well as of the madder. It is therefore absolutely necessary to avoid or to render inactive every acid, alkaline, or saline substance, that may be contained in the water or madder itself. I have shewn that by means of the addition of carbonate of lime (pulverised chalk) you may correct the madder, which I had imagined contained the gallic acid, but which my friend Charles Bertholdi, professor of the central school of the Upper Rhine, afterwards discovered to be sulphuric acid in conjunction with magnesia.

“The important discovery of this addition of chalk, which I made 25 years ago, has given birth to many fabrics, and has brought to perfection all those established near waters which do not carry with them, or retain in a dissolved state, that earthy salt without which it is absolutely impossible to obtain bright and solid colours from madder. This chalk has, since that period, become a new article of commerce, and as its price is very moderate, I have not yet determined the exact proportion to be used; I usually take one part to 4, 5, and 6 parts of madder.

“In order to obtain the colours of madder of a perfect brightness, it is not sufficient to attend to the quality of the water and of the madder; it is likewise of importance to observe the degree of heat of the bath. A low temperature will retard the extraction and attraction of the colouring particles, whilst, on the other hand, if too high, it at the same time promotes the adhesion of the dark particles of the madder, which tarnish and obscure the tints intended to be produced; black only is improved by augmenting the heat. I have invariably observed, that by taking the fire from under the cauldrons, as soon as one can no longer bear to hold one's hand in the liq*ue* they contain, and afterwards suffering the dye to remain two or three hours, one procures the most satisfactory results: for the copper then retains a sufficient heat to keep the liq*ue* at the same temperature, particularly when, according to custom, large cauldrons are used. It would otherwise be extremely difficult to fix a degree of heat, by means of thermometers, with spacious furnaces.

“The dusky particles of madder, as well as of other colouring substances, are probably only parts of the colouring substances themselves combined with oxygen. The produce of this combination, although it acquires a greater degree of solubility, proves, nevertheless, more difficult to be removed in the finishing, if the heat has not been properly attended to in dyeing. I have frequently observed, that madder and other colouring substances, after being long exposed to the atmospheric air, no longer afforded such deep and bright colours as before, either because these substances absorb the oxygen of the atmosphere, or because this essential is supplied by the water which they attract, or naturally contain as a constituting principle, and which is decomposed by a slow and imperceptible fermentation. A piece of cotton or linen cloth dyed red, heightened with madder, and exposed in a field, may con-

from the idea of its changing to a dusky hue; but this deep colour becomes clearer and clearer, after growing dull, and at length assumes a more agreeable crimson tint in the finishing. I have demonstrated in a Memoir on Indigo, inserted in the *Journal de Physique*, of the year 1788, that the nitric acid changes this blue to a yellowish sediment (see *INDIGO, Suppl.*). A similar change takes place in exposing in a field this same sediment attached to any kind of stuff whatever, and the yellow that results from both methods is more soluble in warm water than in the same liquid when cold. It appears, however, that the combination of the oxygen is not the only cause of the changing of the colours, for curtains of any kind of stuff dyed, or coloured in any manner whatever, by vegetable or animal substances and exposed to the daylight, lose their colour entirely, in process of time, on the side exposed to the rays of the sun, whilst the opposite side preserves the same colour for a great length of time. Although, therefore, the sun's rays give more vigour to the animated bodies of the animal and vegetable kingdom, by disengaging from them the oxygen gas, yet they appear to act destructively on the same inanimate bodies, by decomposing their constituting principles. At any rate, it will be the best way to keep the colouring ingredients in dry places and covered up from the light, which probably acts no otherwise on these bodies, than by decomposing the aqueous constituting part, whose two essential principles may transfer themselves to the carbone, to form carbonic acid, and likewise other resinous and oily substances. These conjectures prove, at least, that the action of the sun's rays, or more properly of light, on bodies in general, presents an extensive field for interesting experiments.

"If, in dyeing with madder, we obtain more lively colours by a careful management of the heat, we, at the same time, sacrifice a small portion of the colouring particles of the madder, which cannot be entirely exhausted, except by adding thereto gall-nuts or sumach, and afterwards augmenting the heat to ebullition; but as the colours obtained by this method fade more or less in proportion to the quantity of the madder, of the gall-nuts, or of sumach, it must not be used but with precaution, and principally for common purposes, for calicoes, cotton yarn, or thread. To prevent, as much as possible, the waste of madder, one might, after having finished dyeing the articles of value, and before the common ones are put into the cauldron, add thereto gall-nuts or powder of sumach, with a fresh and small portion of madder; attention must then be paid not to suffer the ebullition to take place till two hours after.

"I have endeavoured, in various trials, to exhaust the madder by simple ebullition, and without any other addition than that of chalk; but it always appeared to me to be attended with injury to all the colours excepting black; I thought that even the effect of the madder was far superior when the heat was managed with moderation, and that accumulated heat easily decomposed the colouring substance. This tendency to decomposition, and particularly by fermentation, if ever so little damped or diluted with water, has hitherto prevented my obtaining from it a substantial colour, sufficiently deep and solid to be applied to any stuff whatever. I have moreover observed, that too great a degree of heat in the first instance, when the dye is intended to be used a second and third time, not only prevented my obtaining lively and agreeable tints, but also the requisite strength. The aqueous vehicle of the madder at too high a temperature never fails to

weaken the power of adhesion of alum and oxid of iron to stuffs, and to take away a portion of them, which, upon examining the bath, is easily discovered by persons accustomed to the business.

"I repeat, that, for common articles and of little value, it is indispensably necessary to use gall-nuts or sumach, in order to save one-half, or even two-thirds, of the madder; but the colours thus obtained are less brilliant and less solid. The addition of chalk must nevertheless not be forgot; without it the gallic acid would carry away a portion of the alum and coloured oxid of iron, the loss of which would weaken and tarnish the tints; it would likewise injure the white that might have been preserved in the stuffs. Without adding gall-nuts or sumach, I consider it impossible totally to exhaust the madder of colouring particles; whence I presume that their adhesion is promoted by the viscid nature of the tanning principle of those astringent substances, which carries away the colouring particles by its combination with them. I must further observe, that gall-nuts, as well as sumach, lose the quality of staining black, and on the contrary acquire the property of staining or colouring alum yellow, and oxid of iron a green olive, with the addition of chalk, whose calcareous basis unites with the gallic acid. Are these yellow and olive-green colours produced by any particular substance contained in the gall-nuts and sumach, or do they originate in the tanning principle? This question remains to be examined.

"The quantity of madder to be used in dyeing ought not only to be proportionate to the extent of surface to be dyed, but also to the concentration of the liquors of *acétie of alum and iron*, improperly denominated mordants: that is to say, to the greater or less quantity of alum or oxid of iron which these saline liquors, either separate or combined, may have left or deposited by the evaporation of the acetic acid, when drying upon the articles to be coloured. If the articles to be dyed are not very numerous, or particularly if most of them are to exhibit only vivid tints, the madder may be applied but once; but the application of madder may be repeated twice and even thrice, when the articles are numerous, and are intended to present deeper tints. Three quarters of a pound of madder of a good quality are sufficient for dyeing a piece of calico of a white ground, six ells in length (three quarters wide), and which is to contain but few coloured objects: the quantity of this colouring substance will increase in proportion to the mass of alum or oxid of iron, expended on a piece of stuff of the same dimensions: it may be augmented to 6, 8, 10, and even 12 pounds for well covered grounds, of a brilliant colour, and of the utmost deepness. Attention and experience in the management of a dyeing establishment will not fail to point out, with sufficient accuracy, the proper proportions.

"Whatever care may have been taken with the madder, to prevent the adhesion of dusky particles, it requires much more, that the colours obtained may possess all the beauty and solidity they can possibly acquire in the finishing, preceded by a very long ebullition in perfectly clear water. This ebullition alone may be made to answer the purposes of finishing by the addition of bran; the reds will assume a more lively hue by using soap, with or without the addition of bran; carbonate of potash or soda substituted for soap will extract the tints from crimson; but I must observe, that to prevent the danger of turning the reds into brown, and in such a manner as never to be able to recover them, they must, by all means, previous to the application of soap or alkali, be exposed to the action of

the most violent heat that can be given to water; the success of this operation will be the more complete by giving very little vent to the aqueous vapours, and by forming, as it were, a digester with the cauldrons employed. The solidity of the colours will be proportionate to the time they have been exposed to the action of the boiling water. It is needless to mention, that the same risk is not incurred of injuring the colours by soap and alkaline carbonates, when the madder, instead of being kept at a moderate heat, has been made to boil, as is customary in many dye-houses; but in this case the colours obtained are more difficult to be finished.

"As water charged with oxygenated muriatic acid destroys the colouring particles of madder, and also of other vegetable and animal substances by decomposing them, and afterwards more concentrated acids can, in their turn, clear away from the surface of stuffs the colourless alum and oxid of iron, I cannot possibly countenance the idea of a chemical combination of colouring particles with alum and metallic oxids, which, being fixed and coloured upon any stuff whatever, make in my opinion only compound aggregates.

"The finishing of impressions with objects in white, requires modifications, which I shall detail at another opportunity, as soon as I shall find leisure: it will therefore now be sufficient to state, that, after having for some time prosecuted the experiments inserted in the *Annales de Chimie* of the year 1792, I discovered a red infinitely more beautiful and solid than the Levant, by fixing alum on cotton yarn or on thread by an alkaline solution of that earth mixed with linseed oil. The following is the process I employed.

"After having made a caustic lye, with one part of good potash of the shops, dissolved in four parts of boiling water and half a part of quick lime, which I afterwards killed, I dissolved one part of pulverised alum in two parts of boiling water, and whilst this solution of sulphate of alum was still quite hot, I, with all possible expedition, to prevent the recrystallisation, kept pouring into it, and stirring at the same time without intermission, the above caustic lye, till the alum it had at first precipitated after the saturation of the sulphuric acid was re-dissolved. I afterwards suffered this solution of alum to stand; it exhaled ammoniac, and as it cooled formed a precipitate of sulphate of potash in very small crystals; after which I mixed with it a 33d part of linseed oil, with which the alkaline solution of alum forms a kind of milk. As the oil by degrees separates from this mixture under the appearance of cream, it ought to be stirred again before it is used; the skains of cotton or thread should successively be dipped in it, pressed equally, and hung to dry on a line in the order in which they were taken out of the mixture: they must be dried under cover from the rain in summer, and in a warmed place in winter, and remain 24 hours; they should then be washed in clear running water, and again dried; then dipped in the alkaline lye, squeezed and dried a second time, in the same manner as before; taking care, however, to recommence the immersion in the lye with those skains which came last out of the oily composition, because the first invariably take away a greater portion of the oil than the latter: it will be advisable also to use the whole of the mixture at once, that it may not have time to attract the carbonic acid with which the lower region of the atmosphere, particularly of work-shops, is always charged; for the alkali in returning to the state of carbonic suffers the alum to precipitate, and loses the property of commixing with oil.

"Two impregnations of the alkaline solution of alum, mixed with linseed oil, are sufficient to obtain a fine red; but, by continuing to impregnate the skains a third and even a fourth time under the same circumstances as the first, colours of the utmost brilliancy will be obtained.

"The deepness of the red intended to be obtained will be proportionate to the quantity of madder employed in dyeing; by taking the same weight of madder as that of the skains, it will produce a red which the finishing will turn to a roseate tint; on the contrary, you will obtain a more or less lively carmine by using two, three, and even four parts of madder, never forgetting the addition of chalk, if the water employed containeth none; four parts of this colouring substance will produce a red of such beauty and brilliancy, that it could never be brought into circulation in commerce, on account of its high price. By diluting the alkaline solution of oily alum with two or three parts of water, and impregnating the skains twice, thrice, and even four times in the manner mentioned above, bright tints will be produced without using much madder; but they will not be so deep as those produced by means of the same solution concentrated, and as small a quantity of madder.

"The best manner of procuring clear and lively tints at the same time would be to expose, for a sufficient length of time, deep-and-finished reds to the action of the lye of oxygenated muriate of potash or of soda, with the addition of alkaline carbonate to procure such a degree of colour as might be required; but it may easily be conceived that this method would be the most expensive.

"To have the alkaline solution of oily alum always as nearly as possible in the same state of concentration, it will be necessary to use an aerometer, to determine the degree of strength of the caustic lye, before it is employed in the process of the solution of alum. This caustic lye may, at first, be made of the best potash that can be procured in the shops, and the degree it may give to the aerometer should be noticed, that, if afterwards one were obliged to use potash of inferior quality, one might by evaporation bring the lye obtained therefrom to the degree fixed.

"The caustic lye, made with four parts of good potash of the shops [or perhaps soda], cannot contain much extraneous salt. In making a great quantity, and after having poured off the limpid part, it will be necessary to shake the vessel twice every day for some time, in order to be able to pour off the rest of the alkaline liquor; and, that no part of what remains in the vessel may be lost, it should be diluted with fresh water, which may afterwards be used for dipping the cotton, which, before it is subjected to the dye, should be purified and cleaned; which may be done by lie, soap, or simply boiling it in water, and afterwards rinsing and drying it. As squeezing with the hands might derange the filaments of the skains of cotton yarn and thread, and consequently weaken the thread, it will be advisable, in operations on a large scale, to squeeze them by means of a press.

"As to the thread, intended to be dyed a deep, beautiful, and solid red, it should be previously well bleached, and impregnated at least four times successively with the alkaline solution of oily alum; not only because alum and metallic oxids adhere less readily to thread than to cotton, but likewise because these mineral substances, after being coloured, more easily quit thread than cotton in the finishing. It still remains to be examined, whether, between each impregnation of the alkaline solution of oily alum, the cotton yarn or thread requires to be left a longer or shorter time before being rinsed and dried.

"All gross oils may be used for this mixture with proper precaution, but linseed oil mixes best, and remains longest suspended in the alkaline solution of alum; but I never tried fish oil; perhaps it might be preferable. Perhaps, likewise, in processes on a large scale, it might be advisable to diminish the quantity of linseed oil in the mixture with the alkaline solution of alum; for I have frequently had occasion to observe, that too much oil was injurious to the attraction of the colouring parts of the madder: a 33d part of linseed oil always produced the best effect in my experiments on a small scale.

"As to the process of dyeing thread or cotton yarn sufficiently charged with alum by the oily alkaline solution of that earth, the skains must first be cleared from every saline substance, and likewise from superfluous oil, by rinsing them for a considerable time in clear running water; after this they must be arranged, without drying, in a machine that it will be necessary for every one to adapt to the form of the cauldron wherein it is to be placed, so that during the operation of dyeing the skains may be continually moved and turned about, in order to imbibe equally and throughout, the colouring particles. The bath must be composed of madder mixed with a sixth part of pulverized chalk, diluted with about 80 or 40 parts of water. The heat must not be carried beyond such a point that a person might hold his hand in the bath, for an hour, without scalding; and it should be kept at that degree two hours longer, either by taking away the fire, if the furnace preserve sufficient heat, or by supplying it with a little fuel from time to time. Three hours' dyeing are sufficient to exhaust the madder: upon leaving the bath, the skains should be washed in plenty of water to clear them; they must then be submitted to the action of the finishing, which consists in boiling them a long time in water containing a quantity of bran tied in a bag, and adding thereto soap and alkaline carbonate, to give the red a roseate or crimson hue.

"As I never had occasion to dye cotton yarn or thread upon a large scale, I performed the process in a small copper, which served me at the same time for finishing: with regard to the last operation, I confined myself to boiling the skains, after well arranging them, in water, containing a small bagful of bran, for eight hours successively; and, in order not to interrupt the ebullition, I replaced the part evaporated with fresh boiling water. In this finishing I used neither soap nor alkali, and, notwithstanding, I obtained a red surpassing in beauty and solidity that of the Levant, and capable in every respect of standing a comparison with the best dyes of France, or Paul Remy and Son's, of Lausanne.

"For dyeing my red, I used three parts of the best madder to one part in weight of the dry cotton yarn.

"With the precaution I took to obtain an equal colour, I could dye at once; but I would advise this operation to be always performed at twice, taking, each time, half the quantity of madder and chalk, if one cannot continually keep turning the skains in the cauldron; it may likewise serve for finishing, by adapting to it a cover, leaving but a confined passage for the vapours, which one should endeavour to condense as much as possible, because it would be expensive to replace the evaporated part with fresh boiling water. Perhaps, in working upon a larger scale, and by concentrating the heat in cauldrons shut almost close, there might be no necessity to employ eight hours of ebullition to finish and give solidity to the colours. I have every reason to believe, that it was the finishing of Levant red that gave birth to the idea of bleaching with

vapours; it might have been observed, that, in finishing, colours lose considerably in deepness; perhaps, at the same time, it may have been seen, that the pieces of packthread, used to arrange the skains, were bleached in finishing, and particularly by the addition of alkalis.

"A very great variety of colours, and of different tints, may be procured by adhering to the same process as I have detailed for obtaining beautiful and solid reds. For this purpose, the alkaline solution of oily alum must only be made use of, when such a tint of oxid of iron, or indigo blue, has been given as may be thought proper; but, whatever colour or tint may be intended to be given previous to fixing the alum on the skains of cotton, yarn, or of thread, these skains ought always to be first thoroughly boiled and cleansed, the power of adhesion of the sediment of indigo, as well as that of oxid of iron, and likewise of coloured alum, being augmented by the colouring particles of the madder, if they are submitted to the action of the heat of boiling water, before they are impregnated with the alkaline solution of oily alum. The manner of dyeing all kinds of blue tints with indigo being already well known, it is not worth while to detail it; and as to producing a yellow rust colour, which is done with very little expense, it depends only on soaking the skains thoroughly in a solution of sulphate of iron, on pressing them equally, and immersing them afterwards in a caustic lye of potash, which will precipitate and fix the oxid of iron of a disagreeable colour, but which will uniformly assume a yellow tint like rust, by attracting and saturating itself with the oxygen of the atmospheric air: this yellow will be more or less deep, in proportion to the greater or less quantity of iron contained in the solution; one may likewise give more brilliancy, and even more equality, to yellow rust-colour, by soaking the skains a second time in the ferruginous solution, and immersing them in the caustic lye. Care must be taken not to use soda for this operation, as it generally contains sulphur which turns black the oxid of iron by mineralizing it.

"Skains coloured blue and yellow rust-colour, treated with the alkaline solution of oily alum, will procure, with the madder, purple colours, violet, lilac, &c. &c. It may easily be imagined, that if, instead of madder, the same skains prepared for dyeing with madder are coloured with kermes, cochineal, f. rambuc, campeachy wood, Santa Martha wood, woad, yellow wood, Avignon nuts, &c. &c. a vast variety of tints will be obtained: these tints may even be multiplied to infinity, by mixing the colouring ingredients of one, with the other, in various proportions.

The affinity of adhesion of the colouring parts of all these ingredients, varies also in this particular, that the tints produced by a yellow or olive green dye, are changed or totally metamorphosed by a second tincture of madder, kermes, cochineal, or fernambuc; and will furnish orange tints, capuchin, carmelite, brass, &c. &c. As the previous preparation of the skains by the alkaline solution of oily alum, may be too expensive for some of these colours, the process which I detailed in the *Annales de Chimie* of the year 1792, page 250, 17, 18, and 19, may be substituted in its stead, which consists in treating the skains alternately with soap and sulphate of alum, whose excess of acid has been saturated, either with carbonate of alkali or of lime: this process is very expeditious; the skains may be prepared and dyed, on the same day, particularly in summer, red, as well as any other colours, which, for the most part, may be subjected to ebullition; and the operation of finishing with bran, for a quarter of an hour, half an hour, and some even for a whole hour. It must still be observ-

ed, that it is only the colours of madder, whose bases of alum and oxid of iron have been fixed upon stuffs, by means of an alkaline oily solution, that can acquire perfect solidity by the action of the heat of boiling water; and that the solidity is far inferior in all those colours of madder whose earthy and ferruginous bases have been transferred to the stuffs by acid dissolvents.

"Alum, plentifully fixed on cotton or linen stuff, by means of one of the most concentrated alkaline solutions, very readily attracts the colouring particles in dyeing with madder. The effect is not the same, if the same earth is transferred to it by means of the most concentrated acetic solution of alum; it is absolutely impossible to complete dyeing at one single time, even if one were to be so lavish of madder as to take infinitely more than would be required to obtain a satisfactory result, from repeating the process three or four times*. This singularity will give occasion for new and interesting experiments; my observations prove, mean while, that dyeing with madder in general requires to be managed with the most scrupulous attention."

REDHEAD, a promontory in Angushire, on the German Ocean, lying S. of Montrose. Here are the ruins of a castle, almost surrounded by the sea. Till the year 1793, this cape was the point beyond which coal was not permitted to pass without paying a heavy duty, which was taken off by a commutation duty on spirits.

REDON, a town of France, in the department of Isle and Vilaine. It serves as a mart for the commerce of Rennes, and is seated on the Vilaine, 20 miles E. of Vannes, 225 E. by S. of Paris. Long. 2. 10. W. Lat. 37. 48. N. REDONDELLA, a commercial town of Spain, in Galicia, with a castle. It was pillaged by the English in 1702. There is a fishery for anchovies on the coast. It is seated at the bottom of a bay of the Atlantic, eight miles S. of Ponte Vedra. Long. 8. 15. W. Lat. 42. 18. N.

REDONDO, a town of Portugal, in Beira, with a castle. It has a manufacture of cloth, and is seated at the mouth of the Mondego, 17 miles S.W. of Coimbra. Long. 8. 34. W. Lat. 40. 4. N.

REES, a strong town of Germany, in the duchy of Cleves, seated on the Rhine, 10 miles S.E. of Cleves, and 10 N.W. of Wesel. Long. 6. 4. E. Lat. 51. 40. N.

REFINING (*Encycl.*). The following is extracted from the specification of a Patent granted to Mr. Wakefield, of Northwich, in Cheshire, for a new method of refining sugar. It is dated June 2, 1801.

"Pressure is to be applied to the sugar intended to be refined, which may be done by weight, or by rollers, or by the screw or wedge, with the help of a steam-engine, or any engine, mill, or power capable of acting, by way of pressure, with great force. The sugar so to be refined is to be placed in such a situation as to be conveniently acted upon by the pressure to be applied, and is to be contained or inclosed in a cloth, felt, vessel, or covering, either having pores or holes therein, or otherwise so constructed that moisture may be discharged from the sugar through, or out of, the cloth, vessel, or covering; and to such sugar, previously containing moisture in it, or having moisture added or given to the substance thereof, or by such moisture being communicated to the inclosing cloth, felt, or vessel, or other covering, the pressure is to be applied forcibly, so as to make the moisture, or a part thereof, pass from the sugar, and out of, or through, the said covering. And thus a part of the colouring matter, and of the

impurities of the sugar, will be expelled; and the degree of refinement procured will be proportioned to the quantity of pressure applied, and the quantity of moisture expelled or squeezed out of the sugar. From the moisture or substance thus forced out, there may be extracted some sugar, melasses, and rum, or other spirits, by the usual processes. And every sort of sugar, from the lowest to the highest degree in quality and value, will be very much accelerated in the refinement thereof, in several stages of the progress towards refinement, by pressure applied in the manner above described; the pressure being used as often as the workman shall think fit, according to the previous quality and state of the sugar, and the nature of the operations that are to follow."

REFORM, a building or receptacle in the vicinity of London, opened by the PHILANTHROPIC SOCIETY, for the reception of criminal poor children, and for the protection and maintenance of the innocent offspring of persons who have been executed or transported.

"The great object of the society (say the committee in their *address to the public*), which has now been instituted upwards of twelve years, is to unite the purposes of charity with those of industry and police; and thereby, while it affords relief to a description of persons of all others the most to be pitied, to make it the interest of every individual to contribute to the support and extension of this institution.

"Among the calamities to which the children of indigent parents are exposed, the want of moral and religious instruction, with early habits of industry, is the most to be lamented; such wretched objects are not only subjected to the temptations attendant upon poverty, but are without the disposition and ability to gain an honest livelihood. When to these circumstances are added the baneful example of parents, whose crimes have subjected them to banishment, or an ignominious death, the condition of such children is truly deplorable, and demands the benevolence of the Christian, the interference of the statesman, and the exertions of the patriot.

"There are no reflecting minds, or feeling hearts, but must have frequently lamented the fatal depravity which pervades the lower classes of the people, especially in the more populous part of this kingdom; and there are few who have not, at one time or other, trembled for their own safety in consequence of this depravity.

"With the increase of crimes our penal laws have multiplied; but while it is obvious that to prevent crimes is better than to punish them; and while every humane person must view with the deepest compassion and regret the numbers that are annually swept away by banishment, or consigned to an ignominious death, it is worthy of observation, that previous to this institution, the proper remedy for these disorders had not been adverted to, nor any plan of *preventive police* so much as projected.

"No nation has been more distinguished than Great Britain, for its various and excellent charities.—The truth, however, is, that most of our charitable institutions have confined their beneficence to the deserving, but unfortunate part of the community; whilst the offspring of the vicious and dishonest have been unhappily involved in the guilt of their parents. Those who have violated the laws in any instance have been excluded from society, or at least have been treated with extreme severity when received again within its protection; and before this institution, no asylum

* The concentrated acetic solution of oxid of iron is attended with nearly the same difficulties.

was ever opened for the repenting culprit, where the wanderer might be recalled from the error of his way, not by harsh and cruel treatment, but by gentleness and kindness; where he might prove the excellence and benefits of virtue, and contemplate her no longer under an austere and threatening aspect; where, by his own industry, he might contribute to his own subsistence, and be no longer under the necessity of stealing for bread*. It is the peculiar characteristic of this Society, to continue its care and attention till its objects have attained to such a mature age, as to be able to think and act for themselves, and have acquired such habits as will probably ensure their future good conduct through life.

"It is a well-known fact, that of the multitudes who fall victims to the violated laws of their country, the majority are trained and educated by experienced thieves, in a course of dishonesty, and are as regularly brought up to this way of life, as other persons are to common trades and professions. Hence their dexterity and adroitness in all the departments of this dangerous system; hence their union with each other, which renders their attempts so much the more formidable; which frequently eludes the pursuit of justice, and even intimidates those who see the wrong publicly committed.

"To break the chain of these pernicious confederacies, and to cut off all their supplies, is the intention of the Philanthropic Society, which aims at the prevention of crimes, by removing out of the way of evil counsel and example, those children, whose destruction, without their assistance, would be inevitable.

"In order to carry into effect these desirable purposes, the doors of the Reform have been thrown open for the reception of the infant offspring of convicted felons; for although such children may not have begun as yet the criminal practices of their profligate parents, yet it is to be feared, the pernicious sentiments and principles imbibed from those parents, and their wretched connections, will operate so forcibly on their youthful minds, as to render them more open to temptation than the children of parents of an opposite description.

"Another class still more wretched, and the next object of this institution, are those who have already commenced their criminal course by the commission of petty thefts or fraudulent practices, and, in consequence of detection, have been brought before a magistrate and discharged for want of legal evidence to produce conviction, although no doubt remained of their actual guilt; also those who have been tried and convicted; but by reason of their tender years, or some other mitigating circumstances, are recommended by the judges of assize, or other magistrates, before whom such trial took place. Such recommendations are particularly attended to by the committee."

For the employment of the children the REFORM has been erected with suitable workshops, &c. in St. George's Fields, London. There, under the direction of the several master workmen, are carried on the trades of a Printer, Copper-plate Printer, Book-binder, Shoemaker, Taylor, Ropemaker and Twine-spinner; to one or other of which the boys are apprenticed, carefully instructed, and excited to industry by rewards that bear a proportion to their exertions. The girls are educated as menial servants, and have otherwise abundant employment in washting the linen, making their own clothing, shirts for the boys, &c. Several

of them have been placed out in service, and, upon producing testimonials of their good behaviour, have received the rewards which the committee have thought it right to hold out for their encouragement. A steward resides upon the spot to keep the accounts, distribute the provisions, &c. and the whole is under the care of a superintendent, also resident on the spot, who sees that the master tradesmen do their duty, and that the children conduct themselves properly in every respect.

The important task of inculcating religion and morals is assigned to the society's chaplain; and the children are supplied with such books as are likely to promote those salutary ends.

The whole number of children of both sexes that have been received by the society amount to 464, and the number now in the Reform (1802) is 165. Among these were many who, though young in years, were yet old in iniquity. There are amongst them boys who have been guilty of felonies, burglaries, and other crimes: yet, singular as it may appear, these very children are now become no less remarkable for their industry, decency, and obedience, than they formerly were for the opposite vices.

In order to extend its benefits to a still greater number of objects than the funds will enable them to maintain within the Reform, the committee endeavour to obtain masters out of the Reform, for those boys that have become entitled to good characters, by paying an annual sum with each for the two or three first years of their apprenticeship; and propose to distribute rewards to such of those boys who behave well, either at the end of their several apprenticeships, or at any intermediate periods, when they appear to merit them.

It is impossible not to feel interested in behalf of this very superior public charity, which does more than provide for the temporal wants of the objects under its protection. We heartily wish it perpetuity and extension.

REGEN, a town of Bavaria, on a river of the same name, 12 miles N.E. of Deckendorf, and 40 E. of Ratisbon. Long. 13. 2. E. Lat. 48. 50. N.

REGENSTEIN, a town of Lower Saxony, in the bishopric of Halberstadt, six miles S. Halberstadt, and seven W. of Quedlingburg. Long. 0. 41. E. Lat. 51. 26. N.

REGGIO, an ancient city of Italy, in a duchy of the same name, with a citadel, and a bishop's see. It has been ruined several times by the Goths and other nations. In the cathedral are paintings by the greatest masters; and in the square is the statue of Brennus, chief of the Gauls. The inhabitants are about 22,000, who carry on a great trade in silk. It was taken by Prince Eugene in 1706, and by the King of Sardinia in 1742. It is situated in a fertile country, 15 miles N.W. of Modena, and 80 S.E. of Milan. Long. 11. 5. E. Lat. 44. 43. N.

REGINA, a town of Naples, in Calabria Citeriore, 14 miles N. of Cozenza. Long. 16. 21. E. Lat. 39. 34. N.

REGNANO, a town of Italy, in the patrimony of St. Peter, seated near the Tiber, 17 miles N. of Rome. Long. 12. 36. E. Lat. 42. 11. N.

REICHENAU, an island of Suabia, in the Zeller See, or lower lake of Constance. It is three miles long and one broad; contains about 1600 inhabitants, all catholics; three parishes, and a rich abbey, of which the Bishop of Constance is abbot. In this convent was interred Charles le Gros, who was emperor; and king of France, but was

* These unfortunate children are frequently forced on desperate courses; with blasted reputations, with dangerous connections, and coming from suspicious places, what private family will open a door to receive them?

deposed in 887, and died in extreme want and misery. This island is three miles W. of Constance, and belongs to the bishop of that place.

REICHENAU, a town of Switzerland, in the country of the Grisons, seated in a rich and fertile valley, at the conflux of the two branches that form the Rhine. Here are two curious bridges. One of these is thrown across the lower branch of the Rhine, and is 105 feet in length. The other, built across the Rhine, below the point of union, is a wooden one, of a single arch, the span of which is 220 feet. Reichenau is seven miles S.W. of Coire.

REICHENBACH, a river of Switzerland, which has its source at the foot of Mount Wetterhorn, and rolls its numerous cataracts down the steep sides of Mount Scheidec, till it unites with the Aar, near Meyringen. It conveys into the Aar the gold dust that is found in the bed of that river.

REICHENFELLS, a town of Germany, in the duchy of Carinthia, 24 miles N.E. of Clagenfurt, and 24 E. of Muhrau. Long. 14. 4. E. Lat. 47. 9. N.

REICHENHALL, a town of Upper Bavaria, on the Sala, with a rich salt spring, nine miles S.W. of Salzburg, and 64 S.W. of Munich. Long. 13. 2. E. Lat. 47. 28. n.

REICHENSTEIN, a town of Silesia, famous for the silver mines in its neighbourhood. It is 12 miles W. of Grotzkaw.

REICHSHOFEN, a town of France, in the department of Lower Rhine, with a castle, in the neighbourhood of Haguenau.

REID (Thomas) a distinguished moral and metaphysical writer, was the son of the Rev. Lewis Reid, minister of the parish of Strachan, in the county of Kincardine, North Britain. He was born at the parsonage house of Strachan in April 1710, and received the rudiments of his education at the parish school of Kincardine-oniel; and was removed from thence to the Marischal College, Aberdeen, when not more than twelve years of age.

After the usual course of four years employed in the study of Latin, Greek, Mathematics, and Philosophy, he probably took his degree of M. A. which at that period, and for a long time subsequent to it, was the universal practice in the university of Aberdeen, and then commenced the study of theology. In due time he was licensed to preach the gospel according to the forms of the church of Scotland; but continued to reside for some years in Aberdeen, cultivating his favourite science, mathematics.

The mathematical chair in the Marischal College was then filled by Mr John Stuart, a man of great eminence in his profession; but who, like many other profound mathematicians, was not happy in his mode of communicating science, at least to the duller part of his pupils. Mr. Reid occasionally read lectures for the professor, and became very popular with his fellow pupils. He could not however spend his life in the study of mathematics, and in reading barren lectures for other men. He had been educated for the church; and it was in the church only that he had the prospect of gaining a livelihood. He was accordingly presented, we know not in what year, to the church of *New Machar* in Aberdeenshire, at a time when the good people of Scotland were very far from being reconciled to the rights of patronage; and the consequence was, that his settlement met with much popular opposition. Even a little riot took place in the church at his ordination; but he soon gained the affections of his flock by his good sense, his acknowledged worth, and his unwearied attention to all their wants, which he was ever ready to relieve to the utmost extent of his abilities. So deeply rooted indeed was their

regard for him at last, that though it is now almost half a century since his relation to the parish of *New Machar* ceased, his memory continues to be revered in that parish even at the present day.

In the year 1751, about the beginning of the session or annual term, one of the professors of philosophy in King's College, Aberdeen, died; and the late Dr. John Gregory, then professor of medicine, with the Rev. Dr. Macleod, the present sub-principal of King's College, were deputed to visit Mr. Reid, and to request his immediate acceptance of the vacant professorship. He yielded to the request, not without some hesitation, and was admitted professor of philosophy on the 22d of November.

He was now in the very situation for which Nature seemed to have intended him. He had not only an opportunity, but it was his duty to cultivate the science to which his attachment was so strong; and the duties of his office made him turn his attention more closely than he had hitherto done to another science, in which he was destined to make a more conspicuous figure than he ever made even in his favourite mathematics.

It was during his professorship in the university of Aberdeen that he wrote his *Essay on Quantity*, which was published in the 45th volume of the *Philosophical Transactions*, and is perhaps the finest specimen of metaphysical mathematics, if we may use such an expression, that is extant in our own or in any other language. It was during the same period that he published his *Enquiry into the Human Mind on the Principles of Common Sense*; a work of unquestionable merit, which has contributed more than any other work whatever to give a rational turn to metaphysical speculations. It was about this period that the degree of D.D. was conferred upon him by his mother-college,

The well-earned fame of Dr. Reid attracted the attention of the University of Glasgow to him as the fittest person to succeed the celebrated Dr. Adam Smith; and he was admitted professor of moral philosophy in that university on the 11th of June, 1764. There his attention was not distracted by a multitude of sciences, which it was his duty to teach; and he had leisure to improve his metaphysical system, though he continued through life to amuse himself occasionally with mathematical speculations.

In the year 1773 appeared, in Lord Kames's *Sketches of the History of Man*, A brief Account of Aristotle's Logic; with remarks by Dr. Reid. It would seem that he had entered upon this task rather reluctantly, and merely in compliance with the solicitations of his friend, the author of the *Sketches*.

But when it is known that the late Dr. Doig of Stirling, to whom Greek was as familiar as his mother tongue, and an equally learned doctor of Oxford, who has been reading Aristotle ever since he was fourteen years of age, agreed in opinion, that a more accurate view of his logic could not be given in the same compass than had been given by Dr. Reid, we may surely affirm, with some degree of confidence, that this small work adds much to the fame of its author.

Though Dr. Reid's health continued good, and his mental faculties unimpaired, till a very short time before his death, he ceased for some years to read lectures from his professorial chair, employing that time in preparations for eternity, and in fitting his lectures for the press. These were published in two volumes 4to: the first in 1785, under the title of *Essays on the Intellectual Powers of Man*, dedicated to his friends Dr. Gregory and Professor Stewart, both of the University of Edinburgh; and the second in

1788, under the title of *Essays on the Active Powers of Man*, without any dedication or preface. He continued to enjoy the fame acquired by this work, as well as the affection of his friends, and the reverence of the public for eight years, dying at Glasgow in the end of September, or the beginning of October, 1796, in the 87th year of his age. He had been married, and he left behind him one daughter.

To do justice to the biography of such a man as this, we should here attempt to draw his intellectual character, and to appreciate the merits of his works; but to perform this task in a manner at all worthy of him, or we hope of ourselves, would require more room than our limits permit us to allot to any article of the kind; and our readers will be pleased to learn, that they may confidently expect an account of his life, with a critique on his works, by a man better qualified to do justice to both, than the writer of this short sketch pretends to be. His works are in the hands of the speculative public; and by that public will be duly valued, as long as sound sense shall be preferred to impious jargon. How long that may be, God only knows; but if any thing can guard the minds of our youth against that sophistry of which the object is to attribute real agency to material fluids, and to represent the elective attractions of chemistry as perfectly similar to human volitions, it will be the unbiassed study of Dr. Reid's *Essays on the Intellectual and Active Powers of Man*. They will there find metaphysics divested of mystery, and the profoundest speculations rendered intelligible by the constant use of words in one determined sense.

Candour however obliges us to acknowledge, that he has advanced some doctrines which we cannot admit as true. Though not in general partial to Locke, he has adopted his notions respecting our power of abstraction, with hardly any other variation than the substituting of the term *conceptions* for Locke's favourite phrase *ideas*. He has likewise endeavoured to prove, that we may distinctly conceive what cannot possibly exist. These mistakes, however, for such they appear to us, are infinitely more than counterbalanced by his clear, accurate, and satisfactory disquisitions on our notions of *active power*. Had Dr. Reid never written a sentence but the essay which treats of this delicate and important subject, he would have been entitled to a place in the very first rank of useful metaphysicians; for, previous to the appearance of his works, we had nothing written directly on *power*, but contradictory and unintelligible jargon. We recommend the serious perusal of this essay, the first in his second volume, to such of our readers as fancy that they distinctly conceive the powers of chemical agents, and that intelligence and volition may result from mechanical organization, or any combination whatever of matter and motion.

REIFFERSCHIED, a town of Germany, capital of a county of the same name, in the archbishopric of Cologne. It is 32 miles S. W. of Cologne, and 42 W. of Coblenz. Long. 6. 50. E. Lat. 50. 20. N.

REISENBURG, a town of Prussia, in the province of Oberland, anciently the residence of the bishops of Pomerania. Near it is an ancient castle. It is 73 miles S. W. of Königsburg. Long. 20. 5. E. Lat. 53. 52. N.

REMIREMONT, a town of France, in the department of the Vosges. It had lately a chapter of canonesses, who were obliged to prove their nobility, and whose abbess was a princess of the empire. It is seated on the Moselle, at the foot of Mount Vosges, 42 miles S. by E. of Nancy. Long. 6. 47. E. Lat. 48. 3. N.

REMY, St. a town of France, in the department of

the Mouths of the Rhone. A triumphal arch, and a mausoleum, in the neighbourhood, display the taste of the Augustan age: the first is not entire; but the second is in the best state of preservation. St. Remy is 10 miles N. E. of Arles.

RENDSEBURG, a town of Lower Saxony, in the duchy of Holstein, with a castle. It is seated in an island formed by the river Eyder, 12 miles S. E. of Sleswick. Long. 10. 6. E. Lat. 54. 30. N.

RENNEBON, a town of Germany, in the bishopric of Strasburg, 10 miles E. of Strasburg.

RENTI, a town of France, in the department of the Straits of Calais, seated on the River Aa, 12 miles S. W. of Aire, and 50 N. W. of Arras. Long. 2. 20. E. Lat. 50. 36. N.

REOLE, a town of France, in the département of Gironde, seated on the Garonne, 20 miles S. E. of Bourdeaux. Long. 0. 4. W. Lat. 44. 30. N.

REPAILLE, a town of Savoy, in Chablais, seated on a river which falls into the lake of Geneva, and famous for the retreat of Amadeus, duke of Savoy, in 1440, where he went to enjoy the pleasures of a country life. Here is a Carthusian monastery, remarkable for its extensive prospects. It is three miles from Thonon, and 20 N. E. of Geneva. Long. 6. 21. E. Lat. 46. 26. N.

REPEHAM, a town in Norfolk, with a market on Saturday. It has two churches in one church-yard, and is seated in a valley, 15 miles N. W. of Norwich, and 109 N. E. of London. Long. 1. 7. E. Lat. 52. 50. N.

REPOSITORY, a building or apartment destined to receive any collection of curious or valuable articles either for inspection or sale. Thus the collection of models and new inventions at Woolwich (lately destroyed by fire) was called "The Repository." The same appellation is also given to a charitable institution at Bath, where a *Repository for the Benefit of the Poor* has been opened, and is thus described by Mrs. Bernard in the Reports of the Society for bettering the Condition of the Poor.

Towards the end of the year 1796, a Repository was opened at Bath by several ladies, for the reception of works of industry and ingenuity, to be sold for the benefit of the poor. It is supported by subscription, and is conducted by a committee of ladies chosen from among the subscribers; of whom one attends the sale every day from twelve to three, and three or four meet on Saturday, to look over the books, and to pay the poor people. During the two first years articles were sold for the benefit of 200 poor persons, and the receipts amounted to 1133*l.* 11*s.* 4*d.* The last year's receipt was 700*l.*

There are at present sixty-three poor women, who regularly bring their work, and come every Saturday to be paid for such part as is sold; many of them are widows with large families, and some very infirm; particularly one poor woman, who employs herself in making stay-laces, and is paralytic; so much so, as to be unable even to lift her head from the pillow. Her work is remarkably neat, and well done; and she not only earns some addition to her means of subsistence, but relieves herself from the weariness of many painful hours. The articles sold consist of sets of childbed linen for the poor, shifts, shirts, stockings, gloves, garters, laces, purses, rugs, and the like. These are chiefly the work of the poor; besides which there are all kinds of fancy works, contributed by the ladies, and sold for the benefit of particular poor persons, whose names are written on each article, and who attend to receive the money; it being a rule that the poor object, for whose benefit any charitable person may wish to em-

ploy her ingenuity, should be the bearer of the work, his or her name being ticketed upon it by the donor, and should in person receive the money.

The plan is similar to that adopted in London; the substance of its regulations being the same, except where it has been deemed expedient to omit any part, or vary the form of them, from local circumstances, or the relative situation of the two cities. With it is connected a very useful charity, for lending out childbed linen to the poor. The School of Industry at Bath also receives assistance from it, by its affording a vent for the work of the children.

A charity box is placed at the door of the apartment; into which, to prevent the inconvenience that might arise from idle visits of curiosity, sixpence is requested to be put by those who do not purchase any thing.

The object of this institution (to use the words of its conductors) is "the encouragement of industry, in all descriptions of persons reduced to distress; by affording them a ready sale for the articles which are admitted into the Repository, at the price fixed by the owners; the value whereof is paid to them, without any deduction, as soon as they are sold.

This charity is very beneficial; not only in the means of acceptable employment which it offers to the poor, but in the useful occupation that it affords to the rich; converting caprice and fashion into sources of relief, and making the amusements of the idle and the young, contributory to charity and benevolence. Amid the pleasures and dissipation of Bath, it must be no small satisfaction to those parents whose health obliges their families to be occasionally resident there, that a place of amusement of this kind should be opened for their children, and that it should be powerfully recommended by fashion:—a place, where they may, at an early age, be instructed to employ the means, and enjoy the gratification, of being useful to the poor, and of soothing and relieving their distresses. For it must occur to them, before it can be suggested, that habits of this kind, when, at an early and teachable age, they are acquired and enjoyed, will remain through life a blessing, and an ornament, to the possessor.

Particular circumstances, in Bath and London, may make this charity peculiarly proper and commendable; but there is no country town in England, where the rich may not derive pleasure, the poor receive benefit, and society in general be improved, by the imitation of this example.

REPPEN, a town of Upper Saxony, in the new marche of Brandenburg, 16 miles S.S.E. of Custrin. Long. 14. 28. E. Lat. 52. 30. N.

REQUENA, a town of Spain, in New Castile, with a castle. It was taken by the English in 1706, and retaken by the French the next year. It is seated on the Oliana, 40 miles W. of Valencia, and 130 E. by S. of Madrid. Long. 0. 40. W. Lat. 39. 24. N.

REQUESTS, COURT OF (*Encycl.*). By the act called the *London Small Debt Act*, 39 and 40 Geo. III. c. 104. so much of the former acts relating to the Court of Requests within London, viz. 3 Jac. I. c. 15. and 14 Geo. II. c. 10. as restrains the jurisdiction of that court to debts not exceeding 40s. is repealed.

And it is enacted, that it shall be lawful for any person, whether residing within the city of London or elsewhere, and who may have any debt, not exceeding 5l. owing to him from any person residing within the city of London, and the liberties thereof, or keeping any house, warehouse, shop, shed, stall, or stand, or seeking a livelihood, or trad-

ing or dealing within the same city or liberties, to cause such debtor to be summoned before the commissioners of the said Court of Requests, who may order and direct payment, either in one sum, or by instalments at stated periods, and no certiorari is to be allowed to remove the proceedings.

Debts due by persons under age for necessities may be recovered; and servants under age may recover wages: also attorneys are subject to the processes of the court.

But the act does not extend to any debt arising upon title of freehold or leasehold, or to any debt by speciality, which shall not be for payment of a sum certain; nor to any debt concerning testaments, or matrimony, or any ecclesiastical matter, although the same shall not exceed 5l.

And if any action be commenced in any other court than the said Court of Requests, for any debt not exceeding 5l. and the plaintiff obtain a verdict, he shall not be entitled to costs; and if the verdict be given for the defendant, and the judge shall certify that the debt ought to have been sued for in the Court of Requests, he shall have double costs.

But this is not to restrain persons from recovering rents by distress or action, though the rent does not exceed 5l.

And debtors may plead the statute of limitations.

Debtors committed in execution are to remain in custody as follows, and for no longer time, viz: when the debt does not exceed 20s. (exclusive of costs) twenty days; 40s. forty days; 3l. sixty days; 5l. one hundred days.

RESHT, a town of Persia, capital of Ghilan, seated on the S.W. coast of the Caspian Sea, 110 miles N. of Casbin. Long. 52. 16. E. Lat. 37. 18. N.

RETHÉL, an ancient town of France, in the department of the Ardennes, seated on a mountain, near the river Aisne, 20 miles N.E. of Rheims, and 108 N.E. of Paris. Long. 4. 26. E. Lat. 49. 30. N.

RETIMO, a sea-port of Candia, with a bishop's see, and a citadel, where the bashaw resides. It was taken in 1647, by the Turks, who have kept it ever since. The silk, wool, honey, wax, laudanum, and oil, are preferred to all others. It is seated on the N. coast of the island, 45 miles from Candia. Long. 24. 45. E. Lat. 35. 22. N.

REVEL, a town of France, in the department of Upper Garonne, nine miles N. of St. Papoul. Long. 2. 10. E. Lat. 43. 26. N.

REVEL, a government of Russia. See ESTHONIA.

REVELLO, a town of Piedmont, in the marquisate of Saluzzo, near the Po, on the top of a very high mountain, strongly fortified by nature and art. It is three miles N.W. of Saluzzo.

REVERO, a strong town of Italy, in the Mantuan, seated on the Po, opposite Ostiglia, 10 miles N.E. of Mirandola, and 20 S.E. of Mantua. Long. 1. 9. E. Lat. 44. 58. N.

REUS, a town of Spain, in Catalonia. It has a considerable trade in wine, brandy, and nuts, which are carted down to Salo, an open but safe road, five miles off. About 20,000 pipes of brandy are annually exported. It is seated in the middle of a most fruitful plain, 35 miles N.E. of Tortola, and 60 W.S.W. of Barcelona.

REUSS, a river of Switzerland, which rises in the lake of Locendo, between the mountains of Petina and Locendro, flows through the lake of Lucern, and the town of that name, and adjoining the Aar, falls into the Rhine, below Zurzach.

REUX, a fortified town of the Netherlands, in Austrian Hainaut, eight miles N.E. of Mons.

REWAH, a town of Hindoostan Proper, in the province of Allahabad, 57 miles S.S.W. of Allahabad. Long. 81. 36. E. Lat. 24. 35. N.

REYNA, an ancient town of Spain, in Andalusia, seated in a plain, with a castle, built upon an eminence, three miles from Lerna, and in a territory abounding in wine and cattle.

REZAN, a government of Russia, formerly a province of the government of Moscow. It is fertile in corn, and populous; and had anciently its own princes.

RHE, an island on the W. coast of France, in the department of Lower Charente. It is four leagues long and two broad, and very populous. Its products are bitter wine, abundance of salt, excellent brandy, and the liquor called aniseed. It is defended by four forts, and is eight miles W. of Rochelle. St. Martin is the capital.

RHEDA, a town of Westphalia, in the county of Linggen 10 miles N. of Lipstadt. Long. 7. 22. E. Lat. 51. 47. N.

RHEINAU, a town of Switzerland, in Thurgau, with an abbey, on an island formed by the Rhine, between Schaffhausen and Eglisau.

RHEINBACH, a town of Germany, in the electorate of Cologne, 19 miles S. of Cologne, and 53 E. of Liege. Long. 6. 9. E. Lat. 51. 39. N.

RHEINFELDEN, a strong town of Suabia, the best of the four forest-towns, belonging to the house of Austria. It has been often taken and retaken, and is seated on the Rhine, over which is a bridge of several arches, eight miles E. of Basle. Long. 7. 46. E. Lat. 47. 36. N.

RHEINHAUSEN, a town of Germany, in the bishopric of Spire, situate on the Rhine, three miles S.E. of Spire. **RHEINMAGEN**, or **REMAGEN**, a town of Westphalia, situate near the Rhine, 19 miles N.N.W. of Coblenz. Long. 6. 30. E. Lat. 50. 38. N.

RHEINABERN, a town of Germany, in the bishopric of Spire, with a castle, 15 miles S. of Spire.

RHEINTHAL, a fertile valley of Switzerland, lying along the Rhine, which divides it from a territory of Austria, till it reaches the lake of Constance. It belongs to the eight ancient cantons, and to that of Appenzel. The Protestant inhabitants are the most numerous.

RHEINWALD, a large valley in the country of the Grisons; so called from the Hinder Rhine, which takes its rise on Mount Vogelsberg, at the distance of 12 miles, and runs through the valley. Splügen is the capital.

RHENEN, a city of the United Provinces, in Utrecht, seated on the Leck, 20 miles S.E. of Utrecht. It was taken by the French in 1672, and 1795. Long. 5. 22. E. Lat. 51. 59. N.

RHINE, LOWER, a department of France, containing the late province of Lower Alsace. Strasburg is the capital.

RHINE, UPPER, a department of France, containing the late province of Upper Alsace. Colmar is the capital.

RHINE, PALATINATE OF THE, an electorate of Germany, in the circle of the Lower Rhine; bounded on the N. by the archbishoprics of Mentz and Treves, on the E. by Franconia and Suabia, and on the W. and S. by France. It is 100 miles in length, and 70 in breadth, and the principal rivers are the Rhine and Neckar. It has suffered more by the wars with France, than all the provinces of Germany put together; for, in the last century, Lewis XIV. ordered the whole country to be laid waste by fire and sword. Heidelberg is the principal town, but Mannheim is the electorate residence. This electorate is also called the Lower Palatinate, to distinguish it from the Upper Palatinate of Bavaria.

RHODE ISLAND, one of the United-States of Ame-

rica, bounded on the N. and E. by Massachusetts, on the S. by the Atlantic, and on the W. by Connecticut. These limits comprehend what has been called Rhode Island and Providence Plantations. It contains five counties, and 29 townships. It is as healthful as any part of North America, and is principally a country for pasture. Providence and Newport are the chief towns.

RHODE ISLAND, an island of North America, in a state of the same name. It is 13 miles long and four broad, and divided into three townships. This island is a noted resort of invalids from the southern climates, being exceedingly pleasant and healthful, and is called with propriety the Eden of America.

RHONE, MOUTHS OF THE, a department of France, containing part of the late province of Provence. Aix is the capital.

RHONE AND LOIRE, a department of France, including the late provinces of Forez and Lyonnais. The capital is Lyons.

RHYNDS, or **RINNS OF GALOWAY**, the W. division of Wigtownshire, almost cut off from the other parts of the country by Loch Ryan and the bay of Luce.

RIALEXA, a town of New Spain, in Nicaragua, seated on a small river, five miles from the Pacific Ocean, where there is a good harbour. The air is unwholesome, on account of the morasses. It is 60 miles W. of Leon de Nicaragua. Long. 89. 10. W. Lat. 12. 25. N.

RIBADEO, a sea-port of Spain, in Galicia, situate at the mouth of the Eo, with a good harbour, defended by two castles. It is 15 miles N.E. of Mondnedo. Long. 7. 2. W. Lat. 43. 30. N.

RIBAS, a town of Spain, in New Castile, on the river Xarama, eight miles from Madrid.

RIBEIRA GRANDE, a town of St. Jago, the principal of the Cape de Verd Islands, with a good harbour. It is seated between two high mountains. Long. 23. 24. W. Lat. 15. 0. N.

RIBEMONT, a town of France, in the department of Aisne, seated on an eminence, near the river Oise, 10 miles W. by S. of St. Quentin. Long. 3. 21. E. Lat. 49. 48. N.

RIBERAC, a town of France, in the department of Dordogne, 17 miles E. of Perigueux, and 27 S.E. of Angoulesme. Long. 1. 5. E. Lat. 45. 15. N.

RIBNIC, a town of Turkey in Europe, in Walachia, with a bishop's see, 44 miles S. of Hermanstadt, and 130 E.S.E. of Temeswar. Long. 23. 40. E. Lat. 45. 19. N.

RIBNITZ, a town of Lower Saxony, in the duchy of Mecklenburg, with a nunnery for noble women. It is seated on a bay of the Baltic, 12 miles N. of Rostock. Long. 12. 55. E. Lat. 54. 10. N.

RICE (*Encycl.*). The following account of some experiments in cultivating rice in Britain, by Sir Joseph Banks, bart. were communicated in a letter to the President of the Board of Agriculture, dated April 15, 1799. "As I conceive," says Sir Joseph, "the introduction of new esculent vegetables, a matter of material importance to the agricultural interests of this country, and that even an unsuccessful experiment on this subject may be, though not perhaps fitting for publication, a proper document to be lodged in the archives of the Board of Agriculture, I take the liberty of submitting the following remarks to your lordship's better judgment.

"The dry, or mountain rice, which I received last year from the Board of Agriculture, for trial, had been procured at some considerable expence by Sir John Murray, from the neighbourhood of Serinagur, a city in India, situated at the foot of Mount Imaus, where snow lies till

late in the spring; and where the climate has been supposed to resemble that of England, sufficiently to make it probable, that the vegetable productions of the one, would equally succeed in the other country; I consider it as a duty owing to the patriotic exertions of Sir John, to give your lordship and the Board some account of the result of the trial of it, made by me at Spring Grove, near Hounslow, in Middlesex.

"It was not till near the end of May, when the samples, being six sorts, were delivered out by the Board, and they were sown immediately, on the 21st day of that month, on six small beds in a garden, under the shelter of a pale, in a south exposure.

"The grains were sown very thin, in order that the progress of their vegetation might be better noted; in a very few days they appeared above ground. The season being warm, with a moderate supply of rain, it was seldom necessary to water them: however, when they appeared to flag, which generally happened after three or four dry days had taken place, they were well sprinkled with a watering pot.

"In less than a month they had grown several inches high: each sort had acquired an appearance very different from the rest; some were pale green, and had broader blades; some were deeper coloured, and narrower in the blade; and one sort had a brown hue on the whole plant; and the bases of the leaves in this kind were nearly black.

"During the month of August, they tillowed much more than I have observed any other corn to do: so much so, that although they had been sown very thin, they became a dense compact bed of plants; the blades in some of the kinds standing as close or closer to each other, than the thickest sown barley ever does.

"At the close of the month, the blades were from a foot to eighteen inches high; the plants continued to tillow, each root having by this time produced from ten to twenty offsets, but no symptom of a rising stem was at all observable.

"In the middle of September, they had still continued to tillow, and the blades to lengthen, so that some of them were at least two feet long. As the frosts of the autumn were nearly now approaching, it became an object of some importance to examine the state in which the plants really were, in order to ascertain the probability of their having produced ears, or possibly of their having ripened corn, if they had been sown a month or two earlier. The most careful inspection was therefore made by dissection, but no traces could be found of the rudiment of a joint beginning to form itself on the crown of the root, or of the embryo of the glumes of the ear, which in all kinds of corn are first discernible in that part.

"About this period I was taken ill, and obliged to desist from observing their future progress; but a frost soon after followed, which cut the blade down to the earth, and at once destroyed all hopes of these kinds of rice producing grain in our climate: the quantity of the blade was how-

ever so uncommonly great, that it is not impossible it might be advantageous to sow it as food for cattle, for a very large proportion of stock might certainly be maintained upon an acre of it.

"Before the frost set in, I had ordered a tuft of each kind of the rice to be transplanted into a pot, and placed in a hot-house, in order, if possible, to ascertain the natural period of this grain; whether, like winter corn, it requires eight or nine months to come to perfection, or, like our Lent corn, arrives at the same period in five or six; but all of these died, notwithstanding great attention was paid to them: some seed, however, which I had given to Mr. Lambert, succeeded better; it was sown in his hot-house in the month of June, where it threw well, but did not produce ears till near Christmas, a period of seven months; from whence, as it is not probable the grain would have ripened in less than two months from the time when the ear appeared, it is easy to deduce, that in the neighbourhood of Serinagur these kinds of rice are either sown as winter corn, or the climate there is far better suited to promote the quick progress of vegetation, than ours is. It was, when it produced ears, about three feet and a half high, and some of the stems had five joints, including the radical one: had it been in a more suitable climate, it would certainly have grown taller, for the flowers dropped off without producing seed.

"In the course of this spring I have forwarded a few seeds, which were left from Sir John Murray's importation, to Portugal; if they succeed, I shall probably hear of it; and in that case, if your lordship feels interest on the subject, I shall certainly do myself the honour of communicating such information concerning them, as I am able to obtain."

The following extract from an account of the benefit of the use of rice, by the matron of the Foundling Hospital, is published by the Society for bettering the Condition of the Poor.

"During the scarcity of wheat in July, 1795, one of the measures adopted at the Foundling Hospital, with a view of lessening the consumption of flour, was the substitution of rice puddings for those of flour, which, by the table of diet, were used for the children's dinner twice a-week. The flour puddings, for each day, had taken about 168lb. weight of flour; the rice puddings, substituted in their place, required only 21lb. of rice, to make the same quantity of pudding; the result of the experiments being that, in a baked pudding made with milk, one pound of rice will go very nearly as far as eight pounds of flour.

"The use of the puddings has ever since been continued in the Hospital, with this variation, that the quantity of rice has been increased to 24lb. weight for each day's dinner; and it now continues the substitute for near 168lb. of flour before used: the ingredients in the rice puddings at present, being 24lb. of rice, 6lb. of treacle, and 18 gallons of milk; and the produce, upon an average*, 180lb. of

* In order to ascertain correctly the comparative weight of the materials in their liquid state, with that of the pudding after it is baked, the weight has been carefully taken several times. The amount has not always been *precisely* the same, but the average is nearly as follows:

Weight of 18 gallons of milk, being about 1 lb. 3 oz. the pint -	171 lb.
24lb. of rice -	24 lb.
6lb. of treacle -	6 lb.
Total of the ingredients -	201 lb.
Average weight of the rice pudding in a solid state -	180 lb.
Average waste in dressing -	21 lb.

good substantial pudding; a very sufficient dinner for the 170 persons who dine on it.

"The milk is the better kind of London milk; about equal to good skim-milk in the country. The expence of the dinner is as follows:—24lb. of rice, five shillings; 6lb. of treacle, two shillings; and 18 gallons of milk, twelve shillings; the total for 170 persons being nineteen shillings, or rather more than five farthings per head.* The saving to the Hospital, by this use of rice during the year, was something more than 200l. and the national saving in the consumption of flour, from that circumstance only, during the same period of scarcity, being one year ending July 1796, appears to be nearly 17,472lb. weight of flour."

From this account it will appear how much benefit, as well national as individual, may be derived from the general use of rice. There is hardly any way in which it can be stewed down, either with bacon, or with meat seasoned with salt and pepper, and some leeks or onions, or with cheese, in which it will not make a cheap, pleasant, and nutritious dish; and it is particularly proper for poor families, or for workhouses and public charities.

RICHELIEU, a town of France, in the department of Indre and Loire, with a fine palace and extensive park. It was built by Cardinal Richelieu in 1637. The streets are as straight as a line, and it contains a handsome square. It is seated on the Amable and Vide, 27 N. of Poitiers, and 152 S.W. of Paris. Long. 6. 20. E. Lat. 47. 2. N.

RICHMOND, the capital of the state of Virginia. It has an elegant state-house, on a hill in the upper part of the town, and is seated on the north side of James river, at the foot of the falls, 60 miles W. by N. of Williamsburg. Long. 77. 30. W. Lat. 37. 25. N.

RICHMOND, a town of Staten Island, in the state of New York and county of Richmond. Its inhabitants are chiefly Dutch and French. It is nine miles S.W. of New York.

RICHMOND, a borough in the north riding of Yorkshire, with a market on Saturday. It was inclosed by a wall, with three gates, now in ruins; and it has a castle, on an inaccessible mount, and two churches. It sends two members to parliament, is governed by a mayor, and has a manufacture of woollen stockings, caps, &c. It is seated on the Swale, over which is a bridge, 40 miles N.W. of York, and 230 N.N.W. of London. Long. 1. 35. W. Lat. 54. 28. N.

RICHMOND, a village in Surrey, with a stone bridge over the Thames, nine miles west-south-west of London. It was anciently called Bheen; but Henry VII. called it Richmond, on account of his having been earl of Richmond in Yorkshire. Here was a palace, in which Edward III. Henry VII. and Queen Elizabeth, expired. Richmond is still distinguished by its beautiful royal gardens, which, in summer, are open every Sunday; and in these is a noble observatory. Here is an extensive royal park, called Richmond, or the New Park; surrounded by a brick wall, built by Charles I.

RICHMONDSHIRE, a district in the north riding of Yorkshire, formerly a county of itself. It abounds in romantic situations, and is noted for the industry of its inhabitants, who manufacture knit stockings and other coarse goods. Many lead mines are in this district, of which Richmond is the chief town.

RICHTENBURG, a town of Germany, in Anterior

Pomerania, 28 miles E.N.E. of Rostock. Long. 12. 50. E. Lat. 54. 10. N.

RICKMANSWORTH, a town in Hertfordshire, with a market on Saturdays, seated on the Coln, eight miles S.W. of St. Alban's, and 18 W.N.W. of London. Long. 0. 16. W. Lat. 51. 42. N.

RIDLEY (JAMES), the supposed author of the *Tales of the Genii*, under the feigned name of "Sir Charles Morell." This assumed title, with the addition of "formerly ambassador from the British settlements in India, to the great mogul," is annexed to the title pages of the volumes in question, and concurred with the rest of the fiction, viz. the assertion in the same page of the tales being translated from "a Persian MS." to impress the public mind with the idea of their being really of Eastern origin. The name of "Morell" perhaps occurred to the author as a proper name to designate the moral tendency of his writings; he that as it may, the fictitious appellations of Sir Charles Morell have too long usurped the laurels which belonged to our author.

This gentleman was the second son of the Rev. Dr. Gloucester Ridley, well known by his very masterly life of his ancestor, Bishop Ridley, the martyr, who suffered for his attachment to the reformed religion, in the reign of Mary. James Ridley was educated at Winchester school, under Dr. Barton; and, as it is related by a contemporary of Ridley's now living, he then, in his boyish days, shewed a great inclination and talents for theatrical exhibitions. He, at any time, willingly left the play-ground if he could persuade his companions to join him in acting the parts of some favourite dramatic writer. He was, at the usual time, elected fellow of New College, where he staid but a little time, for in the graduate book his name is not inserted; a proof that he did not take the degree generally conferred at the expiration of seven years. Ridley married when very young; and the chaplaincy of Romford was conferred on him by his father, to whom the titles of that parish were let by the New College. About this time, probably, his 25th year, he published his *Tales of the Genii*, but with what success is not apparent; for the *Monthly Review*, the only one which took notice of the publication, considered the volumes worthy only of the nursery; and ranked them with the frivolous productions of fairy tales, &c. This review appeared about the year 1763. So unjust a criticism, on a work of uncommon genius, could have arisen only from the haste or a total want of taste in the writer of that article, which is also unworthily placed in the *Monthly Catalogue*. Neither the *Biographia Britannica*, nor any other biographical publication, has mentioned (as the writer of this article believes) the name of the author of the *Tales of the Genii*. This omission seemed to call aloud for some notices of the author and his work; and the present attempt to bring both before the public in an advantageous light, claims the indulgence of the reader, from the willingness, rather than from the capacity to do justice to the talents of a man who contributed to sink into oblivion his own merits, by too great diffidence. Previous to his great work, Ridley, always ardent in the cause of virtue, determined to stem the torrent of those pernicious writings which endeavour to subvert sentimental feelings for the sound and sacred principles of religion and morality; a proceeding so perverse or so base, that the genius of Fielding or Rousseau can in no degree

* Where skim-milk, as in the country, may be had at 2s. a gallon, the price of this dinner would hardly exceed a halfpenny a head.

compensate for the badness of the design. In the life of James Lovegrove, Ridley portrays a young man without the advantages of personal beauty, but by the mere influence of good principles, aspiring to, and at length obtaining, a lady of beauty and fortune in marriage. Whilst other novelists exhibited their heroes in all the splendor of youth, elegance, wealth, and extraordinary graces, Ridley led his hero to honour and happiness, under the disadvantages of a very moderate share of health, wealth, or beauty; and he also differed essentially from his brother novelists, as Lovegrove was neither exquisitely handsome, nor infamously profligate. He thought with the great poet—

Virtue can see to do what virtue would,

By her own radiant light, &c.

Since the time of the immortal Spenser, the powers of allegorical instruction have never been so nobly and so beautifully exerted. The moral duties are enforced by the profoundest philosophy; and on their personifications all the ornaments of a very rich imagination are most profusely bestowed. The good Genii, according to the mythology of the East, assemble before their king, and, at his command, report by what exertions they rescued Virtue from persecution, supported her under temptations and dangers, and crowned her ardent enterprises with merited success, against the machination of their enemies, the evil Genii. The important lesson, that neither riches, honour, nor pleasure, lead to happiness, is set forth in the very entertaining and variegated History of the Talisman of Orosmandes, or of the Merchant of Abudah. The Adventures of Urad, or the Fair Wanderer, is an impressive and instructive lesson to every beautiful unprotected female. In the words of the author, "to guard the soft female heart from the delusions of the faithless, said Icaragem (the king of the Genii), is worthy of our race; and the sage Honadir (the good Genius and narrator of the tale) has wisely combined chastity and prudence in her delightful instructions: but female delicacy makes an unequal opposition to brutal cunning, unless the protection of the just one overshadow the footsteps of the virtuous maid. Wherefore, Alla is the first and chief supporter of the female sex, who will, assuredly, when requested, confound the vain artifices of man, and exalt the prudent counsels of the modest fair-one;" (end of the Tale of Urad, the Fair Wanderer). The above tales are taken by chance, from the rest, as a specimen of the useful subjects on which they treat, and to obviate any suspicions that they are formed for the meridian of the nursery. Spenser, sometimes, strives to produce very complicated allegories to set off circumstances and reflections of little value; but the author of the Tales of the Genii, has strictly followed the precept of Horace—

Nec Deus intersit nisi dignus Vincide nodus.

No *Genius* is employed to disturb the order of nature, but for some great moral purpose; nor his attributes ostentatiously displayed for the sake of exhibiting the writer's well-known faculty of imagination. In the Tale of the Enchanters, or Misnar, Sultan of India, those potent agents of magic power are described as leaving the divan, after the virtuous sultan had refused their wicked councils, with so much horrible and satanic majesty, that neither Milton, nor Spenser, nor Dante, nor Tasso, would have blushed to own these congenial efforts at ideal character.

A very delightful fiction is introduced in the Tale of Mirgilip, the Dervise of the Groves. The dervise shews his royal pupil his pleasure-grounds: the latter observing various seats disposed in very opposite situations of hill and dale, shade and sun-shine, enquires their purpose of erec-

tion. The dervise here describes his friends; and, in a charming allegorical strain, describes their manners, disposition, and acquisitions, by the peculiar situation and adjunct circumstances which distinguish one seat and situation from another. The names of the persons are anagrammatised thus—Pnesog Enepes, Joseph Spence, &c. The writer of this article apprehends that these valuable fictions are not sufficiently known to men of taste and knowledge. His fears are that the term *Tales of the Genii* may convey to many minds the same opinion of puerile fiction and grotesque imagery, which they appear to have excited in the judgment of the writer of the critique in the Monthly Review before alluded to. But the following sublime and interesting passage alone, that concludes these entertaining volumes, must be sufficient to rescue them from such a sentence. After the author closes his reign of fiction, and acknowledges the regions of his fancy are exhausted, he addresses the reader as follows:—

"Kind reader, the Genii are no more; and Horam, the phantom of my mind, speaks not again. Fiction himself, and fiction all he seemed to write; nor useless shall his life be deemed by those who blush at worse than pagan vices in enlightened climes. In friendly guise, these sheets were written to lead thee unto virtue; and the proud gaudy trappings of the East, with all its wild romantic monsters, have risen far above their usual sphere to serve the cause of moral truth. But then, perchance, you'll ask, what shall that truth avail, now all the beauteous wildness is no more, which was the spring and mover of this pagan virtue? The Genii all are fled, who watched attendant the virtuous mind, and crowned it with success; and the reward ceasing, the incentive to noble actions ceases with it. If, then, you will yet spare a few moments and listen to me, I trust you shall not long lament the loss of Horam and his friendly Genii; for were the foundations of morality laid only in phantom and imagination, persuasion would be so fruitless that every moral writer, dissatisfied with his ill success, might justly cast his works into the flames.

"Prepare, then, for a scene more worthy of your sight than human fancy could conceive. A scene tremendous, wonderful, and great; full of mercy and of truth; where heaven itself inclines to earth, and God becomes an offering to mankind. Behold the moral veil rent in twain, and from thick clouds of darkness the sun of righteousness arise!—Behold death nailed on the cross, and Mercy springing from the grave; redemption brought to man by a heavenly being far superior to angels or ministering spirits; and the voice of God declared to us by his son, whom he hath appointed heir of all things; by whom also he made the worlds; who being the brightness of his glory, and the express image of his person, and upholding all things by the word of his power, when he had by himself purged our sins on the cross, sat down on the right hand of the Majesty on high."

RIESBERG, a town of Westphalia, capital of a county of the same name; situate on the Ems, 12 miles N.N.W. of Paderborn. Long. 8. 50. E. Lat. 51. 55. N.

RIETI, a town of Italy, in the duchy of Spoleto, with a bishop's see; seated on the river Velino, near the lake Rieti, 27 miles S. by E. of Spoleto, and 37 N.E. of Rome. Long. 13. 5. E. Lat. 42. 23. N.

RIEUX, a town in France, in the department of Upper Garonne. Before the revolution of 1789, it was a bishop's see. It is seated on the Rise, 25 miles S.W. of Toulouse, and 83 W. of Narbonne. Long. 1. 17. E. Lat. 43. 16. N.

RIEZ, a town of France, in the department of the Lower Alps. Before the revolution of 1789, it was a

bishop's see. It is populous, though small, but was formerly much larger than at present. It is seated in a plain, abounding with good wine and excellent fruits, 35 miles N.E. of Aix, and 50 N.E. of Toulon. Long. 6. 22. E. Lat. 43. 51. N.

RIMMEGEN, a town of Westphalia, in the duchy of Juliers, seated on the Rhine, and remarkable for several Roman antiquities.

RINCOPING, or RINKIBISE, a town of Denmark, in North Jutland, seated on the west coast, 50 miles N. by W. of Ripen.

RINGLEEEN, a town of Upper Saxony, in the principality of Eisenach, six miles N. of Erfurt, and 26 E.N.E. of Eisenach. Long. 11. 25. E. Lat. 51. 5. N.

RINGSTED, an ancient town of Denmark, in the isle of Zealand, where the kings of Denmark formerly resided and were buried. It is 30 miles S.W. of Copenhagen. Long. 12. 10. E. Lat. 55. 28. N.

RINGWOOD, a town in Hampshire, with a market on Wednesday, and a considerable manufacture of worsted knit hose; seated on the Avon, 50 miles S.W. of Winchester, and 91 W. by S. of London. Long. 1. 41. W. Lat. 50. 49. N.

RINTLEN, or RINTELN, a town of Westphalia, in the county of Schawenburg, with an university. It is subject to the Landgrave of Hesse-Cassel, and seated on the Weser, 15 miles S.E. of Minden, and 35 S.W. of Hanover. Long. 9. 20. E. Lat. 52. 13. N.

RIO-DE-LA-HACHA, a small province of Terra-Firma, in the form of a peninsula, between the gulf of Venezuela on the east, and a bay of the Caribbean Sea on the west. Rio-de-la-Hacha, the capital, is seated at the mouth of a river of the same name, 100 miles E. of St. Martha. Long. 72. 54. W. Lat. 11. 30. N.

RIO-DE-LA-MADALENA, a river in Terra-Firma, which rises in the mountains north of Popayan, and running north, falls into the Caribbean Sea, between Carthagena and St. Martha. It is also called Rio Grande.

RIO-DE-LA-PLATA. See PLATA.

RIO-DE-MIRANDA, a river of Spain, which rises in the mountains of Austrias, and separating that city from Galicia, enters the bay of Biscay at Rivadeo.

RIO-GRANDE, a river of Africa, which runs from east to west through Negroland, and falls into the Atlantic Ocean, 11° N. latitude.

RIONS, a town of France, in the department of Girondet, seated on the Garonne, 18 miles S.E. of Bourdeaux.

RIPA TRANSONE, a populous and strong town of Italy, in the marquise of Ancona, with a bishop's see, five miles W. of the gulf of Venice, and eight S. of Fermo. Long. 13. 50. E. Lat. 42. 59. N.

RIPLEY, a town in the west riding of Yorkshire, with a market on Monday, seated on the Nyd, 23 miles W.N.W. of York, and 221 N. by W. of London. Long. 1. 50. W. Lat. 54. 4. N.

RIPPON, an ancient borough in the west riding of Yorkshire, with a market on Thursday. In its neighbourhood is the celebrated park of Studley, including the venerable remains of Fountain's Abbey. Rippon was once famous for its religious houses, and has now a collegiate church, adorned with three lofty spires. It is noted for its manufacture of hardwares, particularly spurs, and the market-place is one of the finest squares of the kind in England. It is governed by a mayor, sends two members to parliament, and is seated on the Ure, 28 miles N.W. of York, and 218 N.N.W. of London. Long. 1. 29. W. Lat. 54. 11. N.

RIQUIER, an ancient town of France, in the department of Somme, seated on the Cardon, five miles N. of Abbeville, and 95 N. of Paris. Long. 1. 59. E. Lat. 50. 10. N.

RISBOROUGH, a town in Buckinghamshire, with a market on Saturday, 20 miles S. of Aylesbury, and 37 W.N.W. of London. Long. 0. 42. W. Lat. 51. 40. N.

RITBERG, a town of Westphalia, capital of a county of the same name, with a castle seated on the Ems, 12 miles N.W. of Paderborn. Long. 8. 42. E. Lat. 51. 52. N.

RIVA, a strong town of Germany, in the bishopric of Trent. It was taken by the French in 1703, but soon abandoned. It is seated at the mouth of a small river, on the lake Garda, 17 miles S.W. of Trent. Long. 11. 7. W. Lat. 46. 4. N.

RIVADAVIA, a town of Spain, in Galicia, seated at the confluence of the Minho and Avia, in a territory that produces the best wine in Spain, 15 miles W.S.W. of Orense. Long. 7. 55. W. Lat. 42. 13. N.

RIVADEO, a sea-port of Spain, in Galicia, seated on a rock, at the mouth of the Rio-de-Miranda, 45 miles N.N.E. of Lugo. Long. 6. 47. W. Lat. 43. 33. N.

RIVALLO, a town of Naples, in Terra di Lavoro, seated on a mountain, 20 miles from Naples.

RIVALLO, a town of Piedmont, situate on the Sangone, six miles S.W. of Turin, and 19 E.S.E. of Susa.

RIVALTA, a town of Italy, in the duchy of Milan, situate on the Adda, 15 miles E. of Milan.

RIVAROLO, a town of Piedmont, situate on the Orio, 15 miles N. of Turin, and 12 N.W. of Carmagnola.

RIVESALTES, a town of France, in the department of eastern Pyrenes, famous for fine wine. It is seated on the Egly, eight miles N. of Perpignan.

RIVOLI, a town of Piedmont, with a magnificent castle, nine miles W. of Turin. Long. 7. 32. E. Lat. 45. 4. N.

RIVOLO, a town of Italy, in the Veronese, seated on the lake Garda, 20 miles N.W. of Verona. Long. 11. 1. N. Lat. 45. 34. N.

ROA, a strong town of Spain, in Old Castile, with a citadel, seated on the Douero, in a country fertile in corn and wine, 10 miles S.W. of Aranda, and 70 N. of Madrid. Long. 3. 22. W. Lat. 41. 35. N.

ROAD-HARROW (*Encycl.*). Roads being frequently disfigured, and otherwise injured, by the deep ruts which are necessarily made by the continual passing and re-passing of narrow-wheel carriages, various machines have been contrived, with a view to facilitate the repairing of highways, and to fill up such excavations. From these, we shall first communicate the *Road-Harrow*, invented by Mr. Harriott, to whom the Society for the Encouragement of Arts, &c. in 1789, voted a reward of ten guineas. As this machine may not only be employed with great advantage by the surveyors of public roads, but will also be found very serviceable in repairing and improving the private ways, or avenues, belonging to manors, we have given a representation in 2d pl. 43.

The model, from which the figure was taken, is on the scale of two inches to one foot; so that the head of the harrow is three feet wide from one side of the bar to the other externally. These bars are four inches square, five feet long, and, to prevent them from being split, they are contrived lengthwise, instead of being in a transverse direction. The mould-boards are four feet two inches in length, ten inches in depth, and two in thickness: they extend eleven inches beyond the bars, in order that the stones (which are brought to the surface by the teeth of

the harrow) may be drawn into a smaller compass. These mould-boards are, further, shod with an iron bar, and lined with a plate of the same metal, to the height of the spot where they are marked black, in the engraved figure; and such parts of the delineation as are represented of a deeper colour, distinguish the iron from the wood-work. The teeth are one foot in length from the inferior side of the bars to their points, which ought to be steeled; they are $1\frac{1}{2}$ inch square, and are fixed by means of strong nuts and screws, with collars both on the upper and lower side of such bars.

Mr. Harriott's road-harrow is drawn by two horses abreast: the outside animal is led by a boy on that quarter; while the other horse walks in the proper path, and a man keeps the harrow steady by the handles; consequently they take one inside and one outside quarter in their progress, and the remainder two quarters in their return.

By this excellent machine, a man, boy, and two horses, may with ease repair three miles in length in one day; harrowing down the quarters, and drawing the stones together, which are dropped into the ruts, by means of the mould-boards, in a more effectual manner than if they were stubbed in by a man. Lastly, the work is performed not only more expeditiously, but also at one tenth part of the expence incurred, when the roads are repaired by manual labour.

In the 8th volume of the *Repertory of Arts, &c.* we meet with an account of a contrivance for preventing the wheels of carriages from making ruts in roads, by Robert Beatson, esq. This object is effected by fixing between the other wheels a *protector*, or small roller, or broad wheel: the circumference of its upper part should be about $1\frac{1}{2}$ inch beneath the axletree, while the lower one ought to be at a similar distance from the ground. Such roller must be secured to the axletree, so as to be able to support the whole weight of the carriage, in case the principal wheels descend into any deep ruts. The size of the protector varies according to the proportions of these wheels; but Mr. B. observes, that two feet in diameter will be sufficient for single carts; and that double carriages, or waggons, will require it to be rather larger and broader. By thus elevating the roller a little distance above the lower surface of the wheels, the latter will, on good roads, support the weight of the load; and, if the middle or horse-path be firm, they cannot sink into old, or form any new, ruts; because the protector will roll in the middle, and thus afford an easier draught to the cattle. The additional weight of the machine, if it be properly constructed, Mr. Beatson conceives, will be inconsiderable; when compared with the utility of such contrivance, and the great reduction in the expence both of making and of repairing roads. A more comprehensive account of this invention the reader will find in the work above cited.

ROANNE, a populous and commercial town of France, in the department of Rhone and Loire, seated on the Loire, where it begins to be navigable for barks. Hence the merchandise of Lyons, Marseilles, and the Levant, is conveyed down the Loire, and by the canal of Braire, into the Seine, and thence to Paris. Roanne is 50 miles N.E. of Clermont, and 210 S.E. of Paris. Long. 4. 12. E. Lat. 46. 13. N.

ROASTER, a most ingenious kind of oven, lately invented by Count Rumford, by means of which the culinary process of roasting meat is effected in the most complete way, and with the least possible consumption of fuel. Under the article *OVEN*, in this supplement, we have described, from Part II. of the Count's 10th Essay,

an invention little inferior to this as a *roaster*, and more desirable in small families, since it also answers the purpose of *broiling* at the same time.

Count Rumford gives the following account of the *roaster*, and of the principles on which it is constructed: "When I first set about to contrive this machine," says he, "meditating on the nature of the mechanical and chemical operations that take place in the culinary process in question, it appeared to me that there could not possibly be any thing more necessary to the roasting of meat than heat, in certain degrees of intensity, accompanied by certain degrees of dryness; and I thought, if matters could be so arranged, by means of simple mechanical contrivances, that the cock should be enabled, not only to regulate the degrees of heat at pleasure, but also to combine any given degree of heat with any degree of moisture or of dryness required; this would unquestionably put it in her power to perform every process of roasting in the highest possible perfection.

"The means I used for attaining these ends, will appear by the following description of the machinery I caused to be constructed for that purpose.

"The most essential part of this machinery, which I shall call the body of the roaster (see 2d pl. 43. fig. 1), is a hollow cylinder of sheet-iron, which, for a roaster of a moderate size, may be made about 18 inches in diameter, and 24 inches long; closed at one end, and set in an horizontal position in a mass of brick-work, in such a manner that the flame of a small fire, which is made in a closed fire-place directly under it, may play all round it, and heat it equally and expeditiously. The open end of this cylinder, which should be even with the front of the brick-work in which it is set, is closed either with a double door of sheet-iron, or with a single door of sheet-iron covered on the outside with a panel of wood; and in the cylinder there is an horizontal shelf, made of a flat plate of sheet-iron, which is supported on ledges rivetted to the inside of the cylinder, on each side of it. This shelf is situated about three inches below the centre or level of the axis of the body of the roaster, and it serves as a support for a dripping-pan, in which, or rather over which, the meat to be roasted is placed.

"This dripping-pan, which is made of sheet-iron, is about two inches deep, 16 inches wide above, $15\frac{1}{2}$ inches in width below, and 22 inches long; and it is placed on four short feet, or, what is better, on two long sliders, bent upwards at their two extremities, and fastened to the ends of the dripping-pan, forming, together with the dripping-pan, a kind of sledge; the bottom of the dripping-pan being raised by these means about an inch above the horizontal shelf on which it is supported.

"In order that the dripping-pan on being pushed into or drawn out of the roaster may be made to preserve its direction, two straight grooves are made in the shelf on which it is supported, which, receiving the sliders of the dripping pan, prevent it from slipping about from side to side, and striking against the sides of the roaster. The front ends of these grooves are seen in fig. 1, as are also the front ends of the sliders of the dripping-pan, and one of its handles.

"In the dripping-pan, a gridiron (seen in fig. 1) is placed, the horizontal bars of which are on a level with the sides or brim of the dripping-pan, and on this gridiron the meat to be roasted is laid; care being taken that there be always a sufficient quantity of water in the dripping-pan to cover the whole of its bottom to the height of at least half or three quarters of an inch.

" This water is essential to the success of the process of roasting: it is designed for receiving the drippings from the meat, and preventing their falling on the heated bottom of the dripping-pan, where they would be evaporated, and their oily parts burnt or volatilized, filling the roaster with ill-scented vapours, which would spoil the meat, by giving it a disagreeable taste and smell.

" It was with a view more effectually to defend the bottom of the dripping-pan from the fire, and prevent as much as possible the evaporation of the water it contains, that the dripping pan was raised on feet or sliders, instead of being merely set down on its bottom on the shelf which supports it in the roaster.

" A late improvement has been made in the arrangement of the dripping-pan, by an ingenious workman at Norwich, Mr. Frost, who has been employed in putting up roasters in that part of the country: an invention which I think will, in many cases, if not in all, be found very useful. Having put a certain quantity of water into the principal dripping-pan, which is constructed of sheet-iron, he places a second, shallower, made of tin, and standing on four short feet, into the first, and then places the gridiron which is to support the meat in this second dripping-pan. As the water in the first keeps the second cool, there is no necessity for putting water into this; and the drippings of the meat may, without danger, be suffered to fall in it, and to remain there unmixed with water. When Yorkshire puddings, or potatoes, are cooked under roasting meat, this arrangement will be found very convenient.

" In constructing the dripping-pans, and fitting them to each other, care must be taken that the second do not touch the first, except by the ends of its feet; and especially that the bottom of the second (which may be made dishing) do not touch the bottom of the first. The lengths and widths of the two dripping-pans above, or at their brims, may be equal, and the brim of the second may stand about half an inch above the level of the brim of the first. The horizontal level of the upper surface of the gridiron should not be lower than the level of the brim of the second dripping-pan; and the meat should be so placed on the gridiron that the drippings from it cannot fail to fall into the dripping-pan, and never upon the hot bottom or sides of the roaster.

" To carry off the steam which arises from the water in the dripping-pan, and that which escapes from the meat in roasting, there is a steam tube belonging to the roaster, which is situated at the upper part of the roaster, commonly a little on one side, and near the front of it, to which tube there is a damper, which is so contrived as to be easily regulated without opening the door of the roaster. This steam-tube is distinctly seen in fig. 1; and the end of the handle by which its damper is moved, may be seen in fig. 2.

" The heat of the roaster is regulated at pleasure, and to the greatest nicety, by means of the register in the ash-pit door of its fire-place (seen in fig. 2.) and by the damper in the canal, by which the smoke goes off into the chimney; which damper is not represented in any of the figures.

" The dryness in the roaster is regulated by the damper of the steam-tube, and also by means of a very essential part of the apparatus—the blow pipes—which still remain to be described. They are distinctly represented in the figs. 1, 2, and 3.

" These blow-pipes, which lie immediately under the roaster, are two tubes of iron, about 2½ inches in diameter, and 23 inches long, or about one inch shorter than the roaster; which tubes, by means of elbows at their

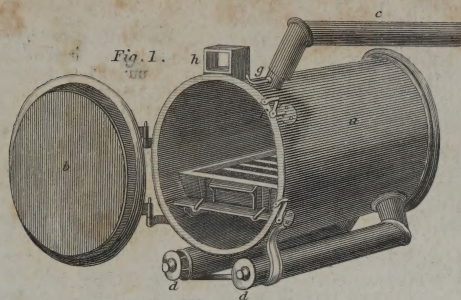
further ends, are firmly fixed to the bottom of the roaster, and communicate with the inside of it. The higher ends of these tubes come through the brick-work, and are seen in front of the roaster, being even with its face.

" These blow-pipes have stoppers, by which they are accurately closed: but when the meat is to be browned, these stoppers are removed, or drawn out a little, and the damper in the steam-tube of the roaster being at the same time opened, a strong current of hot air presses in through the tubes into the roaster, and through the roaster into and through the steam-tube, carrying and driving away all the moist air and vapour out of the roaster.

" As these blow-pipes are situated immediately below the roaster, and just over the fire, and are surrounded on every side by the flame of the burning fuel (see fig. 3), they are much exposed to the heat; and when the fire is made to burn briskly, which should always be done when the meat is to be browned, they will be heated red hot, consequently the air which passes through them into the roaster will be much heated; and this hot wind, which blows over the meat, will suddenly heat and dry its surface in every part, and give it that appearance and taste which are peculiar to meat that is well roasted.

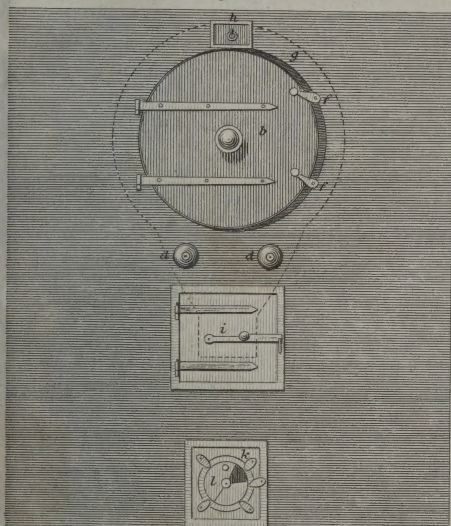
" When these roasters were first proposed, and before their merit was established, many doubts were entertained respecting the taste of the food prepared in them. As the meat was shut up in a confined space, which has much the appearance of an oven, it was natural enough to suspect that it would be rather baked than roasted; but all those who have tried the experiment have found that this is by no means the case. The meat is roasted, and not baked; and however bold the assertion may appear, I will venture to affirm, that meat of every kind, without any exception, roasted in a roaster, is better tasted—higher flavoured—and much more juicy and delicate, than when roasted on a spit before an open fire.

" In enumerating the excellences of this new implement of cookery, there is one of indisputable importance, which ought not to be omitted. When meat is roasted in this machine, its quantity, determined by weight, is considerably greater than if it were roasted upon a spit before a fire. To ascertain this fact, two legs of mutton, taken from the same carcase, and made perfectly equal in weight before they were cooked, were roasted on the same day, the one in a roaster, the other on a spit before the fire; and, to prevent all deception, the persons employed in roasting them were not informed of the principal design of the experiment. When these pieces of roasted meat came from the fire, they were carefully weighed; when it appeared, that the piece which had been roasted in the roaster was heavier than the other, by a difference which was equal to six per cent, or six pounds in an hundred. But this even is not all; nor is it indeed the most important result of the experiment. These two legs of mutton were brought upon table at the same time, and a large and perfectly unprejudiced company was assembled to eat them. They were both declared to be very good; but a decided preference was unanimously given to that which had been roasted in the roaster; it was much more juicy, and was thought better tasted. They were both fairly eaten up; nothing remaining of either of them that was eatable. Their fragments, which had been carefully preserved, being now collected and placed in their separate dishes; it was a comparison of these fragments which afforded the most striking proof of the relative merit of these two methods of roasting meat, in respect to the economy of food. Of the leg of mutton which had been roasted in the roaster,



Front view of the Roaster and Fire Place.

Fig. 2.

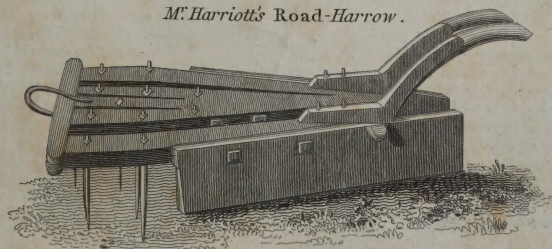


Section of the Roaster and Fire Place.

Fig. 3.



M^r. Harriott's Road-Harrow.





hardly any thing visible remained except the bare bone ; while a considerable heap was formed of scraps not eatable, which remained of that roasted on a spit."

"I believe," adds the Count, "I may venture to say, that the result of this experiment is deserving of the most serious attention, especially in this country, where so much roasted meat is eaten, and where the economy of food is every day growing to be more and more an object of public concern."

We must refer our readers to Count Rumford's Essay for directions respecting the management of this valuable invention, and for various other important particulars relating to it. Many persons of rank have been induced to prefer them in their kitchens ; and they may be inspected at the Royal Institution in London.

Description of the figures in the plate.—Fig. 1. Represents the iron roaster with its materials complete ; *a* is the body of the roaster, of cast-iron ; *b* the hollow door, formed of two circular pieces of plate-iron ; *c* a pipe of sheet-iron for carrying off the steam from the meat, having a small register at *g* ; *d d* two cast-iron blow-pipes, which being placed within the fire-place, transmit *hot air*, when the stopper is drawn forth, for the purpose of *browning* the meat ; *e* the dripping pan, placed on a horizontal shelf, and containing a trivet on which the meat is to be placed ; *f f* the two turn-buckles which fasten the door, seen more distinctly in fig. 2 ; *g* a small wire handle which turns the register within the steam-pipe *c* ; *h* a square frame of iron, through which a small twisted-wire brush may be introduced to sweep the soot, when necessary, from the top and sides of the roaster. The same letters refer to the same parts in the other figures.

Fig. 2. Shews the roaster set in brick-work, with its closed fire-place ; *i* is the double door of sheet iron, more distinctly shewn at *i* ; *m*, in fig. 3 ; *k* the ash-pit door with its register *l*.

Fig. 3. Is a section of the roaster, fire-place, and brick-work ; *n* is the inner plate of the fire-place door ; *a* the grate on which the burning fuel *B* rests above the ash-pit ; *A C D* the open space which surrounds and passes behind the roaster from the fire-place beneath ; *E F* the passages by which the smoke escapes ; *G* shews the inside of the roaster which contains a piece of meat, *o*, supposed to be roasting.

ROBBEN ISLAND, sometimes called Penguin Island, a barren sandy island, near the Cape of Good Hope. Long. 18. 22. E. Lat. 33. 50. S.

ROBIL, a town of Lower Saxony, in the duchy of Mecklenburg, seated on the river Muretz.

ROCAMADOUR, a town of France, in the department of Lot, 23 miles N. of Cahors. Long. 1. 32. E. Lat. 44. 48. N.

ROCCA-D'ANFO, a strong town of Italy, in the Bresciano, seated on the lake Idro, 25 miles S.E. of Trent. Long. 11. 40. E. Lat. 45. 50. N.

ROCCA-ANNONE, and Rocca-d'ABBAZZE, two forts of Italy, in Montferrat, each of which is seated on a mountain, in the road from Asti to Alexandria.

ROCELLA, a town of Naples, in Calabria Ulteriore, near which is a celebrated coral fishery, 10 miles N.E. of Geirace. Long. 16. 47. E. Lat. 38. 20. N.

ROCHE, a town of Switzerland, subject to the canton of Bern, which has here a director of the salt works. Roche is celebrated for the residence of the celebrated Haller, who filled that office from 1758 to 1766.

ROCHE, or ROCHE-EN-ARDENNES, a town of the Netherlands, in the duchy of Luxemburg, with a strong

castle, seated on a rock, near the river Ourte, 22 miles S. of Liege, and 32 N.W. of Luxemburg. Long. 5. 40. E. Lat. 50. 15. N.

ROCHE BERNARD, a town of France, in the department of Morbihan, seated on the river Vilaine, 23 miles E. of Vannes.

ROCHE CHOUART, a town of France, in the department of Upper Vienne, with a castle on the top of a mountain, on the declivity of which the town is seated, near a small river that falls into the Vienne, 60 miles S. by E. of Poitiers, and 189 S. by W. of Paris. Long. 0. 53. E. Lat. 45. 46. N.

ROCHE MACHERAN, a town of the Netherlands, in the duchy of Luxemburg, with a strong castle, 15 miles N.E. of Luxemburg. Long. 6. 25. E. Lat. 49. 46. N.

ROCHE-POSAY, a town of France, in the department of Indre and Loire, remarkable for its mineral waters. It is seated on the Creuse, 25 miles S. of Roche. Long. 0. 50. E. Lat. 45. 46. N.

ROCHE-SUR-YON, a town of France, in the department of Vendee, seated near the Yon, 20 miles N.W. of Luçon, and 202 S.W. of Paris. Long. 1. 31. W. Lat. 46. 40. N.

ROCHEFORT, a town of the Netherlands, in the duchy of Luxemburg, with a castle, said to have been built by the Romans. Here the celebrated general La Fayette was seized and made prisoner by the Austrians. It is surrounded by rocks, 15 miles S.E. of Diant, and 50 N.W. of Luxemburg. Long. 5. 10. E. Lat. 50. 12. N.

ROCHEFORT, a town of France, in the department of Morbihan, 17 miles E. of Vannes, and 40 S.W. of Rennes. Long. 2. 26. W. Lat. 47. 42. N.

ROCHEFOUCAULT, a town of France, in the department of Charente, with a castle. It is seated on the Tardouere, 12 miles N.W. of Angoulême, and 208 S. by W. of Paris. Long. 0. 29. E. Lat. 45. 46. N.

ROCHESTER, a village in Northumberland, on the Watling-street, N.W. of Otterburn, and near the source of the Read. It has some Roman altars, inscriptions, and other antiquities.

ROCHETTA, a town of Italy, in the county of Nice, 16 miles N.E. of Nice. Long. 7. 33. E. Lat. 43. 52. N.

ROCHILZ, a town of Upper Saxony, in the territory of Leipsic, with a castle, copper-mines, and a handsome bridge over the Muldaw, 24 miles S.E. of Leipsic, and 36 W. of Dresden. Long. 12. 46. E. Lat. 51. 10. N.

ROCKBRIDGE, a county in the state of Virginia, between the Allegany Mountains and the Blue Ridge, which receives its name from a curious natural bridge. See CEDAR CREEK.

ROCKINGHAUSEN, a town of Germany, in the palatinate of the Rhine, 26 miles W. of Worms.

ROCKISAW, a town of Bohemia, in the circle of Pilsen, 11 miles E. of Pilsen.

ROCOUX, a village of the Netherlands, near Liege, remarkable for a victory gained by the French over the allies in the year 1746.

ROCROY, a town of France, in the department of Ardennes, seated in a plain surrounded by forests. It is celebrated for the victory which the Prince of Condé, then Duke of Enghien, gained over the Spaniards, in 1643. It is 26 miles N. of Rethel. Long. 4. 27. E. Lat. 49. 56. N.

RODACH, a town of Upper Saxony, in the principality of Coburg, situate on a river of the same name, six miles W.N.W. of Coburg.

RODESTO, *RODOSTO*, or *RUPISTO*, a populous seaport of Turkey in Europe, in Romania, with a Greek

bishop's see. It is seated on the side of a hill, on the sea of Marmora, 62 miles S.W. of Constantinople. Long. 27. 37. E. Lat. 41. 1. N.

RODEZ, an ancient town of France, in the department of Aveyron. Here are four great annual fairs, where mules are sold for Spain; and some manufactures of grey cloths and surges. It is a bishop's see; and the steeple of the cathedral, remarkable for its height, is much admired for its architecture. It is seated in the midst of mountains, on a hill, at the foot of which flows the rapid Aveyron, 30 miles W. by S. of Mende. Long. 2. 39. E. Lat. 44. 21. N.

RODOK, a town of Hindoostan Proper, in the province of Delhi, 50 miles E. of Hissar, and 60 W.N.W. of Delhi. Long. 75. 30. E. Lat. 29. 10. N.

ROER, a river of Westphalia, which rises in the duchy of Juliers, passes by the town of that name, and falls into the Maese above Runemonde.

ROER, a river of Germany, which rises in the circle of Upper Rhine, waters Arensburg, and falls into the Rhine below Duisburg.

ROKUX, a town of the Netherlands, in the Austrian Hainault, eight miles N.E. of Mons. Long. 4. 12. E. Lat. 50. 31. N.

ROGLIANO, a town of Naples, in Calabria Citeriore, nine miles S.S.E. of Cosenza. Long. 16. 23. E. Lat. 39. 15. N.

ROGONATPOUR, a town of Hindoostan Proper, in the country of Bengal, 106 miles S.W. of Moorshebad, and 108 N.W. of Calcutta.

ROHACZOW, a town of Lithuania, capital of a district of the same name; seated at the confluence of the Dnieper and Ordrwa, 37 miles N.W. of Rzezcica, and 158 N. of Kiof. Long. 30. 40. E. Lat. 53. 2. N.

ROHAN, a town of France, in the department of Morbihan, seated on the Aoust, 20 miles N. of Vannes. Long. 2. 42. W. Lat. 48. 0. N.

ROHILCUND, or ROHILLA, a territory of Hindoostan Proper, whose inhabitants are called Rohillas. It lies to the N. of Delhi, and is subject to the nabob of Oude, by whom it was conquered in 1774. Bereilly is the capital.

ROLDUC, a town of the Netherlands, in the duchy of Limburg, capital of a territory of the same name, with a castle, seven miles N. of Aix-la-Chapelle. Long. 6. 6. E. Lat. 50. 55. N.

ROLLRICH STONES, in Oxfordshire, N. of Stanton Harcourt, six miles W. of Oxford. It is a circle of stones standing upright, which the vulgar have a notion were men petrified. Antiquaries disagree with respect to the origin and intention of this ancient monument.

ROM, or ROEM, an island of Denmark, on the E. coast of South Jutland. It is five miles in length, and half as much in breadth, and contains a few villages.

ROMAIN-MOTIER, a town of Switzerland, in Pays de Vaud, capital of a bailiwick, with a castle. It is seated at the foot of a mountain, in a narrow valley, through which flows the river Diaz.

ROMANO, a strong and populous sown of Italy, in Bergamosco. It carries on a great trade in corn, and is seated on a river that runs between the Oglio and Serio.

ROMANS, an ancient town of France, in the department of Drome, seated in a fine plain, on the river Isere, 22 miles S.W. of Grenoble, and 30 S. of Vienne. Long. 5. 12. E. Lat. 45. 2. N.

ROMELIA, the general name given by the Turks to their European dominions.

ROMENAY, a town of France, in the department of Saone and Loire, eight miles S.E. of Tournus, and 15 N.N.E. of Macon. Long. 5. 5. E. Lat. 46. 30. N.

ROMERSTADT, a town of Moravia, in the neighbourhood of which are some iron mines. It is 20 miles N.N.E. of Olmutz. Long. 17. 45. E. Lat. 52. 20. N.

ROMHILDEN, a town of Franconia, with a castle. It belongs to the Duke of Saxe Altenburg.

ROMNA, a town of Russia, in the government of Tchernigof, 28 miles S.S.E. of Tchernigof. Long. 33. 24. E. Lat. 50. 36. N.

ROMONT, or ROPMONT, a strong town of Switzerland, in the canton of Friburg, seated on a mountain, 10 miles from Friburg, and 12 from Bern. Long. 7. 1. E. Lat. 46. 50. N.

ROMSDAL, a town of Norway, capital of a provostship, in the diocese of Dronthheim, 100 miles S.S.W. of Dronthheim. Long. 7. 54. E. Lat. 63. 28. N.

RONCEVALLOS, a town of Spain, in Navarre, situate in a valley to which it gives name, 14 miles N.N.E. of Pampluna. Long. 1. 25. W. Lat. 42. 54. N.

RONDA, a strong town of Spain, in Grenada, with a castle. It was taken from the Moors in 1485, and is seated on a craggy rock near the Rio Verde, 20 miles N.W. of Gibraltar, and 62. S.E. of Seville. Long. 5. 12. W. Lat. 36. 40. N.

RONNEBURG, a town of Upper Saxony, in the principality of Altenburg, 12 miles S.W. of Altenburg, and 60 W. of Dresden. Long. 12. 7. E. Lat. 50. 48. N.

ROOM (*Encycl.*). In June, 1801, a patent was granted to Mr. Winter, of Shacklewell, in Middlesex, for a kind of paper manufacture for covering the floors of rooms, for packing goods, and various other purposes.

"*First*," says the patentee, "I procure from the tanners' yards the waste tan or bark, after it has been used for the purposes of tanning. This I cause to be well washed, and freed from dirt; and the fibrous parts picked and separated from those which are more brittle. The tan or bark so prepared I cause to be boiled for a considerable time until the fibres are so softened as readily to separate, and be bruised. I then bruise this softened tan or bark, either by passing it through large iron or wooden rollers, after the manner of flattening mills, except that the rollers are placed by the side of each other in a horizontal position, in order to their being fed, instead of being placed one above the other; or by large wooden stampers or mallets, shod with iron. When it has been thus bruised, I cause it to be again well washed in large sieves, through which pass the remaining brittle particles, and leave the fibres fit for use.

"*Secondly*, I procure, from the different manufacturers of leather, the shreds, or scrapings, or parings of leather, of any description, which are the refuse of sweepings of their shops or warehouses; which pieces of leather I cause to undergo the same operations of picking, washing, and bruising, as before mentioned, with respect to the tan or bark, until it becomes a pulp; but I do not wash it again after it is reduced into that state.

"*Thirdly*, I procure the short hair of animals, of any description, which I cause to be also well washed, and (when it is dry) separated by being beaten with sticks, so that it may the more completely interweave and unite with the other before-mentioned ingredients of the fibres of the tan or bark, and pulp of the leather.

"My principal ingredients being so prepared, I take a proportionate quantity of each, accordingly as I want my

manufacture to be firm or flexible, fit to be used in the sheathing of ships, covering of floors, for button-boards, or the common packages of merchandize, but generally in the proportion of one hundred weight of the fibres of the tan or bark to half a hundred weight of the pulp of the leather, and one quarter of a hundred weight of the hair; the whole of which I cause to be well mixed together, adding thereto, and straining, as equally as possible, amongst the whole mass, a small quantity (that is, in the proportion of five pounds to one hundred weight of the principal mixture) of refuse tow or wadding, or the sweepings or refuse of wool-chambers, previously cut short and separated. This mixture is then beaten altogether with hammers or stampers, in large mortars, and a little water added to it, as occasion may require, to keep, as much as possible, any particular ingredient from adhering together. After being thus beaten, until the ingredients are fully blended and intermixed, the whole is conveyed into receivers or vats; and warm water (previously made a little glutinous by boiling in it a few pounds of the pieces of pelts or skins from which glue is made, or of the glue itself, in quantity accordingly as I want my water to be of a stronger or weaker gluten, but generally in the proportion of four pounds of the skins, or two pounds of glue, to ten gallons of water, skimming off the fat which arises on the boiling of the pieces of pelts) added by degrees, the whole of the mass being kept constantly stirred until the particles float in the water. In this state it is moulded in frames, similar to those commonly used in the manufacture of paper; from which frames it is turned out and pressed between flannels, till the water has drained from it; and, when nearly dry, it is taken from the flannels, and again put into a press without the flannels; whence it is taken out, and hung up to dry: when dried, it is fit for use."

ROOT-STEAMER, an useful machine, employed in America, for steaming potatoes, carrots, and other roots; with the view of feeding cattle; and which, for the simplicity of its contrivance, and the facility with which vegetables may be thus prepared, deserves to be more generally known in Britain. We have therefore given a representation of it in Pl. 45.

The apparatus there delineated, consists of a brick-stove, in which a pot or kettle is fixed: over this boiler is placed a hogshhead or cask, the top of which is open (we believe it might with more advantage be covered with a wooden lid); while the bottom is drilled with numerous holes, about one inch in diameter; so that the steam may freely pass through the roots. In this vessel, the potatoes, &c. after being washed, are deposited; and, when sufficiently steamed, they afford a more invigorating and fattening food for cattle, than in a raw state.

A root-steamer on an improved construction is sold by the Rev. Mr. Cook, the inventor of the drill machine. This is so contrived as to be easily lifted off the boiler by means of a compound lever, and the roots discharged in an instant by withdrawing a pin which keeps the perforated bottom of the cask in its place.

ROQUE, St. a large village of Spain, in Andalusia, at the entrance of the Isthmus which separates Gibraltar from the continent. It is seated on the top of a hill, overlooking the bay, and has several batteries, and a fort at each end, to defend the lines which run across the isthmus.

ROQUE DE MARSAN, a town of France, in the department of Landes, seated on the Douese, 10 miles N.E. of Monte de Marsan.

ROQUEBRUNE, a town of Italy, in the principality

of Monaco, with a castle, seated near the sea, three miles from Monaco.

ROQUEMAURE, a town of France, in the department of Gard, seated on a craggy rock, near the Rhone, 22 miles N.E. of Nismes. Long. 4. 48. E. Lat. 44. 2. N.

ROQUETAS, a town of Spain, in Granada, on the coast of the Mediterranean, 10 miles S.W. of Almeria, and 52 S.E. of Granada. Long. 2. 3. W. Lat. 55. 51. N.

ROSANA, a town of Lithuania, in the palatinate of Novogrodec, seated near the Zolva, 20 miles S.W. of Novogrodec. Long. 25. 45. E. Lat. 55. 30. N.

RÖSCHAD, a commercial town of Switzerland, in a bailiwick of the abbey of St. Gallen, with a castle on a mountain. It is seated on the lake of Constance.

ROSES, a sea-port of Spain, in Catalonia, with a citadel, seated on the bay of Roses, in the Mediterranean, 15 miles N.E. of Girona. It was taken by the French in 1693, and in 1795. Long. 3. 1. E. Lat. 42. 16. N.

ROSES, OTTAR OF (*Encycl.*). The Royal Society of Edinburgh received from Dr. D. Monro the following account of the manner in which that costly perfume is prepared in the East. It was given him by a gentleman who had actually assisted in making it. A large quantity of the petals of the rose, freed from every extraneous matter, are steeped in pure water, in an earthen or wooden vessel, which is exposed daily to the sun, and housed at night, till a scum rises to the surface. This scum, which is the *ottar*, is carefully absorbed by a very small bit of cotton tied to the end of a stick. The oil, as it is collected, is squeezed out of the cotton into a very diminutive vial, and stopped for use. The collection of it should be continued from time to time whilst any scum is produced.

ROSHAAN, a country of Asia, lying to the W. of the kingdom of Burmah, to which it is subject.

ROSIENNE, a town of Samogitia, seated on the Dubisse, 70 miles S. of Mittau, and 188 N.E. of Warsaw. Long. 23. 45. E. Lat. 55. 30. N.

ROSOY, a town of France, in the department of Seine and Marne, with a magnificent castle, 15 miles S. of Meaux. Long. 2. 59. E. Lat. 48. 40. N.

ROSS, a sea-port of Ireland, in the county of Cork. It is united to Cork as an episcopal see, and is seated on a bay of the Atlantic, 20 miles S.W. of Kinsdale. Long. 8. 58. W. Lat. 51. 32. E.

Ross, New, a sea-port of Ireland, in Wexford, situate on the Barrow, which is navigable for large vessels up to the quay. The town has a considerable trade, and exports a great quantity of butter and beef. It is 11 miles N.E. of Waterford, and 17 W. of Wexford. Long. 6. 58. W. Lat. 51. 22. N.

ROTA, a town and castle of Spain, in Andalusia, at the entrance of the bay of Cadiz, seven miles N. of Cadiz. Long. 6. 16. W. Lat. 36. 35. N.

ROTA, an island of Asia, one of the principal of the Ladrones.

ROTAS, a town of Hindoostan Proper, in the country of Bahar, 65 miles S.E. of Benares, and 85 S.W. of Patna. Long. 83. 50. E. Lat. 24. 50. N.

ROTENBERG, a town of Germany, in Bavaria, the capital of a lordship of the same name, 12 miles N.E. of Nuremberg, and 46 N.W. of Ratisbon. Long. 11. 20. E. Lat. 49. 35. N.

ROTENBERG, a town of Switzerland, in the canton of Lucern, four miles N. of Lucern.

ROTENBURG, a free imperial town of Franconia, seated on the Tauber, 15 miles N.W. of Anspach. Long. 10. 23. E. Lat. 49. 23. N.

ROTENBURG, a town of Suabia, in the county of Hoenburg, with a castle. It belongs to the house of Austria, and is remarkable for its mineral waters. It is seated on the Neckar, seven miles W. of Tubingen. Long. 8. 55. E. Lat. 48. 28. N.

ROTENBURG, a town of Germany, in the langravate of Hesse-Cassel, with a castle, seated on the Fulde, 25 miles S. of Cassel. Long. 9. 30. E. Lat. 50. 55. N.

ROTTERDAM, one of the Friendly Islands, in the S. Pacific Ocean, discovered by Tasman. Long. 174. 30. W. Lat. 20. 16. S.

ROTTINGEN, a town of Franconia, in the bishopric of Wurtzburg, situate on the Tauber, nine miles N.E. of Mergentheim, and 18 W.N.W. of Rottenburg. Long. 8. 55. E. Lat. 49. 35. N.

ROTHWEIL, a free imperial city of Suabia, in alliance with the Swiss cantons since the year 1513. A mile and a half from this place is a famous abbey, where they receive none but noble women. It is seated on the Neckar, near its source, and also near the Danube, 27 miles S.S.W. of Tubingen. Long. 8. 44. F. Lat. 58. 9. N.

ROVERBELLA, a town of Italy, in the duchy of Mantua, 12 miles N.N.W. of Mantua. Long. 10. 42. E. Lat. 45. 18. N.

ROUBLE. See *St. George, Supp.*

ROUSSELTART, a town of France, in the department of the north, 10 miles N.E. of Ypres, and 20 S.E. of Ostend. Long. 3. 0. E. Lat. 50. 58. N.

ROXBURGH, a town and castle of Scotland, which gives name to a county. It is situate near the Tiviot, 19 miles S.W. of Berwick, and 32 S.E. of Edinburgh. Long. 2. 47. W. Lat. 55. 46. N.

ROYAN, once a large town of France, in the department of Lower Charente, famous for a siege maintained by the Huguenots against Lewis XIII. in 1622. It is now almost in ruins, and is seated at the mouth of the Garonne, 30 miles S. of Rochelle. Long. 0. 57. W. Lat. 45. 38. N.

ROYES, a strong town of France, in the department of Somme. Some mineral waters were discovered here a few years ago. It is 12 miles N.W. of Noyon, and 60 N. by E. of Paris. Long. 2. 31. E. Lat. 49. 46. N.

RUATAN, an island of New Spain, in the bay of Honduras, 10 miles from the coast, with a good harbour.

RUBIERA, a small but strong town of Italy, one of the keys of the Modenese, seated on the Secchia, eight miles N.W. of Modena. Long. 11. 14. E. Lat. 44. 39. N.

RUDAW, a town of Prussia, remarkable for the victory obtained by the knights of the Teutonic order in 1370, over Kingdard, great- duke of Lithuania; in memory of which a stone pillar was erected, which is still remaining. It is 12 miles N.N.W. of Königsberg.

RUDDER (*Encycl.*). The following is extracted from the specification of a patent granted to Capt. Bolton, of the Royal Navy, for an improved rudder, and the means of preserving the rudder of a vessel: it is dated June 23, 1801.

His invention consists in fixing the rudder, so that when the vessel touches the ground, it will rise of itself, or it may be lifted at will by any of the ordinary mechanical powers, as screws, lever, tooth and pinion, &c. This is effected by hanging the rudder on a metal bar, bolt, or slide, passing through the braces, or a solid frame fixed to

the stern-post; those braces on the aft side being made to correspond to the bar, bolt, or slide. In Pl. 41. fig. 1, A is the rudder; B the bar, bolt, or slide, to which the rudder is hung; C, Braces corresponding to B, and which confine it to the stern-post; D, the stern-post; E, screw-bolt, passes through the head of B (which is tapped), by turning the lever *d*, raises the rudder; F, iron tiller, which spars the rudder-head, and through which the rudder and B slide when lifting, *a*, pintles; *b*, goodings, cast solid with B. Capt. Bolton's improved rudder consists of the means of enlarging its size whenever it may be necessary. The rudder is slit down, or it may be made in two parts, in which is inserted a piece of wood, or metal plate, similar to A, fig. 2, the upper end of which is circular, and furnished with teeth, and turns on its centre. A bolt, B, passes through, or at the back of the rudder, and either throws out or draws in A, by turning to the right or left. In order to strengthen the rudder, either screw or shoulder-bolts, as *b*, *b*, may be fitted, and grooves, as *a*, *a*, will traverse over them.

RÜDKIOBING, a sea-port of Denmark, in the island of Langeland, which has a considerable trade in corn and provisions. Long. 10. 45. E. Lat. 55. 1. N.

RUDOLFWERD, a strong town of Germany, in Carinola, with an abbey. It is seated on the Gurck, in a country fertile in good wine, 45 miles S.E. of Laubach. Long. 15. 20. E. Lat. 46. 8. N.

RUFFAC, a town of France, in the department of Upper Rhine, seated on the Rotbach, seven miles S. of Colmar, and 17 N.W. of Basle. Long. 7. 27. E. Lat. 47. 58. N.

RUFFEC, a town of France, in the department of Charente, seated on the Anche, 27 miles N. of Angoulême.

RUGBY, a town in Warwickshire, with a market on Saturday, and a famous free-school. It is 11 miles S.E. of Coventry, and 85 N.N.W. of London. Long. 1. 12. W. Lat. 52. 24. N.

RUGLEY, a town in Staffordshire, with a market on Tuesday, seated on the Trent, 10 miles S.E. of Stafford, and 126 N.W. of London. Long. 1. 48. W. Lat. 52. 57. N.

RUGENWALD, a town of Prussian Pomerania, the chief place of the duchy of Wenden, with a castle, seated on the Wipper, eight miles from the Baltic, and 35 N.E. of Colberg. Long. 16. 27. E. Lat. 54. 35. N.

RUMFORD, a town in Essex, with a market for hogs on Tuesday, and for corn on Wednesday, 12 miles E.N.E. of London. Long. 0. 13. E. Lat. 51. 36. N.

RUMILLY, a town of Savoy, seated on an elevated plain, at the confluence of the Seram and Nepha, five miles from Annecy. Long. 6. 10. E. Lat. 45. 56. N.

RUMSEY, a corporate town in Hampshire, with a market on Saturday. It is governed by a mayor, has a manufacture of shalloons, and several paper and corn mills. It is eight miles N.N.W. of Southampton, and 74 W. by S. of London. Long. 13. 1. W. Lat. 51. 2. N.

RUNGPOUR, a town of Hindoostan Proper, in Bengal, 73 miles N.E. of Mauldah, and 106 N.N.E. of Moorshedabad.

RUNKEL, a town of Westphalia, situate on the Lahn, with a citadel, on a high hill, formerly the residence of the counts, 14 miles E. of Nassau. Long. 8. 5. E. Lat. 50. 23. N.

RUNNYMEAD, a celebrated mead, near Egham, in Surrey, where King John was compelled to sign Magna Charta and Charta de Foresta. See *WRAYSBU*.

RUPEL, a river of the Austrian Netherlands, formed by the junction of the Senne and Demer, below Mechlin. After

receiving the canal from Brussels, it joins the Scheldt, at Rupelmonde.

RUPELMONDE, a town of Austrian Flanders, seated on the Scheldt, opposite the mouth of the Rupe, eight miles S.W. of Antwerp, and 22 N.E. of Ghent. Long. 4. 23. E. Lat. 51. 7. N.

RUPERDORF, a town of Bohemia, in the circle of Koenigsgratz, four miles N.N.W. of Braunau.

RUPERT, FORT, a fort belonging to the Hudson's Bay Company, seated on the E. side of the S. end of Hudson's Bay. Long. 80. 0. W. Lat. 51. 3. N.

RUREMONDE, a strong town of Austrian Guelderland, with a bishop's see. It suffered greatly by fire in 1665, and has been taken and retaken several times; particularly in 1793, by the French, who were obliged to evacuate it soon after, but took it again the next year. It is seated near the confluence of the Maefe and Roer, 12 miles S. of Venlo, and 70 N.E. of Mechlin. Long. 5. 50. E. Lat. 51. 8. N.

RUSS, a town of Prussian Lithuania, and principal place of a district, situate at the mouth of the river Russe, 20 miles N.W. of Tilsit. Long. 21. 50. E. Lat. 55. 20. N.

RUSSELSHEIM, a town of Germany, in the principality of Hesse Darmstadt, situate on the Main, six miles E. of Mentz, and 13 N.W. of Darmstadt. Long. 8. 16. E. Lat. 49. 55. N.

RUSTGADEN, a town of Sweden, in the province of Dalecarlia, 23 miles S.S.W. of Fahlun. Long. 16. 30. E. Lat. 60. 18. N.

RUTCHESTER, a village in Northumberland, the Vindebol of the Romans. Severus' wall runs on the middle of the E. rampart, and Adrian's vallum passes about the distance of a chain to the S. of it. This fort has been very considerable, and the ruins of it are remarkable. It is six miles N. of Hexham.

RUTHIN, a town in Denbighshire, with a market on Monday. It is seated in a vale, on the river Clwyd, and had a strong castle, now in ruins. It is 15 miles S.W. of Holywell, and 206 N.W. of London. Long. 3. 30. W. Lat. 53. 7. N.

RUTLAM, a town of Hindoostan Proper, in the pro-

vince of Malwa, 48 miles W. of Ougein, and 136 E. of Amedabad. Long. 74. 58. E. Lat. 23. 25. N.

RUTIGLIANO, a town of Naples, in Terra di Bari, five miles S.E. of Bari.

RUTTUNPOUR, a city of the peninsula of Hindoostan, in Orissa, and the capital of one of the Western Maharrata chiefs. Long. 82. 36. E. Lat. 22. 16. N.

RUVO, a populous town of Naples, in Terra di Bari, with a bishop's see, 16 miles W. of Bari. Long. 16. 44. E. Lat. 41. 26. N.

RUZA, a town of Russia, in the government of Moscow, 48 miles W.N.W. of Moscow. Long. 36. 2. E. Lat. 55. 46. N.

RYACOTTA, a town of Hindoostan, in the Mysore country, 75 miles S. of Seringapatam, and 85 W.S.W. of Arcot. Long. 76. 45. E. Lat. 30. 15. N.

RYAN, Loch, a lake in the N.W. angle of Wigtonshire. The sea flows into it through a narrow pass; and it was formerly crowded, in the season, with shoals of herrings.

RYDAL-WATER, a lake in Westmoreland, a little to the W. of Ambleside. It is one mile in length, spotted with little islands; and communicates, by a narrow channel, with Grasmere-water to the W. and, by the river Rothay, with Windermere-water to the S.

RYDROOG, a town and fortress of Hindoostan, in the Mysore country, 128 miles N. of Seringapatam. Long. 76. 52. E. Lat. 14. 40. N.

RYEGATE, a borough in Surrey, with a market on Tuesday. It had a castle, some ruins of which are still to be seen; particularly a long vault, with a room at the end, large enough to hold 500 persons, where (according to tradition) the barons, who took up arms against King John, held their private meetings. It is seated in a valley, called Holmesdale, 16 miles E. of Guilford, and 21 S.W. of London. Long. 0. 15. W. Lat. 51. 16. N.

RYMENAUT, a town of Brabant, situate on the Dyle, five miles E. of Mechlin.

RZECZICA, a town of Lithuania, capital of a territory of the same name. It is seated at the confluence of the Wyedszweck and Dnieper, 125 miles N. of Kiof. Long. 31. 5. E. Lat. 50. 32. N.

S.

S A A D A H, a strong and populous town of Arabia Felix, where much Turkey leather is made. It is 140 miles W.N.W. of Sanaa. Long. 44. 55. E. Lat. 17. 50. N.

S A A L E F E L D, a town of Upper Saxony, in the principality of Altenburg. Here are manufactures of cloth and silk stuffs: it is likewise the mint-town for the circle of Upper Saxony. It stands on the Saal, 20 miles N.N.E. of Coburg, and 46 S.W. of Altenburg. Long. 11. 22. E. Lat. 50. 21. N.

S A A T Z, or **Z A T T C**, a town of Bohemia, which gives name to a circle. It is situate on the Eger, 25 miles S.W. of Leutmeritz, and 44 S. of Dresden. Long. 4. 15. E. Lat. 50. 16. N.

S A B A, a town of Persia, in Irac-Agemi, on the road from Sultania to Kom. Long. 52. 15. E. Lat. 34. 56. N.

S A B A N D G E, a town of Turkey in Asia, in Natolia. Here all the roads from Asia to Constantinople meet. It is situate on a lake which abounds in fish, 60 miles E.S.E. of Constantinople. Long. 29. 40. E. Lat. 40. 30. N.

S A B A T Z, or **S A B A C Z**, a town and fortrefs of Turkey in Europe, in Servia. It was taken by the Imperialists in 1789. It is situate on the Drave, 22 miles S. of Peterwardin, and 28 W. of Belgrade. Long. 20. 2. E. Lat. 45. 5. N.

S A B I A, a kingdom on the E. coast of Africa, bounded on the N. by Sofala, on the E. by the Mosambique, on the S. by unknown regions, and on the W. by Manica. It has mines of gold, and many elephants. Manbone is the capital.

S A B I A, a cape of Africa, in the kingdom of Tripoli, at the bottom of the gulf of Sidra.

S A B I E, a sea-port of Denmark, situate on the E. coast of N. Jutland, at the mouth of a river of the same name, 23 miles N.N.E. of Alburg. Long. 10. 18. E. Lat. 57. 20. N.

S A B I O N C E L L O, a peninsula of Dalmatia, to the S. of the gulf of Narenta, and to the N. of a chanel which separates the islands of Curzola and Melida.

S A B I O N C E L L O, a town of Dalmatia, in the republic of Ragusa, situate on the peninsula of the same name, 45 miles N.W. of Ragusa. Long. 17. 40. E. Lat. 43. 20. N.

S A B I O N E T T A, a strong town of Italy, in the Milanese, capital of a duchy of the same name, with a castle. It belongs to the house of Austria, and is 20 miles E. of Cremona. Long. 10. 30. E. Lat. 45. 0. N.

S A B L E, an ancient and populous town of France, in the department of Sarthe, with a castle. In the neighbourhood are some quarries of black marble. It is seated on the Sarthe, 25 miles N.E. of Angers, and 135 S.W. of Paris. Long. 0. 24. W. Lat. 47. 50. N.

S A B L E S D' O L O N N E, a commercial town of France, in the department of Vendée, with a port capable of containing vessels of 150 tons. It is seated on the bay of Biscay, 31 miles W. of Luçon. Long. 1. 36. W. Lat. 46. 30. N.

S A C C A I, a strong city and sea-port, one of the most famous in Japan, with several castles, temples, and palaces. It is seated on the sea, and has a mountain on one side, which serves as a rampart, 300 miles S.W. of Jedo. Long. 134. 5. E. Lat. 35. 0. N.

S A C C H A R O M E T E R, an instrument contrived by Mr. Richardson of Hull, upon the principle of the **HYDROMETER**, for measuring the *sweetness* of WORTS, or malt infusions; by comparison with the specific gravity of the water employed in the process. The principle is well known, and the making of such an instrument is in every one's power without any precise instructions.

S A D D L E (*Encycl.*). The following is the specification of a patent granted to Mr. Inglis, of Chelmsford, in Essex, for a saddle upon a new construction, the stirrup-bars of which are so contrived that should the rider, by accident, be thrown off, or fall from, his horse, he will immediately upon falling be disengaged. It is dated May 21, 1801.

"The nature of my invention," says Mr. Inglis, "is to give elasticity to the seat of the saddle, and consequently ease to the rider, by means of a spring introduced into the long straining web; and to attach the stirrup-bar to the saddle by means of a bolt or fastening, connected with the rider in such a manner, that on falling off, or by being thrown, he draws the bolt or fastening, and detaches the stirrup from the saddle. The manner in which this is performed is as follows: Take a common fiddle-tree, and being provided with a strong spring of steel, or other metal (see Pl. 44. fig. 2), instead of fixing the long strained web in the usual manner, take a piece, of a sufficient length, when doubled, and put over one arm of the spring, as at *a*, and nailed to the head of the tree in the usual manner, will just suffer the spring to clear the head, and work free; the other part of the web is to go over the other arm of the spring at *b*, and instead of being nailed down on each side upon the bar of the fiddle-tree, within side the cantle, is to be passed through two slits, to-be cut in the two sides of the cantle, about three quarters of an inch above the bar, and nailed on the lower part of the outside of the cantle, as described in fig. 3. By the web being thus elevated, and passed through the cantle, it will be allowed to play with the elasticity of the spring without being pressed down upon the tree, and in fixing this part of the long web, care must be taken that the spring be not stretched in doing it, nor the web left slack; but it must be drawn and fixed in a workman-like manner; the spring will then rest in a horizontal position over the gullet of the saddle, immediately behind the head, and the long web will receive its elastic effect therefrom. The saddle in this state is represented in the drawing fig. 1. The steel spring, as seen naked in this drawing, is then to be covered with two pieces of web, each three quarters of an inch broader than the distance between the parts of the web already on the spring at *a* and *b*, and of sufficient length to nail on each side on the bar of the tree. One of these pieces must be strongly sewed underneath the spring to each part of the web at *a* and *b*, and the other piece over the spring to the web in the same manner, which will not only prevent the spring being over stretched, but will also prevent the stuffing of the saddle from interfering with it. Then sew a piece of small, but strong, cord or string round and over the spring, through the parts of the web, drawing the string or cord tight, and fasten both ends on the under side of the web, which will prevent the spring from

Mr Inglis's Patent Saddle and Stirrup.

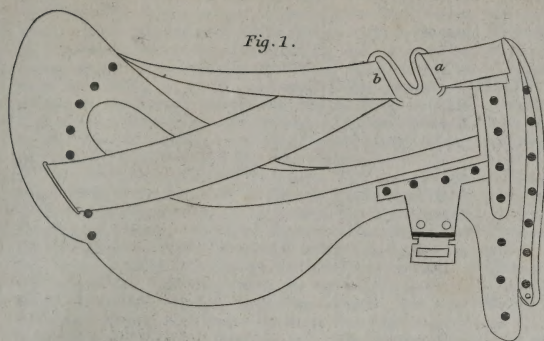


Fig. 1.

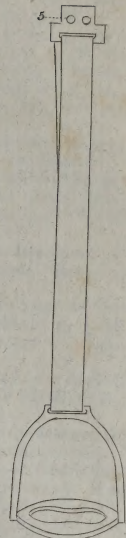
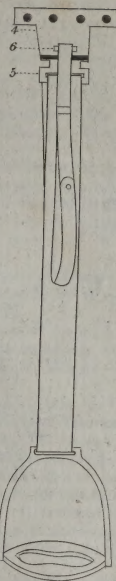


Fig. 2.

Fig. 6.

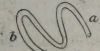


Fig. 4.

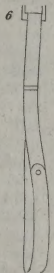


Fig. 5.

Fig. 3.

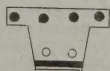


Fig. 1.

Mr Manley's improved Salt-Pans.

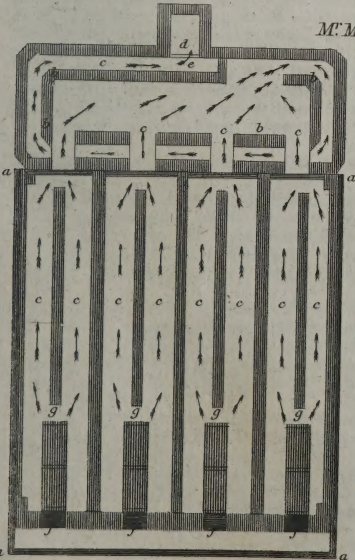
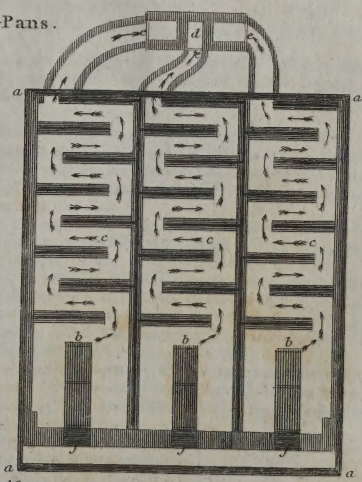
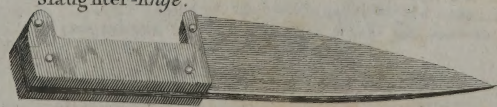


Fig. 2.



Slaughter-Knife.



being stretched during the cross-frainings. Then cross-frain the long web to a proper form, in the usual manner, except that the cross-fraining must not be brought quite so forward as the spring, but must be sewed behind, and not upon the spring, so as not to interrupt its motion. Then proceed to finish the saddle, as usual; and immediately previous to putting in the pannel, remove the cord or string from the spring, and suffer it to have its freedom. This description is equally sufficient to enable a workman to make a lady's saddle, as the furring is to be fixed in the same manner.

"The stirrup-bar consists of three parts. Fig. 4, is an open box, riveted on the bar of the saddle-tree, a little higher than the bar, on a common tree. Fig. 5, is the stirrup-bar, which supports the stirrup, with a short shank to be introduced into the box, where it is bolted by a double spring bolt, fig. 6; the two prongs of which pass through two corresponding holes in the bar and box, and thus attach the bar and stirrup to the saddle: to this bolt, fig. 6, a small strap is sewed. The rider being then seated, is to button the straps round his thighs a little above each knee; or should he fall, or be thrown from his horse, the straps will draw the bolts, and the stirrups will immediately drop from the saddle. Before he dismounts he must unbutton the straps; or, if he wish to try the effect of the invention, he may dismount with the straps on, when the spring bolts will be drawn, and the stirrups disengaged from the saddle. Instead of the straps going round the thighs, they may be attached to the body in any other manner, so as to draw the bolts on falling or being thrown."

SAFFI, a trading town of Morocco, with a castle. The Portuguese were long in possession of it, but they forsook it in 1641. It is surrounded by several eminences, which command the town. Long. 8. 58. W. Lat. 32. 28. N.

SAGAN, a town of Silesia, capital of a principality of the same name, belonging to Prince Lobkowitz. It has double walls, a castle, and a priory of the Augustine order. By permission of the emperor, in 1709, a Lutheran school was founded here. It is seated on the Bober and Queis, 62 miles N.W. of Breslaw. Long. 15. 22. E. Lat. 51. 42. N.

SAGREZ, a strong town of Portugal, in Algarva, with a harbour and a fort, four miles W. of Cape St. Vincent, and 125 S. of Lisbon. Long. 9. 4. W. Lat. 37. 4. N.

SAGUR, a town of Hindoostan Proper, in the province of Malwa, situate near the Bunnais River, 87 miles N.W. of Gurrak, and 112 S. of Agra. Long. 78. 53. E. Lat. 23. 45. N.

SAID, a town of Upper Egypt, seated on the Nile, 150 miles S. of Cairo. Long. 31. 20. E. Lat. 27. 32. N.

SAL, one of the Cape de Verd Islands; 42 miles in circumference, lying to the E. of St. Nicholas. It has its name from the great quantity of salt made here from the sea water, which overflows part of it, from time to time. It is 300 miles W. of the coast of Africa. Long. 22. 56. W. Lat. 16. 38. N.

SALA, or **SALBERG**, a town of Sweden, in Westmania, near which is a very large ancient silver mine. This town was first built by King Gustavus Adolphus in 1624, and destroyed by fire in 1736. It is seated on a river, 30 miles W. of Upfal, and 50 N.W. of Stockholm. Long. 17. 45. E. Lat. 59. 50. N.

SALARANO, a town of Italy, in the Milanese, situate on the Lambro, five miles W.S.W. of Lodi, and 15 S.E. of Milan. Long. 9. 22. E. Lat. 42. 44. N.

SALECTO, a town of the kingdom of Tunis, near which are the remains of a large castle. It is seated near the Mediterranean, 22 miles S.S.E. of Monaster. Long. 11. 3. E. Lat. 35. 13. N.

SALEM, a sea-port of the state of Massachusetts, capital of the county of Essex. It is the oldest town in the state, except Plymouth, and carries on a large foreign trade. It is 15 miles N.E. of Boston. Long. 71. 30. W. Lat. 42. 16. N.

SALEM, a sea-port of the state of New Jersey, 37 miles S.S.W. of Philadelphia. Long. 75. 32. W. Lat. 39. 37. N.

SALEM, a town of North Carolina, in the county of Surry. It is the principal settlement of the Moravians in this state, and 170 miles W. of Edenton. Long. 80. 21. W. Lat. 36. 2. N.

SALERS, a town of France, in the department of Cantal, seated among the mountains, nine miles N. of Aurillac.

SALIES, a town of France, in the department of Lower Pyrenees, remarkable for its springs of salt water, from which the white salt is made. It is seven miles W. of Orthea.

SALIGNAC, a town of France, in the department of Upper Vienne, 10 miles S. by W. of Limoges. Long. 1. 18. E. Lat. 45. 42. N.

SALIGNAS, a town of Spain, in Biscay, seated on the Deva, at the foot of a mountain, eight miles N. by E. of Vittoria, and 28 S.S.E. of Bilbao. Long. 2. 54. W. Lat. 43. 5. N.

SALINAS, a town of Spain, in Guipuscoa, near Mount St. Adrian, 16 miles N.E. of Vittoria, and 28 S.S.W. of St. Sebastian. Long. 2. 45. W. Lat. 43. 5. N.

SALINS, a considerable town of France, in the department of Jura, with a strong fort. It is remarkable for its salt-works, the largest of which is in the middle of the town, and is like a little fortified place. It is seated in a fertile valley, on a stream that has its source in the town, 29 miles S. of Benafcon, and 200 S.E. of Paris. Long. 6. 5. E. Lat. 46. 56. N.

SALM, a town of Germany, capital of a county in the duchy of Luxemburg, 11 miles S.S.E. of Spa, and 38 N. of Luxemburg. Long. 5. 55. E. Lat. 50. 25. N.

SALM, a town of France, in the department of Meurthe, with a castle, seated at the source of the Sar, 20 miles W. of Strasburg, and 55 S.E. of Nancy. Long. 7. 15. E. Lat. 48. 34. N.

SALO, a town of Italy, in the Bresciano; taken by the French in August, 1796. It is seated on the lake Digarpa, 17 miles N.E. of Brescia. Long. 10. 49. E. Lat. 45. 38. N.

SALOBRENA, a sea-port of Spain, in Granada, with a castle. It carries on a great trade in sugar and fish, and is seated on a rock, near the mouth of a river of the same name, 12 miles E. of Almuñecar, and 36 S. of Granada. Long. 3. 30. W. Lat. 36. 31. N.

SALON, a town of France, in the department of the Mouths of the Rhone, seated on the canal of Craponne, 20 miles N.W. of Aix. Long. 5. 5. E. Lat. 43. 38. N.

SALONE, a town of Livadia, with a bishop's see. The inhabitants are Christians and Turks, pretty equal in number; and Jews are not suffered to live here. It is seated on a mountain, on the top of which is a citadel, 20 miles N.E. of Lepanto. Long. 23. 1. E. Lat. 38. 50. N.

SALPE, a town of Naples, in Capitanata, near which are some saltworks. It is situate on a lake, near the sea, 23 miles S. of Manfredonia, and 92 E.N.E. of Naples. Long. 16. 10. E. Lat. 41. 12. N.

SALSONNA, a town of Spain, in Catalonia, seated on the Llobregat, 44 miles N.W. of Barcelona. Long. 1. 38. E. Lat. 41. 56. N.

SALT (Encycl.). To remove and lessen the known inconveniences in the manufacture of salt, Mr. Manley, of

Great Budworth in Cheshire, invented and adopted the following apparatus, and processes, for which he has obtained a patent.

"My first head of improvement (says he in his specification) consists in adding to the common apparatus for salt-making another pan, which I call a heating cistern, or preparing-pan. This is placed contiguous to the common salting-pan, and is heated by an extension of the flues from the said salting-pan, and therefore without requiring any additional fuel. The preparing-pan may be made of iron, or any other suitable material, and of a form the best adapted to different salt-works, and either with or without a cover. It should hold at least as much brine as will serve for one charge of the salting-pan.

"The construction of the pans will be explained by a reference to the drawing hereto annexed or subjoined. In Plate 44. fig. 1, is the ground plan of a salting-pan, of the usual form, with a preparing-pan adjoining to it. *a, a, a, a*, is the salting-pan; *b, b, b, b*, the preparing-pan; *c, c, c, c*, flues which convey the flame from beneath the salting-pan to the preparing-pan; *d*, the chimney; *e*, a damper; *f, f, f, f*, fire-doors; *g, g, g, g*, grates. The arrows shew the course of the flame through the flues.

"These pans may be used in the following manner: (allowing for such variations as may be found advisable from occasional differences in the quality of the brine, or the particular convenience of the manufacturer). The rough brine, in the state in which it is pumped out from the well, or drawn from the reservoir, is to be lent directly to the preparing-pan, instead of going at once into the salting-pan, which is done in the present method of manufacture. The rough brine is then heated in the preparing-pan, by means of the same fire which is heating the brine already in the salting-pan. The rough brine, by being thus heated in the preparing-pan, is brought, without expense of fuel, to the degree of heat requisite for depositing the earthy and metallic impurities separable from it by mere heat. These impurities subside to the bottom, leaving the brine above them clear and hot, ready to be afterwards evaporated in the salting-pan before used, as soon as this pan is able to receive it, or in any contiguous salting-pan. The clarified brine may be drawn off from the sediment by a siphon, or by any other suitable method; after which the sediment is to be let off through a waste-pipe at the bottom of the preparing-pan, and the whole well washed out. The preparing-pan is then to be filled with fresh brine, and heated as before, by the same fire which is supplying the salting-pan, so as to prepare a charge of clear and hot brine for a subsequent evaporation.

"The improvement in the process of salt-making, which I have here specified, will save a considerable quantity of fuel, inasmuch as the brine may be brought in the preparing-pan, without any additional expense of fuel, to the same state, for which in the usual mode of manufacture a fire must be kept up for several hours under the salting-pan.

"The above improvement will likewise save much of the time necessary to the process of evaporation, as well as much of the time and labour now employed in clearing out the sediment, and it will contribute to lessen the quantity of the pickings, and consequently the frequency of their removal.

"My second head of improvement in the manufacture of salt, which is quite distinct from the first, is to add to the brine a certain quantity of fixed alkali, especially of barilla, or any other species of the mineral alkali, whereby several of the earthy salts contained in the brine, and not separable from it by mere heat, are decomposed, and the earth precipitated in the form of a sediment, which may be removed without much difficulty. The quantity of the alkali, and the time at which

it should be added, must depend on the degree of concentration of the brine, and especially on the nature and proportion of its contents; and as these differ much in different springs, and even in the water of the same spring at different times, they must therefore be left to the manufacturer to determine for himself according to circumstances.

"My third head of improvement in the manufacture of salt, which is quite distinct from the two former, consists of a peculiar method of constructing the flues for conveying the flame and heated air of the furnaces beneath the pans, so as to lessen the requisite consumption of fuel. Many attempts have been made at various times to increase or retain the heat under salt-pans by means of circuitous, angular, or otherwise lengthened flues, all of which attempts have been frustrated by the heaving or rising of the pan, when the liquor which it contains is fully boiling, which has allowed the flame to pass directly over the cross and midfeather walls to the chimneys, instead of circulating through the flues.

"To remedy this inconvenience, let flue-plates be formed of plates of iron bent to an angle lengthwise, in order to afford a face or flanch part, to be rivetted, or otherwise fastened, to the bottom of the boiler, whilst the other part of the width of the plates project downwards from the bottom of the pan, and is either to be received loosely in a groove of the cross and midfeather walls, or else to hang down for some inches beside them. By this method the flame and heated air will be kept within the flues, notwithstanding the rise and fall of the pan, and the advantage in saving fuel which is derived from the circuitous course of the flues will be secured.

"Figure 2, exhibits one of the methods* of applying these plates. *a, a, a, a*, is the salt-pan; *b, b, b*, grates; *c, c, c*, flues; *d*, the chimney; *e, e, e*, dampers; *f, f, f*, fire-doors. The dark lines represent the iron plates, and the lighter parts on each side represent the brick partition walls of support, between which the plates are received loosely. The arrows shew the course of the fire through the flues.

"The above construction may be applied both to salt-pans and to pans of any description which are intended to bear the fire."

SALTZA, a town of Lower Saxony, in the duchy of Magdeburg. It takes its name from the salt-pits, and is 12 miles S.S.E. of Magdeburg. Long. 11. 54. E. Lat. 52. 3. N.

SALTZWEDDEL, a town of Upper Saxony, in the old marche of Brandenburg, formerly reckoned one of the Hanse towns. Here are flourishing manufactures of cloth, serge, and stockings. It is situate on the Jetze, 20 miles N.N.W. of Gardeleben, and 48 E.N.E. of Zell. Long. 11. 30. E. Lat. 52. 55. N.

SALVADOR, Sr. the capital of the kingdom of Congo, with a large palace, where the king and a Portuguese bishop reside. It is seated on a craggy mountain, 240 miles E. by S. of Loango. Long. 15. 39. E. Lat. 4. 50. S.

SALVADOR, Sr. a populous city of Brazil, with an archbishop's see, and several forts. It contains many religious houses, and carries on a considerable trade. The houses are two or three stories high, and the walls thick and strong, being built of stone. The principal streets are large, and there are many gardens, full of great variety of fruit-trees, herbs, and flowers. The chief commodities are sugar, tobacco, wood for dyes, raw hides, tallow, and train-oil. It is seated on an eminence, on the bay of All Saints, 120 miles S.W. of Sergippy. Long. 40. 10. W. Lat. 13. 30. S.

SALVATERRA, a town of Portugal, in Estremadura, with a royal palace, seated on the Tajo. Long. 7. 51. W. Lat. 38. 59. N.

SALVATERRA, a strong town of Portugal, in Beira. It

was taken by the French in 1704, and by the allies in 1705. It is feated on the Elia, 12 miles N.E. of Alcantara. Long. 6. 14. W. Lat. 39. 30. N.

SALVATIERRA, a town of Spain, in Galicia, feated on the Minho, 56 miles S. of Compostella. Long. 8. 16. W. Lat. 41. 48. N.

SALVATIERRA, a town of Spain, in Biscay, feated at the foot of Mount St. Adrian, 30 miles E. by S. of Vittoria. Long. 2. 17. W. Lat. 42. 54. N.

SAMARAND, a populous town on the eastern part of the island of Java.

SAMARCAND, an ancient and populous city, in the country of the Ufbeck Tartars, with a castle and a university. It was the birth-place and feat of Tamerlane the Great. It carries on a trade in excellent fruits, and is feated near the Sogde, which runs into the Amo, 138 miles E. by N. of Bokhara. Long. 65. 15. E. Lat. 39. 50. N.

SAMATHAN, a town of France, in the department of Eure, with a strong castle on a mountain. It is feated in a valley, on the river Save, five miles N. of Lombez. Long. 1. 0. E. Lat. 43. 34. N.

SAMBAS, a town of the island of Borneo, capital of a kingdom of the same name, near the W. coast. In its vicinity diamonds are found. Long. 109. 0. E. Lat. 2. 20. N.

SAMBRE, a river of the Netherlands, which rises in Picardy, and passing by Landrecy, Maubeuge, Thun, and Charleroy, falls into the Maese, at Namur.

SAMOGITIA, a province of Poland, 175 miles long, and 125 broad; bounded on the N. by Courland, on the E. by Lithuania, on the W. by the Baltic, and on the S. by Western Prussia. It is full of forests and high mountains, which feed a great number of cattle, and produce abundance of honey. Here are also very active horses, in high esteem. The inhabitants are clownish, but honest; and they will not allow a young woman to go out in the night without a candle in her hand, and two bells at her girdle. Rofienne is the principal town.

SAMSO, or **SAMSOI**, an island of Denmark, on the E. coast of North Jutland. It is eight miles long, and three broad, and very fertile. Long. 10. 33. E. Lat. 56. 2. N.

SAMSON, Sr. a town of France, in the department of Eure, feated on the river Rille, five miles from Pontaudemer.

SANA, or **ZANA**, a town of Peru, and capital of a jurisdiction in the bishopric of Truxillo. It is situate in a charming valley, fertile in fruit and corn, and adorned with the most beautiful flowers, whence it has been sometimes called Miraflores. It is 90 miles N. of Truxillo. Long. 78. 30. W. Lat. 40. 35. N.

SANCERRE, a town of France, in the department of Cher. The wines produced in its environs are scarcely inferior to those of Burgundy. It is feated on a mountain, near the river Loire, 22 miles N.W. of Nevers, and 110 N. of Paris. Long. 2. 59. E. Lat. 47. 18. N.

SANCIAN, an island of China, on the coast of Quan-tong, 40 miles in circumference, and famous for being the burying place of St. Francis Xavier, whose tomb is to be seen on a small hill.

SANCOINS, a town of France, in the department of Cher, feated on the Argent, 15 miles S.W. of Nevers.

SANDECZ, a strong town of Little Poland, in the palatinate of Cracow. There are mines of gold and copper in its territory, and it is feated at the foot of Mount Krapack, 32 miles S.E. of Cracow. Long. 20. 32. E. Lat. 49. 43. N.

SANDERSLEBEN, a town of Upper Saxony, in the principality of Anhalt Dessau, situate on the Wipper, 26 miles

S.E. of Quedlingburg, and 31 S.W. of Dessau. Long. 11. 22. E. Lat. 51. 38. N.

SANDHAMN, a sea-port of Sweden, in the province of Upland, where all vessels on their passage to and from Stockholm are examined. It is 10 miles E. of Stockholm. Long. 18. 20. E. Lat. 59. 20. N.

SANDO, an island of Japan, on the N. coast of Nippon; with a town of the same name. It is 87 miles in circumference. Long. 139. 30. E. Lat. 38. 35. N.

SANDUGAL, a town of Portugal, in Beira, feated on the Coa, 12 miles S.E. of Guarda.

SANDVLIET, a town of Brabant, on the river Scheldt, 12 miles N.W. of Antwerp. Long. 1. 12. E. Lat. 51. 22. N.

SANDY HOOK, a small island of the United States, near the coast of New Jersey. It was formerly a peninsula, but the sea broke through the isthmus and formed it into an island in the winter between 1777 and 1778. It is seven miles S. of Long Island.

SANEN, or **GESSENAY**, a town of Switzerland, in the canton of Bern, situate on a river of the same name, 24 miles S. of Friburg, and 25 E.S.E. of Lausanne.

SANGUESA, a town of Spain, in Navarre, feated on the Arragon, 20 miles S.E. of Pampeluna. Long. 1. 17. W. Lat. 42. 34. N.

SANORE-BANCABOUR, a town of Hindoostan, in the kingdom of Myfore, 117 miles E. by N. of Goa. Long. 75. 44. E. Lat. 15. 39. N.

SANTA CLARA, an island of Peru, in the bay of Guayaquil, 90 miles W. of Guayaquil. Long. 82. 36. W. Lat. 2. 18. S.

SANTA FE, the capital of New Mexico, feated among mountains, near the Rio-del-Norte, 950 miles N. of Mexico. Long. 106. 35. W. Lat. 35. 32. N.

SANTORINI, an island of the Archipelago, to the N. of Candia, and to the S. of Nio. It is eight miles in length, and nearly as much in breadth; and near it are three or four other small islands, each of which bears evident marks of a volcanic origin. It produces plenty of barley, cotton, and wine, in which, and the cotton manufactures, its trade consists. Fruit is scarce, except figs, and it has neither oil nor wood. The inhabitants are all Greeks, about 10,000 in number, and though subject to the Turks, they choose their own magistrates, Pyrgos is the capital. Long. 26. 1. E. Lat. 36. 10. N.

SAONE AND LOIRE, a department of France, including part of the late province of Burgundy. Macon is the capital.

SAOIGIS, a town of Piedmont, in the county of Nice, situate on the summit of a rock. It was taken by the French in 1794. It is 17 miles N.E. of Nice. Long. 7. 33. E. Lat. 36. 38. N.

SAPIENZA, three small islands, and a cape, near the S. coast of the Morea. The largest island was anciently named Sphacteria. The pirates of Barbary conceal themselves behind it, to surprize vessels which come from the gulf of Venice, or the coast of Sicily. Long. 21. 35. E. Lat. 36. 50. N.

SARATOF, a government of Russia, formerly a province of Astracan. It is divided into 12 districts, of which that of the same name is the principal.

SARATOF, a town of Russia, capital of the government of that name. It is feated on the side of a mountain, near the river Volga, 220 miles S. of Kasan, and 300 N.W. of Astracan. Long. 49. 25. E. Lat. 52. 4. N.

SARATOGA, a fort of the state of New York, memorable for the surrender of an army of British and Hessians, under the command of General Burgoyne, to the Americans, in 1777. It is feated on the E. side of Hudson's River, 50 miles N. of Albany.

SARBOURG, a town of Germany, in the electorate of Treves, seated on the Sare, eight miles S. of Treves. Long. 6. 40. E. Lat. 49. 37. N.

SARBOURG, a town of France, in the department of Meurthe, seated on the Sare, at the foot of a mountain; 15 miles E. of Marfal, and 50 S.E. of Metz. Long. 7. 9. E. Lat. 48. 46. N.

SARBRUCK, a town of France, in the department of Moselle, seated on the Sare, 14 miles E.S.E. of Sarlouis, and 40 E. by N. of Metz. Long. 7. 2. E. Lat. 49. 14. N.

SARDAM, a sea-port of North Holland, where there are vast magazines of timber for building ships, and naval stores, with a great number of shipwrights; and here is seen the hut in which Peter the Great resided, while he worked as a shipwright in this town. Sardam is seated on the Wye, seven miles N.W. of Amsterdam. Long. 4. 45. E. Lat. 52. 28. N.

SARDO, a town of Turkey in Asia, in Natolia. It was formerly called Sardis, and was the capital of Lydia, under the famous King Cræsus. It was afterwards one of the seven churches of Asia, celebrated in the book of Revelation, but was destroyed by an earthquake in the reign of Tiberius. It now contains only a few wretched huts. However, here is a large caravanserai, where there are handsome lodgings for travellers, it lying in the great road from Smyrna to Aleppo; and the Turks have a mosque, formerly a christian church. The inhabitants are now almost all shepherds, who feed their flocks in the neighbouring plains. There are also a few Christians, who employ themselves in gardening, but they have neither church nor priests. It is 70 miles E. of Smyrna. Long. 28. 30. E. Lat. 38. 44. N.

SARGANS, a town of Switzerland, capital of a county of the same name, in the canton of Zurich, with a castle on a rock, where Andrew Doria was defeated by Barbarossa. It is seated on the top of a hill; and near it are mineral springs.

SARGEL, a large and ancient sea-port of Africa, in Tremesen, with a castle, seated on the sea-coast, 25 miles S.S.W. of Algiers. Long. 2. 15. E. Lat. 36. 30. N.

SARGUEMINE, a town of France, in the department of Moselle, seated on the Sare, nine miles S. by E. of Sarbruck. Long. 7. 6. E. Lat. 49. 8. N.

SARK, a little island belonging to Great Britain, lying between Guernsey and Jersey, on the coast of Normandy.

SARK, a river of Scotland, which rises in the E. part of Dumfriesshire, and for many miles forms the boundary with England.

SARLAT, a town of France, in the department of Dordogne. It was lately a bishop's see, but is a poor place, seated in a bottom, surrounded by mountains; 27 miles S.E. of Périgueux, and 87 E. by N. of Bourdeaux. Long. 1. 19. E. Lat. 44. 5. N.

SARLOUIS, a strong town of France, in the department of Moselle, seated on the isthmus of a peninsula formed by the river Sare, 20 miles E. of Thionville, and 32 N.E. of Metz. Long. 6. 48. E. Lat. 49. 21. N.

SARNEN, a town of Switzerland, in the canton of Underwalden, near a lake to which it gives name. It had formerly a strong castle, and is nine miles S. of Lucern. Long. 8. 7. E. Lat. 46. 55. N.

SARNO, a river of the kingdom of Naples, which rises near Sarno, and falls into the bay of Naples.

SARNO, a town of Naples, in Principato Citeriore, with a bishop's see. It is seated on the Sarno, near its source, 12 miles N.E. of Salerno, and 20 S.E. of Naples. Long. 14. 49. E. Lat. 40. 46. N.

SARP, or **SARPEN**, a town of Norway, in the province of Christianland. Near it is a great cataract, the noise of which

may be heard to the distance of 20 miles. It is ten miles W.S.W. of Fredericstad. Long. 10. 47. E. Lat. 59. 9. N.

SARREAL, a town of Spain, in Catalonia, seated on the Francoli, in the neighbourhood of which are quarries of alabaster, so transparent that windows are glazed with it. Long. 2. 0. E. Lat. 41. 30. N.

SARTE, a department of France, including the late province of Maine. It takes its name from a river which joins the Maine and the Loire, above Angers. The capital is Mans.

SARVERDEN, a town of France, in the department of Moselle, seated on the Sare, 18 miles S. of Sarbruck. Long. 7. 7. E. Lat. 48. 58. N.

SARWAR, a town of Lower Hungary, capital of a county of the same name, seated on the Raab, 50 miles W. by N. of Buda. Long. 16. 48. E. Lat. 47. 30. N.

SARZANA, a strong town of Italy, in the territory of Genoa, with a bishop's see. It was given to the Genoese, by the Great Duke of Tuscany, in lieu of Leghorn. It is seated at the mouth of the Magra, 50 miles S.E. of Genoa. Long. 9. 52. E. Lat. 44. 8. N.

SASERAM, a town of Hindoostan Proper, in Bengal, seated at the foot of a mountain, near a great lake, in the middle of which is an island with the magnificent mausoleum of the Emperor Shere Shah, which had a fine bridge leading to it; but both are greatly decayed. It is 50 miles S.E. of Benares. Long. 86. 44. E. Lat. 26. 10. N.

SASSARI, a city of Sardinia, capital of the territory of Lugari, with a castle and an archbishop's see. It contains 30,000 inhabitants, and is famous for a fountain called Roffè, which is said to be more magnificent than the best at Rome. It is seated in a plain, six miles N. of Alger. Long. 8. 39. E. Lat. 40. 46. N.

SASSEBES, a strong town of Transylvania, capital of a county of the same name; seated at the confluence of two rivers, which fall into the Maroch. Long. 26. 40. E. Lat. 46. 26. N.

SAS VAN GHENT, a strong town of Dutch Flanders. It has fine sluices, and is seated on a canal, which communicates with Ghent, about eight miles N. from it. It was built by the inhabitants of Ghent, as a bulwark to that town, but was taken, in 1644, by the Dutch, from whom the French took it in 1794. Long. 3. 49. E. Lat. 51. 11. N.

SATALIA, a strong sea-port of Natolia, on the coast of Caramania. It is divided into three towns, and has a superb mosque, which was formerly a church. The country around is very fertile; and the citrons and oranges are extremely fine. It is 150 miles W. by S. of Cogni, and 265 S. by E. of Constantinople. Long. 32. 21. E. Lat. 37. 1. N.

SATGONG, or **SATAGONG**, a village of Hindoostan Proper, in Bengal. In the 16th century it was a large city, in which the European traders in Bengal had their factories. It is seated on a creek of the Hoogly River, four miles N.W. of Hoogly.

SATTARAH, a town of the Deccan of Hindoostan, in the province of Visapour, formerly the capital of the Mahrattah state. It is situate near the source of the Kistnah, 50 miles S. of Poona, and 77 W. of Visapour. Long. 74. 8. E. Lat. 17. 45. N.

SAVENAY, a town of France, in the department of Lower Loire, 18 miles N.W. of Nantes, and 32 W. of Ancenis. Long. 1. 55. W. Lat. 47. 23. N.

SAVENDROOG, a strong fortress of Hindoostan, in the kingdom of Myfore. It is situate on the top of a vast rock, rising half a mile in perpendicular height, from a base of above eight miles in circumference, and divided at the summit by a chafin, that forms it into two hills; these having each its

peculiar defences, serve as two citadels, capable of being maintained, independently of the lower works, which are also wonderfully strong. Notwithstanding this, it was taken by the English, in 1791, after a siege of seven days. It is 18 miles W. of Bangalore.

SAVERDUN, a town of France, in the department of Arriège, seated on the Arriège, 25 miles S.S.E. of Toulouse. Long. 1. 36. E. Lat. 43. 14. N.

SAVERNE, a town of France, in the department of Lower Rhine, with a palace, the occasional residence of the late archbishops of Strasbourg. It is seated at the foot of Mont Voiges, in a fertile country, which produces plenty of wine, 18 miles N.W. of Strasbourg, and 120 E. of Paris. Long. 7. 35. E. Lat. 48. 41. N.

SAVGILIANO, a strong town of Piedmont, capital of a territory of the same name, with a rich Benedictine abbey. It is seated on the Maira, five miles W. of Fossano, and 26 S. of Turin. Long. 7. 44. E. Lat. 44. 30. N.

SAULGEN, a town of Suabia, capital of a county of the same name, which belongs to the Baron of Walburg.

SAULIEU, a town of France, in the department of Côte d'Or. Here was anciently a college of the Druids, and a wood in which they performed their sacrifices, and where the ruins of a druidical temple are still visible. It is seated on an eminence, 25 miles W. of Dijon, and 142 S.E. of Paris. Long. 4. 7. E. Lat. 47. 17. N.

SAVOLAX, a district of Sweden, in the province of Finland, about 200 miles in length, and 100 in breadth, bordering on Russia.

SAVONIERS, a town of France, in the department of Indre and Loire, five miles from Tours. Near it are caverns, famous for their petrifications.

SAURUNGPOUR, a town of Hindoostan Proper, in the province of Malwa, 42 miles N.N.E. of Indore, and 43 N.E. of Ougain. Long. 76. 32. E. Lat. 23. 35. N.

SAUVES, a town of France, in the department of Gard, seated on the Vidoure, 12 miles S.W. of Alais.

SAUVETERRE, a town of France, in the department of Lower Pyrénées, with an old ruined castle, 20 miles W.N.W. of Pau.

SAUVETERRE, a town of France, in the department of Aveyron, 12 miles S.E. of Villefranche.

SAVU, an island in the Indian Ocean, to which the Dutch have a kind of exclusive trade, having entered into an agreement with the rajahs that their subjects shall trade with no ships, but those of the Dutch East-India Company. Long. 122. 30. E. Lat. 10. 35. S.

SAXENBURG, a town of Germany, in the duchy of Carinthia, situate on the Drave, 38 miles W. of Clagenfurt. Long. 13. 40. E. Lat. 46. 52. N.

SAXENHAGEN, a town of Westphalia, in the county of Schwabenburg, 20 miles N.W. of Hanover. Long. 9. 36. E. Lat. 52. 30. N.

SAXMUNDHAM, a town in Suffolk, with a market on Thursday, seated on a hill, 29 miles N.E. of Ipswich, and 89 N.E. of London. Long. 1. 40. E. Lat. 52. 18. N.

SAYBROOK, a town of the United States, in Connecticut. It is the most ancient town in the state, and situate on Connecticut River, 18 miles W. of New London. Long. 73. 2. W. Lat. 41. 16. N.

SAYCOCK, one of the islands of Japan, divided from Nippon by a narrow channel. The Dutch factors are permitted to reside in the little island of Difunia, which is on the W. side of this. Long. 132. 28. E. Lat. 34. 0. N.

SAYPAN, one of the Ladrone Islands, larger and pleasanter than that of Tinian; lying between 140 and 150° E. long, and in 15. 22. N. lat.

SCALE-BEAM. Under the article BALANCE we have spoken fully on the construction of scale-beams. To what we have there said we purpose to add the description of a *Band* or *Support* applicable to scale-beams of every size, and calculated to render the operations, for which these instruments are used, more expeditious and convenient, without diminishing their accuracy. This account is the production of Citizen Prony, member of the National Institute of France, and published in the *Annales de Chimie*.

"Several experiments," says he, "in which I was engaged during the course of the last winter, put me under the necessity of contriving a support, which might be applied promiscuously to every kind of balance, whether provided with a suspending handle or not, and which, without detriment to its accuracy, should afford me commodious means of successively raising and lowering it. It is well known how embarrassing and laborious the operation of weighing is, when performed with balances supported by the hand; though this is often only the least inconvenience with which their use is attended.

"Various artists have contrived supports, commodious in their use, and ingenious in their principle; but as each of these supports can only be adapted to a single balance, they become so expensive as to be out of the reach of the majority of artists and experimentalists. I think, therefore, I shall do them an acceptable service, by publishing, in compliance with the request of several eminent chemists, the description of a support, which, besides the advantage of being adapted for all kinds of balances, possesses that of being constructed, at a small expense, either in wood or metal.

"It was my intention to have added to this description some views relative to the theory and construction of balances, of which I conceived that artists, acquainted with the elements of geometry and arithmetic, might avail themselves for perfecting the machines used for weighing; but as this part of my labour has extended itself to a greater length than I had at first imagined, I shall publish it separately.

"A triangular foot of copper A, *a*, *a* (figs. 1 and 2, Plate 45. representing the elevation and section of my apparatus), has its three extremities *a*, *a*, *a*, firmly screwed down upon a table or horizontal plane. Into the part A of this foot is screwed a cylindrical rod A B, which may be of any arbitrary length: it may even be convenient to have two of these of different lengths, in order that they may be changed, when we wish to employ the machine for very large balances. Those which I have made use of are, the one half a metre, and the other one metre, in length.

"A vertical pulley, P, is placed at the top of the stem A B, in such a manner that the same vertical plane passes through the axis of the rod, and through the horizontal axis of the pulley; the block or collar C D of this pulley has at its lower part a tube C B, into which enters, with a gentle friction, the superior extremity of the rod A B; a screw E serves to keep the pulley in a fixed position.

"Another pulley P is fixed at the bottom of the rod A B, in such a position, that the tangent of the pulleys P and *p* is parallel with the axis of the rod A B.

"A cord K *t* p H G P F, to the end of which is suspended, on the outside of the vertical table K, a small weight *k*, passes through a hole *t* made in the foot *a*, rolls over the pulleys *p* and P, and is attached at F to a piece *m m' n q*, which has the form of a fork, and to which are suspended (as I shall shortly explain) the balance, the weights, and the substances that are to be weighed. F *m* is a button, which being screwed at the top of the fork, receives the end of the cord, and by means of a knot made on it sustains the fork.

"The tail or handle of this fork is of a prismatic form at the part *m' n*; this prismatic part enters a groove *f f'* made at

the extremity N of the horizontal piece N O, so that it can slide freely in this groove either upwards or downwards, its course being however limited at m' , where it is stopped by the enlarged handle of the fork, and at n by the greater width produced by the separation of the two branches of the fork.

"The piece N O, which is hollow, and intersected at O, by the stem A B, can slide along and turn round this stem: when it is brought to its proper height, it is secured by means of the screw V, and it is then necessary, first, that it should be at such a height that, when the stop m rests on the side of the groove $f f$, or when N O can move no further down, the scales of the balance shall be in contact with the table or horizontal plane, in order that we may afterwards be able to raise it the whole height of $f n$; secondly, that the cord F F be in one and the same vertical plane with H G.

"The groove at T ought to be situated in such a manner that the axis of the prismatic part of the tail of the fork, and the cord F F, shall always be in the same vertical plane, or in a parallel line with the axis of the stem A B.

"These dispositions being made, let us imagine the two branches $n g$ of the fork to be perforated with holes of different diameters, in order to receive horizontal pins ($g g$) of different sizes; and we shall have all that is requisite for the ordinary operations of weighing, performed in the air, with balances, the beams of which are suspended from above.

"In fact, whatever kind of balance we use, we are to introduce the extremity of its suspending handle into the fork $n g$, and insert into the round hole, which the handle of the balance always has at its superior extremity, any one of the pins that will enter with ease; we then apply the piece O N, in such a manner as to fulfil the conditions above laid down for the position of this piece; after which, it is to be fixed by the screw V. This being done, the scales of the balance are to be charged, which being in contact with the table, or horizontal plane, can have no motion. When the scales are charged, we lay hold of the small ball k , and draw the cord which suspends it so as to raise the balance very slowly: if the scales be not in equilibrium, the cord is to be loosened till they rest again upon the table, and so successively.

"A counterpoise Q, suspended to the cord F G, ought to preserve the equilibrium with the weight of the balance. By means of this precaution, it comes to pass, that the common centre of gravity of all the forces supported by the pulley P falls in all cases upon the axis of the stem A B, which thus has no tendency to bend.

"If we wish now to use a hydrostatic balance, we adapt to the stem A B a small board O N', fig. 3, which, by means of a cylindrical hole at O, may slide along the rod A B, and be fixed at any arbitrary height by a screw at V. Another piece, or board, K' K', is placed upon V' N', in such a manner that the holes T T correspond with the centre of the scales, under which are placed the hooks intended for holding the substances suspended in the water, and K' K' is fixed upon V' N' by means of screws V'.

"These arrangements being made, let the piece N' O' and the board K' K', be placed in such a manner that, first, the whole height of the balance be placed between this piece and the board, and that the scales L L be in contact with the board K' K', their centres corresponding with holes made in T T. Secondly, that K' K' be sufficiently elevated to enable us to place under it the vessels W W, filled with water, and conveniently to immerse, in one of these vessels, the substances which we wish to weigh hydrostatically.

"According to the common practice, these substances are suspended by a very thin wire; but by placing, after my method, two vessels, and suspending to the two scales wires of equal diameter, the one of which supports the substance that is

to be weighed, and the other merely in part immersed, the magnitude of the diameter will have no influence upon the accuracy of the operation; for, let us suppose the apparatus to be adjusted in such a manner, that at first the two wires were in equilibrium with each other (which may easily be obtained by varying the height of the water in the vessels), these two wires will still be in equilibrium, when the beam F F, being elevated, will remain in its horizontal position: whence it follows, that if one of the wires have suspended to it a substance immersed in the water, and we place in the opposite scale, and consequently out of the water, a weight adequate to keep the equilibrium with the immersed substance, for a horizontal position of the beam, the equilibrium will still be maintained, whatever may be the elevation or depression of the beam, provided it continue in a horizontal position; for the lengths of the wires, either above or below the surface of the water, being equal, the difference between the specific weight of the water and that of the metal will operate equally upon both extremities of the beam. It is evident that this advantage will not be obtained if we employ only the wire to which the substance is suspended, and that the equilibrium, established for a certain elevation and a horizontal position of the beam, will not apply to other elevations of the beam by preserving it in the horizontal position.

"It is to be remarked, that my method compensates not only for the excess of the specific weight of the wires over that of the water, but also for that which depends upon the adhesion of the fluid to the wires, and the covering of water which they carry along with them.

"All that has been said hitherto applies only to balances that are provided with suspending handles; but, in order to render this support absolutely universal in its use, it was necessary that it should be possible to adapt it to a beam which had nothing but its centres; for which purpose I contrived an apparatus, which is suspended, like those of a common balance, to the fork $n g$, and which may receive the centres of any beam. The engraved plates of my machine represent it provided with this apparatus, the construction of which is as follows.

"A piece $s s'$ has a screwed hole bored into it at s' , into which the screw $d d$ is inserted half its length. Another hole, made at s , in a perpendicular direction to the first, receives the pin $g g$, to which all the inferior apparatus is suspended. This hole s supplies the place of that which is found at the upper extremity of the suspending handles of balances.

The two other vertical pieces $r r$, fig. 4, have at their upper part cylindrical holes not screwed, in which the screw $d d$ can turn freely. These superior parts are placed at an arbitrary distance, and retained in their situation by means of four nut-screws u, u, u, u , each of the pieces being fastened between two of these nut-screws. A cylindrical rod $h h$ traverses the inferior parts of these pieces $r r$, and is fixed there by means of nut-screws, in such a manner that the superior and inferior points of the pieces $r r$ are invariably at the same distance.

"Each of these pieces $r r$ has, upon the surface which is perpendicular to the direction of $d d$ and $h h$, a groove $e e$, and a circular aperture X, having at its lower part a small bracket of polished steel $a a$, intended to support one of the centres of the beam. Into the upper part of the grooves $e e$ a rule $e' e'$ is introduced, which must enter with tightness, and which, with the pieces $d d$ and $h h$, give such a solidity to the apparatus, that the adjustment of its parts cannot be in the smallest degree deranged. The remainder of the groove, which is not occupied by $e' e'$, ought to be of a length somewhat greater than that of the largest cock or index adapted to the beams which we shall have to use.

"The method of using the apparatus which I have just de-

scribed, is very simple. The beam which we intend to employ is placed between the two branches $r r$, which are removed from each other till the centres can be brought opposite to the circular holes X ; the pieces r, r , are then brought together in such a manner that the centres enter these holes X , and so as still to leave some room for motion between these pieces and the body of the beam, in order that the oscillations of the balance may be perfectly free. The pieces r, r , are brought parallel with each other, and the adjustment of the apparatus is rendered perfectly firm, by means of nut-screws, by the small cylindrical rod $h h$, and by the rule $e' e'$. The apparatus being adjusted in this manner, it is suspended to the fork $n q$, by inserting the pin $g g$ into the hole s , and the balance is used in the manner that has already been explained.

We know the equilibrium to be established, and the beam to be horizontal, when the index $y y$ divides the breadth of the space $e e$ into two equal parts; but, in order to ascertain the circumstance with greater accuracy, I have suspended to the rule $e' e'$ a plummet $e' i$, by means of which we may distinguish the slightest deviations of the index from the perpendicular direction."

Such is the description and use of Cit. Prony's support for the scale-beam, which, in practice, he says, perfectly answered his expectations.

SCALITZ, or **SCALA**, a town of Upper Hungary, in the county of Poson. There is a very advantageous passage by it, from Moravia to Hungary, and it is seated on the March, 50 miles N. of Preburg. Long. 17. 17. E. Lat. 49. 4. N.

SCHAGEN, or **SCAGERIE**, a promontory of North Jutland, in Denmark, at the entrance of the passage out of the ocean into the Categate. Long. 10. 6. E. Lat. 57. 16. N.

SCHAMACHIE, a town of Persia, capital of Schirvan. It was formerly very large, but is now decayed, above 6000 houses having been thrown down by an earthquake. It has manufactures of silks and cottons, and is seated on the W. side of the Caspian Sea, 250 miles N.E. of Taurus. Long. 37. 5. E. Lat. 40. 50. N.

SCHANTZ STERNEY, a fortress in the Russian government of Wiburg, seated on the Neva, a little E. of Peterburgh. Long. 37. 15. E. Lat. 60. 0. N.

SCHARNITZ, a fortified town of Germany, in the Tirol. It is a passage of great importance, on the confines of Bavaria, 12 miles N. of Innsbruck.

SCHAUENBURG, a territory of Westphalia, 22 miles long, and 10 broad, belonging to the landgrave of Hesse Cassel.

SCHAUMBURG, a town and castle of Germany, which give name to a lordship, in the circle of Lower Rhine, 23 miles N.N.W. of Mentz, and 25 W.S.W. of Wetzlar. Long. 8. 2. E. Lat. 50. 10. N.

SCHLESTADT, a strong town of France, in the department of Upper Rhine, seated on the river Ill, 20 miles S.W. of Strasburg. Long. 7. 40. E. Lat. 48. 17. N.

SCELLENBURG, a fortress of Bavaria, remarkable for a victory obtained here by the allies, over the French and Bavarians, in 1704. It is 22 miles W. of Ingolstadt. Long. 10. 58. E. Lat. 48. 46. N.

SCELLING, an island of the United Provinces, in Friesland, lying at the entrance of the Zuider-Zee. Long. 5. 10. E. Lat. 53. 20. N.

SCHENCK, a fortress of Dutch Guelderland, seated on the point where the Rhine divides into two branches, the Rhine and the Wahal. It is of great importance, as the centre of communication between Holland and Germany, and is 13 miles E. of Nimeguen. Long. 5. 26. E. Lat. 51. 55. N.

SCHENINGEN, a town of Lower Saxony, which gives

Vol. X.

name to a district, in the principality of Wolfenbüttele. It is 16 miles N. of Halberstadt, and 18 E.S.E. of Wolfenbüttele. Long. 11. 25. E. Lat. 52. 22. N.

SCHIEDAM, a town of the United Provinces, in Holland, seated on a canal, which communicates with the Maefe, four miles E. by S. of Rotterdam. Long. 4. 30. E. Lat. 51. 54. N.

SCHILTA, a strong town of Upper Hungary, in the county of Neitra, seated on the river Waag.

SCHINTZNACH, a town of Switzerland, in the canton of Bern, remarkable for its agreeable position on the Aar, and its tepid mineral waters. Near it, on a lofty eminence, are the ruins of the famous castle of Hapzburg.

SCHIRVAN, a province of Persia, bounded on the N. by Daghestan, on the E. and S.E. by the Caspian Sea, on the S.W. by Erivan, and on the W. by Georgia. It is about 150 miles in length, and 90 in breadth. Schamachie is the capital.

SCHLEUSSINGEN, a town of Franconia, in the county of Henneburg, seated on the Schleus, 10 miles S.E. of Smalkald, and 19 N.N.E. of Schweinfurt. Long. 11. 2. E. Lat. 50. 43. N.

SCHLEYDEN, a town of Westphalia, in a county of the same name, annexed to the county of Mark. It is 40 miles N. of Treves. Long. 6. 40. E. Lat. 50. 45. N.

SCHLITZ, a town of Suabia, which gives name to a county. It is situate on a small river that runs into the Fulda, seven miles N.N.W. of Fulda, and 33 E. of Giefen. Long. 9. 40. E. Lat. 50. 45. N.

SCHLUSSERBURG, a town and fortress of Russia, situate on the Neva, near lake Ladoga. The fortress stands on an island in the river, and has frequently been used as a state-prison. It is 36 miles E. of Peterburg. Long. 30. 55. E. Lat. 50. 55. N.

SCHMIDBERG, a town of Silesia, in the duchy of Jauer. Almost all the inhabitants are smiths, whence the place takes its name. It is seated at the foot of a mountain, near the source of the Bauber.

SCHNEEBERG, a town of Upper Saxony, situate on an eminence near the Mulda. Here are manufactures of thread, silk, gold, and silver-lace; and in the neighbourhood are silver mines, which formerly were very productive. It is seven miles N.W. of Schwartzburg.

SCHOMBERG, a town of Germany, in the electorate of Treves, seated on a mountain, 15 miles from Limbourg.

SCHONECK, or **SCHOENECK**, a town of Germany, in the electorate of Treves, with a castle, seated on the Eym, 27 miles N. of Treves. Long. 6. 26. E. Lat. 50. 12. N.

SCONEN, **SCANIA**, or **SKONE**, a province of Sweden, bounded on the W. by the Sound, which separates it from Zealand; on the N. by Halland and Smoland; and on the E. and S. by Blekingen and the Baltic. It is 58 miles long, and 40 broad, and is a fertile country. Lunden is the capital.

SCHONGAW, a town of Upper Bavaria, seated on the Lech, 30 miles S. of Augsburg.

SCHOOL (*Encycl.*). We have given an account of various schools established in Britain already; but some more recently established must not be overlooked. The following is extracted from an account of two schools founded by the Rev. Mr. Gilpin at Boldre in Hampshire; published by the Society for bettering the Condition of the Poor.

Two schools at Boldre in the New Forest, Hants, were established and opened on the first of July, 1791, by the Rev. Mr. Gilpin; one for twenty boys, the other for twenty girls, to be selected from the children of the day-labouring poor of the parish; a preference being given (in order to encourage reading) to children who have learnt to read a chapter in the

Testament: but, if the prescribed number of such scholars cannot be found, the deficiency is supplied by such children as cannot read.

Sixty-three boys and fifty-nine girls have already been admitted, including those at present in the schools. Their attendance commences at nine o'clock, when all the scholars are assembled for prayers. From twelve to one is allowed for dinner, which the children bring with them to school; they are dismissed in summer at five, and in winter at four o'clock; except on Saturdays, when the school breaks up at twelve. If any one is absent, or is beyond the fixed time, without a proper excuse, such child is punished by an hour's confinement and employment, at noon in winter, and in the evening in summer: and if the children have been kept at home, so as to continue absent, without leave (which leave is to be entered in a book for the inspection of the visitors), they are usually dismissed from the school, and their places filled up by such as will attend and make a better use of their time. As to vacation, a week is allowed at Whitfuntide, a fortnight at Christmas, and a month at harvest, in order to give them an opportunity of benefiting by harvest work.

The girls are taught to read, knit, spin, sew, and mend their own clothes, so as to fit them to be useful daughters, and good wives: the boys (besides being improved in their reading), are instructed in writing and arithmetic; in the first, so far as to write a legible hand, for which one copy a day is thought sufficient; and in arithmetic, so far as the four first rules, and particularly in the tables that belong to those rules.

No precise time is fixed for admission: in order that the children in the parish may be encouraged to an early proficiency in reading, as the qualification for a place in the school: nor is any precise time fixed for the removal of either the boys or girls; as it is presumed that as soon as they are made *really useful*, their parents will wish to take them away, and thereby room will be left for the admission of other children. They usually come from seven to nine years of age, and quit the school at thirteen or fourteen. As an incitement to industry, a separate account is kept of the produce of each girl's sale-work; and such produce is laid out for them in clothes and necessaries, at the end of the year. Petty offences are punished by a little extra confinement in play-hours; but no corporal correction is allowed, except for lying, swearing, stealing, indecent language, or immorality.

At the end of November, the annual account of the work of the girls is made up; and from thence to Christmas, their working hours are employed *gratis*, in making up shirts and shifts for the children in the school, and in knitting stockings (a pair each for the boys and girls) the worsted for which is given them.—At the end of the year all the children attend at the vicarage; where their clothes are examined: if there has been neglect on their part, it is noticed: and additions are, at the same time, made to their clothing.

The great object of the founder of these schools is to promote in these children the *knowledge and practice* of religion; in order that they may be able therein to instruct their own children, when they have families; an instruction, that, from local circumstances, is much wanted in the neighbourhood of the New Forest. For this purpose, Mr. Gilpin has drawn up an easy explanation of the duties of religion, by way of question and answer. This the children are taught to repeat, as well as their catechism, and are examined in it on Tuesday and Friday after dinner, and on Sunday afternoon.

The annual expence of this useful establishment does not exceed 40 guineas a-year. The master, who lives in the house, has for salary, and finding fuel, &c. 21l. year, and the habitation and garden. The mistress lives in the village; she has ten guineas a-year: and Mr. Gilpin's donations of cloth-

ing to the children, and some other incidental expences, amount to nearly ten guineas a-year more.

The school-house is a neat brick building, with the boys' school at the end next the road; and, at the other, the dwelling house, comprising the school of the girls, and looking into the garden. It is built on a healthy and beautiful situation, with a gradual descent to Lymington river. It cost 210l. On the walls of the school rooms are various texts of scripture inscribed in tablets. The children stand round the table at particular times, and read them over, with a view of imprinting on their memory some of the most useful precepts in the Testament.

For the permanent endowment of these schools after his death, Mr. Gilpin purposed to provide by the sale of his drawings and sketches, which, as we have been told, he has formed for that purpose into eighty-nine lots, each lot containing several drawings. How valuable an addition they will make to the collections of the artist, the connoisseur, and the lover of the fine arts, it will be unnecessary and presumptuous in us to endeavour to explain. The value of the drawings, enhanced by the object to which the produce is destined to be applied, must render them an enviable possession to every one, whenever (in consequence of that event which the friends of humanity hope may be long delayed) they shall be offered to the public.

The benefit of such schools, as those founded by Mr. Gilpin at Boldre, is important in every situation, and at all times; but, in the New Forest, where the children of the poor have too much disposition to partake of the natural wildness of the place, they are peculiarly necessary and beneficial.

To this we shall add the *Rules of a Spinning School* at Oakham, in the county of Rutland, published by Lord Winchelsea in the same work, with the hope of encouraging the establishment of similar institutions in other parts.

1st, All inhabitants of the parish shall be admitted.

2d, No persons to receive relief from the parish upon account of their families, who refuse to send their children to the school: unless they can prove, to the satisfaction of the overseers, that they can employ them to more advantage elsewhere.

3d, They are to be instructed gratis in spinning jersey, and linen, and in knitting: those who choose it, in reading; and those who can bring work with them, in sewing.

4th, The hours of work to be from eight to one, and from two to seven; from one to two, dinner and rest. No work after dinner on Saturdays.

5th, A dinner to be provided for those who choose to dine at the school on the working days: for which they are to pay each 6d. per week.

6th, In case of illness, the dinner may be sent for to their homes.

7th, The portions, if the dinner is sent out, to be as follows:

One pint and half of peas porridge.

ditto ditto of rice milk.

One pint and half of rice broth.

One pound and half of potatoe pudding.

Those who dine at the school, to have as much as they choose to eat, and a quarter of a pound of bread each: except on the pudding and rice milk days, when no bread is allowed.

8th, The *whole of the earnings* to belong to the children.

A spinning school had been established at Oakham, in 1787: but, till this arrangement took place, the children used to go home to their dinner; which was attended with great inconvenience in wet and bad weather, and with loss of time; as, frequently, when the weather was very

bad, they did not return after dinner; and sometimes did not go at all.

In order to establish the present system, the dinners, for the first fortnight, were given gratis, and the parents invited to taste them; after that they were informed, that the children of those who approved of the plan, *might* dine there, upon paying *fixpence a-week*; and those whose parents preferred their dining at home, *might* continue to do so. The whole of the parents approved much of their dining at the school; and the whole number, which amounts to between sixty and seventy, dine there, and pay their money. They do more work in the week by these means, and get a much better dinner than they could at home. Several children come there, whose parents do not receive relief.

By purchasing the different articles wholesale, by the use of barley bread (which is customary at that place), and by means of a Rumford copper, the expence for the dinners and fuel has never exceeded the *fixpence per head*. The peas porridge, and pudding, are those recommended in Count Rumford's essay.

Lord Winchelsea conceives, that the success, which has hitherto attended this plan, is owing to its having been left to the *option* of the parents, whether their children should dine there or not.

SCHOONHOVEN, a strong town of the United Provinces, in Holland, with a commodious haven, seated on the Leck, 14 miles E. of Rotterdam. Long. 4. 54. E. Lat. 51. 68. N.

SCHORNDORF, a town of Suabia, in the duchy of Wirtemberg, with a strong castle. Here are salt springs, from which a great deal of salt is made. This place was possessed by the French in August, 1796. It is seated on the Rems, 11 miles N.E. of Stuttgart. Long. 8. 54. E. Lat. 48. 56. N.

SCHWALBACH, a village of Germany, in the circle of Upper Rhine and county of Nassau, frequented for its mineral waters, which are of a similar nature to those of Spa. It is seated on the river Aa, nine miles N. of Mentz.

SCHWARTZ, a town of Germany, in the Tirol, famous for its mines of different metals. It is seated on the river Ill, 14 miles N.E. of Inspruc. Long. 11. 42. E. Lat. 47. 19. N.

SCHWELM, a town of Westphalia, in the county of Mark. Near it are some medicinal springs. It is 22 miles N.E. of Cologne, and 22 E. of Dusseldorf. Long. 7. 25. E. Lat. 51. 10. N.

SCHWERIN, a town of Lower Saxony, capital of the duchy of Mecklenburgh Schwerin. It is divided into four parts; namely, Schwerin, the New Town, the island of Schelf, and the Moor, which are all nearly encircled by a beautiful lake. The cathedral is a fine Gothic pile, with a lofty spire. The ducal palace and gardens are on an island in the lake, and have a communication with the town by a drawbridge. It is 33 miles W. by S. of Gustrów. Long. 11. 48. E. Lat. 53. 48. N.

SCIATI, an island of the Archipelago, near the coast of Janna, 20 miles to the N. of Negropont, and almost at the entrance of the gulf of Salonichi. It is 22 miles in length, and eight in breadth. Long. 23. 40. E. Lat. 30. 26. N.

SCOPELO, an island of the Archipelago, five miles E. of Sciati, and 17 N. of Negropont. It lies at the entrance of the gulf of Salonichi, and is 10 miles long and five broad. It is very fertile, produces plenty of good wine, and contains 12,000 inhabitants, who are almost all Greeks.

SCOPIA, or **USCAPIA**, a town of Turkey in Europe, in Bulgaria, with an archbishop's see. It is seated on the Vardar,

over which is a bridge of 12 arches, 67 miles W.S.W. of Sofia. Long. 22. 25. E. Lat. 42. 10. N.

SCUTARI, a strong town of Turkey in Europe, capital of Upper Albania, with a bishop's see. It is seated on the lake Zeta, at the mouth of the river Bocana, 20 miles N.E. of Antivari, and 47 N.W. of Albanopolis. Long. 10. 25. E. Lat. 42. 35. N.

SCUTARI, a town of Turkey in Asia, in Natolia, with a good harbour, seated on the E. side of Constantinople, of which it is considered as a suburb, being directly opposite. It contains a handsome mosque, and is built on the side of a hill. Long. 29. 4. E. Lat. 41. 0. N.

SCYTHE, or **SITHE**, an instrument of husbandry, employed for the purpose of cutting grass, and also for the mowing of corn.

Before we attempt a description of the latest improvements on this rural instrument, we shall briefly observe, that the well known *Hainault*, or *French scythe*, for reaping wheat, has of late years met with many advocates in Britain. It consists, according to the description given by Dr. Templeman, of a short blade, being one-third of the length of those commonly used in England; with a wooden handle to be held in the right hand, having a bend and a broad rounded piece at the upper end, for the support of the arm. Further, an iron hook is fixed to a staff, four feet in length, made of oak or ash, to be used with the left hand, with a mortise near the end, for the convenience of the husbandman's carrying the scythe on his shoulder. On the handle of the scythes, and staff of the hook, at about half a yard from the bottom, are placed leather loops for the fingers, to keep the two grasps at proper distances from the ground.

Having already stated the disadvantages, which cannot be avoided in the use of *fickles* for cutting corn under the head of husbandry, and likewise pointed out the superior utility of scythes, we shall now give a description of *two* instruments, which are eminently calculated for both purposes. These scythes were first introduced to public notice by the Patriotic Society of Milan, in one of the earlier volumes of their Transactions. Convinced of the inconveniences arising from the use of the common instruments, they procured a model of a *Silesian scythe*, with which the corn of that country is uniformly mown. Having caused a similar instrument to be constructed, it was accordingly tried; and, notwithstanding its imperfect manufacture, as well as this circumstance, that the labourer had never used a scythe on such principles, it was fully proved, that *nearly half the usual time was saved*, and the fatigue or labour was considerably lessened. Further, the corn was thus cut without receiving any injury from the concussion in falling to the ground, on which it was spread in a regular manner, so that it could be easily formed into sheaves. The Milanese Society was afterwards presented with an Austrian implement, different from the Silesian in a few respects, which will be noticed in the subsequent account.

Figure 1, Pl. 46. represents the *Silesian scythe*, which varies little from that commonly employed for mowing grass: the blade, however, is somewhat smaller, and has four wooden teeth which are fixed parallel to it, with a view to prevent the grain from being scattered, when it is cut: so that the labourer is enabled to lay it on the ground in an even and regular way. *a, b*, the handle, which is two Milanese braccia and nine inches and a half, or about four feet and four inches English measure, in length. *b, c*, represents the blade, being one braccia, and three and a half Milanese inches, or about two feet one inch long.—The piece of wood, in which the teeth are inserted, is one braccia, one inch and a half, or nearly two feet in length.

The *Austrian scythe* greatly resembles the instrument above delineated, excepting that the blade is larger, and the number of wooden teeth is increased to five, which are consequently longer.

The Patriotic Society of Milan observe in their Memoir, that the difference in the construction of these two implements, will render it necessary to employ each of them in a peculiar manner, which can only be acquired by practice. They further remark, that though, in mowing grass, the feet are kept in a direction nearly parallel to each other, it will be advisable to place them, when corn is reaping, in a line, one behind the other, the right foot being thrust forward, and the left drawn towards it; because, in the latter case, if they were advanced in a parallel manner, the labourer would be obliged to turn and bend his body in a very inconvenient posture.

Such of our agricultural readers as are accustomed to the use of the common scythe, will easily ascertain the most suitable and advantageous mode of employing the instrument now described: and, before we complete the history of the new implements, it will not be too great a digression from the subject to give (from the *Domestic Encyclopædia*) the manner of reaping wheat in Flanders, by means of a very simple scythe, greatly resembling that above explained by Dr. Templeman; and a model of which is preserved in the Repository of the "Society for the Encouragement of Arts, &c." in London. Another account, as well as a representation of this useful implement, was communicated to the public by Mr. Adam Walker, in 1788, and inserted in the 9th volume of *Annals of Agriculture*, where he observes, that corn, thick clover, and vetches, are thus cut down with great regularity, and such expedition, as to surpass the sickle, in the proportion of three to one.

After the above-given descriptions, and observations, relative to the *Silesian scythe*, had been published, the Milanese Patriotic Society made additional experiments, from which it appeared, that when the stalks of corn are bent down in consequence of heavy rains, the wooden teeth are apt to catch some of the ears, to the stalks of which the blade does not extend; and this not being cut below, the ears are pulled down and the grain is scattered. This accident happens principally, when the labourers, not being sufficiently acquainted with the use of the scythe, are unable to adapt it to particular circumstances.

To remedy these inconveniences, it occurred to an ingenious blacksmith, to add a collector or gatherer, made of cloth, the construction of which is represented in the plate at fig. 2. *a, b, c*, is a common scythe. *c, d, m, l, o, f, n*, &c. The gatherer; which at *c, d, e*, is composed of a thin iron plate; having a cavity at its extremity, for receiving the point of the blade. At *e, d*, are holes for sewing in the cloth, which is light, coarse, and cheap: it is likewise fixed to two thick iron wires, the upper of which is continued to *f*, where it terminates in a hole, in the handle:—the other is secured to the back of the blade. The method of fixing the gatherer to such blade, will be more clearly understood by referring to the figure, delineated in the plate, fig. 2. and representing one of the irons, which are secured by means of screws to the back of the scythe. These irons proceed from, and constitute a part of, the upright irons, *m, n, l, o*, that serve to keep the gatherer extended.

This contrivance is very simple and cheap; an attempt, however, has been made to simplify it still further, by substituting for the gatherer two iron hoops, represented in the figure last referred to, by the dotted lines, marked *h, g, k, i*, with a cross-piece that serves to connect them; thus saving the cloth and iron plate before described.—Experiments, how-

ever, have been made with both these implements; from the result of which it appears, that the gatherer is, upon the whole, preferable to the hoops, as no ears of corn are left behind; and that the latter alteration promises to be most serviceable, when there is no short corn, that can insinuate itself between such iron hoops.

SEAFORD, a borough and sea-port in Suffex, which sends two members to parliament, but has no market. It is eight miles S.E. of Lewes, and 59 S. by E. of London. Long. 0. 10. E. Lat. 50. 50. N.

SEATON, or PORT SEATON, a sea-port, in Haddingtonshire. Here is a ruinous palace, in which Mary queen of Scots occasionally kept her court, after her return from France. In the chapel are several curious monuments of marble. Seaton has a considerable trade in salt and coal, and is situate on the Frith of Forth, nine miles E. of Edinburgh. Long. 2. 54. W. Lat. 56. 0. N.

SEBASTIA, a town of Turkey in Asia, in Palestine, the remains of the ancient city of Samaria. It is 34 miles N.N.E. of Jerusalem. Long. 35. 40. E. Lat. 32. 15. N.

SEBASTIAN, St. a large city of Brasil, capital of the province of Rio Janeiro, and a bishop's see. It has a very extensive and commodious harbour, defended by numerous forts. The city stands on low ground, which was formerly swampy, and is surrounded by high hills, which exclude the benefit of the refreshing sea and land breezes; so that it is suffocatingly hot, and unhealthy, in the summer. The different mechanics carry on their business in distinct parts of the town; particular streets being set apart for particular trades. On the S. side of a spacious square is the palace of the viceroy; and there are several other squares, in which are fountains, supplied with water by an aqueduct, of considerable length, brought over valleys by a double row of arches. A Benedictine convent and a fort are on the extreme point, jutting into the harbour, opposite to which is Serpent Island, where there are a dock-yard, magazines, and naval store-houses. In another part of the harbour, at a place called Val Longo, are the warehouses for the reception, and preparation for sale, of the slaves imported from Africa. St. Sebastian is seated near the mouth of the Rio Janeiro, in the Atlantic. Long. 42. 44. W. Lat. 22. 54. S.

SEBASTOPOLIS, or SAGATOPOLI, a town of Mingrelia, on the Black Sea. It was put under the protection of Russia, in 1783. It is 220 miles W.N.W. of Teflis, and 260 N.N.W. of Erivan. Long. 55. 15. E. Lat. 46. 10. N.

SEBOURG, a town of France, in the department of the North, 12 miles E. of Valenciennes, and 12 S.E. of Condé. Long. 3. 50. E. Lat. 50. 22. N.

SECHURA, a town of Peru, in the bishopric of Truxillo, situate near the mouth of a river of the same name, 30 miles S.S.E. of Païta, and 180 N.N.W. of Truxillo. Long. 81. 10. E. Lat. 5. 55. S.

SECKAU, a town of Germany, in Upper Stiria, with a bishop's see; seated on the Gayle, nine miles N. of Judenbourg, and 90 S.W. of Vienna. Long. 14. 27. E. Lat. 47. 10. N.

SECKENHEIM, a town of Germany, in the palatinate of the Rhine, near which the elector, Frederic I. gained an important victory in 1462. It is four miles E. of Mannheim.

SECKINGEN, a town of Suabia, one of the forest towns. It belongs to the house of Austria, and is seated on an isle, formed by the Rhine, six miles S.E. of Rheinfelden, and 27 W. of Scaffenhausen. Long. 7. 57. E. Lat. 47. 34. N.

SECKINGTON, a village in Warwickshire, near Tamworth; famous for a battle, fought in 757, between Cuthred, king of the West Saxons, and Ethelbald, king of the

Well-Tube.



Scythe.

Fig. 1.

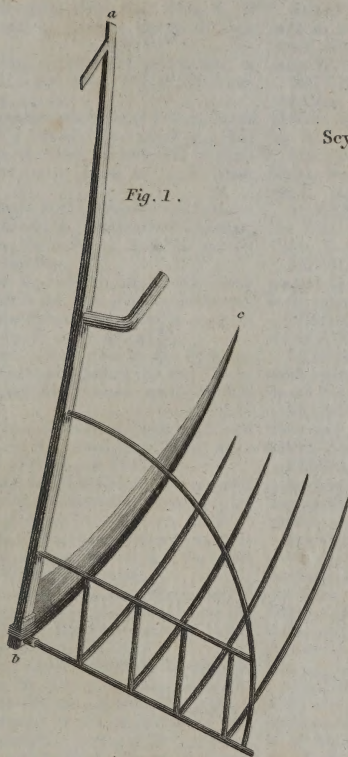
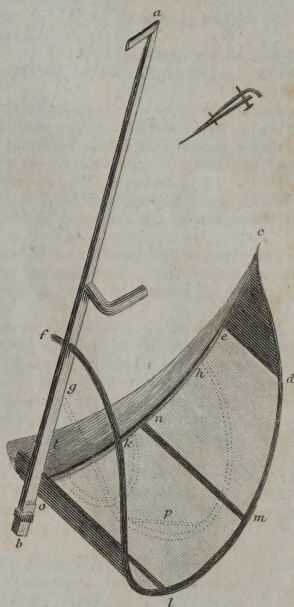
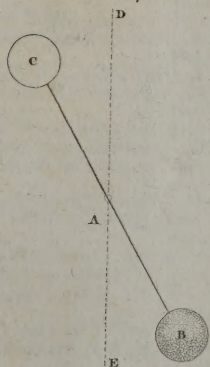


Fig. 2.



Time-Keeper.



Mercians. On the north side of its church are the ruins of a fort, and near it an artificial hill, 45 feet high.

SEECHING, a town in Norfolk, with a market on Tuefday, feated on a fmall navigable river, four miles S. of Lynn, and 93 N.E. of London. Long. 0. 24. E. Lat. 52. 44. N.

SEER, a town of Arabia, capital of a principality, in the province of Oman. It is 108 miles W.S.W. of Julfar. Long. 54. 38. E. Lat. 25. 10. N.

SEEZ, an ancient and confiderable town of France, in the department of Orne, with a bifhop's fee; feated in a fine country, near the fource of the Orne, 12 miles N. of Alençon, and 102 W. by S. of Paris. Long. 0. 15. E. Lat. 48. 36. N.

SEGESTAN, a province of Perfia, bounded on the north by Korafan and Balck, on the eaft by Candahar and Sableftan, on the S. by Mackerran, on the S.W. by Kernan, and on the W. by Covheftan and Pariftan.

SEGESWAR, a town of Tranfylvania, capital of a county of the fame name. It is built in the form of an amphitheatre, on the fide of a hill, near the river Kokel, 47 miles north of Hermanftadt. Long. 24. 55. E. Lat. 47. 4. N.

SEGRA, a river of Spain, which rifes in the Pyrenées, and runs S.W. through Catalonia, paffing by Puy-Cerda, Urgel, Belaguer, Lerida, and Mequinenza, where it falls into the Ebro.

SEGURA, a town of Portugal, in Beira, with a caftle on a mountain. It is near the rivers Elia and Tago, eight miles S.E. of Caftel-Branco, and 30 N.W. of Alcantara.

SEGURA, a town of Spain, in New Caftile, and territory of La Mancha, feated among the mountains of Segura, 35 miles N.E. of Baeza. Long. 2. 39. W. Lat. 37. 56. N.

SEGURA, a river of Spain, which rifes in the mountains of Segura, in New Caftile, and croffing Murcia, and the fourth part of Valencia, falls into the Mediterranean.

SEHARANPOUR, a town of Hindooftan Proper, capital of a diftrict of the fame name, between the Jumna and the Ganges, in the country of Delhi. It is 86 miles N. of Delhi. Long. 77. 15. E. Lat. 30. 4. N.

SEINE, a river of France, which rifes in the department of Côte d'Or, and flowing by Troyes, Melun, Paris, and Rouen, falls into the Englifh Channel, at Havre de Grace.

SEINE, Lower, a department of France, including part of the late province of Normandy. Rouen is the capital.

SEINE AND MARNE, a department of France, including part of the late province of the Ifle of France; Meux is the capital.

SEINE AND OISE, a department of France, including part of the late province of the Ifle of France. Verfailles is the capital.

SEINSHEIM, a town of Franconia, with a caftle, 33 miles N.W. of Nuremberg. Long. 10. 28. E. Lat. 49. 40. N.

SEIR, or **HOR**, a mountain in Arabia Petrea, from which formerly bounded Judea on the S. and feperated it from Idumæa. It is now called Sardeny, and is 140 miles E. of Cairo, in Egypt.

SELAM, a town of Mexico, in the province of Jucatan, fuate near the fea-coaft, 45 miles N.W. of Merida. Long. 90. 28. W. Lat. 39. 12. N.

SELBY, a town in the Weft Riding of Yorkfhire, with a market on Monday, feated on the Oufe, 12 miles S. of York, and 182 N. by W. of London. Long. 1. 2. W. Lat. 53. 47. N.

SELESHTIA, anciently **SELEUCIA**, a town of Turkey, in Afia, in Caramania, 10 miles from the fea, and 58 W. of Terafto.

SELIGENSTADT, a town of Germany, in the electorate Vol. X.

of Mentz, formerly imperial. It is feated at the confluence of the Gernpentez and Maine, 14 miles E. of Francfort, and 27 E. of Mentz. Long. 8. 32. E. Lat. 49. 54. N.

SELIVREA, a town of Turkey in Europe, in Romania, with an archbifhop's fee. It was a large place, but is now much decayed. It is feated on the fea of Marmora, 35 miles W. of Conftantinople. Long. 28. 12. E. Lat. 41. 4. N.

SELLES, a town of France, in the department of Loir and Cher, with a caftle, over which is a bridge, 12 miles S.E. of Blois, and 105 S.S.W. of Paris. Long. 1. 56. E. Lat. 47. 25. N.

SELTZ, a town of France, in the department of Lower Rhine, feated on the Rhine, 270 miles E. of Paris. Long. 8. 12. E. Lat. 48. 53. N.

SEMENNUD, a town of Egypt, on the E. branch of the Nile, eight miles S.S.W. of Manfoura, and 53 N. of Cairo. Long. 31. 30. E. Lat. 31. 5. N.

SEMIGALLIA, the E. part of the duchy of Courland, feperated by the river Mafza, from Courland Proper. Mittau is the capital.

SEMINARI, a town of Naples, in Calabria Ulteriori, 22 miles N.E. of Reggio. Long. 10. 21. E. Lat. 38. 20. N.

SEMINOLAS, a divifion of the Creek Indians, which inhabit a fertile country on the rivers Appalachikola and Flint, in the ftate of Georgia, in North America.

SEMLIN, a town of Sclavonia, on the W. fide of the Danube and Save, oppofite Belgrade, and 70 miles S.E. of Eick. Long. 21. 0. E. Lat. 45. 20. N.

SEMPACH, a lake of Switzerland, in the canton of Lucern, three miles long and one broad. The banks on each fide flope gently to the edge of the water, and are checkered with wood.

SEMPACH, a town of Switzerland, in the canton of Lucern: celebrated for the battle which eftablifhed the liberty of the Swifs, and in which Leopold duke of Auftria was defeated and flain. The anniversary of this battle, which happened July 9, 1386, is commemorated with great folemnity, both at Sempach and Lucern. Sempach is feated on a lake of the fame name, feven miles N.W. of Lucern. Long. 7. 57. E. Lat. 47. 10. N.

SEMUR, a town of France, in the department of Côte d'Or, with a caftle. It has a manufacture of cloth, and is feated on the Armançon, over which are two bridges, 37 miles N. of Autun, and 135 S.E. of Paris. Long. 4. 19. E. Lat. 47. 28. N.

SEMUR-EN-BRIENNOIS, an ancient town of France, in the department of Saone and Loire, 40 miles N.W. of Lyons, and 175 S. of Paris. Long. 4. 22. E. Lat. 46. 14. N.

SENA, or **MARZALI**, a town of Monemotapa, on the river Zambeze, where the Portuguefe have a factory. Long. 32. 3. E. Lat. 18. 2. S.

SENEFFE, a town of Aufrian Brabant, four miles S. of Nivelle; famous for a battle gained by the French over the Prince of Orange, in 1674.

SENEZ, a town of France, in the department of Lower Alps, feated in a rough barren country, 46 miles N.E. of Aix, and 49 N.W. of Nice. Long. 6. 40. E. Lat. 43. 59. N.

SENLS, an ancient town of France, in the department of Oife, lately a bifhop's fee. The cathedral has one of the higheft fteeples in France. It is feated on the fide of a hill, on the river Nonette, almoft furrounded by a large foreft, 20 miles N.W. of Meaux, and 27 N.E. of Paris. Long. 2. 40. E. Lat. 49. 12. N.

SENS, an ancient town of France, in the department of Yonne, with a bifhop's fee. The metropolitan church is a handfome Gothic ftructure. The dauphin and dauphinefs, parents of Lewis XVI. were interred in this church; and here was lately their monument, a mafter-piece of Couffon's,

crowned by two urns united, expressive of the unalterable affection of this virtuous pair. It was the last request of the unfortunate monarch, their son, to the National Convention, that his remains might be interred with theirs; a request which they refused. Sens is seated in a fertile country, at the confluence of the Vanne with the Yonne, 25 miles N. of Auxerre, and 60 S.E. of Paris. Long. 3. 22. E. Lat. 48. 12. N.

SERA, a town of the peninsula of Hindoostan, in the Mysore country, 55 miles N. of Seringapatam, and 58 N.W. of Bangalore. Long. 75. 54. E. Lat. 13. 28. N.

SERAI, a town of Turkey in Europe, capital of Bosnia, 110 miles S.W. of Belgrade. Long. 18. 5. E. Lat. 44. 24. N.

SERAMPOUR, a town of Hindoostan Proper, in Bengal, seated on Hoogly River, a small distance above Calcutta. It is a Danish settlement, and carries on a considerable trade.

SERAVALLE, a town of Italy, in the duchy of Milan, 24 miles N. of Genoa. Long. 8. 36. E. Lat. 44. 44. N.

SERCELLI, a sea-port of the kingdom of Algiers, a little to the W. of Algiers. Long. 2. 20. E. Lat. 36. 50. N.

SERDOBOL, a town of Russia, in the government of Wiburg, situate on the lake Ladoga, 60 miles N.N.E. of Wiburg. Long. 30. 15. E. Lat. 61. 45. N.

SERFO, or SERFANTE, an island of the Archipelago, 50 miles N.W. of Naxia. It is eight miles long and five broad, and full of mountains and rocks, in which are mines of iron and loadstone. The inhabitants are all Greeks, and have but one town, called St. Nicholo, which is a poor place. Long. 25. 10. E. Lat. 37. 19. N.

SERGAG, a town of Russia, in the government of Niznei Novogorod, 48 miles S.E. of Niznei Novogorod. Long. 45. 20. E. Lat. 56. 25. N.

SERGIPPY, a sea-port of Brazil, capital of a government of the same name. It is seated at the mouth of the Rey, 120 miles N.E. of St. Salvador. Long. 39. 46. W. Lat. 31. 30. N.

SERPA, a strong town of Portugal, in Alentejo, seated on a rugged eminence, with a castle, three miles from the Guadiana, and 83 S.E. of Lisbon. Long. 7. 45. W. Lat. 37. 47. N.

SERRES, a town of France, in the department of Upper Alps, 15 miles S.W. of Gap.

SERVULO, a castle of Austrian Istria, seated on a high mountain, four miles from Trieste. Near it is a famous cavern, in which the sparry exudations have formed various figures of blue and white colours.

SESSA, an ancient town of Naples, in Terra di Lavoro, with a bishop's see. It was formerly very considerable, and is 30 miles N. of Naples. Long. 14. 19. E. Lat. 41. 20. N.

SESTRI-DI-LEVANT, an ancient town of Italy, in the territory of Genoa, 30 miles W. of Genoa. Long. 9. 28. E. Lat. 44. 23. N.

SE-TCHUEN, a province of China, bounded on the N. by Chen-fu, on the E. by Hou-quang, on the S. by Koei-tcheou, and on the W. by Thibet. It is watered by the great river Yang-tie-king, and is rich, not only on account of the great quantity of silk it produces, but its mines of iron, tin, and lead, as well as its amber, sugar-canes, and lapis lazuli. It likewise abounds in mulk, rhubarb, &c. Tching-tou fou is the capital.

SETIMO, a town of Piedmont, seated on the Po, eight miles N. of Turin. Long. 7. 47. E. Lat. 45. 14. N.

SETLEGE, a river of Hindoostan Proper, the most easterly of the five eastern branches of the Indus. About midway

between its source and the Indus, it receives the Beyah, and joins the Indus a great way to the S. of Moultan.

SETTENIL, a town of Spain, in Granada, eight miles N. of Ronda, and 38 N.W. of Malaga. Long. 5. 10. W. Lat. 36. 48. N.

SETTIA, a town of the island of Candia, with a Greek bishop's see, 48 miles E.S.E. of Candia. Long. 26. 2. E. Lat. 35. 3. N.

SETTLE, a town in the West Riding of Yorkshire, with a market on Tuesday. It is seated on the Ribble, over which is a bridge, 28 miles E. by N. of Lancaster, and 235 N.N.W. of London. Long. 2. 15. W. Lat. 54. 6. N.

SEVEN ISLANDS, islands to that number, in the Frozen Ocean, lying in long. 18. 48. E. Lat. 80. 31. N. Among those islands Captain Phipps, with the Race-horle and Carcais, were surrounded by the ice, from the 31st of July to the 10th of August, 1773, when a brisk wind at N.N.E. effected their deliverance.

SEVENOAKS, a town in Kent, with a market on Saturdays. It obtained its name from seven large oaks which were near it when it was first built. Here is an hospital for the maintenance of aged people, with a free school, first erected by Sir William Sevenoaks, lord mayor of London in 1418, who is said to have been a foundling, charitably educated by a person of this town. Queen Elizabeth having augmented the revenues of the school, it was called Queen Elizabeth's School; and the whole was rebuilt of stone in 1727. Near this town is Knole, an ancient palace of the see of Canterbury, which Archbishop Cranmer exchanged with the crown for other lands, and Queen Elizabeth gave to Thomas lord Buckhurst, afterward earl of Dorset, from whom it descended to the present Duke of Dorset. In 1450, the rebel John Cade defeated the royal army near this town. It is six miles N.W. of Tunbridge, and 23 S.E. of London. Long. 0. 18. E. Lat. 51. 19. N.

SEVER, St. a town of France, in the department of Landes, seated on the Adour, 20 miles E. of Dax, and 65 S. by E. of Bourdeaux. Long. 0. 35. W. Lat. 43. 45. N.

SEVERNDROOG, an island of Hindoostan Proper, 60 miles S. of Bombay. Here was a strong fort that belonged to Angria the pirate, which was taken by Commodore James, in 1756.

SEVERO, a town of Naples, in Capitanata, with a bishop's see, seated in a plain, 75 miles N.E. of Naples. Long. 15. 34. E. Lat. 41. 40. N.

SEVRES, Two, a department of France, including part of the late province of Poitou. It is so named from two rivers, one of which flows W. by St. Maxient and Niort, into the bay of Biscay, opposite the isle of Rhé, and the other takes a N.W. direction, passes by Clisson, and enters the river Loire, opposite Nantes. St. Maxient is the capital.

SEWALICK, MOUNT, a chain of mountains that borders on the level country, on the N. of the province of Delhi, in Hindoostan Proper. At Hudwar, the Ganges forces its way through this ridge into the plains of Hindoostan.

SEYSSSEL, a town of France, in the department of Ain. It is divided by the Rhone, which here begins to be navigable, into two parts; of which the eastern was ceded to the King of Sardinia, by the treaty of Turin, in 1760. It is 14 miles N.E. of Belley. Long. 7. 45. E. Lat. 46. 6. N.

SEZANNE, a town of France, in the department of Marne, seated on a little river, 27 miles N.W. of Troyes, and 65 S.E. of Paris. Long. 4. 10. E. Lat. 48. 41. N.

SEZZA, a town of Naples, in Terra di Lavoro, with a bishop's see, 29 miles N.N.W. of Naples, and 72 S.E. of Rome. Long. 13. 45. E. Lat. 41. 11. N.

SHABUR, a town of Egypt, on the W. branch of the

Nile, 48 miles S.E. of Alexandria, and 50 N.N.W. of Cairo. Long. 30. 58. E. Lat. 30. 47. N.

SHAHJEHANPOUR, a town of Hindoostan Proper, in the province of Malwa, 20 miles N.E. of Ougain, and 196 S. of Agimere. Long. 76. 18. E. Lat. 23. 26. N.

SHEFFORD, a town of Bedfordshire, with a market on Friday, feated between two rivulets, which unite their streams below the town, and fall into the Ouse. It is eight miles S.E. of Bedford, and 41 N. by W. of London. Long. 0. 21. W. Lat. 52. 8. N.

SHEFNAL, a town in Shropshire, with a market on Friday, nine miles N.E. of Bridgenorth, and 136 N.W. of London. Long. 2. 23. W. Lat. 52. 42. N.

SHELburne, a town of Nova Scotia, situate at Port Rowley. It extends two miles on the water side, and one mile backward, with wide streets crossing each other at right angles. The harbour is deep, capacious, and secure. About a mile from Shelburne, and separated from it by a small river, is the Black Town, containing about 1200 free blacks, who served on the royal side during the American war. Shelburne is 100 miles S.W. of Halifax. Long. 65. 0. W. Lat. 43. 46. N.

SHELLA, a town of Morocco. It is considered as a sacred asylum, and none are allowed to enter it but Mahometans. It is four miles E. of Sallee.

SHENAN (*Encycl.*). The note referred to in that article is to the following effect. Shenan, an eastern dyeing-drug, may be procured at any of the ports in the Levant. It is the *Salicornia*—the eastern jointed-kali, and grows in that part of the world plentifully. The lesser species of *salicornia* found on the coasts of Britain is not found to equal the foreign in the process of dyeing; though the experiments yet made towards ascertaining the fact are by no means decisive.

SHEPTON MALLET, a town in Somersetshire, with a market on Friday, and a considerable manufacture of second cloths, the principal material of which is fine English wool. It is feated under Mendip Hills, 17 miles S.W. of Bath, and 114 W. of London. Long. 2. 30. W. Lat. 51. 9. N.

SHERBORN, a town in Dorsetshire, with a market on Thursday and Saturday. It was formerly a bishop's see, and had three churches, though now but one, which was the cathedral, and in it are interred the Saxon kings Ethelbald and Ethelbert. It had also a castle, now in ruins. Here is a famous free-school, founded by Edward VI.: two large silk mills; and a conduit of excellent water, which is continually running. It is 16 miles N. by W. of Dorchester, and 113 W. by S. of London. Long. 2. 41. E. Lat. 50. 54. N.

SHEVAGUNGA, a town of the peninsula of Hindoostan, in the Myfore country, 25 miles N.W. of Bangalore. Long. 77. 18. E. Lat. 13. 20. N.

SHIPPENSBURG, a town of Pennsylvania, in Cumberland County, 21 miles N.E. of Chambersburg. Long. 77. 35. W. Lat. 45. 50. N.

SHIPTON, an ancient town in Worcestershire, though surrounded by Warwickshire, with a market on Saturday. It is feated on the Stour, 14 miles W. of Banbury, and 83 N.W. of London. Long. 1. 25. W. Lat. 52. 5. N.

SHOALEs, ISLES OF, in North America, on the coast of New Hampshire. They lie conveniently for the cod fishery, which was formerly carried on here to great advantage; but the inhabitants are now few and poor.

SHOGLE, a town of Syria, feated on the Asi, anciently called Orontes, over which is a bridge of 13 arches. It is 18 miles S. by E. of Antioch, and 45 S.W. of Aleppo. Long. 36. 40. E. Lat. 35. 20. N.

SHOOMSKA, one of the Kurile Islands, three leagues S. of Cape Lopatka, in Kamtschatka. Its inhabitants consist of a mixture of natives and Kamtschadales.

SHOP, the lower front apartment of a house in which goods are displayed for sale by retail. Shops of this description are too generally known to require particular notice; but the following extract from an account of a *Village shop* at Greenford, in Middlesex, by the Rev. Dr. Glasse, will shew that some recent establishments useful to the poor have been opened under the appellation of shops.

"In January, 1800," says Dr. Glasse, "I resolved to open a village shop at Greenford, as nearly as possible on the plan of that at Mongewell: for this purpose I fitted up a room near my house, and appointed an intelligent young woman, one of my servants, to the office of shop-keeper; the time of sale being limited to the hour between twelve and one o'clock; which I knew would not be inconvenient to those for whom the shop was intended, as they almost all live near to my house. I proposed to supply them with bacon, cheese, butter, rice, soap, sugar, and tea. We had no difficulty in conducting the sale of any of these articles, except the last, which, being a subject of excise, could not be dealt in without a licence specially taken out for that purpose. This I thought at first might be dispensed with; but the excise-man is obliged, by his oath, to require it. Accordingly a licence was obtained, at the expence of only a few shillings; and the young woman's name, as a dealer in tea, &c. was written on the door of her shop.

"The principal objection to a village-shop, was, in this instance, removed by an established shop-keeper in the village having just left off business; there being only one remaining, the keeper of which had other sufficient means of support. I was therefore doing no material injury to any one, in the service which I was endeavouring to render to many.

"I determined to lay in every article for sale of the best kind, and to sell it at the prime cost; and the poor, in consequence of an arrangement, which had their comfort and advantage for its sole object, were immediately supplied for ready money only with the necessaries of life; at a price, which, on comparison with what they had been accustomed to pay, appeared to them to be extremely moderate and reasonable. It is true, however, that, at the best, every article which they now purchase, must come to them exceedingly dear.

"Whoever deals at the shop, is supplied with a card or ticket, inscribed with his or her name; which is to be given to the parish clerk, in church, by some one grown up person of the family, after morning or evening service. This ticket the clerk is to bring to the shop on Monday: and if by the absence of any ticket it appears that the owner was absent from church on the preceding day, such owner, unless a satisfactory reason can be given, is deprived of the advantages of the shop for the ensuing week.

"The receipts, in six months, are rather better than 150*l.* and the savings, to the poor, beside the prevention of frequent journeys to Brentford (four miles), and that chiefly on Sunday morning, are different on different articles; on none less than 15 per cent.; on some, 20 per cent. and on others, 25 per cent.

"I should have mentioned, that, although the hour of applying to the shop is limited on other days, to between twelve and one, yet on Saturdays it is open from six till nine in the evening. The labourers have prevailed on their employers to lay aside the practice of paying wages on Sunday; and urge, as an argument, the necessity of their carrying money in their hands when they go to this shop, to purchase the necessary supplies for their families, on Saturday evening. I hope I shall be able to continue this mode of affluence to the poor, and to extend it with effect to other articles; particularly to those of coals and potatoes; the latter of which

we are now selling to the poor, at one halfpenny a pound; but they are small, though of the best sort. Our price for coals never exceeds one shilling a bushel; which, at the present cost of the article, will require a subvention to support it: as, if the demand were great, the deficiency would be too considerable to be conveniently supported by an individual.

"It is but too obvious, how much the poor are imposed upon by the petty shopkeepers, in the necessaries which they are enabled to purchase. The quality of the goods is not the best: the price is extravagantly high; and the quantity is reduced by deceitful weights, and a scanty measure. This is so often the case, as to call for a particular attention to two recent acts of parliament for the inspection of weights and balances: and I cannot help considering those officers who undertake this enquiry, when they faithfully discharge their duty, as public benefactors.

"One great advantage, which I hope my poor neighbours will derive from my shop, will be an established habit of *paying ready money*; for we have no book debts. In too many cases, the ready cash used to go *à l'eschère*, doing no good, but much harm: while the poor shopkeeper was the principal creditor, and thought himself justified in charging an extravagant price, to make himself amends for long credit, and frequent losses of the whole debt.

"There is another benefit much more important, which, I hope, will arise from this little institution: and that is, that the poor will acquire a habit of attending public worship on the Lord's day. By the church ticket, required to be delivered to the clerk, the congregation is greatly increased; the habit of indolence, perhaps, rather than downright irreligion, which kept them from church, is overcome, and an improvement in the morals of my customers may reasonably be expected."

A shop of this kind had been opened, in 1794, at Mongewell in Oxfordshire. An account of its beneficial effects is related in the Reports of the Society for bettering the Condition of the Poor by the Bishop of Durham.

SHOREHAM, a borough in Sussex, with a market on Saturday. It sends two members to parliament, and is commonly called New Shoreham, to distinguish it from the Old, which lies near it, and is now of little account. It is seated on an arm of the sea, which makes it a place of some trade, and many small vessels are built here. It is 16 miles N.W. of Newhaven, and 56 S. by W. of London. Long. $0^{\circ} 15'$ W. Lat. $56^{\circ} 54'$ N.

SIARA, a town of Brasil, capital of a captainship of the same name, which lies between those of Maraguan and Rio-Grande, on the N. coast. In the neighbourhood is a fort, on a mountain, near the river Siara. Long. $39^{\circ} 35'$ W. Lat. $3^{\circ} 15'$ S.

SIASKOI, a town of Russia, in the government of Peterfborg, near the lake Ladoga, 24 miles N.E. of New Ladoga. Long. $30^{\circ} 47'$ E. Lat. $60^{\circ} 16'$ N.

SICAL, a town of Mexico, on the N. coast of the province of Jucatan, 70 miles N.W. of Merida. Long. $90^{\circ} 30'$ W. Lat. $30^{\circ} 30'$ N.

SICHEM, a town of Austrian Brabant, to the S. of which is a celebrated monastery. It is seated on the Demer, 18 miles E. of Mechlin. Long. $5^{\circ} 0'$ E. Lat. $51^{\circ} 6'$ N.

SIDAYE, a strong town on the N. coast of the island of Java, with a harbour. Long. $113^{\circ} 15'$ E. Lat. $6^{\circ} 40'$ S.

SIDEROCAPSA, a town of Turkey in Europe, in Macedonia, famous for a gold mine in its neighbourhood. It is five miles from the gulf of Contessa. Long. $13^{\circ} 44'$ E. Lat. $40^{\circ} 30'$ N.

SIDRA, an island of the Archipelago, between the gulf of Napoli and that of Engia. Long. $24^{\circ} 0'$ E. Lat. $37^{\circ} 0'$ N.

SIDRA, a spacious gulf on the coast of Barbara between

Tripoli and Barea, which takes its name from a small island at the bottom of the gulf.

SIEDENBERG, a town of Westphalia, in the county of Hove, nine miles S.S.W. of Hove.

SIEGBURG, a town of Westphalia, in the duchy of Berg, subject to the elector palatine. It is seated on the Sieg, 15 miles S.E. of Cologne. Long. $7^{\circ} 22'$ E. Lat. $50^{\circ} 43'$ N.

SIEGMARINGEN, a town of Suabia, capital of a county of the same name. It is 26 miles N. of Constance, and 44 S. of Stuttgart. Long. $9^{\circ} 10'$ E. Lat. $48^{\circ} 2'$ N.

SIEGSTADT, a town of Norway, in the province of Aggerhuys, 58 miles N. of Christiania. Long. $10^{\circ} 55'$ E. Lat. $60^{\circ} 0'$ N.

SIENNOI, a town of Russia, in the government of Mohilef, 60 miles N.N.W. of Mohilef. Long. $29^{\circ} 45'$ E. Lat. $54^{\circ} 30'$ N.

SIGNAU, a town of Switzerland, and principal place of a district, in the canton of Bern, 12 miles S.E. of Bern. Long. $7^{\circ} 18'$ E. Lat. $46^{\circ} 44'$ N.

SIGNET (*Encycl.*). All the supreme courts of Law in Scotland have seals or *signets* proper to their several jurisdictions. The courts of session and judiciary formerly used the same signet, which was called the king's, because the writs ran in his name; and though the judiciary at last got a separate signet, yet that of the session is still named the king's signet. In the signet office are sealed summonses of citation, letters of executorial diligence, or for staying of diligence; and, generally, whatever passes by warrant of the session, and is to be executed by officers of the court. All, before sealing, must be signed by the writers or clerks of the signet. But letters of diligence, where they are granted in a depending process, merely for probation, though they pass by the signet, must be subscribed by a clerk of session. The clerks of the signet also prepare and subscribe all signatures of charters, or other royal grants, that pass the exchequer.

SIGTUNA, an ancient town of Sweden, in Upland, seated on the lake Maeler, between Stockholm and Upsal.

SIGUENZA, a town of Spain, in New Castile, with an archbishop's see, a university, and a castle, in which is an arsenal. The university consists of several colleges; but the most considerable structure is the cathedral. It is seated on a hill, at the foot of Mount Atienza, 60 miles N.E. of Madrid. Long. $2^{\circ} 41'$ W. Lat. $41^{\circ} 6'$ N.

SILHET, a town of Hindoostan Proper, capital of a district of the same name, in the country of Bengal. It is 100 miles N.E. of Dacca, and 200 E.N.E. of Moorshedabad. Long. $91^{\circ} 57'$ E. Lat. $24^{\circ} 52'$ N.

SILISTRIA, or **DORESTRA**, a town of Turkey in Europe, in Bulgaria, with a citadel, and an archbishop's see. It is seated near the confluence of the Milovo and Danube, 97 miles N.E. of Nicopoli, and 170 N.E. of Adrianople. Long. $27^{\circ} 31'$ E. Lat. $45^{\circ} 0'$ N.

SILKEBURG, a town of Denmark, in N. Jutland, with a castle, which was formerly of great strength. It is 18 miles W. of Arhusen. Long. $9^{\circ} 30'$ E. Lat. $56^{\circ} 3'$ N.

SILLEBAR, a sea-port on the W. coast of Sumatra, a little S. of Bencoolon. Long. $101^{\circ} 0'$ E. Lat. $4^{\circ} 0'$ S.

SILLE-LE-GUILLAUME, a commercial town of France, in the department of Sarthe, 20 miles N.E. of Mans.

SIMANCAS, a town of Spain, in Leon, with a castle, in which, on account of its strength, Philip ordered the archives of the kingdom to be kept. It is situate on the Deuro, eighty miles S.W. of Valladolid. Long. $4^{\circ} 30'$ W. Lat. $41^{\circ} 45'$ N.

SIMBRISK, a government of Russia, formerly a province of the kingdom of Kafan. The capital, of the same name, is seated on the Volga, 100 miles S. by W. of Kafan. Long. $48^{\circ} 34'$ E. Lat. $54^{\circ} 22'$ N.

SIMI, the ancient Syme, an island in the Mediterranean, between the island of Rhodes and the continent of Asia, six miles N. of Rhodes. Long. 27. 33. E. Lat. 36. 35. N.

SIMMEREN, a town of Germany, in the circle of Lower Rhine, capital of a duchy of the same name, with a castle. It belongs to the elector palatine, and is seated on the Simmeren, 26 miles W. of Mentz, and 35 E. of Triers. Long. 7. 41. E. Lat. 49. 51. N.

SIMOGU, a town of the peninsula of Hindoostan, in the Mysore country, situate on the Tumbadra, 93 miles N.W. of Seringapatam. Long. 75. 30. E. Lat. 13. 21. N.

SIMONS, St. an island of North America, on the coast of Georgia, opposite the mouth of the Altamaha. It is fifteen miles long and four broad, and has a good town called Frederica.

SIMONTHORNA, a strong town of Lower Hungary, in the county of Tolna, with a castle. It was taken from the Turks in 1686, and is seated on the Sarwege, eight miles from Tolna. Long. 18. 16. E. Lat. 46. 40. N.

SINCAPOUR, an island and town at the most southern extremity of the peninsula of Malacca, from which it is separated by the strait of Singapore. It is 100 miles S.E. of the city of Malacca. Long. 104. 10. E. Lat. 1. 10. N.

SINDELFINGEN, a town of Suabia, in the duchy of Württemberg, six miles S. W. of Stuttgart, and 30 E. of Baden. Long. 9. 5. E. Lat. 48. 45. N.

SINES, a town of Portugal, in Estremadura, 40 miles S. of St. Ubes. Long. 8. 55. W. Lat. 37. 40. N.

SING, a strong town of Dalmatia, built by the Turks in opposition to Clissa. It was taken by the Venetians in 1686. It is eight miles N. of Clissa, and 16 N. of Spalatro. Long. 17. 30. E. Lat. 47. 10. N.

SINGAN-FOU, a city of China, capital of the province of Chen-si. It is one of the largest and most beautiful in the empire next to Peking. In its territories (which contain six cities of the second and thirty-one of the third class) bats of a singular species are found; they are as large as domestic fowls, and the Chinese prefer their flesh to that of chicken. It is 48 miles S.W. of Peking. Long. 108. 43. E. Lat. 34. 16. N.

SINGILIES, a town of Russia, in the government of Simbirsk, situate on the Volga, 24 miles S. of Simbirsk. Long. 48. 34. E. Lat. 54. 1. N.

SINGO, a town of Turkey in Europe, in Macedonia, on the gulph of Monte Santo. Long. 24. 0. E. Lat. 40. 13. N.

SINGOR, a town in the peninsula of Malacca, seated at the mouth of a small river, in the bay of Patan. Long. 101. 25. E. Lat. 6. 40. N.

SINGAGLIA, a strong town of Italy, in the marquise of Ancona, with a castle and two harbours. It is seated at the mouth of the Nigola, in the gulph of Venice, 17 miles S.E. of Pesaro, and 30 E.S.E. of Urbino. Long. 13. 29. E. Lat. 43. 45. N.

SINCUB, or **SINOPE**, a decayed sea-port of Turkey in Asia, in Natolia, surrounded by walls, with double ramparts; but the castle is much neglected. The inhabitants are Turks, who will not admit any Jews, and the Greeks are obliged to live in the suburbs. It is the birth-place of Diogenes the cynic philosopher, and seated on the isthmus of a peninsula in the Black Sea. Long. 33. 55. E. Lat. 41. 5. N.

SINOBU, a town of the peninsula of Hindoostan, in the Mysore country, 50 miles S.E. of Bednore, and 90 N.W. of Seringapatam. Long. 75. 30. E. Lat. 13. 30. N.

SINTZHEIM, a town of Germany, in the palatinate of the Rhine, seated in a morass, 12 miles S.E. of Heidelberg. Long. 9. 0. E. Lat. 49. 15. N.

SION, an ancient town of Switzerland, capital of the Valais, and an episcopal see, whose bishop is a prince of the empire. It is situate near the Rhone, at the foot of three insulated rocks, that rise immediately from the plain. The highest, called Tourbillon, supports the old ruinous and deserted episcopal palace. On the second, denominated Valeria, are the remains of the old cathedral, and a few houses belonging to the canons. On Mayorja, the third rock, stands the present episcopal palace, an edifice of stone, built in 1547; the apartments furnished with great plainness and simplicity. Sion was formerly the capital of the Seduni, and some Roman inscriptions still remain. It is 50 miles E. of Geneva. Long. 7. 12. E. Lat. 46. 6. N.

SIOUT, one of the largest and most populous towns in Egypt. It has several mosques, and is the see of a Coptic bishop. Here are the ruins of an ancient amphitheatre, and some sepulchres of the Romans. It is surrounded by fine gardens, and palm-trees that bear the best dates in Egypt. This place is the rendezvous of those who go in the caravan to Senar, in Nubia. It is a mile from the Nile, and 185 S. of Cairo. Long. 31. 24. E. Lat. 27. 2. N.

SIRADIA, a town of Great Poland, capital of a palatinate of the same name, with a castle. It is seated in a plain, on the river Warta, 62 miles N.E. of Breslaw, and 105 N.W. of Cracow. Long. 18. 55. E. Lat. 51. 32. N.

SIRAF, a town of Persia, in the province of Laristan, situate on the Persian Gulf, 30 miles S.W. of Lar. Long. 52. 25. E. Lat. 35. 20. N.

SIRAVAN, a town of Persia, in the province of Kufistan, 48 miles N.N.E. of Sufter. Long. 51. 5. E. Lat. 31. 50. N.

SIRGIAN, a town of Persia, in the province of Kirman, celebrated for its beautiful pottery, and a manufacture of fluffs. It is 180 miles E. of Schiras.

SIRHIND, an ancient city of Hindoostan Proper, in the province of Delhi. Procopius takes notice, that in the time of Justinian (the sixth century) silk was brought from *Serinda*, a country in India. Sirhind is 195 miles N.W. of Delhi. Long. 75. 35. E. Lat. 30. 15. N.

SIRIK, a town of France, in the department of Moselle, with a castle, on a neighbouring hill. It is seated on the Moselle, 23 miles N. of Metz. Long. 6. 38. E. Lat. 49. 36. N.

SIRINAGUR, a large rugged country of Asia; bounded on the N. and N.E. by the Thibetian mountains, on the S.E. by Napaul, on the S. by Rohilla, on the S.W. by Delhi, and on the N.E. by Lahore. The capital, of the same name, is 160 miles N. of Delhi. Long. 77. 38. E. Lat. 30. 59. N.

SIRIUS ISLAND, an island of the Pacific Ocean, about 18 miles in circuit, discovered by Lieutenant Ball, in 1790. Long. 162. 30. E. Lat. 10. 52. S.

SIRMICH, or **SIRMIUM**, a town of Slavonia, capital of a county of the same name, with a bishop's see. It is seated on the Bosworth, near the Save, 42 miles S.E. of Eiseck. Long. 20. 19. E. Lat. 45. 13. N.

SIRONG, or **SERONG**, a town of Hindoostan Proper, in the province of Makra, celebrated for its manufacture of painted cottons and chintzes. It is 120 miles N.E. of Eugene. Long. 78. 4. E. Lat. 24. 4. N.

SILIZAN, a sea-port on the E. coast of Luconia, one of the Philippine Islands. It is situate almost immediately opposite to Manila, and in the vicinity of very high mountains, which render the air extremely moist. Long. 123. 45. E. Lat. 14. 20. N.

SISSAC, a town of Switzerland, in the canton of Basil, capital of the province of Sigow. It is 17 miles S.E. of Basil.

SISSEG, a town of Austrian Croatia, with a monastery.

feated on the Save, 28 miles S.E. of Zagrad, and 42 E. of Carlstadt. Long. 16. 17. E. Lat. 46. 6. N.

SIŠSEK, a strong town of Croatia, situate at the confluence of the Save and Kulpa, 40 miles E. of Carlstadt. Long. 22. 10. E. Lat. 45. 48. N.

SISSOPOLI, a town of Turkey in Europe, in Romania, with an archbishop's see; seated on a peninsula of the Black Sea, 25 miles S. of Mefembria, and 97 N.W. of Constantinople. Long. 28. 9. E. Lat. 42. 30. N.

SISTERON, a town, and late episcopal see, of France, in the department of Lower Alps, with a citadel on the top of a rock, which was the prison of Casimir V. king of Poland. It is seated on the Durance, 45 miles N. E. of Aix, and 407 S.E. of Paris. Long. 6. 1. E. Lat. 44. 11. N.

SITIA, a town on the N. coast of the isle of Candia, near a bay of the same name, 58 miles from Candia. Long. 26. 29. E. Lat. 35. 0. N.

SITTARD, a town of Westphalia, in the duchy of Juliers, seated near the Maefe, 10 miles S. of Ruremonde. Long. 5. 50. E. Lat. 50. 58. N.

SIVRAI, a town of France, in the department of Vienne, seated on the Charante, 25 miles S. of Poitiers, and 100 S.S.W. of Paris. Long. 0. 23. E. Lat. 46. 16. N.

SKAITING (*Encycl.*). It is well known that Norway is, during four or five months, covered with snow, which, at some distance from the sea coast, is so deep that it becomes impossible for the traveller to quit the beaten road either on horseback or on foot. Even the road itself must be new beaten after each new fall of snow: and that operation is performed by means of a machine somewhat resembling a plough, pointed before, and gradually widening behind, which, being drawn by horses, cuts its way through and levels at the same time.

Notwithstanding the difficulties which the Norwegian winters thus naturally present, the chase has ever been a favourite exercise with the inhabitants of the country, which formerly abounded with fierce animals, besides deer and smaller game. To make the most of the short days in that climate by traversing the forests with increased celerity, the Norwegian devised the use of skais, very different however from those which we use in our more southern lands for the purposes of amusement. The Norwegian skais are a pair of boards, about four or five inches broad, from half an inch to an inch thick, slightly hollowed in the middle underneath, to prevent unsteadiness, and to advance in a straight line. The board for the left foot is ten feet long, the other only about six. They are both bent a little upward at the extremities, but higher before than behind. They are tied to the feet with thongs fastened in the middle, where they are left higher and thicker than in the other parts. The skait for the right foot is often underlaid with rein-deer skin or seal skin, which glides very smoothly along when the skaiter moves forward in the direction agreeing with the grain of the hair, but which presents a resistance when he presses his foot in a backward direction causing the hair to bristle.

It is an ascertained fact that a good skaiter, when the snow is tolerably firm, can travel more rapidly over a level country, and continue his rapid march for a longer time, than the best horse trotting on the finest road.

If he has to descend a mountain, he moves with such impetuosity, that he is obliged to moderate his first effort in springing forward, lest he should lose his breath in the descent. He ascends more slowly, and not without some difficulty, because he is obliged to mount in a zig-zag direction. Nevertheless he reaches the summit in as short a time as would suffice for the best foot-man. And, if the snow have acquired any small degree of consistency, he never sinks into it.

Experience having proved, that, in spite of the multiplied obstacles arising from the severity of the winter, Norway had been repeatedly attacked by the enemy during that season—and this mode of performing long excursions being in general use among the inhabitants—it was natural that the idea should occur of forming a military corps of skaiters.

Accordingly such a plan has been adopted; and the corps, consisting of 560 men, is divided into two battalions, one for the northern part of the country, the other for the southern.

Their present uniform consists of a short green jacket, a grey furtout with a yellow cape, grey pantaloons, and a black leathern cap.

Their arms are a carabine hung with a sling which passes over the shoulder, a broad cutlass, and a staff three yards and half long, an inch and quarter thick, having at the end an iron point, and, at some distance from the extremity, a circular piece of iron. The principal use is to check the excessive rapidity of the skaiter's motion in descending heights. On these occasions he places it between his legs, and drags it after him, or he drags it by his side. On other occasions he makes use of it to push himself forward in ascending: in short he variously employs it according to circumstances. This staff serves him also as a support for his carabine when he wishes to fire a shot; though indeed the Norwegian peasants in general shoot very well without any such aid, and seldom miss their aim.

To the exercise of skaiting, this corps unites also that of the ordinary chaffeurs or light troops, of which it is to be considered as constituting a part: it performs all the same functions as they, nor differs from them except in the circumstance of marching on skais, which gives it a great advantage over the others. The skaiters, moving with great agility, and being secured by the depth of the snow from all pursuit either by infantry or cavalry, may safely hover round a hostile army on its march, may watch all its motions, harass and gall it on each side of the road, without incurring any danger. Even discharges of cannon would produce little effect on a number of skaiters scattered at two or three hundred yards distance from each other, and whose movements besides are so rapid, that, at the moment while the cannoniers fancy they still have them in sight, they have already vanished, to make their appearance anew when least expected.

If the enemy halt, that is the time when the skaiters enjoy their full superiority over them. Whatever precautions the hostile army may have adopted, they are momentarily exposed to the attacks of men who do not stand in need of either roads or paths, but indiscriminately traverse morasses, lakes, and rivers, provided they only be covered with snow. Even though the ice beneath should be too weak to bear either horse or man, the skaiter is safely wafted over it by the rapidity of his motion. Indeed there is not any corps better calculated, in the winter-season, for the service of reconnoitring, carrying intelligence respecting the enemy; or performing the office of couriers.

It may, however, be supposed that they find a difficulty in turning round, on account of the great length of their skais: but that is not the case. The skaiter draws back his right foot, to which is fastened the shorter skait, places it vertically to the left, then raises the left, and, placing it parallel to the right, he is turned. If he wishes to turn completely back, he has only to repeat the manœuvre.

In their ordinary winter exercises, the skaiters form themselves in three ranks, at eight paces distance between the ranks, and three between the files; and, unless when they designedly scatter themselves, they exactly observe those distances, that they may not impede each other in the use of their skais.—When they have occasion to fire, the middle and

rear ranks advance close to the front; each file thus forming a little body apart.

The baggage and camp-equipage of this corps are conveyed in sledges placed on skits. A fingle man easily draws one of these sledges by means of a leathern thong, which passes over his right shoulder and crosses to his left side, like the sling for the carbine.

An improvement on this plan has been suggested—that of attaching to the corps a few pieces of light artillery, to be drawn upon skits in the same manner as the baggage.

SKARA, a town of Sweden, in West Gothland, with the ruins of an ancient palace, the residence of the Gothic kings. It is seated on the Lida, in a morass, 17 miles N.E. of Falköping. Long. 14. o. E. Lat. 58. 16. N.

SKEEN, a town of Norway, in the government of Agderhus, remarkable for its mines of iron and copper. It is seated near the Categate, 40 miles W. of Fredericstadd.

SKIDDAW, a mountain in Cumberland, one of the most remarkable in England, being above 1000 yards perpendicular height from the surface of the lake of Derwent-water, to the north of which it is situate. Here eagles and other birds of prey resort. This mountain is not difficult of access, and is almost covered with grass, which gradually grows coarser in the ascent. The whole top is covered with a loose brown slaty stone.

SKILSKOER, a town of Denmark, in the island of Zealand, situate on a bay, 48 miles S.W. of Copenhagen. Long. 11. 27. E. Lat. 55. 16. N.

SKIPTON, a town in the West Riding of Yorkshire, with a market on Saturday; seated among hills, near the river Aire, 41 miles S. by E. of Richmond, and 231 N. by W. of London. Long. 2. 42. W. Lat. 53. 55. N.

SLAGELSE, a town of Denmark, in the island of Zealand, 42 miles W.S.W. of Copenhagen. Long. 11. 29. E. Lat. 55. 26. N.

SLATINA, a town of Turkey in Europe, in Moldavia, 18 miles N.W. of Niemez. Long. 26. 5. E. Lat. 47. 10. N.

SLAUGHTERING, a term used to denote the killing of calves, oxen, or other horned cattle.

The instrument at present generally employed for this purpose, is a common *axe*; by which the animal is at least stunned, in case he does not fall after one or two blows; yet, as the *knocking down* of cattle carries with it an idea of ferocity, a milder and more humane method of terminating their existence ought to be substituted for that practice. Such desirable object may be attained by adopting the mode of slaughtering which prevails in Portugal; namely, the “laying down cattle,” by separating the spinal marrow with a peculiar knife; in consequence of which, the animal is *unversed*, and falls instantaneously: in Plate 44. we therefore give a representation of the instrument employed in that kingdom.

The whole knife is eleven inches in length; the handle being 4½, and the blade 6½ inches. In order to use it, the person who is about to “lay down” an animal, must place himself in front of the latter, holding it by the horn in the left hand; and passing the knife over its brow, through the vertebrae of the neck, into the spinal marrow.—For the knowledge of this practice, we are indebted to the humane Lord Somerville; who, during his late residence in Portugal, caused a person to be instructed in the use of the knife above described. His lordship has liberally offered to comply with the request of those whose business is to slaughter cattle, and who may be desirous of additional information. He further observes (in *The System followed during the two last Years by the Board of Agriculture, &c.*) that the man alluded to, has laid

fifteen oxen in a row “with more regularly and expedition than would at first, perhaps, be credited.”—Lord S. likewise is of opinion, that if the practice of carters *head-lining* or walking at the heads of oxen, were adopted in Britain, the animals would probably be induced to stand more quietly; in consequence of which the operation will become “as safe as it is easy.”

SLAWKAW, or **AUSTERLITZ**, a town of Moravia, capital of a circle of the same name. It is 10 miles E. of Brinn. Long. 16. 57. E. Lat. 49. 5. N.

SLEAFORD, a town of Lincolnshire, with a market on Monday. It had formerly a castle, now in ruins, and has a large market-place, in the form of a parallelogram. It is seated on the Slea, which is navigable hence to the Witham, 18 miles S. of Lincoln, and 115 N. of London. Long. o. 21. W. Lat. 53. 1. N.

SLONIM, a town of Lithuania, in the palatinate of Novogrodeck, with a castle, seated on the Sezraa, 40 miles S.W. of Novogrodeck, and 60 S.E. of Grodno. Long. 23. 57. E. Lat. 53. o. N.

SLOOTEN, or **SLATEN**, a town of the United Provinces, in Friesland, seated on a lake called Slooten-mere, three miles from the Zuider Zee, and 18 N.W. of Steenwick. Long. 5. 26. E. Lat. 52. 55. N.

SMITH'S ISLAND, an island in the Pacific Ocean, discovered by Lieut. Ball, in 1790. Long. 161. 54. E. Lat. 9. 44. S.

SMOLAND, or **SMALAND**, a province of Sweden, in Gothland, 112 miles long and 62 broad. It has immense forests of pine and fir; and the approach to the villages is announced by groves of oak, beech, and birch, and numerous plots or parterres of arable land among pastures and rocks. An acre of land has been frequently observed to be laid out with alternate slips of rye, barley, flax, and hemp; the intervals between and around, sown with grass: In many parts, the trees are cut down, and burnt in order to manure the soil. Calmar is the capital.

SMOW, a noted cavern, on the N. coast of Sutherlandshire, between Cape Wrath and Loch Eribol. It runs so far under ground, that is extremity, it is said, could never be explored.

SMYNHUSEN, a town of Lower Saxony, in the duchy of Holftein, six miles E. of Lunden.

SNACKERBURG, a commercial town of Lower Saxony, in Bruntweck Lunenburg, seated at the confluence of the Ucht with the Elbe, 35 miles E. by S. of Danneberg. Long. 12. 22. E. Lat. 53. 10. N.

SNEECK, a town of the United Provinces, in Friesland. It is called Snitz by the natives, and is seated on a lake of the same name in marshy land, eight miles S. of Franeker. Long. 5. 26. E. Lat. 53. 2. N.

SNEIRNE, a town of Persia, in the province of Irac, 57 miles W.N.W. of Amadan. Long. 46. 24. E. Lat. 35. 45. N.

SNETHSHAM, a town in Norfolk, with a market on Friday, seated on a small inlet of the sea, 12 miles N.N.E. of Lynn, and 111 N. by E. of London. Long. o. 32. E. Lat. 52. 55. N.

SNIATIN, a trading town of Little Poland, capital of Poketia, seated on the Pruth, eight miles E. of Coloni, and 45 S.E. of Halitz. Long. 26. 7. E. Lat. 48. 44. N.

SOANA, or **SUANE**, an ancient town of Tuscany, in the Siennese, with a bishop's see. The badness of the air has caused it to be almost deserted, and it is now no more than a village. It is seated on a mountain, near the river Fiora, 30 miles S.E. of Sienna. Long. 11. 46. E. Lat. 42. 40. N.

SOCIETY, a class of Hindoostan Proper, which rises on the S. confines of Aulhawal, rising from the same lake, which is the source of the Nerbudda; and flowing in an opposite direction to that river, 1500 miles, it falls into the Ganges, above Patna.

SOCIETY (Engel). Among the most important of the various associations for charitable and benevolent purposes in Britain, is the formation of a society in London, for encouraging the industry, and promoting the welfare of the poor, instituted in 1790, under the name of a Society for bettering the Condition and increasing the Comforts of the Poor; an establishment which has been the means of adding much to the physical state of national happiness. Its objects are described to be—every thing that concerns the happiness of the poor—every thing by which their comforts can be increased. To remove the difficulties attending parochial relief, and the discouragement of industry and economy, by the present mode of distributing it; to correct the abuses of workhouses; and to assist the poor, in placing out their children in the world—in this, and in the improvement of their habits and gardens; in assistance and information as to the use of fuel, so as to give them more benefit from it; and in adding to, and in meliorating their means of subsistence, by public kitchens, and by other means. In these respects it has been proved that much may be done by the action of liberal and benevolent mind—much by the circulating of information, and by personal assistance and advice.

It must afford a strong additional inducement to efforts of this nature to consider, that, in proportion as we can multiply domestic comforts, in the same degree we may hope to promote the cause of morality and virtue. For a very gratifying illustration of this, as well as for the most important improvements in fuel, food, and in the mode of assisting the poor, the world is indebted to the philanthropy and abilities of Count Rumford. (See the articles COAL, FUEL, STOVE, &c. *supra*.)

It is not, however, merely the increase of the comforts and morals of the poor, great as that benefit may be, that this society has in a great measure effected: its improvements and experiments apply more or less to farms, manufactories, private families, and to every situation of life.

His majesty, the ready patron of every useful undertaking, when informed of the plan and object of the society, was graciously pleased to take it under his protection, and at a subsequent meeting the society came to the following resolution:

"That the general object of the society be to collect information respecting the circumstances and situation of the poor, and the most effectual means of meliorating their condition; in order that any comforts and advantages which the poor do now actually enjoy in any part of England, may eventually be extended to every part of it, with as much improvement and additional benefit as may be to the poor; and with a tendency, gradually to diminish parochial expences. For the attainment of these ends, it appears to the society, that the circulation of useful and practical information, derived from experience, and stated briefly and plainly, so as to be generally read and understood, may be of very great national and individual benefit; and may induce and enable all well disposed persons to unite in the prosecution of an object so important to the happiness and welfare of the community at large, and particularly of that valuable branch of it, the labouring poor."

"The following are selected as the subjects of informa-

tion, upon which the Society is desirous of obtaining and circulating hints:

1. *Parish Relief*—how it may be best directed for the benefit of the poor.
2. *Friendly Societies*—their good effects, and how they may be best encouraged.
3. *Parish Workhouses*—the amendment of them.
4. *Cottages*—the increasing the comfort and neatness of them.
5. *Cottage Gardens*—and the means of enabling the cottager to keep a cow, or of supplying him with milk.
6. *Parish Mills* for corn; and parish ovens.
7. *Village Shops*, for better supplying the poor with the necessaries of life.
8. *Village Kitchens*, and *Soup Shops*.
9. *Cottage Fire-places*, and *chimneys*—the improvement of them.
10. *Fuel*—how the poor may be better supplied with it.
11. *Apprentices* to manufacturers, and all parish apprentices.
12. *Country fairs*—the means and effects of reforming them.
13. *Beggars*—the least exceptionable modes of assisting them.
14. *Public Rooms* for the resort of the industrious poor in cold weather.

For proofs of what has been effected by the Society already, see the several heads in this SUPPLEMENT. We shall now introduce to the reader's observation the institution of the kind, namely, the *Society for bettering the Condition of the Poor at Clapham*, established in 1799. It consists both of ladies and gentlemen, willing to take an active part in promoting the welfare of the poor. The objects of this society, are the discovery and relief of cases of real distress, the assisting and rewarding of honest industry, the detection of fraud and imposture, the discouragement of idleness and vice, and the employment of children at an early age, &c. as to improve both the condition and the morals of the poor.

The members of the society meet at each other's houses, in winter, one evening in the month, and in the summer once in two months, for the purpose of conversation and communication on the preceding subjects. They have divided the parish of Clapham into eight districts, and have appointed four or more ladies and gentlemen, as visitors for each district. The duty of the visitors is to inform themselves of the circumstances and character of every poor person within their district; and to meet for the purpose of acting in concert, and of becoming more acquainted with the real state of the poor; so as to report at the general meeting every peculiar case of distress: with their opinion, as to the means of improving the conduct, and bettering the condition, of the objects of their attention. A journal was agreed to be kept of the observations of the Society, and of the effects produced by its labours; and a correspondence has been opened with the officers of the parish, so as to form a channel for the mutual communication of intelligence.

The first act of the society was to draw out an accurate list of all the poor of the parish of Clapham; distinguishing each individual's respective occupation, family, residence, and place of legal settlement.—From this account, two distinct lists have been made out: one in the order of residence—the other in an alphabetical order: and a list of the allowances granted by the parish has been obtained of the overseers. It appeared by the return, that there were in the whole 348 families in the parish, which were likely to become objects of charitable assistance; viz.

In the 1st district	=	46 families.
2d	"	71
3d	"	80
4th	"	58
5th	"	41
6th	"	33
7th	"	37
8th	"	18

348

Of these 61 were single persons; 50 had wives, but no children; and the remaining 287 had wives and children; the number of children being, upon an average, not more than two to each family.—There were in all 572 children, and the total amount of poor was 1207 persons.

For each district, a lady was appointed as sub-treasurer; whose office it was to keep the accounts of the district, and to call meetings of the visitors; no visitor having a power (except in cases of emergency) to give any material relief, but what shall be directed at a district meeting. Their accounts are passed at the general meeting. The measure of sub-dividing the districts among the visitors was soon after adopted, in some instances, with very good effect.

The rector, with the concurrence of the churchwardens and vestry, added the sacrament money, about 100*l.* a year, to the funds of the society.—In case of application for relief, it was recommended to the visitors to take the opportunity of gaining information respecting the character of the person applying; as to regular attendance on public worship, the care and schooling of their children, and the industry and earnings of every branch of the family. This information is useful to direct both the kind and the quantity of relief, so as to assist and encourage virtue and industry.

In case of any infectious disorder, the treasurer is directed to consult with the medical gentlemen of the society, concerning the most effectual means of preventing the danger of communication; and he has the authority immediately to take the necessary steps, at the expense of the society. Of the benefit of this regulation several instances have appeared. The small-pox has attacked several poor families with much violence; some of the children, yet uninfected, were successfully inoculated at the expense of the society. A dangerous species of putrid and scarlet fever had broken out at different periods, in some of the houses of the poor; it was prevented from spreading beyond the families in which it originated. A putrid and scarlet fever, in a neighbouring parish, was at the same time extremely fatal to the children of the poor; and three months had elapsed, before its ravages ceased.

There is hardly any thing for the improvement and benefit of the poor, that may not be adopted and effected by such a society as that of Clapham. They came to very early resolutions to furnish the poor *gratis*, with unlaid line to white-wash their cottages; to provide beds of the poor in the different districts; to furnish grown-up persons with suitable employment; and to place children at school, and from thence in service; to establish in the village a friendly society, under their own care and patronage; to purchase blankets to lend the industrious poor in winter;—and that whenever a poor married woman should deposit a weekly sum in the hands of the visitor to provide for her confinement, the society would repay it, with the addition of as much more, at the time of her lying-in.

In order to provide for the sick poor such refreshments as might be ordered by the visitors or medical attendants, the society engaged an apothecary at 2*l.* a week. She is a middle-aged woman, not burthened with a family, not going

out to washing for her livelihood; and a person in whose cleanliness, industry, integrity, and skill in cookery, they and the poor can place a confidence. To her care are intrusted the stores for the relief of the sick; consisting of sage, wine, oatmeal, &c. and also the materials for work, she has been furnished with a book of receipts for preparing refreshments for the sick; to be lent by the order of any of the visitors, the keeping a regular account of the same. It is her duty to register the names of the nurses and charwomen in the parish, who are deserving of recommendation, in order that those who want employment may have an opportunity of stating that they are unoccupied; and that housekeepers, who want a nurse or helper in the house, may know who is disengaged. It is also her office, upon reference from the visitors, to make enquiries respecting the character of any person, when the visitors do not succeed in procuring satisfactory information upon the subject.—Three ladies of the society undertook to purchase for her the necessary utensils and stores, to furnish her with sufficient information and instructions, and to superintend her in the execution of her office.

For the desirable object of forming early habits of attention and industry (there being already at Clapham, schools for children of riper age), a knitting and reading school for boys and girls under six years of age was established under the care of one of the ladies, at the request and expense of the society. An industrious woman, who had a comfortable room adapted to the purpose, agreed to take any number of children, and at any hour that might be thought proper, to instruct them in knitting and reading; and, on Sunday, to open it as a Sunday school. For this, and her firing and all expenses, she was to be allowed five shillings a week. The school was opened in the beginning of December last with fifteen boys, whose number was soon increased to twenty-one, and the monthly account of whole work already makes an article in the minutes of the society.

In the early part of the winter the society provide blankets, to be numbered, marked, and lent to the poor, under the following regulations: 1*st*, That a note should be given with them, expressing the day on which they were lent, and that on which they were to be returned. 2*d*, That an account should be kept by the society's agent, in her book, of the number of each blanket, the person to whom lent, and the time when lent, and when returned. 3*d*, That the blankets lent to any poor family for the winter season, should be returned on the first of May, clean washed if required. 4*th*, That in cases where any infectious disorder might have prevailed in the family to which they have been lent, a discretionary power be given to the visitor to permit them to be kept. And 5*th*, That all the blankets, upon being returned to the society, should be baked, in order to purify them, before they are laid up in the society's store.

It is difficult to say what may not be done for the poor, or in what degree their religious and moral habits, and their domestic comfort and enjoyments, may not be increased, by the formation, in every large parish in England, of societies like that at Clapham; societies which, without the incumbrance of an establishment, give to the rich all the power and effect of co-operation; which offer to the poor every incitement to virtue and industry; and, while they relieve the distressed and unfortunate, while they educate the young and comfort the aged, imprint on the minds of all a just sense of the value of character, and of moral and religious habits, and render them useful to themselves and to the community.

It is no small merit in the society at Clapham, that it has afforded satisfactory evidence that the system of dividing

the poor into districts, and of thereby diminishing labour by arrangement of attention (a system recommended by the precepts of Count Rumford, and by the example of Hamburgh), is applicable and practicable in every parish in England. However the mind may be intimidated by the difficulties which must embarrass the attempt of an individual, to improve the habits and increase the comforts of a whole parish, or of a larger district; there are very few of our countrymen, and still fewer, we trust, of our fair countrywomen, who would, at any period, shrink from the duty of occasionally visiting their eight or ten adjoining cottagers; and of attending a sociable monthly meeting of their friends and acquaintance, in order to consider how their poor neighbours might be made more happy and virtuous in themselves, and more useful to the neighbourhood.

This mode of keeping down the poor-rates, of preventing crimes, and of encouraging honesty, industry, and economy, will never be very irksome in the detail, while it only occasionally occupies a tedious hour, and promotes a pleasant and satisfactory monthly meeting of the neighbourhood. This, when directed "to the discovery and relief of cases of real distress,—to the assuaging and rewarding of honest industry,—to the detection of fraud and imposture,—to the discouragement of idleness and vice,—to the employment of children in early habits of industry,—and to what ever has a tendency to improve the condition and morals of the poor" (and these are the declared objects of the society at Clapham), must, except in a very debased state indeed, afford satisfactory occupation to every human being;—to the miser, in the improvement of his property,—to the anxious mind, in the security of it,—to the sensualist, in enjoyment,—and to the pious and benevolent, in the promotion of the virtue and happiness of their fellow-creatures.

This society is directed by principles different from those which too frequently actuate the parochial overseer. The great object of the society is the improvement of the poor. They apply leisure, talents, information, and every power which they derive from instruction, situation, and property, for the assistance of those who do not possess the same advantages; not with the petty and unstable object of affording capricious or momentary relief; but in the well-founded hope of conferring permanent benefit, by increasing their resources, by improving their principles, and encouraging them in habits of industry, sobriety, and frugality.

Charity of this kind has not only the advantage of increased effect by co-operation, and of impartial benevolence in embracing all objects within the district, in proportion to their claims and necessities; but also of acting upon collective information, and of directing joint exertions systematically, and to the proper end. The enquiry respecting the industry, economy, and character of the poor, must necessarily increase the value and prevalence of those virtues, at the same time that it enables the individual to direct his relief most effectually to the advantage of the sufferer,—if it is temporary distress occasioned by sickness, provision is made for their immediate comfort and speedy recovery; and, while the ordinary parochial fund is resorted to in the usual way, the society adds the lesser comforts, and those aids to the recovery, which parish relief can never completely afford: such is a nurse, whose employment may perhaps be as much charity to her, as to the sick on whom she attends; whose care, where quiet is peculiarly necessary, may remove some of the children during the day, and place them with a neighbour or friend; and whose attention may prevent the patient from returning to hard labour, before his strength is sufficiently recruited and confirmed.

In checking the progress of infectious disorders, a society like that of Clapham may be of infinite service. It is

the duty of the visitor in that case immediately to inform the treasurer, who is authorized to take medical advice, as to the most effectual means of stopping the contagion. A very trifling sum, seasonably expended in the removal and care of the infected person, and in purifying and white-washing his habitation, may save thousands of useful lives, and prevent an irretrievable loss, and insupportable expense to the parish. (See HOUSE OF RECOVERY, and WHITE-WASH, *Supp.*)

For a period when the weaker and more helpless sex stand in great need of kindness and assistance, the society has made a very acceptable provision, by doubling the sum which may be deposited for the assistance of any poor woman at her lying-in. Besides this, the placing, at such a time, some of their children at school, and providing a nurse, may be at times an act of very useful and necessary charity.

The forming of children to early habits of industry, is another primary object of this society; which adopts the principle that every child, above mere imbecility, should produce something towards its own support. If what it can produce is *only a penny a week*, even that ought not to be neglected. The habit of saving small sums is the foundation of economy; and constant occupation is one grand preservative from vice. For this purpose, it is of great moment to find regular employment for the poor; and it is much to be regretted that processes for the abridgment of labour have, in many parts of the kingdom, deprived the poor of the means of industry.

The habit of cleanliness, producing as it does many valuable moral virtues, is an important effect of this society. Another is, the institution of friendly societies under their immediate care and patronage; and particularly such a one as may afford relief to women as well as to men; and, with the contributory aid of the rich, secure liberal and certain advantages to the members. Besides this, the encouraging of the poor to buy for ready money, and the donation of rewards to cottagers for the support of large families, and for the degree of industry and sobriety they may possess, and for other commendable points of character, may, with attention and discretion, be of the greatest use in improving the condition, not only of the poor, but of the neighbourhood and of the community at large.

Whatever have been the advantages to the poor, the beneficial effects produced by such a society upon the rich, are likely to be equally great. Ladies who have not been accustomed to enquire personally into the state of their necessitous neighbours, may thus be excited to be extremely active in assisting them, and in devising the best methods of doing them good. When the rich are induced to visit the families of labourers, and to make the comparison between their own comforts and those of others, they receive from such occupation much mental improvement, and become properly grateful for their own benefits and situation in society. It may then become necessary to caution them against too warm and liberal an application of their charity, and against that degree and species of benevolence, which, instead of aiding and instructing the poor to help themselves, render them more helpless and hopeless. It is then very important to hold up to constant view the wise and excellent maxims adopted at Hamburgh; *that if the manner in which relief is given be not a spur to industry, it becomes in effect a premium to sloth and profligacy*; and that if the charitable or parochial support of an idle person exceeds what any industrious person in the same circumstances can earn, idleness will become more profitable than industry, and beggary a better trade than the work-shop.

Philanthropic SOCIETY. See REFORM, Supp.

SOCONUSCO, a province of New Spain, in the audience of Mexico, 88 miles long and nearly as much broad; bounded on the N. by Chiapi, on the E. by Guatimala, on the S. by the Pacific Ocean, and on the W. by Guaxaca. It is sheltered from the north winds by high mountains, which renders the air exceeding hot; and the soil is not very fertile. There are few Spaniards settled here.

SOCONUSCO, or **GURVETLAN**, a town of New Spain, capital of a province of the same name, 440 miles S.E. of Mexico. Long. 98. 16. W. Lat. 15. 42. N.

SOCZOWA, a town of Turkey in Europe, in Moldavia, seated on the Seret, 32 miles S.W. of Jassy. Long. 26. 20. E. Lat. 47. 16. N.

SODBURY, or **CHIPPING SODBURY**, a town in Gloucestershire, with a market on Thursday, and noted for its fine cheese. It is seated in a bottom, near the towns, 15 miles E.N.E. of Bristol, and 112 W. of London. Long. 2. 15. W. Lat. 51. 36. N.

SOEBORG, a town of Denmark, in the island of Zealand, nine miles W.N.W. of Elsinore.

SOEST, a large town of Westphalia, in the county of Marck, formerly free and imperial, but now belongs to the King of Prussia. The streets are watered with streams that proceed from a lake, and the inhabitants are generally Papists. It is 12 miles S.W. of Lipstadt, and 30 S.E. of Munster. Long. 8. 11. E. Lat. 51. 41. N.

SOFFA, or **SOPHIA**, a town of Turkey in Europe, capital of Bulgaria, with an archbishop's see. It is seated at the foot of the mountains of Argentaro, on the river Bogana, 135 miles W.N.W. of Adrianople, and 155 E. of Scutari. Long. 23. 58. E. Lat. 42. 36. N.

SOFROY, a town of the kingdom of Fez, noted for a very handsome mosque. It is seated on a hill, at the foot of a mountain of the same name, part of Mount Atlas, and between two rivers, 12 miles E. of Fez. Long. 4. 48. W. Lat. 33. 40. N.

SOONO, a town of the kingdom of Congo, in a province of the same name, which is a dry sandy country, but yields a great deal of salt. The inhabitants are said to be Christians, converted by the Portuguese, and the Capuchins have a church here. It is seated on the Zaire, near its mouth, 185 miles W.S.W. of St. Salvador. Long. 13. 15. E. Lat. 5. 50. S.

SOHAGEPOUR, a town of Hindoostan Proper, capital of a district, in the province of Allahabad, 120 miles S. of Allahabad, and 230 S.W. of Patna. Long. 82. 20. E. Lat. 23. 50. N.

SOHAM, a town in Cambridgeshire, with a market on Saturday, seated on a fen of the same name, near Sohammere, which takes up 1000 acres of land. It is five miles S.E. of Ely, and 70 N. by E. of London. Long. 0. 14. E. Lat. 52. 21. N.

SOHO, a village in Staffordshire, two miles N.W. of Birmingham. It was recently founded by Mr. Boulton, as a manufacture for every article common to the Birmingham trade, the plated ware usually made at Sheffield, and of elegant pieces of silver both light and massive. Here also are made the improved steam engines, now adopted in numerous concerns throughout the kingdom. In 1797, an ingenious apparatus for coining and stamping was employed here by government, on a copper coinage of penny and two-penny pieces; and in 1799, halfpenny and farthing pieces were likewise coined at this mint.

SOIGNIES, a town of Austrian Hainault, seated near a forest of the same name, on the river Senne, eight miles N.E. of Mons, and 17 W. of Brussels. Long. 4. 14. E. Lat. 53. 29. N.

SOLDANIA BAY, a bay on the S.W. coast of Africa, a little to the N. of the Cape of Good Hope. Long. 18. 4. E. Lat. 38. 10. S.

SOLENHOFEN, a town of Franconia, in the principality of Anspach, 29 miles S. of Anspach. Long. 10. 45. E. Lat. 44. 36. N.

SOLFATARAS, a mountain of Naples, in Terra di Lavoro, surrounded by other mountains, in the form of an amphitheatre. It has a kind of cavity, above a mile in diameter, which was no doubt the crater of a volcano at present extinct. The earth here is warm and white; and if opened to some depth is insupportable from the heat and exhalations. The ground is almost every-where hollow, and is supposed to have a subterraneous communication with Mount Vesuvius. Here are manufactures of sulphur and alum, from which the King of Naples derives a considerable revenue. Near it is a small lake full black thick water, which seems to be always boiling.

SOLFWITZBORG, or **SYLVISBORG**, a town of Sweden, in the province of Blekinge, 33 miles W.S.W. of Carlscrona. Long. 14. 31. E. Lat. 56. 2. N.

SOLIHUL, a town in Warwickshire, near which, to the W. is a triangular Danish camp, on an eminence, containing about nine acres. It is 12 miles W. of Coventry, and 107 N.W. of London.

SOLINGEN, a town of Westphalia, in the duchy of Berg, seated near the river Wipper, 15 miles S.E. of Dusseldorf. Long. 7. 10. E. Lat. 51. 10. N.

SOLKAMSK, a town of Russia, in the government of Perm, famous for its salt-pits and good horses. It is seated on the Ussilka, which falls into the Kama, 430 miles N.E. of Kasan. Long. 57. 26. E. Lat. 5. 16. N.

SOLMS, a town of Germany, capital of a county of the same name, in the circle of Lower Rhine. It has a strong castle, belongs to a branch of the house of Nassau, and is seated on a hill, 10 miles S.E. of Herborn. Long. 8. 31. E. Lat. 50. 35. N.

SOLOK, an island in the Indian Ocean, to the S. of Celebes, governed by its own king. Long. 123. 55. E. Lat. 9. 0. S.

SOLSERINA, a town of Italy, in the duchy of Mantua, 17 miles N.W. of Mantua. Long. 10. 40. E. Lat. 45. 20. N.

SOLTAU, a town of Lower Saxony, in the principality of Luneburg Zell, 29 miles N.N.W. of Zell, and 29 W.S.W. of Luneburg. Long. 10. 2. E. Lat. 53. 10. N.

SOLTWELD, a town of Germany, in the old marche of Brandenburg, seated on the Jetze, 45 miles N.W. of Stendal. Long. 11. 36. E. Lat. 53. 6. N.

SOLWAY FRITH, an arm of the sea, between Cumberland in England, and Kircudbrightshire in Scotland.

SOMBREIRO, a cluster of uninhabited islands in the West Indies, belonging to the English. The most remarkable of them is a league long, and consists of an eminence, to which the Spanish discoverers, finding some resemblance to a hat, gave the name of *Sombreiro*. It is 80 miles N.W. of St. Christopher. Long. 63. 37. W. Lat. 18. 38. N.

SOMMA, a town of Naples, in Terra di Lavoro, near which is annually produced between 7000 and 8000 pounds weight of silk of the best quality. It is 10 miles E. of Naples.

SOMME, a department of France, including the late province of Picardy. It takes its name from a river which rises in the department of Aisne, and watering St. Quentin, Peronne, Amiens, and Abbeville, enters the English channel. Amiens is the capital.

SOMMERFELD, a town of Upper Saxony, in the

duchy of Croffen, 15 miles S. of Croffen, and 72 S.E. of Berlin.

SOMMIERES, a town of France, in the department of Gard. It has a manufacture of thick ferges, which bear its name; and is seated on the Vidourle, 10 miles W. of Nîmes. Long. 4. 11. E. Lat. 43. 48. N.

SONCINO, a strong town of Italy, in the Cremonese, seated on the Oglio, 30 miles N.W. of Cremona. Long. 9. 44. E. Lat. 45. 24. N.

SONDERBORG, a seaport of Denmark, in the island of Allen. It has one of the best harbours in Denmark, and a royal palace in which Christian II. king of Denmark, was confined as a prisoner 13 years. It is 16 miles E.N.E. of Flendburgh. Long. 9. 49. E. Lat. 54. 57. N.

SONDERSHAUSEN, a town of Upper Saxony, situate on the Wipper, 30 miles N.E. of Mulhausen, and 26 N. of Erfurt. Long. 11. 5. E. Lat. 48. 25. N.

SONDRO, a town of the country of the Grisons, capital of the Valtelline. It is built in a very romantic situation, at the extremity of a narrow valley, and occupies both sides of the Malenco, a furious torrent, which frequently overflows its banks. Sondrio is 34 miles N.E. of Como. Long. 9. 40. E. Lat. 46. 11. N.

SONERGON, or **SUNNERGAUM**, a village of Hindoostan Proper, once a large city, the provincial capital of the eastern division of Bengal, before Dacca was built, and famous for a manufacture of fine cotton cloths. It is seated on a branch of the Burrampooter, 13 miles S.E. of Dacca.

SONG-KIANG-FOU, a city of China, in the province of Kiang-nan. It is celebrated for the prodigious quantity of cotton cloth which it exports to foreign countries, but has only four cities in its district.

SONORA, a province of New Navarre, extending along the E. side of the gulf of California, in about 26° N. long, and 69° N. lat. It lies in the most delightful part of the temperate zone; and all its productions, whether animal or vegetable, are perfect in their kind. Some rich mines of gold and silver were discovered here by the Spaniards, in 1771, in an expedition against some fierce tribes of hostile and predatory Indians.

SOOLOO, an island of the Eastern Ocean, situate S.W. of Mindanao, almost midway between that island and Borneo. It is 30 miles long and 12 broad, and contains about 60,000 inhabitants. It is governed by a king or sultan, and the natives are Malays, and consequently Mahometans. The populousness of this little spot is caused by its advantageous situation, which renders it a great mart. The English East-India Company have a resident here. Long. 121. 25. E. Lat. 5. 51. N.

SOPELANIA, a town of Persia, in Aderbeizan, seated in a valley, 25 miles N.W. of Tauris. Long. 47. 25. E. Lat. 38. 25. N.

SOPHLENBERG, a town of Denmark, in the island of Zealand, with a royal palace, 13 miles N. of Copenhagen. Long. 12. 40. E. Lat. 55. 54. N.

SOPRA SELVA, a valley of Switzerland, in the country of the Grisons. It extends from Mount St. Gothard to Reichenau, and is the most populous valley of the Grey League.

SOPRON, a strong town of Lower Hungary, capital of a county of the same name, seated on a small river, 27 miles S.W. of Presburg, and 30 S.E. of Vienna. Long. 17. 0. E. Lat. 47. 46. N.

SORA, a town of Naples, in Terra di Lavoro, with a castle and a bishop's see; seated on the Garigliano, 65 miles N.W. of Naples. Long. 14. 4. E. Lat. 41. 34. N.

SORA, a strong town of Denmark, in Zealand, with a

college for the nobility, nine miles W. of Ringsted. Long. 11. 53. E. Lat. 55. 26. N.

SORAW, a town of Germany, in Lusatia, seated near the Hober, 25 miles S. of Croffen, and 32 N.E. of Gorlitz. Long. 15. 48. E. Lat. 51. 40. N.

SORIA, a town of Spain, in old Castile, built on the ruins of the ancient Numantia, near the source of the Douero, 74 miles S.E. of Burgos. Long. 2. 2. W. Lat. 41. 48. N.

SORIANO, a town of Naples, in Calabria Ulteriore, 17 miles K.N.E. of Nicotera.

SOROCK, a town of Poland, seated on the Dnieffter, with a strong castle. The Turks were obliged to raise the siege of this place in 1608.

SOROE, a town of Denmark, in the island of Zealand, surrounded by three fresh-water lakes. Here is a royal academy, endowed with the revenues of a rich convent which was dissolved at the revolution. It is 25 miles S.W. of Copenhagen. Long. 12. 15. E. Lat. 55. 5. N.

SOSPETTO, a town of Piedmont, in the county of Nice. It has a trade in dried fruits, particularly figs; and is seated at the foot of three very high mountains, on the river Bevera, 15 miles N.E. of Nice. Long. 7. 34. E. Lat. 43. 52. N.

SOVANO, a town of Tuscany, in the Siennese, with a bishop's see, 25 miles W. of Orvieto. Long. 11. 48. E. Lat. 42. 48. N.

SOULLIAC, a town of France, in the department of Lot, seated on the Horefe, 35 miles N. of Cahors. Long. 1. 21. E. Lat. 44. 55. N.

SOUND, a strait between Sweden and Denmark, through which ships usually fall from the Categate into the Baltic. It is about four miles broad, and here the Danes take toll of all merchant-ships that pass into the Baltic.

SOUP (*Esopé*). The following extract from an account of the manner and expence of making stewed ox's head for the poor, by Mrs. Shore of Norton-hall, in Derbyshire, is published by the Society for bettering the Condition of the Poor.

"One of the members of the Society having requested the particulars of the ox-head stew, which is given away at Norton-hall," says Mrs. Shore, "I have prepared the following account.—The whole is divided into fifty-two messes; each mess containing a piece of meat, a piece of fat, and a quart of soup. The distribution of it has been continued since October, 1793, once a-week, and sometimes oftener, from October to May. The poor people receive it very thankfully, and generally reserve part of the mess for the second day.

"The manner of preparing it is as follows:—Wash the ox's head very clean and well, and then put it into thirteen gallons of water; add a peck and a half of pared potatoes, a quarter of turnips, half a quarter of onions, a few carrots, a handful of pot-herbs, and the liquor of any boiled meat of the family, in which no vegetable has been boiled; thicken it with two quarts of oatmeal, and add pepper and salt to your taste;—for it to stew with a gentle fire, early in the afternoon, allowing as little evaporation as may be, and not skimming off the fat; but leaving the whole to stew gently over the fire, which should be renewed and made up at night. Make a small fire under the boiler at seven o'clock in the morning, and keep adding as much water as will make up the waste by evaporation, keeping it gently stewing till noon, when it will be ready to serve for dinner. The whole is then to be divided into fifty-two messes; each containing (by a previous division of the meat and fat) a piece of meat and fat, and a quart of savoury nourishing soup.

"The expence of the materials in the northern counties, where it has been tried, may be thus stated:

An ox's head	s. d.
A peck and a half of potatoes	1 6
Onions, turnips, &c.	0 7½
	0 4½
	2 6

"This amounts, exclusive of fuel and trouble, to rather more than a halfpenny for each mess, or not quite two pence halfpenny a gallon; but in the dearer parts of England, the articles being purchased by retail, the messs may cost as much as three farthings or a penny.

"The beef and other bones, and crusts of bread, of the family, may be added to the stew; and will improve the soup, without any additional expence.

"The above is submitted to the consideration of those house-keepers who have not yet adopted a similar charity, as a cheap and useful mode of relieving their poor neighbours, and of gradually teaching them a better system of diet than they at present possess. The sum of *£s. 6d.* a-week for seven months (amounting to *£s. 15s.* a-year) in the cheap parts of England, and a few shillings more in the others, is the expence of a charity which may retain on its lists fifty-two poor persons, and supply them with the comfort of two meals a-week."

This receipt was tried in Auckland workhouse; and was extremely liked by the poor. Though the expence was very small, yet the quantity produced being a great deal more than the people of the workhouse could use, the cottagers near the workhouse were desired to send for messes of it; and had, in consequence, the benefit of a plentiful and unexpected meal. It is now inserted in their table of diet, to be made once a-week for the benefit of the poor, both in and out of the workhouse.

Count Rumford, in his valuable essays, has demonstrated the practicability of making soup abundantly equal to human sustenance, under all circumstances of bodily exertion, of vegetable ingredients only, without a particle of animal matter. On this he fed the soldiery and poor of various descriptions, in Bavaria, for a long time; and those who partook of this excellent cookery were unable to distinguish it from the soup composed of animal broth, except from its superiority in flavour and effect.

SOUP-HOUSE, a recent kind of charitable institution, found necessary for the poor in Britain, during the late scarcity. The following is extracted from an account of the soup-house, in West-street, St. Giles's, by Sir Frederick Morton Eden, bart.

The soup-house in West-street, Seven Dials, was opened on the 10th of January, 1800, upon the plan of giving general relief for all applicants, from any part of the metropolis. The quantity of soup sold there in three months, between the middle of January and the middle of April, 1800, amounted to 118,457 quarts; for which the sum of *£493. 11s. 5d.* was received from the applicants. From that time to the 25th of July, it was conceived that the individuals would be more relieved, and with more benefit to the public, by a supply for their families of potatoes and pork; and of savoury rice, prepared according to the receipt of the society for the poor. The latter, they had the pleasure to find, was very acceptable to the applicants; particularly to those who had several small children. In one week above 4,400 quarts of savoury rice were purchased by the poor; and during the period from the 28th of April to the close of the season in July, the following articles were sold at the soup-house:

66,370 pounds of potatoes,
81,600 herrings,
14,842 quarts of savoury rice,
1,988 pounds of boiled pork.

By these means, during the winter of 1800, many thousand persons, who had no other means of support, received occasional relief; and it was a very gratifying circumstance to the committee which conducted the soup-house, that in many instances persons, who had at first come dirty and negligent in their apparel, became in a short time decent and neat in their persons, and regular and orderly in their behaviour.

The liberal and well-directed assistance of the Committee at Lloyd's, encouraged the exertions of the Committee of the soup-house in West-street; and on the 4th of December, 1800, when it appeared that the general pressure would continue another season, the Committee of Management for the soup-house renewed their labours with increased activity. It is the peculiar misfortune of the poor, who constitute a very considerable part of the neighbouring population of St. Giles's and St. Ann's Soho, that, generally speaking, they are unknown to the subscribers; being resident in streets or courts entirely occupied by the poor, and being mostly engaged in occupations which do not afford them means of access to those who could recommend them as objects of relief. Many families, not having the means of procuring recommendations from the subscribers, applied at the soup-house, in consequence of an instruction given them; and the gentlemen concerned in the management of that trust, visited personally above a hundred families in the greatest distress; and, by enquiry, ascertained the description of the rest. In consequence of information so affecting, they thought it their duty to extend the relief of the charity, not merely to persons recommended by the subscribers, but also to the other distressed families, who had not the ordinary means of procuring tickets of recommendation.

Notwithstanding the time lost in attendance (an inconvenience which at first appeared to be indissolubly connected with this species of charity, but which, in this soup-house, has since been in a great measure remedied), the number of adults and children, receiving relief at the soup-house, amounted to about 14,000 individuals; who, at a time of scarcity, have thus been furnished with wholesome food, and with coals, at a reduced price.—Of the latter article, 250 chaldrons, in the course of this winter, have been laid in the vaults under the adjoining chapel, and have been sold in small quantities to the poor, four days in the week, at the hours most convenient to them, at one shilling a bushel.

The establishment of soup-houses has afforded unequivocal proof, if proof were wanting, that the prejudices of the indolent classes respecting diet, are not inveterate.

That, on a subject so important to the labourer as the daily supply of his family with the principal necessary of life, and the mode of preparing his food, he should feel disposed to abide by the decision of his forefathers, and to think the general practice the best, because it is the general practice, might reasonably be expected. He has not leisure, nor can he afford, to risk experiments to mend the meal, which he must procure from the sweat of his brow. It is not from his manufacturing skill that his mess can be improved, or from his architectural knowledge that his dwelling can be rendered more comfortable. While he labours for others, merchants, manufacturers, and philanthropists, must plan for him. Visionary projects may often disgust him, and render him averse to innovation; but he is sel-

dom so ignorant of his true interest as not to adopt improvements, which have been fairly tried, and satisfactorily explained to him. In truth, the changes which have taken place in the domestic economy of the great mass of the people are not inconsiderable. In the middle of the seventeenth century, tea, sugar, and potatoes, and even wheaten bread (articles which now constitute a great part of the subsistence of the labouring classes) were almost wholly unknown to them; and the experience of very modern times has shewn that good meat, fowl, fish of various kinds, and savoury rice, prepared at a fourth part of the expence of less palatable food, may be introduced at the tables of the poor. To familiarize them, however, to judicious and economical cookery at home,—wealth, science, and benevolence, must continue their exertions. The poor of the metropolis, more particularly, not only want clear and explicit directions how their food may be prepared to the best advantage; but cheaper fuel than they can in general procure, and an improved kitchen apparatus. These, however, are objects which do not fall within the scope of a soup establishment.

Various are the advantages which have resulted from institutions of this nature. They are usually opened in winter, a period of the year in which relief is most acceptable to the poor. They, probably, not only benefit the immediate applicants, but eventually others, to whom habit and local circumstances still render bread a principal article of subsistence. While the scarcity of corn continues, those who will make white bread the great article of their subsistence, will be benefited by those who can be satisfied with substitutes; and it is to be hoped that cheap and nutritious food may be thus brought into general use, by the extension of the knowledge of those culinary processes, which are necessary for preparing it.

It should, however, be remembered that soup-houses are extraordinary resources, only to be used in times of difficulty and distress; when there is a deficiency of food, or when the regular exertions of industry are impeded by an unforeseen pressure or calamity. In a well-ordered state, the permanent welfare of the labouring classes must be the result of their own energies. To open the doors of a soup-house, as well in summer when work may easily be had, as in winter when it cannot,—in years of plenty, as in years of scarcity,—is an indirect assurance to the labourer that the difference between the produce of his industry and the price of provisions shall always be equalized from the contributions of the opulent. Such attempts may be partially made; but in their effects they must be often pernicious: as a general system, they are impracticable.

Soup-houses hitherto have been supported by liberal subscriptions, and managed at a moderate expence. The active zeal of the first promoters has, in most instances, rendered their administration pure and disinterested; but this active zeal has been excited, because the pressure of the present period is considered as extraordinary. In ordinary seasons the subscriptions would be less liberal, and the management less gratuitous, and perhaps less disinterested. A mixture of evil will blend itself with every human contrivance. In order to distribute food with order and economy, soup-houses require the personal attendance of applicants. Hence arises a loss of time, the most valuable property of the poor. He who carries his corn to a parish mill to be ground, instead of purchasing his flour from a neighbouring baker, and he who waits his turn to be supplied with a cheap meal from a soup-house, must deduct from the money price of the article thus bought, the time lost in purchasing it. The benefit in both cases may be

considerable; but in both cases the loss of time must be calculated, and allowed as a draw-back.

It may be doubted whether the morals of the lower classes, particularly of children, are not injured, by their being brought together in great numbers. Whatever pains may be taken to exclude improper objects, it is almost impossible for a soup-house to relieve several hundred families, without often obliging the modest and industrious poor to associate with the idle and the profligate. An establishment of this kind must be content not to scrutinize the merits of applicants "too curiously;" it must forget "their vices in their woe," and not refuse a meal to fix starving children, because the father is idle, or the mother is dissolute.

It is a considerable objection to the permanency of soup-houses, that a charitable fund raised for supplying articles of subsistence, at reduced prices, to industrious persons who are not absolutely paupers, may lessen the distinction between independence and poverty; and gradually obliterate that spirit of independence, which is the chief motive for personal exertion.

SOUR, or **SUR**, a sea-port of Turkey in Asia, in Syria, where stood the famous city of Tyre, of which there is now nothing remaining but ruins. Long. 35. 50. E. Lat. 33. 18. N.

SOUR, or **SUR**, a river in the Netherlands, which runs from W. to E. through Luxemburg, and falls into the Moselle, a little above Treves.

SOURI, a town of Persia, in Laristan, situate on the Persian Gulf, 110 miles S.W. of Ormus. Long. 55. 30. E. Lat. 26. 18. N.

SOUSA, or **SUSA**, a strong town of the kingdom of Tunis, capital of a province of the same name, with a castle and a good harbour. It is a place of some trade, and seated on a high rock, near the sea, 65 miles S.E. of Tunis. Long. 11. 15. E. Lat. 35. 52. N.

SOU-TCHOU-FOU, a city of China, the second in the province of Kiang-nan. It is so intersected by canals of fresh water, that Europeans compare it to Venice; and the country round it is so delightful, that the Chinese call this city the paradise of the world. The brocades and embroideries made here are esteemed throughout the whole empire. Its population is prodigious; but its jurisdiction extends over only one city of the second, and seven of the third class. Long. 112. 20. E. Lat. 38. 40. N.

SOUTERRAINE, a town of France, in the department of Creuse, 24 miles N. of Limoges.

SOUTHAM, a town in Warwickshire, with a market on Monday, and noted for its cider. It is 13 miles S. of Coventry, and 83 N.W. of London. Long. 1. 23. W. Lat. 52. 36. N.

SOUTHEND, **NEW**, a village in Essex, seated at the mouth of the Thames, 44 miles E. of London. Being the nearest place to the metropolis, for sea-bathing; it is much resorted to, and has handsome accommodations for the company.

SOUTHWELL, a town in Nottinghamshire, with a market on Saturday. It is an ancient place; and has a collegiate church. It is 10 miles N.E. of Nottingham, and 130 N.N.W. of London. Long. 0. 51. W. Lat. 53. 6. N.

SOUTHWOLD, a corporate town and sea-port in Suffolk, with a market on Thursday. It is seated on a cliff, near a fine bay, with a harbour to the S. and the river Blythe, and a drawbridge on the W.; so that it is almost surrounded with water, especially at every high tide. Here a much esteemed salt is made, and it has also a trade in corn, beer, and herrings. It is commonly called **SOULS** or **SOLZ**,

and its bay is named **SOLERAY**. In this bay was the great sea fight between the Dutch admiral De Ruyter, and James duke of York, in which the victory was undecided. Southwold is 20 miles S. of Yarmouth, and 10½ S.E. of London. Long. 1. 54. W. Lat. 52. 24. N.

SOUTO MAJOR, a town of Portugal, in Beira, 14 miles N.W. of Pinnel. Long. 6. 48. W. Lat. 41. 5. N.

SOVIGNY, a town of France, in the department of Rhone and Loire, seated on the Queune, 50 miles S.E. of Bourges, and 167 S. of Paris. Long. 3. 21. E. Lat. 46. 39. N.

SOWING-MACHINE. A patent was granted, in 1784, to Mr. Wright, of Cranage in Cheshire, for a machine upon an entirely new principle, for sowing wheat, beans, peas, and other grain, and seeds; which may be fixed to a plough. The drawing, marked A, in Pl. 47. represents this machine as fixed to a plough-beam; and on one side of the box or case is taken away, for the purpose of displaying as much as possible the mechanism of it, and the way in which it works: and it may be fixed to the beam of any plough, and this is the way in which it should be used when it is meant to sow only one row under furrow; or the machine may be so varied as that the motion may be communicated to more feed-plates than one, and these being fixed to a drilling instrument, may be contrived to sow two or four rows at once; but the account here intended to be given is of that intended to sow only one row: the feed-plates, so called because they are the means of sowing and distributing the seed, must be adapted to the nature and magnitude of the seed, or grain, intended to be sown, and they may be easily and soon changed at the pleasure of the user to sow different kinds of seed or grain, as will hereafter appear: the seed or grain is to be put into a box, canister, or hopper, B, at the upper part of the machine, and the feed-plates, which are round, flat, and made of brass, receive their motion from a wheel passing upon the ground; these feed-plates turn horizontally between the bottom of the box B in which the seed is put C, and the top of the lower box or case D; the channels or apertures in them are so ordered as to dispense a limited and certain quantity of the seed or grain intended to be sown, which quantity may be increased or diminished, upon any given space or length of furrow, by changing the pinion-wheel, and adding another with a greater or lesser number of teeth, whereby the plate moves quicker or slower with relation to the movement of the plough. A block of wood E, which is the basis or foundation of the machine, is fixed on the under side of the plough-beams; by means of two long iron bolts, these pass through the block and through the plough-beam, and are screwed together on the upper side of the plough-beam: this wooden block should be seventeen inches long, three inches broad, and three inches deep. To this block of wood E, on the left hand, is fixed an iron frame F, which projects about six inches; the two strong iron arms G, which support this frame, are shouldered, and pass through the arms of an iron plate, and then through the block of wood E. The frame F is the segment of a circle, the radius of which is about six or seven inches; and the cheeks of it are connected together at top and bottom by two thin iron bars, rivetted into the two cheeks: the open space between the two semi-circular cheeks is about three inches, and the range between the cheeks is about seven inches; on the left-hand side this block of wood, and close upon it, there is an universal joint H, in the iron axis I; from this joint to the left hand, for six inches, the axis I is perfectly round, and about three fourths of an inch diameter; on this part of the axis there is a wooden roller K, bushed with brass,

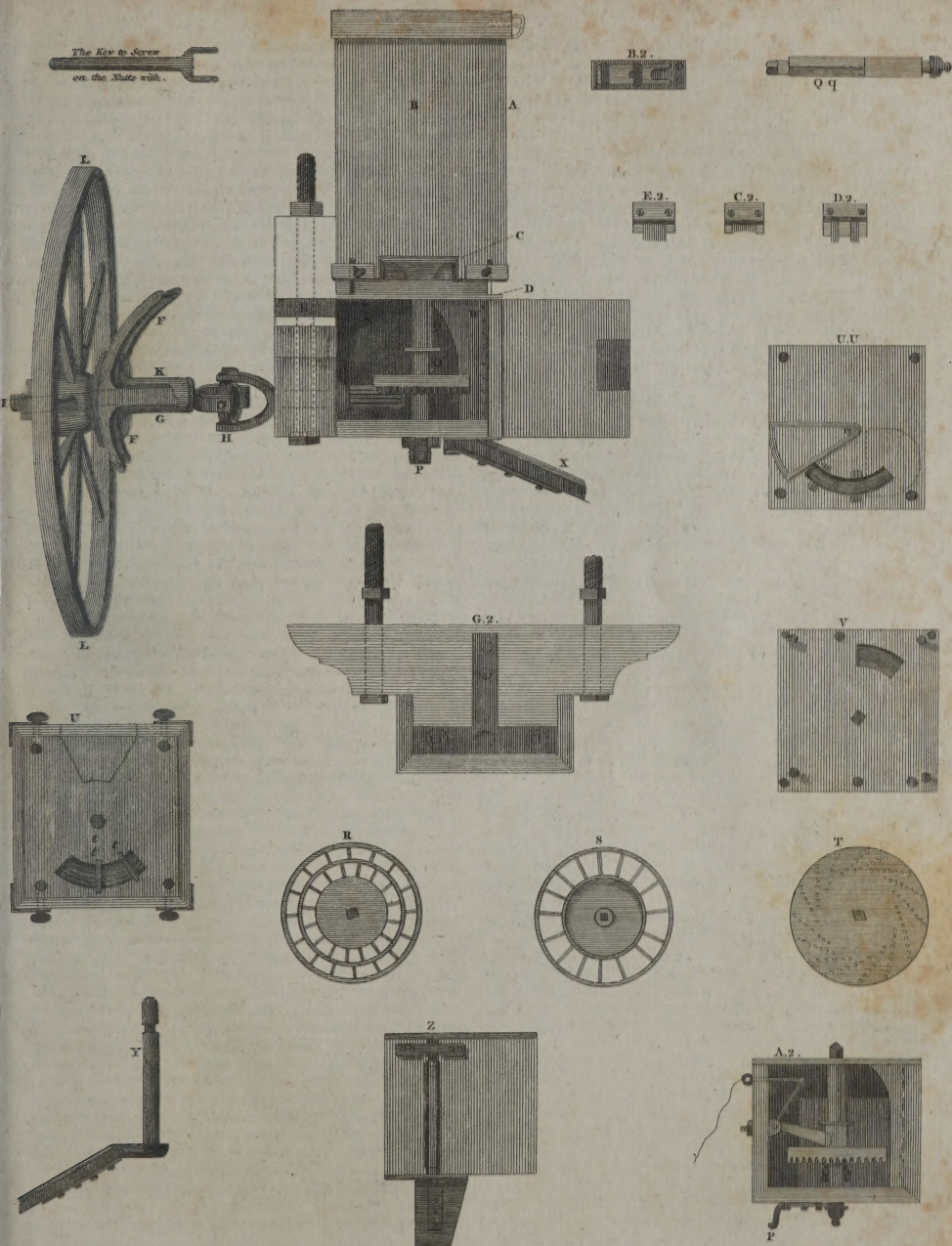
about five inches long, and three in diameter at the larger or outer end, and one inch and a half at the smaller: this roller plays up and down the open range in the iron frame, and effectually prevents the wheel upon the ground from having any movement sideways, which it otherwise would have. From the round part of the axis upon which the roller plays, the axis is continued square for two inches and a half more, with a further allowance of half an inch, which is formed into a screw; the large wheel upon the ground L, which moves the whole machine, has a square mortise in its centre, which exactly corresponds with the square part of the iron axis I; when this is put on and fixed by the nut, the wheel and axis turn together: this wheel gives movement to the feed-plates. Though fixed on twenty-one inches diameter for the large wheel on the ground, as the most convenient height for the ploughs commonly used in Cheshire, it may be made more or less, and constructed of wood hooped with iron, or of cast-iron; the wheel, when fixed to work, will be distant from the plough-beam, on the left-hand or land side, about ten inches. By the contrivance of the universal joint and the roller, the wheel, in its circular motion on the ground, rises and falls, and passes over stones, or any other irregularities, without affecting the movement of the plough, or straining the inside, or other movements of the machine; from the universal joint on the left side, the block of wood before mentioned, the iron axis I is continued through the block; and, about two inches and a half to the right-hand side of it, there is a perpendicular plate of iron, about one inch and a quarter broad, three inches long, and a quarter of an inch thick; on each side the block of wood these are let in, and bushed with brass, or these plates may be formed of cast-iron; and through these the spindle or axis from the great wheel passes: it is here half an inch diameter, and perfectly round for three inches in length; the other two and a half square; on this square part of the axis is fixed the pinion M, with eight leaves or bars: this pinion must be made of hardened steel; or it may be made of cast-copper, with a small allowance of tin to harden it; the pinion must be nearly two inches long, and one inch and a quarter diameter, with a square mortise through it, corresponding with the square of that part of the axis I, upon which it is fixed. Betwixt the pinion and the plate, on the right-hand side the block of wood, there must be put a collar of brass, to make up the whole length of two inches and a half: a broad-headed screw, at the extremity of the iron axis I, fixes all this work; and, when it is necessary to repair, clean, or oil any part of the movement, this broad-headed screw being taken out sets all at liberty: the pinion and collar come off on the inside the box N; and the round spindle, or axis I, comes out on the outer, or other side; the long pinion M is essentially necessary, as it admits of pinion wheels O, of different diameters, with any number of teeth, from sixteen to forty-eight, to work upon it, from one common centre, as will appear afterwards; the block of wood before mentioned forms the left-hand side of the box N; two boards, three quarters of an inch thick, form the front and back part of the box; a board, three quarters of an inch thick, forms the bottom; and on the right-hand side is a door that opens outwards; the top, or cover, is a brass plate, about seven inches square, and a quarter of an inch thick; when the whole is put together, it forms a cube of near six inches within side. In or near the centre, in the bottom of the box, is a round hole, three quarters of an inch diameter; on the outside of the bottom is fixed a brass plate, let in level with the surface, about four inches long, by one inch and a quarter broad, with a hole three quarters of an inch diameter;

by means of two staples, rivetted into this plate, a flat double iron bolt P, with a spring upon it, slides into a rebate, turned out of the upright iron shaft, or spindle, Q, as will be seen in the drawing of the separate parts; by flipping the bolt back, the upright spindle Q is readily taken out, and by pulling it forwards it confines the spindle from rising or sinking, and to all intents answers the purpose of a stop for the spindle to turn upon: the upright shaft, or spindle, Q, is about eight inches long, the lower part projecting under the bottom of the box, through the bolt P, about an inch; then a circular groove for the bolt P to slide into; this is turned out of the iron about one eighth of an inch deep, and as much wide; the shaft is round at the lower end, and three quarters of an inch diameter; at two inches from the circular groove it becomes square: on this square part the different pinion-wheels O are fixed; the upper part is again turned round; this upper round part passes through a round hole in the brass top D of the box N, corresponding with the diameter of the round part of the spindle; the spindle rises one quarter of an inch above the upper surface of the brass top D; and here it is again formed into a square of half an inch; on this square shoulder the different feed-plates are put, by a square mortise, in their centres, corresponding with this square upper projecting part of the upright spindle Q; in order the better to shew, this iron spindle, a separate drawing of it is added, marked Q q. The feed-plates for different seeds differ somewhat, but are all round, flat, and made of brass, as they cannot be seen in the place where they work between C and D, separate drawings of them are therefore added. That for wheat, R, is something more than six inches diameter, and rather more than one eighth of an inch thick; two open channels or circles are cut through it, near the circumference; these are connected by bars alternately disposed, so that there is little or no interruption to the feed dropping, as the plate turns round; these open spaces, with the interposing rim, are about an inch wide. In the plate for beans or peas, S, there is only one open circle, about an inch wide, with sixteen thin partitions, to connect the rim with the body of the plate; this is brass, nearly half an inch thick, and of the same diameter as the other; the partitions are flush with the bottom of the plate, but do not rise more than half-way up the rim on the upper side; this will better appear from the drawing S. The plate for turnips, rape, lucern, or other smaller seeds, T, must be about six inches diameter, something thicker than the diameter of a turnip seed, but not equal to two; the holes must be made as appears in the drawing, and to open successively upon the opening in the brass table D, upon which all the feed-plates turn, and made large enough to contain four or five seeds, more or less, as they are ordered; for in this article persons differ about the quantity of seed they think necessary to be sowed in a given space. In order to connect the feed-box B with the lower box N, between which two the feed-plates move, as above described, there must be fixed, near the four corners of the brass plate D, on the top of the box N, four round upright pillars; these are about one quarter of an inch diameter, and about an inch and a half long; they may be made of brass, or iron, or may be rivetted into the four corners of the brass top of the box N. Four round mortises are to be made in the bottom of the feed-box B, corresponding with these upright pillars; the feed-box must be put on these pillars, and slipped down, and then, by means of four thumb-screws, which screw into the bottom of the box B laterally and horizontally, and act against the upright pillars, the box may be kept in its position: the bottom of the feed-box B is a square piece of

wood (beach, mahogany, or other close-grained wood, is what I have used), nearly seven inches square, and one inch and a quarter thick, perfectly smooth and level; this has four holes through it, corresponding with the four upright pillars before mentioned, and likewise a large femicircular opening, five inches long, and an inch wide; through part of this opening the feed descends from the box above, and part of it is occupied by the brushes, hereafter mentioned; but, as this cannot appear in the machine when it is together, a separate drawing is made of it U, which represents the under-side of it, with the brushes that act upon the feed-plates: this wooden table forms the bottom of the feed-box or hopper B; this hopper may be formed of wood, tin, copper, or rolled iron, and made to contain from one gallon to two; a triangular piece of wood or brass is fixed, by a screw, near the centre of this wooden table U, and is made to slide and cover the opening in it, towards the right-hand of it, for about half-way, and under the bristle-bar τ , and the brush ν , hereafter mentioned, are placed: it is made to slide, for the purpose of taking out, repairing, or changing the brushes, and a separate drawing is made of it U u, which represents the upper-side of the bottom, and the triangular sliding cover: when the feed-plate is put upon the square shoulder of the upright spindle Q, which projects above the brass top D of the lower box N, then the feed-box or hopper B must be put on, and fixed by the lateral horizontal thumb-screws, and the feed-plate will then, by the action of the great wheel L, by means of the pinion M and the pinion-wheel O, turn horizontally upon the brass table D, without any resistance but what is occasioned by the feed passing under the bristle-bar; there must be a femicircular opening in the brass table D (of which, as it cannot be seen in its place in the drawing, a separate drawing is made of it V), about two inches long, and one inch wide; this must be to the right of the bristle-bar τ , in the table C or U, that nothing may fall through it from the opening in C or U, till it has passed under the bristle-bar τ ; and the opening in the table C or U, being to the left of the bristle-bar τ , no feed can escape when the feed-plate stands still; but so soon as this is put in motion, whatever is received from the feed-box into the open channels of the feed-plate, as they pass under this opening, is forced by the divisions in the feed-plate under the bristle-bar τ ; and so soon as they pass under that bar, they drop through the opening in the brass table D or V into a perpendicular conducting pipe W, which conveys them downwards to the moveable conducting pipe X, and that deposits them upon the ground; this pipe W is made of tin, and joins close under the opening in the table D or V, and is as wide at top as that opening, narrowing as it descends through the box N, and is fastened against the inside of the front of that box; on the under or outside of the bottom of the box N, is fixed an oblique flat conducting pipe, made of strong tin, or thin iron, or copper, X; this comes immediately under, and receives the feed from the pipe W; this pipe X turns on a round iron rod or swivel, that is passed through a hole in a flat piece of copper, projecting from the bottom of the box N, and is fixed on the fore-part of the box N on the outside; and by means of a strong spring acting against this rod or swivel, in a groove turned out of it near the top, and the upper end of the rod being confined in a round iron staple that will admit it to turn round in it, the rod and pipe are kept from slipping down, and may be turned to the right or left under the bottom of the machine, to drop the feed in what part of the furrow the user thinks fit; but, as this pipe, and the rod and spring, cannot be seen in the machine as put together, a separate drawing of the pipe and rod are

M. Wrights Sowing Machine.

*The Key to Screw
on the Nuts with.*



made Y, of the front part of the box, with the spring and staple which confine it, Z; the feed-plates are put in motion by the motion of the wheel upon the ground L, which is communicated to them when they are put on the spindle Q, by means of the pinion M acting upon the pinion-wheels O; these pinion-wheels O may be made of brass, or cast or forged iron, and in size may be from two inches diameter to five, with any number of teeth required. What Mr. Wright has used have been wheels with twenty-four, thirty-two, and forty teeth; the rim of the wheels is about half an inch deep, and a quarter of an inch thick; on the upper side of the centre there is a collar, which rises about an inch above the upper side of the wheel: there is a square collar through this mortise, corresponding with the square of the upright spindle Q, upon which it is put, lodging upon that part of the spindle towards the bottom where it is round; on the collar, on the upper part, all round, is a shoulder projecting horizontally a quarter of an inch, under which comes the end of the horizontal arm of a lever of iron of this form L, fixed to the inside of the box N, on that side that is next the ploughman, by means of a strong wire passing from the top of the upright arm of the lever L through the box N, towards the ploughman, and a cord from the wire to the ploughman; he can at any time raise up the pinion-wheel O, so as to clear it from the pinion M, and stop it from working or moving the feed-plate as long as he pleases, though the plough be going on, and the wheel on the ground L in motion all the time; and again, by letting go the cord the wheel O will fall immediately down upon the pinion M, and instantly renew its work; and by this means turnip, rape, lucern, and other smaller seeds, may be sown in drills or rows, in what intervals the user thinks proper. As the lever is fixed on the side of the box N, which in the drawing is taken away to shew the mode in which the machine works, a separate drawing is made, A 2; which represents the situation and operation of the lever upon the pinion-wheel. The operation of this lever gives the machine several conveniences, particularly in going to the field, or returning; it likewise gives the ploughman a perfect command over the instrument. If intervals are required between the rows, as in sowing peas, beans, or wheat, this is soon effected by raising the pinion-wheel out of work, at the user's discretion; when it is kept in constant movement, and sows the seed in every furrow, it is then the same as broad-cast sowing; with this difference, that one-half the quantity of seed may be saved, or in other words, the farmer may sow what number of grains in every yard-length of furrow he thinks proper. The wheat feed-plate used by Mr. Wright delivers out, every revolution it makes, three drams in weight, with little or no variation; this weight, in counting, amounts to 300 grains, or thereabouts. The first or large wheel on the ground is nearly sixty-five inches in circumference. When the pinion-wheel, with twenty-four teeth, is in work, the plough will open a furrow 195 inches, or nearly five yards and a half, for one revolution of the feed-plate, and the machine drop about fifty grains of wheat every yard. When the pinion-wheel with thirty-two teeth is at work, the plough will go something more than seven yards: there would then drop something more than forty seeds every yard. When the forty-toothed wheel is at work, the plough will go nine yards; and in that compass about thirty-four seeds would drop every yard. Mr. Wright has not computed the distance the plough goes, nor the number of grains dropped in a yard, with a mathematical exactness, because, in an operation of this kind, it is not necessary: by making the channels in the feed-plates greater or lesser, by changing the

pinion-wheels for others with more or less teeth, the machine may be made to drop precisely any quantity named. When it is necessary to change the pinion-wheel O for a different one, it is done immediately by drawing back the bolt P under the bottom of the machine, which lets the upright spindle Q fall down; the pinion wheel is then taken off, another put on the spindle, the spindle replaced, with the upper end in the brass-top of the box; and the bolt P sliding upon the circular groove, in the lower end of the spindle, fastens and fits it for work immediately: a separate drawing of the bolt is added, marked B 2. What remains to be described are the brushes or bars of hogs' bristles. These are let into the large open space in the wooden table C or U, before mentioned, under the triangular sliding cover above described, and stand perpendicular to the horizontal feed-plates: they are readily taken out to be repaired, and as soon replaced again. Their elasticity prevents their injuring the corn, in passing under them. They are the only part of the machine that can fairly be injured by use; and, as these may require renewing, it will be necessary to be particular in describing the manner of making them. The brash frame consists of two parts: the first a strong plate of brash, about one inch and a half long, and three quarters of an inch broad; upon this are riveted two cheeks of brash, about the eighth of an inch thick, and a quarter of an inch broad, so as to leave an open space between the cheeks an inch wide; the cheeks must be in length the thickness of the wooden table before mentioned. When these are riveted together, they may be called one part of the frame; the other part consists of a strong brash plate, one inch and a half long by three quarters; two holes must be drilled through the former part, to admit two screws; and this last must have two female screw holes. Fill the vacancy in the first part mentioned with the best Russia bristles; dust some powdered rosin among them; fill it as full as it will contain; then apply the other part, and pass two wires through the screw-holes, to preserve the communication; then put the whole into a hand-vice, and screw it hard; apply the upper part to a hot iron, burn off the redundant bristles, and continue the heat till the rosin is melted, and the whole cemented together; when it is cool, take out the wires, and put in the screws; the bristles below the cheeks must be cut off level with the cheeks, by a broad chisel; this brush or bar is fixed even with the upper surface of the feed-plate, and a separate drawing is made of it, C 2. The second brash, to the right of this, is made in the same manner; only a piece of brash is rivetted in the middle space, between the two cheeks, to divide the brush into two parts; the bristles here are left longer than the cheeks, by the eighth of an inch. The use of this brush is to sweep out any grain that may accidentally lodge in the open channels of the wheat feed-plate, and force them back again down the conducting pipe: a separate drawing is made of this brush, D 2. The brush for beans and peas is made exactly in the same manner; only the bristles must not be cut off square with the cheeks of the brash frame, but left a quarter of an inch longer than the cheeks of the frame; when the bean-plate is intended to be used, the former brush for wheat, marked in the separate drawing C 2, must be taken out, and this put in its place; the second, or double brush, D 2, need not be removed, as it does not act in that case: a separate drawing of this brush for beans and peas is added, marked E 2.

SPA, a town of Germany, in the bishopric of Liege, famous for its mineral waters. That called the Old Spa consists of miserable cottages, and is properly nothing but the suburb to the other. The houses of the New Spa are

all wood, dark, and small, and yet it is affirmed they can make 1200 beds for strangers. The church of the capuchins, and the parish church, are both seated upon eminences. The inn called the Court of London, is very large, the best in the place, and most frequented. The names of the five principal wells are Pouhon, Geronfard, Saviniere, Watpotez, and Tunnelet. The inhabitants are employed in making toys for strangers. Spa was taken by the French in 1794. It is seated in a valley, surrounded by mountains, 17 miles S.E. of Liege. Long. 5. 50. E. Lat. 50. 30. N.

SPAITLA, a town of the kingdom of Tunis, near which are extensive and magnificent ruins. It is 90 miles S.W. of Tunis, and 100 S.S.E. of Bona. Long. 9. 15. E. Lat. 35. 40. N.

SPALDING, a town in Lincolnshire, with a market on Tuesday. It is seated near the mouth of the Welland, and from its neatness, and the canals in the streets, resembles a Dutch town. It has a good carrying trade in corn and coal; and much hemp and flax is grown in its neighbourhood. Near it is the greatest heronry in England, the herons building together on high trees like rooks. It is 14 miles S. by W. of Boston, and 100 N. of London. Long. 0. 2. E. Lat. 52. 45. N.

SPALLANZANI (Lazarus), a distinguished philosopher and physiologist, was born at Scandiano, in the department of Crostolo, in Italy, on the 10th of January, 1729; he was the son of John Nicholas Spallanzani, a counsellor of great repute, and of Lucia Zigliani: he commenced his studies in his own country, and at the age of fifteen went to Reggio de Modena, where he prosecuted them with the utmost assiduity. The Jesuits, who initiated him into the study of polite literature, and the Dominican friars who heard of his vast improvements, were desirous of attaching him to their orders; but his passion for knowledge led him to Bologna, where his relation, Laura Bassi, a lady deservedly celebrated for her genius, her eloquence, and her knowledge of natural philosophy and mathematics, was, at that time, one of the most illustrious professors of that university, and, indeed, of all Italy. Under the direction of this enlightened guide, Spallanzani learned to prefer the study of Nature to that of her commentators, or to estimate the real value of the commentary in proportion to the comparison it bore with the original; he soon perceived the wisdom of her instructions, and ere long experienced their happy effects.

Spallanzani's taste for philosophy was by no means exclusive; he studied his own language with peculiar attention, made a considerable proficiency in the Latin, and more particularly applied himself to the French and Greek. Spallanzani, in conformity to the inclinations of a father who loved him, applied to the study of jurisprudence; he was even on the point of being admitted a doctor, when Anthony Vallinieri, professor of natural history at Padua, induced him to renounce that intention, by promising the consent of his father, who was so sensibly affected at his thus devoting himself to his will, that he left him at liberty to pursue his own inclinations: from that moment he addicted himself to the study of mathematics; but without discontinuing that of the ancient and modern languages.

Spallanzani was soon well known in Italy; and his own country was the first to do homage to his talents. In the year 1754, the university of Reggio chose him professor of logic, metaphysics, and Greek; he continued to deliver his lectures there for six years, consecrating to physical researches those intervals of leisure which his vocation admitted. Some new discoveries excited his passion for natural

history, which was continually augmented by the success of his early efforts. His observations upon the animalcula in infusions, attracted the attention of Haller, and of Bonnet, who pointed out the path by which he himself had ascended to such a degree of eminence, and already proclaimed him to the learned world as Nature's interpreter.

In 1760, Spallanzani was invited to the university of Modena: though his interest might have prompted him to accept the advantageous offers of the respective universities of Coimbra, Parma, and Cefena, yet his patriotism and attachment to his family decided him in the resolution of limiting his exertions to the service of his country. The same considerations induced him to reject, some years after, the proposals of the academy of Peterburgh. He resided at Modena till the year 1768, and had the satisfaction of seeing that his own unaided powers had created a race of illustrious men, who still shine forth the glory of Italy. In the number of these must be reckoned Venturi, professor of natural philosophy at Modena; Belloni, bishop of Carpi; Lucchesini, ambassador of the late King of Prussia; and Angelo Massa, the poet of Parma.

During his residence at Modena, Spallanzani published, in 1765, a treatise, entitled, *Saggio di Osservazioni Microscopiche concernente il Sistema di Needham Buffon*. In this pamphlet he established, upon the most ingenious and well-founded experiments, the animality of microscopic animalcula. He sent his work to Bonnet, who formed his judgment of the author by this production, and who lived to see the accomplishment of the favourable prediction which he then pronounced. From that moment the closest intimacy was cemented between these two philosophers; which continued to the end of their lives.

In the same year Spallanzani produced a dissertation truly original; *De Lapidibus ab aqua Resilientibus*: he there demonstrated, by the most striking experiments, contrary to the received opinion, that the phenomenon which, in the style of infantine recreation, is termed ducks and drakes, is not produced by the elasticity of the water; but by the change of direction which the stone undergoes in its motion after having struck upon the water when it ascends the inflexion of the cavity indented by the shock.

In 1768, Spallanzani prepared the philosophers for the surprising discoveries with which he was to present them in the course of his life, by publishing his *Prodromo di un'Opera da Imprimerfi sopra le Riproduzioni Animali*. He there sketched the plan of a work which he was composing on this important subject: but this simple prospectus revealed more sources of philosophical information than all the books which had hitherto appeared; because it pointed out the method which must be pursued in those mysterious enquiries, and collected, under one view, many unexpected facts; particularly the existence of tadpoles, anterior to the period of fecundation, in many species of toads and frogs; the regeneration of the head in decapitated bodies of snails, which he had already communicated to Bonnet in the year 1766, and which was, for a short time, disputed, notwithstanding the repeated confirmation of this phenomenon by Herissant and Lavoisier; he also finally demonstrated it some time afterwards, in a work entitled *Memoire della Societa Italiana*; by the instance of the reproduction of the tail, legs, and jaws, in the mutilated aquatic salamander. These facts astonished to this day, when reflected on, though time may have rendered them familiar to our senses; and it is not easy to decide which presents greater claims to admiration, the ability of Spallanzani in affording such incontestible proofs, or the indefatigability and undaunted boldness which he manifested in pursuing and demonstrating the results of his

arduous and surprising experiments. It will ever be a subject of regret, that the project of his great work was not realised; but a variety of circumstances prevented him from yielding to the solicitations of his friends in that particular.

The physiology of Haller, which Spallanzani was studying, fixed his attention on the circulation of the blood, in which he discovered many remarkable phenomena. In 1768, he published a small work, *Dell' azione del cuore ne' vasi sanguigni nuove Osservazioni*; and he reprinted it in 1773, with three new dissertations; *De' Fenomeni della Circolazione osservata nel giro universale de' Vasi*; *de' Fenomeni della Circolazione Languente*; *de moti del sangue indipendente dell' azione del cuore e del pulsare delle Arterie*. This book, little known, comprises a series of the most refined and delicate observations and experiments upon a subject of which our knowledge was before extremely superficial.

When the university of Pavia was re-established upon a more extensive plan, the Empress Maria-Theresa, through the medium of the Count de Firmian, invited Spallanzani to fill the place of professor of natural history. His great reputation obtained him this distinction, which was solicited for him by many celebrated men.

On his arrival at the university, Spallanzani selected Bonnet's *Contemplation de la Nature* for the subject of his lectures: he supplied its deficiencies, developed the ideas, and illustrated the justness of its theory by his own experiments; he translated it into Italian, and enriched it with notes: he likewise added a preface, where he took occasion to remark the subjects of animal and vegetable economy; which more especially merited the attention of his pupils, as it sometimes pointed out to them the means of succeeding in these researches. He published the first volume of his translation in 1769, and the second in 1770.

Spallanzani's intimacy with Bonnet, influenced his genius, which insensibly adopted the severe methodical manner of the Genevan philosopher; he gloried in being his pupil, and employed his meditations upon his admirable productions with ever new delight; whence it happened that he was powerfully incited to search in nature the proofs of Bonnet's opinion upon the generation of organic bodies; a subject which, for a considerable time, engrossed his whole attention. In the year 1776, he published the two first volumes of his *Opuscoli di Fisica Animale e Vegetabile*; they consist of illustrations of a part of the microscopic observations which had already appeared. Wholly absorbed by the great phenomenon of generation, he examined the opinion of Needham, in order to demonstrate its impossibility.—Needham, dissatisfied with Spallanzani's microscopic observations, which invalidated his doctrine of an imaginary vegetable power imparting motion to matter, challenged the professor of Reggio to revise what he had published; but he avoided a formal reply by publishing a series of new facts and experiments.

He demonstrated that the animalcula of infusions are produced by germs; that there are some, e. g. certain species of eggs and seeds, which are equally proof against the severity of the most intense cold and the heat of boiling water. On this occasion he treated of the influence of cold upon animals, and proved, that the lethargic numbness of some during winter does not at all depend upon the impression which the cold makes upon the blood, since a frog, deprived of its blood, becomes lethargic when it is chilled in ice, and then swims as usual when it has recovered its natural warmth. He demonstrated, in the same manner, that odours, various liquors, and a vacuum, act upon ani-

malcula as upon other animals; that they are oviparous, viviparous, and hermaphrodites.

The second volume of this work is a voyage into regions still more unknown. A sublime pencil had already delineated them; but the picture was not finished from nature. Spallanzani gives a history of spermatie animalcula, which their eloquent historian invariably confounds with the animalcula of infusions. One cannot but admire the modest diffidence of this new philosopher, struggling almost always against the conviction of his own senses, and the authority of Buffon; and he appears to admit, with much reluctance, the result of these observations, multiplied and varied in a thousand different ways, which expose the weak foundations upon which the system of organic molecules is erected.

Spallanzani afterwards describes the wheel-animal and the sloth, two species of animalcula, the monsters of the microscopical world, singular from their figure and organization, but still more so from their faculty of refusing life after a total suspension of all its apparent acts during many years: it is this phenomenon which he more especially considers in order to ascertain the limits and conditions of it, to enable him to investigate its causes, and connect them with others to which they are analogous. He annexed to this collection an account of that appearance on certain bodies which is called mould; he shewed that its seeds float in the air; and he remarked, that these microscopic fungi were distinguished from other plants by their tendency to grow in all directions, without being subjected to the almost universal law of the perpendicularity of the stem to the soil.

Spallanzani was entrusted with the cabinet of natural history in the university; but he found himself almost the nominal depository of a treasure which did not exist: he himself laid the foundations of it; and it is become, by his endeavours, one of the most valuable and useful.

He enriched it by his repeated travels both by sea and land, into Europe and Asia, across the Appennine mountains, the Alps and Krakacks, to the bottom of mines, amidst the ruins of volcanoes, and on the brink of their craters: by these means he completed that vast collection of curiosities, which all the world's wealth could never have purchased; because wealth can never supply the place of genius and discernment.

In 1779, Spallanzani traversed Switzerland and the Grison territories. He proceeded to Geneva, where he rested a month with his friends; who were no less charmed with his conversation than with his writings. He then returned to Pavia, and published, in 1780, a new work in two volumes, entitled *Dissertazioni di Fisica Animale e Vegetabile*. Some of Spallanzani's experiments upon digestion, which he made for the improvement of his pupils, led him to study that mysterious operation. He repeated the experiments of Reaumur upon gallinaceous fowls; and observed, that trituration, which is, in this case, an assistant to digestion, is, nevertheless, not the efficient cause of it. He discerned, that the gizzard of these birds, which, equal in sharpness to the keenest lancet, pulverises nuts and silberts, does not digest the powder which it forms; but that the nutritious matter thus reduced to powder undergoes a new transformation in the stomach, in order to render it an aliment congenial to the nature of the blood and the humours of the body. He laid it down as an established principle, that digestion operates in the stomach of a great number of animals by the active energy of a certain juice, which dissolves the aliments received; and with a view to render his demonstration more incontestable, he

had the courage to try some experiments upon himself, and the address to complete his proofs by artificial digestions made, in glasses upon his table, effected from mixing the masticated nutriment with the gastric juice, which he found means to extract from the stomachs of animals.

This work gave offence to John Hunter. He published, in 1785, some observations upon digestion, where he took occasion to make very severe animadversions on Spallanzani, who revenged himself by publishing this work in Italian, and addressing to Caldani, in 1788, *Una Lettera Apologetica in risposta alle Osservazioni del Signor Giovanni Hunter*.

The second volume treats of the propagation of animals and plants. Spallanzani proves, by experiments equally new and surprising, the existence of the germ before fecundation; he demonstrates the existence of tadpoles in the females of five different species of frogs, toads, and salamanders, before fecundation; he relates the success of fecundations effected by art upon the tadpoles of these five species, and even upon a quadruped; he shews, in the same manner, the feed in flowers, before the emission of their prolific powder; and, by a nice and delicate anatomy, of which, perhaps, an idea can hardly be formed, he shews, in the *spermium junceum*, the lobe as well as the seeds in their integuments; he traces them through their different stages of budding, before and after the possibility of being fecundated, and leaves not the shadow of a doubt, but that the seed and its integuments exist a long time before the flower begins to bud, and consequently, a long time before the prolific power can exist. He repeated his observations upon many species of plants, with the same results; in short, he raised some individual plants from female flowers, which contained fruitful seed, though there cannot be even the slightest suspicion of their having any communication with the prolific powder of the male flowers. Spallanzani, as was customary with him, took the opportunity presented by the academic vacations of the year 1781, to make a tour abroad, the principal object of which was to increase the collection of curiosities in the cabinet of Pavia. He set out in July for Marseilles, where he commenced a new history of the sea, which, though incomplete, would furnish an infinite number of new and curious facts, relating to several inhabitants of the waves. He afterwards proceeded to Massa and Carrara, in order to observe the quarries of that marble in such great esteem among statuaries; he returned to Spezzia, and brought back to Pavia an immense collection of fishes, both of the testaceous and crustaceous description, which he deposited in this cabinet, of which his travels had rendered him the worthy trustee. With the same views, and with similar success, he visited the coasts of Istria in 1782, and the Appennine mountains in 1783, where he had an opportunity of observing the dreadful storms and the singular vapour which have rendered that year famous in meteorology. His fame daily increased: the Emperor Joseph II. knew him when he was in Lombardy; from the very first he sought the conversation of Spallanzani, and testified the great esteem which he entertained for his talents, by presenting him with his own portrait set in gold.

The university of Padua made him an offer, in the year 1785, of the professorship of natural history, then vacant by the death of Anthony Vallisneri, promising him, at the same time, more considerable perquisites than those which he enjoyed at Pavia; but the archduke doubled his salary, and permitted him to accompany to Constantinople the Chevalier Zuliani. He set out on this journey the 21st of

August; on his road he made many observations upon the marine productions which he met with in those latitudes, as well as upon the meteorological events daily occurring. He touched at several islands in the Archipelago, which he surveyed with a philosophical eye; he descended towards Troy, in order to visit those romantic abodes so beautifully described by the bard whom he most admired, and, slowly moving through those poetical recesses, he made some geological observations truly original.

Spallanzani arrived at Constantinople on the 17th of October, and continued there eleven months. The physical and moral phenomena of this country, hitherto unknown to him, rivetted his attention; he travelled the shores of both the seas, climbed the neighbouring hills, and visited the island of Chalki, where he discovered to the Turks a coppermine, of which they were before entirely ignorant. He proceeded to the island of Priopici, some miles distant from Constantinople, where he discovered an iron mine wholly unknown. He set out on his return to Europe the 16th of August, 1786, loaded with oriental spoils, composed of animals peculiar to those regions.

A sea voyage was, in every respect, the safest as well as the most convenient; but Spallanzani regarded with an eye of perfect indifference the dangers attending long journeys by land, when he entertained any hopes of meeting with new instruction; he boldly confronted all the perils of these desert regions destitute of civil government. Having reached Bucharest, he was detained there nine days by the celebrated and unfortunate Mauroceni, hospodar of Wallachia: this prince, justly renowned for his liberal patronage of the sciences, received him with the most flattering marks of distinction; made him a present of several rarities of his country, and provided him with horses, and an escort of thirty soldiers through the whole extent of his dominions. Spallanzani passed through Hermanstadt to Transylvania, and arrived at Vienna on the 7th of December, after having visited the numberless mines of Transylvania, Hungary, and Germany.

Spallanzani remained five days in the metropolis of Austria, held two conferences of considerable length with the Emperor Joseph II. was entertained by the principal noblemen of the court, and visited by all men of literature. At length he arrived at Pavia; the students came out of the city gates to meet him, and accompanied him to his house, in all the rapturous ardor of unfeigned joy, and, by the most irresistible compulsion, dragged him to the auditory. Impelled by their desire to hear him, they compelled him to ascend the chair, whence he was accustomed to deliver his lectures. Spallanzani, sensibly affected by this conduct, painted to them, in the most eloquent and animated manner, his gratitude and attachment: kind wishes, cries of joy, and shouts of applause, were renewed with more ardor, and he was compelled to request them to restrain their satisfaction, and to permit him to retire to his own house, that he might obtain that repose of which he found himself so much in need. He had, at this time, more than 500 students.

The cabinet of Pavia was always the dear object of Spallanzani's thoughts; among the numerous rarities which he had there collected, his mind was only intent on those which were still wanting. He was struck with its deficiency in volcanic substances, of which a few only were collected, without order, uninteresting, and uninformative, though Italy was the theatre where the volcanic fires, for so many ages, had displayed their desolating energy. He resolved to instruct his disciples, his country, and himself, on these phenomena, so important and so little known, and to collect

the documents of their history on the spot where they are the incessant terror of the surrounding inhabitants; and the useless subject of philosophical observations; he prepared himself for this important undertaking by a laborious course of study. He set out for Naples in the summer of 1788; and, in the course of a dangerous voyage, examined, with minuteness and undaunted courage, the terrible phenomena of Vesuvius, Lipari, Etna, Sylla, and Charybdis. By these means, at the age of sixty, he amassed that invaluable collection of anecdotes comprised in his work entitled *Voyages dans les deux Siciles*, where he embraces the opportunity of comparing the descriptions which Homer, Pindar, Virgil, Diodorus Siculus, and Strabo, have given of those celebrated places, with what he himself saw.

In the travels of Spallanzani is found a new volcanology; he teaches the mode of calculating the degree of intensity in the heat of volcanic fires, as well as of investigating its cause. He has, by analysis, almost ascertained that peculiar species of gas, which, like a strong lever, tears from the earth's entrails, and hurls, even to the summit of Etna, those torrents of melted pumice stone which are disgorged by that volcano. He discloses the nature of pumice stones, which he has since demonstrated in some of artificial fabrication. He proves that the burning of these mountains proceeds from the inflammation of hydrogen carbonic gas; and this solution equally applies to the phenomena of Barizzo, and several other places, some of which were then burning in secret. He found means to render those fires serviceable in making lime, and they are still made use of for this purpose. Spallanzani concludes this excellent production with some interesting researches relative to swallows, taking occasion to describe, under the impulse of a refined imagination, the amiable manners, and the rapidity of flight for which this species of birds are distinguished; the useful hints which they furnish to an observer for the invention of an aerial post; their migrations regulated by the temperature of the air, and its propitiousness to the birth of certain insects; lastly, he discusses the celebrated problem of their state of torpor during winter, and he proves that an artificial cold, more intense than that of our climates, does not render these birds lethargic. He then treats of the owl species; and, in conclusion, speaks of eels and their mode of generation, which still remains a problem to be solved; but he gradually conducts the reader through his researches, to the very step which promises complete solution.

Spallanzani anxiously observed the progress of French chemistry, which he adopted without the least hesitation; it was formed for a judicious mind like his, which delighted to account for the phenomena which it observed. When Götting published his experiments upon the combustion of phosphorus in azote, Spallanzani wished to try the solidity of these arguments which were brought against his favourite system, and, therefore, published in 1797 his *Chémico esame degli Esperimenti del Signore Götting, Professore a Iena*, where he refuted the conclusions of that chemist, by disproving the facts which had produced them.

Spallanzani frequently discovered what before would have been considered impossible. In 1793 he again made a display of this kind, which he published in his *Lettere sopra il sospetto d'un nuovo Senso nei Pipistrelli*; he there informed the world that bats, deprived of sight, act in every respect with the same precision as those who possess that sense; that they avoid equally well the slightest obstacles, and know exactly the proper places to perch, when their flight is at an end. These extraordinary experiments were confirmed by several of the most distinguished naturalists, and made Spallanzani suspect a new sense in these birds, because he thought he had

demonstrated, by exclusion, that their other senses were not able to supply the defect of sight; but the anatomical details of Professor Jurine, upon the organ of hearing in this singular bird, made him incline to the opinion that the ear might serve instead of the eye, as in all those cases where bats are in the dark.

Spallanzani terminated his literary career by a letter addressed to the celebrated chemist, Gioberti; *Sopra le piante che vive nel vasi dentro l'acqua e l'aria, e posse l'immediata lume solare e l'ombra*. It is a melancholy event for this department of science, that his death deprived it of the discoveries which he was on the point of effecting.

All these productions, though printed and generally applauded, still did not form the sum of Spallanzani's labours. He had for a long time employed his studies on the phenomena of respiration, upon their resemblances and differences through the extensive and various circle of animated nature; and he endeavoured to reduce to some certain method his researches on this subject, which must still excite astonishment by a number of facts but little known. He left a valuable collection of experiments and observations upon animal reproductions, upon sponges, the nature of which he defines, and upon a thousand interesting phenomena, which he knew how to draw from the obscurity which enveloped them. He had almost finished his travels to Constantinople, and had collected a stock of materials for the history of the sea.

Spallanzani's reputation was equal to the number, extent, and difficulty of his labours. France, Germany, and England, were all eager to possess his works in their respective languages. He was admitted into the academies and learned societies of London, Stockholm, Göttingen, Holland, Lyons, Bologna, Turin, Padua, Mantua, and Geneva. He maintained a correspondence with the academic societies of Paris and Montpellier; he received from the great Frederic himself the diploma as member of the academy of Berlin, and maintained a direct correspondence with him. Salicetti, while commissioner in the French army of Italy, offered him the professorship of natural philosophy at Paris, which he refused, on account of his advanced age; and the college of physicians at Madrid received him into their body.

In person, Spallanzani was rather tall; his aspect serene, yet noble; his forehead large; his eyes black and sparkling; his complexion dark, and his constitution robust. During the whole course of his life he was afflicted with no disorders, if we except a fit of the ague, which he caught in the mines of Schemnitz, at a time when the season was intensely cold. In the year 1795 he was attacked by a slight retention of urine, and several fits of the gout, which, however, did not suspend, in the least degree, his scientific pursuits.

He was generally esteemed; his virtues, untinctured by austerity, displayed themselves in all the circumstances of his life. He was beloved by all his relations, whom he inspired with his own taste; his brother Nicolas, a doctor of laws, assisted him in his experiments, and continued them, when he returned to Pavia; his sister is an eminent naturalist, perfect mistress of her brother's cabinet of natural history, acquainted with the most abstruse properties of every piece, and all the refined inductions which may be drawn from them.

Spallanzani paid great attention to the education of his nephews, and had the pleasure of seeing the eldest titular professor of physic at Padua.

On the 3d of February, 1799, Spallanzani had some returns of his urinary disorder; he passed the night restless, and in the morning became delirious. His intimate friends, Tourdes, a French physician, and the celebrated Professor

Scarpa, exerted every effort that genius, knowledge, and friendship, could inspire, to save him; but he died on the 6th, edifying with his piety those who were standing round his bed. His death penetrated his whole family with grief, drew tears from all his friends, filled his pupils with the deepest affliction, and depressed with sorrow a nation proud of having given him birth. The 13th, his colleague, Professor Gregorio Fontano, made an eloquent motion in the Legislative Assembly at Milan, to erect a monument to Spalanzani by the side of those of Frisi, Beccaria, and Verri.

SPANDAU, a town of Germany, in the middle marche of Brandenburg, surrounded on all sides by morasses, and close to it is a fine fortress. The arsenal is in subterranean vaults, and there is a prison for state criminals. It is seated on the Havel, 8 miles N.W. of Berlin, and 17 N.E. of Brandenburg. Long. 13. 23. E. Lat. 52. 36. N.

SPARTEL, CAPE, a promontory on the coast of Barbary, at the entrance of the straits of Gibraltar. Long. 5. 56. W. Lat. 35. 40. N.

SPARTIVENTO, CAPE, a promontory of the kingdom of Naples, at the S.E. extremity of Calabria Ulteriore. Long. 16. 40. E. Lat. 37. 50. N.

SPEIGHTS TOWN, a sea-port of Barbadoes, formerly much frequented by the Bristol traders, and thence called *Little Bristol*. It is situate on the N.W. coast of the island. Long. 58. 31. W. Lat. 13. 15. N.

SPELLO, a town of Italy, in Umbria. Here are the ruins of a theatre, and other remains of antiquity. It is seated on a hill, 3 miles N.W. of Foligno, and 13 N. of Spoleto. Long. 12. 24. E. Lat. 42. 40. N.

SPEZZIA, OF SPERTIA, a town of Italy, in the territory of Genoa, with a good harbour. It is seated at the foot of a hill, at the bottom of a gulf of the same name, 47 miles S.E. of Genoa, and 65 N.W. of Florence. Long. 9. 37. E. Lat. 44. 10. N.

SPIELBERG, a town of Suebia, in the principality of Oettingen, 8 miles N.E. of Oettingen, and 13 S.S.E. of Aispach.

SPIGELBURG, a town of Westphalia, capital of a county of the same name, 22 miles S.W. of Mülheim. Long. 9. 46. E. Lat. 51. 56. N.

SPIGNA, a town of Italy, in Monterrat, with a castle, 15 miles N. by W. of Savona, and 40 S.E. of Turin. Long. 8. 26. E. Lat. 44. 45. N.

SPILEMBURGO, a town of Italy, in Venetian Friuli, 37 miles N.W. of Aquileia, and 47 N. by E. of Venice. Long. 12. 15. E. Lat. 46. 10. N.

SPINALONGA, a sea-port of the island of Candia, with a good harbour and a citadel. It is situate near a cape of the same name, 30 miles E. of Candia. Long. 25. 48. E. Lat. 35. 20. N.

SPIRE, a bishopric of Germany, in the circle of Upper Rhine, 50 miles in length, and 30 in breadth, where broadest. It is divided into two parts by the Rhine, and is a fertile country.

SPIRE, a free imperial city of Germany, capital of a bishopric of the same name. It was burnt by the French in 1689; and, in 1693, the imperial chamber, which was in this city, was removed to Wetzlar. It was taken, in 1794, by the French, who evacuated it the next year, but re-entered it in 1794. It is seated on the W. side of the Rhine, 7 miles N. of Philippsburg. Long. 8. 32. E. Lat. 49. 19. N.

SPIREBACH, a town of Germany, in the palatinate of the Rhine, seated on a river of the same name, 8 miles N. of Landau. Long. 8. 12. E. Lat. 49. 20. N.

SPIRITU-SANTO, a sea-port of Brasil, capital of a

government of the same name, with a castle. Long. 41. 0. E. Lat. 20. 10. S.

SPIRITU-SANTO, a town of the island of Cuba, 155 miles S.S.E. of Havannah. Long. 79. 47. E. Lat. 22. 15. N.

SPTAL, a town of Germany, in Carinthia, with a castle, seated on the Lifer, near the Drave, 30 miles W. of Clagenfurt. Long. 13. 37. E. Lat. 46. 53. N.

SPTAL, an ancient village in Lincolnshire, 11 miles N. of Lincoln. It was part of the Roman causeway, leading from London, by Lincoln, to the Humber. Here are two springs, one called Julian's Well, and the other Castleton Well. Great numbers of Roman coins have been dug up in this village.

SPLUGEN, a town of the country of the Grisons, capital of the valley of Rheinwald, seated near the source of the Hinder Rhine, 42 miles S.W. of Coire.

SPONHEIM, a town of Germany, capital of a county of the same name, in the circle of Upper Rhine, 27 miles W. of Mentz, and 46 E. of Treves. Long. 7. 21. E. Lat. 49. 54. N.

SPRELE, a river of Germany, which rises in the mountains of Bohemia, and passing through Lusatia, into the marquisate of Brandenburg, runs by Berlin, and falls into the Havel, opposite Spandaw.

SPRINGFIELD, a town of Massachusetts, in the county of Hampshire, seated on the E. side of Connecticut river, 96 miles W. of Boston.

SPROTtau, a town of Silesia, in the duchy of Glogau, with walls flanked by towers, and a strong castle. It is seated at the confluence of the Bober and Sprotta, 20 miles S.W. of Glogau. Long. 15. 18. E. Lat. 51. 40. N.

SQUILACE, a town of Naples, in Calabria Ulteriore, with a bishop's see. It was formerly famous, but is now a small place, seated on the Favellone, near a gulf of the same name, 30 miles S.W. of St. Severino. Long. 16. 40. E. Lat. 40. 3. N.

STABLO, or STAVOLO, a town of Germany, in the bishopric of Liege, with a celebrated abbey, whose abbot is a prince of the empire. Here is a manufacture of leather, which is sent to foreign parts. It is seated on the Recht, 9 miles S. of Limburg. Long. 6. 5. E. Lat. 50. 20. N.

STADE, a town of Lower Saxony, in the duchy of Bremen, with a fortress, a college, and three churches. It is the principal town of the duchy, subject to the elector of Hanover; Bremen, the capital, being a free imperial town. It is the seat of the regency and chief courts of justice of the duchies of Bremen and Verden; and is seated on the Swinge, near its confluence with the Elbe, 22 miles W. of Hamburg, and 45 N.E. of Bremen. Long. 9. 17. E. Lat. 53. 26. N.

STADTHAGEN, a town of Westphalia, in the county of Schauenberg. Here is a palace belonging to the Prince of Schauenberg Lippe, in the garden of which is a mineral spring. It is 8 miles E. of Minden. Long. 9. 14. E. Lat. 53. 24. N.

STAFARDA, a town of Piedmont, in the marquisate of Saluzzo, seated on the Po, with a rich abbey. It is famous for a victory gained by the French, in 1690, over the Duke of Savoy. Long. 7. 25. E. Lat. 44. 34. N.

STAFFELSTEIN, a town of Franconia, in the bishopric of Bamberg, situate on the Lauter, 16 miles N.N.E. of Bamberg. Long. 11. 12. E. Lat. 50. 15. N.

STAFFURTH, a town of Upper Saxony, in the principality of Anhalt Bernburg, 9 miles N.W. of Bernburg, and 21 S.S.W. of Magdeburg. Long. 11. 40. E. Lat. 51. 55. N.

STAGIRA, a town of Turkey in Europe, in Macedonia, seated on the gulf of Contessa. It is remarkable for being the birth-place of Aristotle, whence he is called the Stagirite. It is now called Lyba Nova, and is 16 miles from Contessa. Long. 22. 48. E. Lat. 41. 15. N.

STAGNO, a sea-port of Ragusan Dalmatia, with a bishop's see, seated on a peninsula in the gulf of Venice, 30 miles N.W. of Ragusa. Long. 17. 50. E. Lat. 43. 12. N.

STAIN, a town of Austria, seated on the Danube, over which is a toll-bridge, 65 miles W. of Vienna. Long. 15. 0. E. Lat. 48. 11. N.

STALERIDGE, a town in Dorsetshire, with a market

on Tuesday, and a manufacture of stockings. Here is an ancient cross of one stone, 21 feet high, on a base of eight feet. It is 20 miles N. by E. of Dorsetshire, and 111 W. by S. of London. Long. 2. 18. W. Lat. 50. 57. N.

STAMPALIO, an island of the Archipelago, 60 miles W. of Rhodes, and 37 from the coast of Naxos. It is 15 miles long and 5 broad, almost without inhabitants, and wants fresh water.

STAMPS (*Encycl.*). The following rules for stamping executed deeds and instruments, we apprehend will prove useful: they are published in KEARSLEY's useful "*Tax Tables*," for 1802.

Definition of Instruments, and where to be brought.	Within what Time.	Penalties payable.	Regulations, and under what acts.
Agreements, Head Office or Country	21 Days	None	23 G. 3. c. 58.
Receipts for money, head office	14 days	5l.	{ Applicable to unstamped receipts as well as those put on wrong stamps, 33 G. 3. c. 55.
Ditto, country	1 Calend. Month	10l.	
Receipts for legacies or personally, head office or country	21 days	None	{ Country distributors to transmit receipts to the head office within 21 days, 36 Geo. 3. c. 52.
Ditto, head office	3 calend months	10l. per cent.	
Bills, notes, drafts, and orders, for money, head office or country	before payable	2l.	{ Confined to bills, &c. on wrong stamps of equal or superior value to the proper ones. 37 G. 3. c. 136.
	after payable	10l.	
Deeds and bonds (for excess of words), head office or country	1 calend. month	None	{ The first class to be transmitted by country distributors to the head office, within 21 days, and certified there only. Action brought for penalty on not duly ingrossing, not to abate if the instrument be not stamped within a month, though it should afterwards be stamped. 37 G. 3. c. 19, as to Deeds and Bonds. 37 G. 3. c. 90, as to Agreements and attested Copies.
Agreements (for ditto), head office	6 calend. months	10l. only	
Attested copies (for ditto), ditto	any time after	10l. per skin, &c.	
Single res. deeds, head office or country	60 days	None	{ Country distributors to sign receipts for the duty, and deliver deeds to the bringer thereof to get stamped. 37 Geo. 3. c. 111.
Ditto, head office	any time after	10l. only	
All instruments, matters, and things (except bills, notes, drafts, and orders*)			{ If it appear to the commissioners on oath or affirmation, made before any one of them, or otherwise to their satisfaction, that any instrument has been ingrossed or written on parchment, or paper, not duly stamped, either by accident or inadvertency, or from urgent necessity, or unavoidable circumstances, and without any fraudulent intention, they may stamp the same within sixty days, and remit the penalty. 37 G. 3. c. 136.
1. On wrong stamps of equal or superior value to proper ones, head office or country	60 days, or any time after, at the option of the parties	5l. only	
2. Unstamped, or on stamps of less than legal value, and liable to accumulated penalties exceeding 10l. head office	Ditto	10l. per skin, &c.	

Apprentices' Indentures and Articles of Clerkship come under the description of Deeds, in respect to the original stamp duty; but the statute of 8 Anne, c. 9. requires a further stamp to be impressed on these proportioned to the amount of the premiums, for which purpose the instruments are to be produced, and such duty paid at the head office within one calendar month, or in the country within two calendar months, from the date and execution.

Assignments of Bail Bonds by 4 Anne, c. 16. and of Replevin Bonds, when the distress is for rent, by 11 G. 2. c. 19. may be stamped on payment of the single duty at

any time before action brought.—Postea are also allowed to be stamped after being indorsed on the Record.

In all cases the New Stamp is to be paid for, exclusive of the penalty, and without any allowance for the stamp misused.

STANCHIO, a fertile island of the Archipelago, near the coast of Naxos, 12 miles N.E. of Stampello, and 40 N.W. of Rhodes. It is the ancient Cos, the birth-place of Hippocrates and Appelles; and is 25 miles long and 10 broad. The capital, of the same name, is seated at the foot of a mountain, at the bottom of a bay, and near a good harbour. Long. 26. 54. E. Lat. 36. 45. N.

* Agreements and Receipts for Money, and Legacies, do not come within this exception, being specially provided for.

STANDON, a town in Hertfordshire, with a market on Friday, eight miles N. of Hertford and 27 of London. Long. 0. 5. E. Lat. 51. 56. N.

STANMORE, a dreary district in the East angle of Westmoreland. Here is a fragment of Rerecros, fet up as a boundary between England and Scotland, when Cumberland belonged to the latter.

STANTON, a town in Lincolnshire, with a market on Monday, 16 miles E. of Lincoln, and 129 N. of London. Long. 0. 2. W. Lat. 53. 18. N.

STANTZ, a town of Switzerland, capital of the canton of Unterwalden, seated in a plain, at the foot of the Stanzberg, and near the lake of Lucern, 29 miles S. of Zurich. Long. 8. 22. E. Lat. 46. 51. N.

STANWIX, **FORT**, in the state of New York, seated on Mohawk river, near its source, 60 miles N.W. of Albany. Long. 75. 15. W. Lat. 43. 15. N.

STARAJA RUSSA, a town of Russia, in the government of Novogorod, seated on the river Polih, not far from the lake Ilmen, 40 miles S. by E. of Novogorod. Long. 33. 2. E. Lat. 57. 40. N.

STARGARD, a town of Upper Saxony, in Prussian Pomerania, with a college, and the ruins of a castle. It has manufactures of ferges, thaloons, tannies, druggets, &c. and is seated on the Ihna, 18 miles S.E. of Stetin, and 37 N.W. of Landsberg. Long. 25. 8. E. Lat. 53. 32. N.

STARGARD, a town of Germany, in Mecklenburg Strelitz, 30 miles S. of New Brandenburg.

STATEN ISLAND, an island of North America, which forms the county of Richmond, in the state of New York. It is 18 miles long and six broad, and contains upward of 3000 inhabitants. On the S. side is a considerable tract of level land; but, in general, this island is rough, and the hills high. Richmond is its only town of any note.

STATEN LAND, a barren craggy island, on the S.E. side of the islands which form the straits of Magellan, in 55° S. lat. Between this island and Tierra del Fuego is the strait of Le Maire.

STAVANGER, a sea-port in Norway, in the province of Bergen, capital of a territory of the same name, with a bishop's see. It is seated on a peninsula, near the fortrefs of Dofwick, 75 miles S. of Bergen. Long. 5. 45. E. Lat. 59. 6. N.

STAVEREN, an ancient sea-port of the United Provinces, in Frieland, formerly a considerable town, but now much decayed, the harbour being choked up with sand. It is seated on the Zuider-Zee, eight miles W. of Slooten, and 15 N.E. of Enchuyfen. Long. 5. 13. E. Lat. 52. 54. N.

STAUBBACH, a celebrated cataract of Switzerland, near the village of Lauterbrunn, in the canton of Bern. It rushes down a precipice 930 feet high with such impetuosity, as to resolve itself into a fine spray, which, viewed in some particular situations, resembles a cloud of dust. Hence it derives its name: the word Staubbach, in German, signifying a spring of dust. The roaring noise it makes is accompanied by a tempest, occasioned by the violent agitation of the air, excited by the rapidity of the fall. The brook which forms this torrent is named the Kupfer-Bachlein, or Rivulet of Copper.

STAUFFEN, a town of Austrian Suabia, in the Brisgau, situate on the Mehbach, eight miles S. of Faiburg, and 24 N.N.E. of Baile. Long. 7. 44. E. Lat. 48. 55. N.

STAUFFENBURG, a town of Germany, in the principality of Upper Hesse, five miles N.N.E. of Gießen, and ten N.E. of Wetzlar.

STAVROPOL, a town of Russia, in the government of

Simbirsk, situate on the Volga, 42 miles S.S.E. of Simbirsk. Long. 28. 58. E. Lat. 53. 44. N.

STAVROPOL, a town of Russia, in the government of Caucasus, situate on the Volga. Long. 41. 50. E. Lat. 44. 56. N.

STAUNTON, a town of Virginia, on the river Potomac, 30 miles W.N.W. of Charlottesville.

STEAM-ENGINE (*Encycl.*). We have already spoken at great length on the construction of these important machines; but various improvements having since been suggested, we think it indispensable, in the supplement of a work of this sort, not to omit the descriptions given by their different inventors.

The following is extracted from the specification of a patent granted to Messrs. James and John Robertson, of Tradetown, Glasgow, engineers, for a method of applying steam in the working of steam-engines, by which a very great saving of that vapour is effected, and a proportional saving of fuel in raising and applying steam for the use of steam-engines; and a method of constructing furnaces for the application of fire to steam-engine boilers, and boilers of various descriptions; and also for the application of fire to many other purposes by means of a furnace. These gentlemen assert, that, by their invention, a very considerable saving of fuel is effected, from the immediate conversion of the whole, or very near the whole, of the smoke arising from the fuel, into flame. This patent is dated August 13, 1800. See Pl. 48 and 49.

"In the best-constructed steam-engines there is a considerable quantity of steam which escapes past the sides of the piston in time of working, and is lost without producing any mechanical effect whatever; so the principle of the said invention of a new and improved method of applying steam in the working of steam-engines, by which a very great saving of that article is effected, and a proportional saving of fuel in raising and applying steam for the use of steam-engines, consists in preventing so great a quantity of steam from escaping, and in making the steam, which actually does escape, act on another piston, and add to the power of the engine. In all forms of the engine after specified and described in the drawings hereto prefixed, to which reference is had, it is to be observed, that there are two steam-cylinders, with pistons fitted to each, the one cylinder of a lesser, and the other of a larger size: these act together in producing the effect. To these cylinders are annexed a condensing vessel and air-pump, as in many others, or varied in this, as circumstances or inclination require. The other parts of this engine, in its various forms, are either pointed out, or correspond with many engines in use, which are well known, and require no explanation. But the ground on which the patentees' claim of preference is founded is the mode of conducting the steam on and between the pistons, as formerly mentioned, and more fully explained in the practical description of the engine.

"Fig. 1 (Plate 48). First form differs little in construction from many other engines, except that in place of one working cylinder in these, there are two in this (see fig. 1), the lesser (a) being placed on the top of the larger (m), and made fast to it. To each cylinder there is a piston fitted, which are connected together by a cylinder D; or this cylinder is so made as to have the pistons in one piece with it. This cylinder is made so that it may nearly fill the small cylinder n; that is, that it may work up and down so that the external surface of the one may not rub on the internal surface of the other. The steam and conducting pipes, with the valves, are explained in the following description of the operation of the engine:

" Let the working handles, with the valves, be placed in such a manner that steam from the boiler may have free access through the pipes and cylinders into the condensing vessel, to free the whole of the air, as in the usual manner. When this is done, the engine is set to work by the valves *b* and *c* being shut, and by that of *a* left open, and water let into the condensing vessel *C*, when a vacuum takes place in it by means of the condensation of the steam, and also in the under part of the large cylinder *m*, below its piston (there being a communication from it to the condensing vessel by the pipe *F*): at the same time the steam from the boiler has free access through the pipe *A*, and valve *a*, into the small cylinder *n*, above its piston *h*, and exerts its force upon it, and presses it downwards with as much force as in the usual manner. But as it is found, from experience, that a considerable quantity of steam escapes past the piston, this steam is in part detained by the secondary piston *g*, and exerts its force on that part or annular section *s s* that is contained betwixt the cylinder *m* and *D*, and assists in forcing the whole downwards; while at the same time the steam which is lodged in this annular space *s s*, and around the cylinder *D*, prevents so great a quantity from escaping past the first piston as would otherwise be the case were there no secondary piston, and the vacuum much more complete below the first piston, consequently there is a greater power produced from a smaller quantity of steam than with a single piston. During the time of the piston's descent the steam valve *a* is shut, and the elasticity of the steam within the cylinders carries the pistons forward to near the bottom of their cylinders, when the valves *b* and *c* are opened by the handles and plug-work admitting the steam to pass from the upper sides of both pistons through the pipes *B* and *E* to the condensing vessel *C*, while the counter weight at the other end of the beam, or this connected with a fly-wheel, raises the pistons again when the valves *b* and *c* are shut, and that of *a* opened by the plug-work, when the engine makes another stroke as before. The piston rod *R* joins the working-beam in any of the usual modes, and in other respects the engine is much the same as in common practice; to this form of the engine, a considerable improvement takes place by means of another valve, and which constitutes the second form of the engine (see fig. 2); the form differs little from the last; but in admitting the steam from the upper cylinder below the piston of the larger, and assisting the returning stroke, and consequently producing a still greater effect from the same quantity of steam than in the first form; it may be understood from the following description of the operation of the engine in this state: let the working-handles be placed so that steam from the boiler may have free access through the pipes and cylinders into the condensing vessel, to free them of air as in the usual manner; when this is done, the engine is set to work by the valves *b* and *c* being shut, and *a* and *d* left open, and water let into the condensing vessel *C*; when a vacuum takes place by means of the condensation of the steam, and also in the under part of the larger cylinder *m* below its position *g* (there being a communication betwixt them through the valve *d* and pipe *F*), and the steam from the boiler having free access through the pipe *A*, the valve *a* will exert its force on the piston *h* of the small cylinder, pressing it downwards with as much power as in the usual manner, but as a quantity of steam escapes the piston, it produces the same effect as mentioned in the first form; during the time of the piston's descent, the steam valve *a* is shut, and the elasticity of the steam within the cylinders carries the pistons forward to near the bottom of the cylinders, when the valve *d*, which admits the steam from the lower part of the large cylinder *m* to the condensing vessel, is shut, while the valves *b* and *c* are opened; by this means the steam

which remains above the piston *h*, in the small cylinder, having free access through the pipe *B* to the bottom of the large cylinder *m*, below its position *g*, exerts its force equally on equal areas, as of each piston; and the annular ring, or section *s s*, being exhausted by the valve *c* being open, this admits the steam to pass through it, and the pipe *E*, to the condensing vessel *C*; this steam therefore which remains above the small piston, and below the large piston, will force the pistons upwards in proportion to the steam's density, and the difference of the areas of the piston, that is, a force in proportion to the density of the steam, and the excess of the area of the large piston to that of the small one, when the pistons arrive at the top of the cylinders, the plug-tree turns the handles of their position for another stroke, &c. It would be needless to describe any more of the practical part of the engine, as it may be seen from inspection of the draught, and corresponds with many of those in common use, and which are well known. In this state of the engine, there are three circumstances take place, which renders the engine more powerful with the same quantity of steam than those with a single piston; the first is, the steam which escapes the first piston acts on the annular ring of the second piston, and increases the power; the second is, the steam which escapes and is detained in the annular space or section *s s*, acts against the steam which passes the first piston, and prevents it to great a quantity from escaping as would take place were there no secondary pistons; the third is, the quantity of steam which remains in the upper cylinder being let into the lower, and assisting the ascent of the piston. In this and the first form, it is necessary to have a small pipe with a cock in it, to connected with the upper part of each cylinder, that a little steam may be made to pass through it by opening the cock a little when the pistons are newly packed, and so admitting a small quantity of steam to act upon the secondary piston at this time, when little escapes the first, and when the friction of the pistons is greatest.

" Third form of the engine (see fig. 3) consists of two cylinders, a larger and smaller, placed 'along side' of each other vertically, and which may be placed so that a line joining their centres may be either in the direction of the working-beam, or at right angles to it, the operations being the same in both cases, but the last is preferable; the other parts of the engine are obvious, from the drawing and the following explanation. The steam is admitted from the boiler by the pipe *A*, and at the valves being kept open, and the whole cleared of air, as mentioned in the former cases, the valves *b d* and *e* are shut, while those of *a c* and *f* are left open, and water let into the condensing vessel *C*, and a vacuum takes place, as also in the large cylinder *m* below its piston (there being a communication to the condensing vessel *C* through the valve *f* and the pipe *F*), and there being a communication from the bottom of the small cylinder *n* to the top of the large cylinder *m* (through the pipe *B* and valve *c*), the steam in the cylinder *n*, below its piston, the steam in the pipe *B*, and that which is above the piston *g* of the large cylinders *m*, will exert their force in pushing the piston forward, and resisting the descent of the small piston *h*; but the superior strength of the steam from the boiler exerting its power on the top of piston *h* of the small cylinder, will cause it to descend; as the pistons go forward in their respective cylinders, the strength of the steam above the piston *g* of the large cylinder, and under the piston *h* of the small cylinder, will diminish, but the superior strength of the steam above the piston *h* to the small cylinder will cause a quantity of the steam to pass it, which will in part exert its force on the piston *g* of the large cylinder, and assist in forcing it down in the cylinder; indeed, what steam remains betwixt the two pistons exerts

equal forces on equal areas of each piston, but the piston of the large cylinder, being of greater area than that of the small cylinder, will be forced down with a power as much greater (as it retards the piston of the small cylinder) as its area is greater than the other. During the descent of both pistons (which move in the same direction in the same time) the valve *a* is shut, which admits the steam into the small cylinder, and the elasticity of the steam which remains above the piston *h* of the small cylinder, together with the less dense steam between the pistons, carries both pistons forward to near the bottom of the cylinders, when the returning stroke begins by the valves *b* *d* and *e* being opened, and the valves *c* and *f* shut (the valve *a* being shut during the descent of the pistons). By such means, the steam above the piston *h* of the small cylinder has free access below it, through the valve *b* and pipe *B*, also to the under side of the large piston through the valve *e*. In this state, the steam is equally strong on the top and bottom of the piston *h* of the small cylinder; but the steam below the piston *g* of the large cylinder exerting its force against it whilst there is a vacuum made in the upper side of the cylinder above the piston (the steam having free access through the valve *d* and pipe *E* *F* to the condensing vessel), this piston will therefore be forced upwards, and as two pistons are fastened by their rods to the beam in such a manner as to move together, they will both ascend together to near the top of their cylinders, when the plug-tree turns their handles and valves for another stroke. The valves *a* *c* and *f* being opened, and those of *b* *d* and *e* shut, and the steam from the boiler exerting its force on the piston *h* of the small cylinder, while the steam which remained at the last stroke below the said piston, and of less density, together with what passes the piston *h*, exerts its force on the bottom of the piston *h* of the small cylinder, and on the top of the piston *g* of the large cylinder, and the work goes on as aforesaid. In this form of the engine, there are three circumstances take place which render it more powerful, with the same quantity of steam, than those with a single piston; the first is, the steam which is lodged between the pistons, together with what passes the first piston, acts on the second piston with a power much greater, as it retards the first, as the second piston is longer in area than the first; the second is, the steam, which remained above the piston of the small cylinder, after its descent, acts upon the piston of the large cylinder, in the time of its ascent; and the third is, what steam remains in the small cylinder, after its ascent, contributes, along with the steam which escapes the piston of the small cylinder, to prevent so great an escape of steam past it, as would otherwise be the case, were there no secondary pistons; the other parts of the engine may be seen from inspection of the draught, and correspond with what is in common use.

"Fourth form of the engine (see fig. 4.) consists of two cylinders, a lesser and a larger, the piston rods of which are connected by a toothed wheel, or short beam placed betwixt them, which gives motion to the machinery by a crank, or otherwise; by this method, the piston of the one cylinder ascends, while the other descends; the operation of the steam in these cylinders and pistons is directly the same as the last, only the pistons move contrary to one another, the steam being directed on the pistons so as to produce this motion, though the acting principle is directly the same; the same description as the last will fully explain it, and the same letters of reference serve, only, that the steam acts on the top of the piston of the large cylinders in the same way as it acts on the bottom of it in the former case. These cases may still be varied by placing the small cylinder in the first case undermost, and admitting the steam from below, and in the two last cases by admitting the steam into the small cylinder

below; but the principle, or mode of action, will still be the same; indeed, the same principle may be varied many ways, but, perhaps, in none better than the following:

"Fifth form (see fig. 5, No. 1 and No. 2.) consists also of two cylinders, as before, and larger, which are placed alongside of each other, as in the third form. Fig. 5, No. 1, is a side view or section of the engine; but the large cylinder, which stands immediately behind the small one, is not seen as well as many of its parts. In fig. 5, No. 2, is an upright section of the cylinders and pipes, as the face, the framing or body of the engine. In this draught, the cylinders, pipes and valves, and condensing vessel, are laid open in so plain a manner, that, with the explanation, an idea of the engine may very easily be conceived; the letters of reference are chiefly applicable to No. 2; but when the letters are placed on No. 1, they refer to the same as on No. 2. The operation and explanation are as follows: the steam is admitted from the boiler into the small cylinder *n*, through the pipes *A* *A*, and valves *a* and *e*, both above and below the piston *h*, of the small cylinder, all the valves being kept open, and the handles wrought in the usual manner, to drive the air out of the cylinders, communicating pipes, and the condensing vessel; the handles are set to their due working posture, that is, the valves, *b*, *c*, and *e*, are shut, while those of *a*, *d*, and *f*, are opened, and water let into the condensing vessel, when a vacuum takes place in the large cylinder *m*, below its piston *g* (the steam having free access through the valve *f*, and pipe *F*, to the condensing vessel), and the steam which remains above the said piston, together with that which is under the piston *h* of the small cylinder, and communicating pipe *D*, exerts its force in pushing down the piston *g* of the large cylinder, there being a communication for the steam between them, through the valve *d* and pipe *D*. The steam from the boiler exerts its force on the top of the piston *h* of the small cylinder, and, as the pistons move forwards in their cylinders, the density of the steam under the piston *h*, and above the piston *g*, will diminish, being expanded to a larger space; but the superior density of the steam from the boiler, acting on the top of the piston *h*, of the small cylinder, will cause a quantity of steam to pass it, which exerts its force in part on the piston *g*, of the large cylinder; indeed, what steam is lodged between the two pistons exerts equal forces on equal areas of each piston, but the piston *g*, being of larger area than the piston *h*, will therefore be forced down with a power as much greater as it retards the piston in the small cylinder, as the area of the large piston is greater than that of the lesser; at the same time the steam which remained beneath the piston of the small cylinder, prevents so much steam from escaping past its sides, as it would do were there only a single piston, and the vacuum below it much more complete during the descent of the pistons (which move in the same direction, in the same time); the valve *a*, which admits the steam from the boiler, from the top of the lesser cylinder, above its piston, is shut, and the elasticity of the steam which remains above the piston *h* of the small cylinder, together with the less dense steam above the piston *g* of the large cylinder, carries both pistons forward to near the bottom of their respective cylinders, when the returning stroke begins by the valves *a* and *f* being shut (the valve *a* being shut during the pistons' descent), and the valves *b* and *e*, opened by the plug-work. When the large cylinder is exhausted above its piston, the steam having free access through the pipes *D* and *E*, and the valve *e*, to the condensing vessel, while the steam from the boiler having free access through the pipes *A* *A*, and valve *a*, to the bottom of the piston *h*, of the small cylinder, and the steam of less density, from the last stroke of the engine, which remains above the said piston,

together with what escapes past its sides, in time of its ascent, having free access through the valve *b* and pipe *B* to the under side of the large cylinder *m*, and below its piston *g*, and exerts its force, in pressing it upwards, with a power as much greater as it retards the piston of the other, as the piston of the large cylinder is greater than the other; then the piston *h*, of the small cylinder, will be pressed up with a force in proportion to the difference of the density of the steam above and below it; at the same time, the steam which remains above the piston prevents so much of it from escaping past the small piston, as would be the case were the vacuum more complete: during the ascent of the pistons, the valve *c* is shut, and the elasticity of the steam which remains below the piston *h*, of the small cylinder, carries it forward, as doth also the less dense steam of the piston *g* of the large cylinder; indeed, the operation of the steam is the same, both in the ascent and descent of the pistons.

" Sixth form (see fig. 6) consists also of two cylinders, the lesser and larger, the piston-rods of which are, as in the fourth form, connected by a toothed wheel, or short beam placed betwixt them, which gives motion to the machinery by a crank; or otherwise the operation of the steam in this form is directly the same as in the last, or fifth form, except that the steam is so conducted as to make the one piston ascend while the other descends; the explanation of the last follows this also, and letters of reference are placed so, only where the top or bottom of the large piston is mentioned; the contrary must be understood for the explanation of this form: in all forms of the engine in time of working, the density of the steam, on the secondary piston, is never allowed to be near its natural state (namely, that density it hath at coming from the boiler, or nearly the same with that of the atmosphere), the other end intended would be in a great measure frustrated, as the quantity which escaped the secondary piston in that state would be attended with as bad effect as that purposed to be remedied by the patentees. It will be observed, that this is effected by shutting the valve which admits the steam from the boiler before the piston has moved through the whole length of the cylinder; though the preventing the waste of steam is the main thing intended, yet the construction of the engine is such, that the elasticity of the steam is carried a great length, and usefully employed, before it gets into the condensing vessel; these forms of the engine may be applied either to the raising of water, or driving machinery, the same as those in common use. The patentees do not pretend to fix upon any exact ratio betwixt the size of the two cylinders: experience and motives of economy may cause a variation in this.

" Specification and description of the nature of a new and improved method of constructing furnaces, for the application of fire to steam-engines and boilers of various descriptions, and also to the application of fire to many other purposes and branches of manufacture where heat is applied by means of a furnace, by which invention and improvement a very considerable saving of fuel is effected, from the immediate conversion of the whole, or very nearly the whole, of the smoke arising from the fuel into flame: first, the said invention in principle consists in supplying the burning fuel more fully with air, having this fuel more in a body together, and a less quantity in combustion, at the same time, than what usually takes place in other furnaces, which are applied to the same uses; in applying the fuel with a portion of fresh air, admitted from an opening made for that purpose, and directed in such a manner as it may come in contact with the smoke from the kindling coal and great heat of the furnace together, and the fuel being more fully supplied with air, and con-

sequently a greater degree of heat taking place, and the smoke and fresh air uniting in the great heat, the smoke is enflamed, and rendered useful in adding to the heat of the furnace; besides, this portion of fresh air is so conducted as to act partly on the kindling or kindled fuel, and raising it to a greater degree of heat, after it has served its purpose by uniting with and enflaming the smoke; and therefore is employed, in some measure, usefully, even after the coal has ceased to smoke: secondly, to the above may be added, the form of the furnace, which is so constructed, that the full kindled fuel is kept backward in the furnace, while the fresh coal lies before, and is more gradually kindled than if introduced further among the full kindled fuel, while the heat of the furnace is little injured or damped by the introduction of fresh coal, as is more fully described in the practical description of the furnace. The coal is admitted into the furnace by a hopper, feeder, or mouth-piece, *A* (fig. 7 and 8), made of cast-iron (but which may be made of other materials), and inclined to the horizon, as in fig. 7; so that the coal in it may, in some measure, fall into the fire-place, above the bars, as the fuel is spent: in the upper part of this hopper, feeder, or mouth-piece, is a plate, *a* (fig. 7 and 8), placed at a small distance, or from about three eighths to three fourths of an inch from the upper side of the hopper, betwixt which plate, and upper plate, or side of the hopper, a stream of air rushes downward on the fire, at about half a right-angle to the horizon, which stream of air assists in consuming the smoke, as formerly mentioned, and more fully described hereafter. *B*, fig. 7, is a section of the bars, which are, in general, a little inclined to the horizon, as in the figure, that the fuel may more easily fall, or be pushed backwards, in the furnace; at *c*, is an opening above the bars, and below the lower end of the hopper, which is in general fitted with a grated door or doors, which open for the more convenient cleansing of the furnace, and the grated form of the doors is also designed for admitting air into the fuel, as well as at the bars, consequently the air is more concentrated in the middle of the burning fuel, and produces a greater heat than if admitted only betwixt the bars; this grated form of the doors is also convenient for the admission of a poker or instrument for pushing backward the kindled fuel, while the fresh coal, or that which is not so well kindled, falls down to supply its place: in some others of these furnaces, the opening below the lower end of the hopper, and above the fore end of the bars, is left without doors at all; at this opening, it is convenient, when the fire is mended, to push the coal from the fore side backward, as mentioned above, or it may be pushed backward with a hooked poker, *P*, by applying the hooked part of it through the furnace bars below; by either of which means, the kindled coals are put backwards, while the fresh coal, or that which is not so well kindled, falls down to supply their place; that is, the coals in the situation *c* are pushed towards *d*, while those in the situation *f* fall down to supply the place of those which were driven from *c* towards *d*; by such means, the strength or heat of the fire is not much damped by the introduction of fresh coal, and the coals which have fallen from *f* towards *c*, are not so rapidly kindled as if introduced above the burning fuel, same time the smoke which arises from these newly-introduced coals, passes partly through the full-kindled coal and partly over, and in contact with the great heat of the burning fuel, and, meeting at the same time with the current of fresh air coming downwards, and tending also to drive the smoke still nearer to the bright kindled fuel, does in general completely inflame the smoke, and render it useful in adding to the heat of the furnace. Another end obtained by the stream of fresh air, is to keep in some measure the great heat of the furnace from acting so

violently on that part of the hopper which is nearest it, and mostly exposed to its heat, and liable to be damaged thereby, which it does by the continual current of fresh cool air that is in contact with those parts; the construction of the furnace may be much varied, but the chief improvements are, that the fuel in combustion is supplied with air by the forefide as well as by the bars, the hopper is placed in such a situation that the kindled or unkindled coal may in part fall to the forefide of the furnace above the bars, as the other fuel is pushed backward in the furnace, and the admission of fresh air to pass over the burning fuel by means of a definite space or spaces, opening or openings, made for that purpose; so that this stream, current, or currents of air, partly come in contact with the burning fuel itself, forcing also the smoke with more immediate union with the burning fuel and great heat of the furnace. The patentees do not pretend any claim to the admission of fresh air as a new principle, as they are sensible that this has been known long ago, and practised by admitting it at the furnace door, shutter, or mouth-piece, and at the opening the coals are admitted into the furnace; their claim rests upon what has been formerly stated, together with the form of the furnace, and its variations after mentioned; the success of the furnace depends also in a considerable degree on what is called the draught of the furnace; that is, the chimney and flues so constructed, as a sufficient current of air may pass through the fire to bring it to a proper degree of heat; also, that the current of fresh air may have such force as to come pretty much in contact with the burning fuel, and to convey the smoke along with it through the hottest of the flame; if this is not the case, the smoke will not be so completely consumed in these furnaces. The hopper is allowed to be kept as full of coal as possible, and either wholly or in part small coal, so as to prevent air as much as possible getting in by that passage; this must be attended to when the furnace is in its ordinary working state; yet, sometimes, it is necessary to keep this opening of the hopper, either wholly, or in part, open, when there is little heat wanted.

The following is a description and reference to the draughts in Pl. 49; fig. 7, is a side view, or section of the furnace, as if applied to a boiler, and cut through the middle. Fig. 8, is a front view of the furnace in perspective, the hopper having a division in the middle, and two regulating plates for the admission of fresh air. Figs. 7 and 8, A, the hopper into which the coals are put to supply the furnace, *a* the regulating plate; above which and below the higher plate *b* of the hopper, a stream of fresh air is admitted to this plate; *a* is made to turn on a pin pivot or centre, so that it may be brought nearer to, or recede further from the uppermost at the point *n*, fig. 7, for regulating the quantity of air admitted between the plate as occasion requires; this plate is sometimes made fast, or kept so, after adopting a space which is judged sufficient for the quantity of fresh air, but on other occasions, as in steam-engines, it is advisable to give it less or more opening according to the state of the fire, that is, when coals are newly introduced into the fire-place, to give the greatest quantity of fresh air, and when they are pretty well kindled to give less air. FFF, fig. 7, the flues beneath and round the boiler; that round the boiler may be in any of the present well-constructed forms; that beneath the boiler, as in the drawing, with a breast D, to prevent the coal getting so far backward in the furnace, and also to direct the flame on the bottom of the boiler; this breast is also necessary for the more complete combustion of the smoke, as by that means, the fresh air, smoke, and flame, are more completely combined than if the breast were wanting, or ill-formed: at *r* is represented a shutter, which is sometimes used in steam-engine

boilers for the purpose of getting the refuse of the fuel taken from the furnace by opening the said shutter; in other cases, the breast of the furnace D coincides with *d* at the ends of the bars. G, figs. 7 and 8, the grated doors, or opening into the fire-place; I, the ash-pit below the furnace; L, fig. 8, a catch, or bar, which slides along the bottom plate of the hopper for keeping the grated doors shut: HHH, &c. the brick-work for furnace and boiler. K, fig. 7, a piece of cast-iron in a horizontal position, which joins the under plate of the hopper, for the more ease and convenience in putting in the coals, the hopper may be made in one or more pieces, as inclination or choice may direct, or of any materials which it may be thought prudent to adopt, but they are usually made with five plates of cast-iron; M representing one of the side plates, N the uppermost, O the undermost, and P the regulating-plate; the side plates having tenons which fit into mortises in the top and bottom plate, which may easily be conceived; on the side plates are detents or abutments, which serve as a centre for the regulating-plate to turn upon; on this plate are also two abutments which rest on the other abutments of the side plates when this plate is put into its place; this plate by such means may be taken out, or put in at any time it is found necessary, without meddling with any other part of the hopper: another method is to have the bottom plate to come out, and in the same manner as the regulating plate; also, that it may fold up or down to any inclination; this form is very commodious for allowing access into the fire-place to get it repaired, or the like, or for having the fire quickly taken from it altogether, for by folding the plate to a level as represented by the dotted line, fig. 9, the coal which is in the hopper is prevented from falling into the fire-place, and there is a greater space left to get into it; this form may either admit or not of the grated doors; indeed the simple opening does very well. Fig. 9, is a representation of the side of the hopper, in this form: another method of the hopper and letting in of air, is by making the underfide of the top plate with cheeks, or grooves, as that the fresh air may rush down in them above the fuel that lies in the hopper, for when the hopper is fitted in as close with coal as it can be, these grooves of cheeks prevent the coal from getting into them, and form separate and definite spaces for the air to rush down on the burning fuel, and perform the same office as the regulating plate, though the proper quantity cannot be so well adjusted this way, yet the only way to accomplish this is to have these grooves or cheeks made as near the proper size as possible; they ought also to be so narrow, that little of the coal will get betwixt them. Fig. 10, is a front view of the hopper, in the state where A represents the opening the coals are put into; another method is to let in the current of fresh air above the uppermost plate of the hopper, this may be done either by another plate placed above, or the building so formed over it, as that a proper quantity of fresh air may get in, and in a proper direction; indeed, this may be accomplished many ways in a greater or lesser degree, by letting in a definite quantity, directed in such a manner as to come in contact with the fuel, though perhaps in no way better than the methods explained: to make this furnace more complete, doors are placed to the front, with a sufficient space below them to let air into the furnace, these doors are represented by SS, fig. 8, as standing open; they are kept shut while the furnace is going, except when coals are put in, or the bars cleaned, or the like when they are opened for that purpose; the use of these doors is to prevent, in a great measure, the radiant heat that comes from under the bars and from the opening at the forefide from escaping; this also adds something to the draught or well-going of the furnace, as this heat when suffered to escape rarifies the air before the

furnace, which air passes upwards, performing in a small degree that which a chimney does, and depriving the fire of a portion of air which it otherwise has when the doors are shut: these furnaces are made of various sizes, according to the uses they are applied to; in some large ones there is a division in the middle of the hopper, as in fig. 8; this size, as measured by the scale, will serve a steam-engine boiler of about nine or ten feet diameter; lesser furnaces do not need this division in the middle of the hopper."

We next present the reader with the specification of a patent granted to Mr. Murray, of Leeds, for a method of constructing the air-pump, and sundry other parts belonging to a steam-engine, by which a considerable saving will be made in the consumption of fuel, and an increased power obtained. It is dated August 4, 1801.

"First, in respect to the principles of the new air-pump," says the inventor, "I cause the air to be discharged from the air-pump without its having to make any effort in opening of valves, or pressing through a body of water, and in causing the water and the air to be discharged separately, and different ways; this is effected by discharging the air alone by one bucket, and the water alone by another, or by an eduction pipe of 2 feet in length, as in figs. 1, 2, 3 (Pl. 50.). Secondly; an improved method of packing the cylinder-lid, stuffing-boxes for valves, &c. I cause the removable parts of each to come in immediate contact with one another; this is effected by placing the necessary packing on the upper side of the cylinder-lid (instead of being betwixt the cylinder and lid as formerly), which prevents the piston-rod receiving friction from any oblique pressure, by the cylinder-lid being forced down more upon one side than the other, which is unavoidably the case in all other methods of packing-lids, valves, stuffing-boxes, and other similar things, where great accuracy is required, as in fig. 4. Thirdly; an improvement in the valves and working gear, the principle of which consists in the advantageous form in which they are made, and in the two uppermost valves being inverted, and the communication by the valve-rods passing through reservoirs of oil, or liquid matter, which will prevent any air getting into the engine to impair the vacuum; the principle of the cylinder-lid is here applied in fixing the stuffing-boxes for the valves, and valve-box lids, which is of the utmost importance to their operating well, as the oblique pressure (which cannot be prevented in the old method) throws the valves out of their seats, and renders them proportionally imperfect, fig. 5. Fourthly; a new principle, opening and shutting the valves by a circular motion (instead of the plug and hand-geer now in use), which prevents the engine making a false stroke, or turning the wrong way round, by which means a steam-engine is rendered as steady in its motion as a water-wheel, as in figs. 6, 7, 8, 9. Fifthly; a new method of connecting the piston-rod to the parallel-motion, as described in fig. 10. Sixthly; an improved method of constructing fire-places for consuming the smoke arising from steam-engines, and other fires, fig. 11. Now I do declare, that the six above-mentioned principles comprehend the real object of my inventions. And, in order for the better comprehension and understanding how the aforesaid may be reduced to practical use, I do hereby further declare, that although I vary my mode of construction, as a difference of circumstances may require, to produce the same effect, and obtain the main purposes intended; yet I principally adhere to the methods herein described, as being fully answerable to what is required, and best calculated to be understood from the drawings and descriptions thereof. And the same is described fully in the drawing or plan added hereto, and contained in the skin of parchment hereunto annexed. (See the plate.) Figs. 1, 2, and 3, are plans exhibiting the principle

of the air-pump. A, the condenser; B, the air-pump; C, the air-gift; D, the air-valve, which is opened and shut by the working parts of the engine, and has an elastic rod; E, the valve for discharging the air; F, the exhausting-pipe, having a free communication betwixt the condenser and the top of the air-pump, when the valve D is open; G, the eduction-pipe; H, a bucket, and balance-valve, for discharging the water down the bored eduction-pipe in fig. 3; I, the delivering-valve for water in figs. 2 and 3; K, in fig. 1, a bucket for lifting the water upwards as in a common pump; L, a foot-valve for preventing the return of the water during the descent of the bucket K; M, the barrel of the pump for discharging water alone; N, N, in fig. 2, an eduction-pipe, thirty feet long or upwards, where the water is discharged by its own gravity, and may be attached to the air-pump, or condenser, as the dotted lines shew. Fig. 4, exhibiting the principle of the top, stuffing-boxes for valves, &c. A A, the cylinder-lid. B B, the top ring that is screwed down with bolts to the flanch of the cylinder. C C, the packing of paper, hemp, or other materials, laid on to the cylinder-lid A, and under the top ring B B. D D, a shoulder bored in the top of the cylinder, for the lid A to be turned and ground into; this method applies to steam-cylinders, air-pumps, stuffing-boxes for valves, as is shown in the other figures. Fig. 5, plan of the working valves and side pipes. A A A, the rods that lift the valves. B B, stuffing-boxes for the valves to work through, fixed in the same manner as the cylinder-lid in fig. 4. C C, rings for fixing the stuffing-boxes. D D D, mortises for the levers for the opening of the valves. E E, are the two inverted top valves. F F, are reservoirs for holding oil, or other liquid matter. G G, two circular valve-boxes for admitting the steam. Figs. 6, 7, 8, and 9, shew the principle of opening and shutting the valve by a circular motion. A, the axle-tree. B, a wheel to be turned from the motion of the fly-wheel, or other parts of the engine or mill-work. C C C C, cranks with rollers fixed upon the axle-tree A, parallel to each other, or at right angles, as circumstances may require. D D, circular box rods for receiving alternate motion from the circular motion of the cranks C C. E E, tappet plates for the cranks to work against. F F, levers for the mortises D D D in fig. 5, for lifting the valves. Figs. 8 and 9, shew the same principle, but differ from the other by having straight plates to work against instead of circular ones. G G G G, handles for setting the engine to work, and may be supported at H H H H. The axle-trees A A, must make the same number of revolutions as the engine does strokes, which may be easily regulated by the wheel-work. Fig. 10, shewing the method of connecting the piston rod to the parallel motion. A, the piston rod. B, the top cone end of the rod. C, two half-sockets which fit the cone end of the rod. D, the outermost socket. E, the cone part of this socket, fitting the outside of the socket C. F, the cotter for pressing the rod A, with its sockets C, into the cone part of the outside socket D, which fixes the whole together as in one piece, without cutting any holes in the rod, as is the case in the old method. Fig. 11, shewing the method of constructing a fire-place for consuming of smoke. A, the boiler. B B B B, brick-work. C, the funnel for conveying coals to the fire. D, sliding plate for lessening the aperture of the funnel, and regulating the quantity of coals in. E, the fire-place. F, the grate-bars lying in a frame, and moving upon a joint at No. 1. No. 2, the grate-bars lowered down for the purpose of cleaning out the fire. G, charging-box for pushing the fire further on the grate-bars, and making room for fresh coals as the others are consumed; this box is filled with holes for the purpose of letting air into the fire. H, a small wheel and rack for working the charging-box G in large fires; but

the box may be thrust in by the handle **I** in small ones. **K**, a lever for turning the wheel **H**. No. 3, plan of the grate-bars frame taken out of its place to the pivots that it turns upon when it is lowered to clean out the fire. 4, plan of the charging-box **G**, to shew the method of working it by wheel-work, either by hand, or by a motion from the engine."

These seem the most important of the recent inventions in aid of this valuable machine, but other contrivances worthy of attention will be found fully described in the Repertory of Arts, &c.

STEEGE, a sea-port of Denmark, in the island of Moen, 38 miles S.S.W. of Copenhagen. Long. 12. 20. E. Lat. 55. 5. N.

STEEL (*Encycl.*). The following is extracted from the specification of a patent granted to Messrs. Wilde and Ridge, of Sheffield, for making saws, steel doctors for printers, plates made of iron, springs, and other articles; dated August 25, 1796.

"When the steel or iron is pared or cut into proper shape, the saws, &c. are put into a frame of metal, or otherwise: they may then be made red-hot in the said frame, and stretched by screw, spring weight, or any other proper power or purchase, and so formed into a curved, straight, or any other direction wanted. They are then to be immersed in water, or a composition of oils or grease, to be hardened in the frame in the direction wanted; and when so hardened they are also to be tempered in the same direction in the frame over fire; and when the saw, doctor for printers, or plate, is over the fire, it must be kept in motion over the fire until the oil or grease upon the said saw, doctor, or plate, smokes. It is then to be gently stretched, and continually kept moving over the fire until a blue blaze alternately appears and disappears. It is then to be stretched with as much power as will bring it into the direction required. The saw, doctor, or plate, is next to be put into another frame, which may be made to move upwards and downwards, or in any other direction necessary, by crank, or any other movement, between proper stones, or between plates of metal, blocks of wood, or any other material that will grind or polish with sand, emery, or other proper material to grind and polish the saws, steel doctors for printers, plates made of iron, also of steels, beads, mouldings, and fender plates, made of iron and steel united, or of iron or steel, and all sorts of springs made of steel, and divers other articles made of iron and steel united, and also of iron or steel. But if the saw, doctor, or plate, is not intended to be hardened, it must be made red-hot, and stretched with as much power as will bring it into the direction wanted; it must then lie in the open air, in the frame, in the said direction required, till cold; then to be ground by a machine for the purpose of grinding and polishing in a frame the said saws, steel doctors for printers, plates made of iron, also of steel, beads, mouldings, and fender plates, made of iron and steel united, or of iron or steel, and all sorts of springs made of steel, and divers other articles made of iron and steel united, and also of iron or steel." This machine is to move the article to be manufactured by means of a crank, or otherwise, so as to sharpen, grind, and polish the plates, and form beads and mouldings, and various other articles."

STEENBERGEN, a strong town of Dutch Brabant, in the marquisate of Bergen-op-Zoom. It has a communication with the Maese, and is seven miles N. of Bergen-op-Zoom, and 17 W. of Breda. Long. 4. 28. E. Lat. 51. 32. N.

STEENKEER, a town of Norway, in the province of Drontheim, 36 miles N.E. of Drontheim. Long. 11. 34. E. Lat. 63. 50. N.

STEENKIRK, a village of Austrian Haizault, famous for

the victory obtained over William III., in 1692, by the Duke of Luxemburg. It is 15 miles N. of Mons, and 16 W. of Brussels.

STEENWYCK, a strong town of the United Provinces, in Overijssel, seated on the river Aa, 20 miles S.E. of Slooten, and 32 N. of Deventer. Long. 5. 50. E. Lat. 52. 50. N.

STEEVENS (George), an eminent English author, received the early part of his education under the tuition of the Rev. R. Wooddison, at Kingston-upon-Thames, at which school he was contemporary with Gibbon, the historian. He went from thence to Eton. Afterwards he was admitted a fellow-commoner of King's College, Cambridge. He also accepted a commission in the Essex militia, on its first establishment.

In 1766 he published "Twenty of the Plays of Shakspeare," in 4 vols. 8vo. Dr. Johnson had brought out, the preceding year, an edition of our great bard; this induced an interview between the respective commentators: abilities and resources were combined, and the public soon felt the benefit of this conjunction.

The year 1773 saw the first fruits of this great coalition in a complete edition of the poet, in 10 vols. 8vo; which edition, with occasional amendments, was twice reprinted between the years 1773 and 1783.

Mr. Steevens certainly possessed, in an eminent degree, the requisites for his important undertaking. He had studied the age of Shakspeare; he was intimately and perfectly acquainted, not only with the laws, manners, and writings of that period, but he was equally versed in the provincial peculiarities, whether of language or custom, which prevailed in different parts of the kingdom, and particularly in those where Shakspeare passed the first years of his life. Fortune likewise favoured his studies: he had ample pecuniary resources, from which he is known to have expended nearly 200l. in the purchase of curious and illustrative books, while preparing each edition of Shakspeare. He had the second folio of that poet, with notes and alterations of scenes by Charles II. in his own hand; and he was assiduous in enriching his own Shakspeare with 1500 portraits of all the persons in the notes and text: of such productions he was a critical judge, excelling himself in painting, with which he frequently amused his hours. Thus qualified and prepared, he produced, in 1793, that invaluable edition of Shakspeare, then published in 15 vols. 8vo. Uncommon indeed, and fully meriting the countenance which he obtained, were his exertions in the completion of this trust: he gave an instance of editorial activity and perseverance that is without example. To this work he devoted, solely and exclusively of all other attentions, a period of eighteen months; and, during that time, he quitted his house every morning at one o'clock with the Hampstead patrol, and proceeded, regardless of the weather or the season, to the chambers of his friend, Mr. Isaac Reid, in Barnard's-inn, where he was privileged to admit himself, and found a room prepared to receive him, with a sheet of the Shakspeare letter-press ready for correction. There, too, was every book he might wish to consult; and on Mr. Reid's pillow he could apply, on any doubt or sudden suggestion, to a knowledge of English literature perhaps equal to his own. This nocturnal toil greatly accelerated the printing of the work; as, while the printer slept, the editor was awake; and there was a sort of perpetual motion in its progress towards publication; and thus, in less than twenty months, did he complete his last edition of Shakspeare, in fifteen large octavo volumes—an almost incredible labour, which proved the persevering energy of his mind. The edition of Mr. Malone, if we err not, employed nine years. It may not be unnecessary to say, that he read the proofs of *Boydell's* splendid Shakspeare, and

Improvements of the Steam-Engine.

Fig. 1.

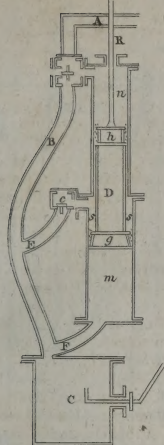


Fig. 2.

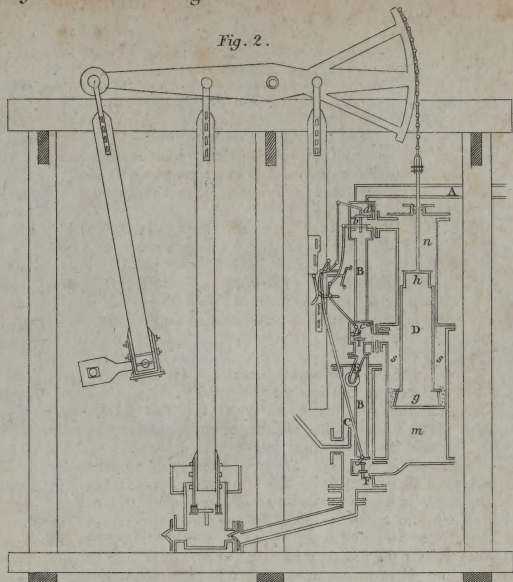


Fig. 5. N° 1.

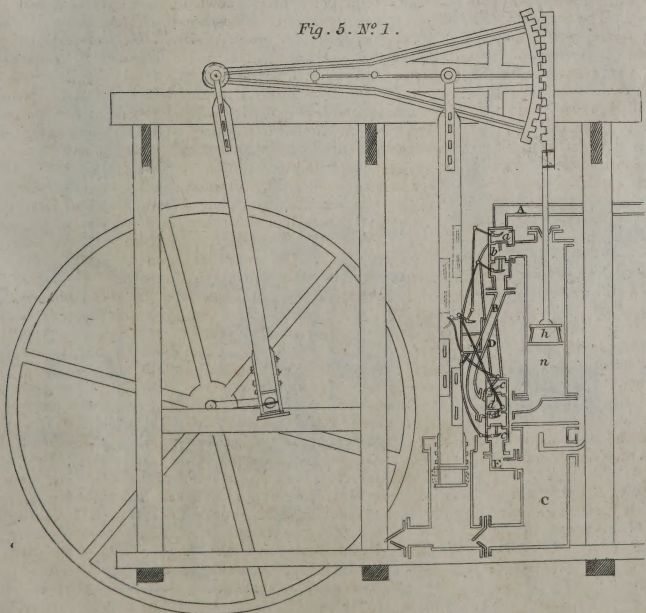


Fig. 5. N° 2.

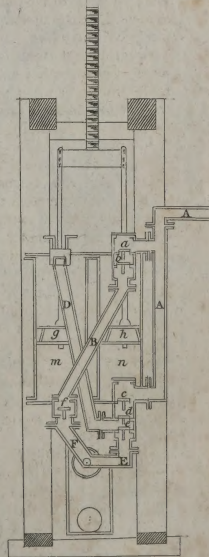


Fig. 4.

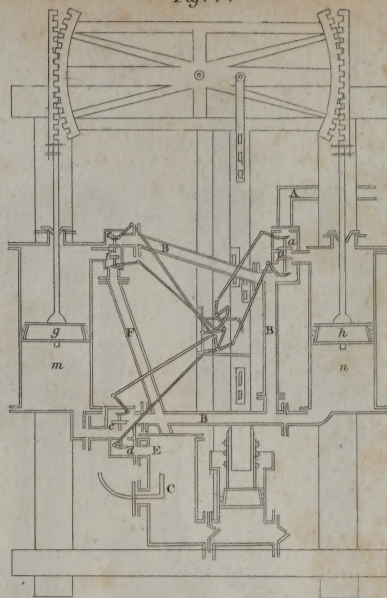


Fig. 3.

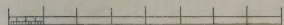
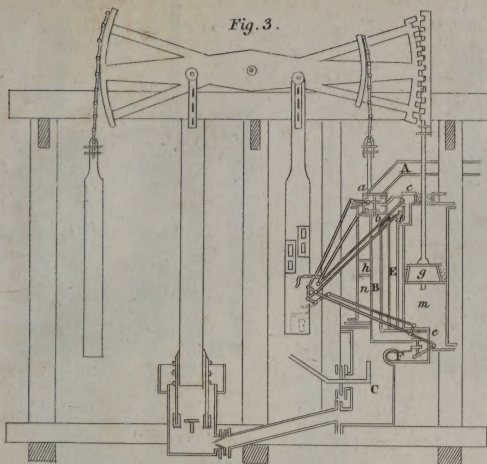


Fig. 6.

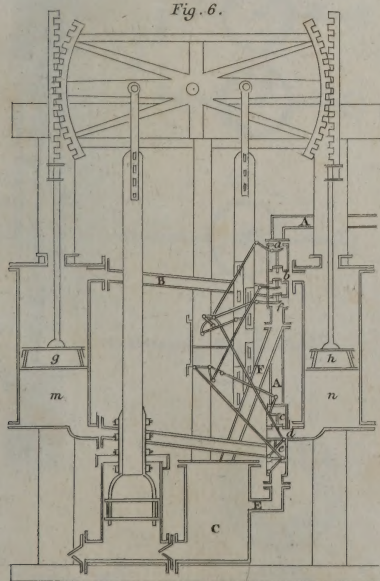


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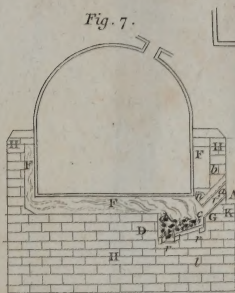


Fig. 8.

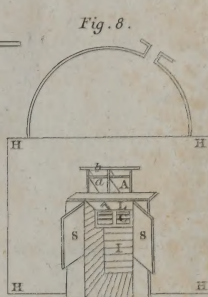


Fig. 10.

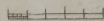
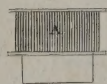
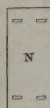


Fig. 9.



M. Murray's Improvements of the Steam-Engine.

Fig. 1.

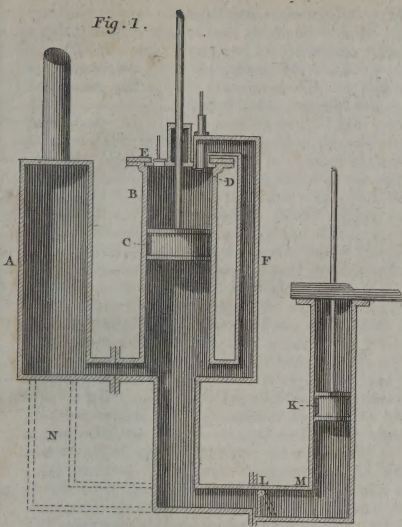


Fig. 2.

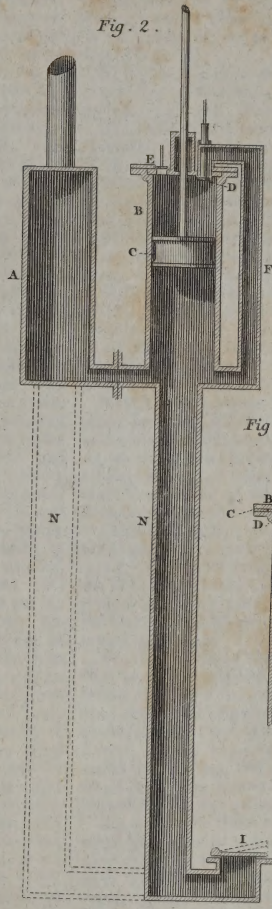


Fig. 3.

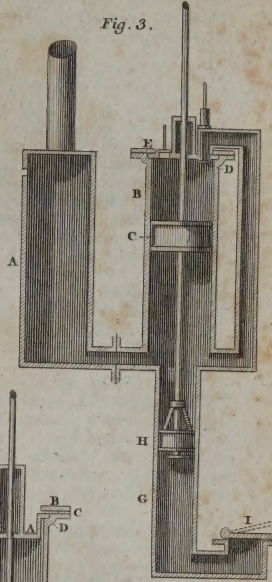


Fig. 4.

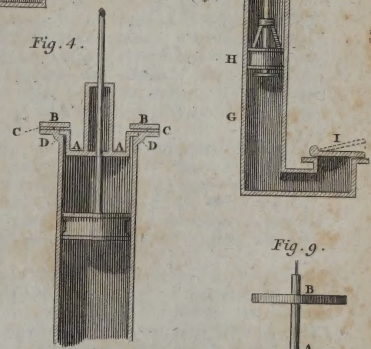


Fig. 5.

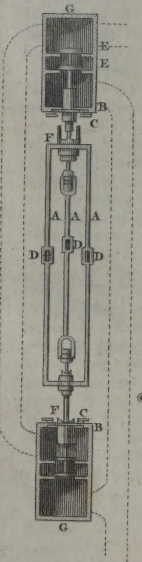


Fig. 6.

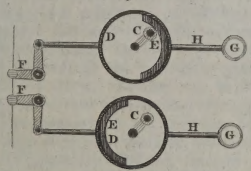


Fig. 7.

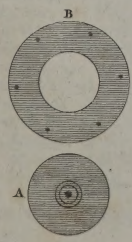
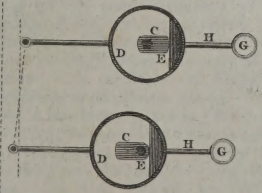


Fig. 11.

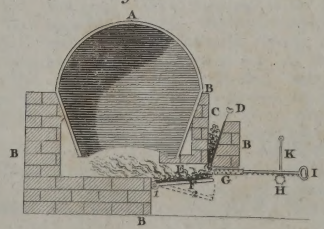


Fig. 9.

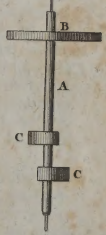


Fig. 8.

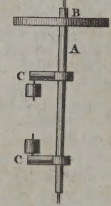
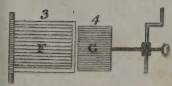
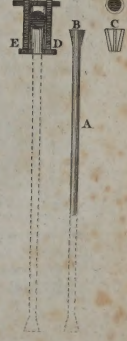


Fig. 10.



that his own large octavo edition is now reprinting. He possessed a strong original genius, and an abundant wit; his imagination was of every colour, and his sentiments were enlivened with the most brilliant expressions. He was also a classic of the first order, and equally acquainted with the belles-lettres of Europe; and he had studied history, ancient and modern, but particularly that of his own country. His conversational allusions to the sciences always evinced the easy familiarity of intimate acquaintance. That he contented himself with being a commentator must have arisen in the habits of his life, and in his devotion to the name with which his own will defend to the latest posterity. Many of his *jeu d'esprit* might probably be collected: of this description are a few fanzas in Dodley's Annual Register, under the title of the "Francic Lover." His manners were singular and eccentric: he never took a pinch of snuff after he lost his box in St. Paul's Church yard, though this recreation had been the custom of his life, and though he was in the habit of making all his memorandums by bits of paper in his box: he would sometimes break off his longest habits, without any offensive reason. Animated and logical in argument, and piquant in wit, his colloquial powers surpassed those of other men; and his jokes, which were remembered by all who heard them, and repeated by all who remembered them, often procured him a kind of malevolent fame which he had by no means justly incurred. He would frequently, in his sportive and almost boyish humours, condescend to a species of ribaldry but little above O'Keefe; indeed, he loved what is called *fun*—a disposition which has a tendency to mischief. As he managed a liberal fortune with discretion, he was enabled to gratify his wishes, which he did without any regard to expence, in forming his distinguished collections of classical learning, literary antiquity, and the arts therewith connected. He bought largely at Sir Clement Dormer's, where he got his Xenophon, worth upwards of 40*l.* for twelve guineas. He was rich in books and prints. Neither was he deficient in generosity: though never fain to give eleemosynary expences to sturdy beggars or sweepers of the crossings, few persons distributed bank-notes with more genuine munificence; and some of his acts of pecuniary kindness, such as could only proceed from a mind adorned with the noblest sentiments of humanity, might be named. Educated at an era when urbanity was the characteristic of a gentleman, he possessed all the graces of exterior accomplishment; all that could soften the asperities of life, and harmonise the social intercourse. Mr. Stevens passed the latter years of his life chiefly at Hampstead in retirement, seldom mixing with society but in bookellers' shops, or in the Shakespeare Gallery, or at the morning conversation of Sir Joseph Banks. When death, by one stroke and in one moment, makes such a dispersion of knowledge and intellect—when such a man is carried to his grave—the mind can feel but one emotion: we consider the vanity of every thing beneath the sun—"we perceive what shadows we are, and what shadows we pursue." Mr. Stevens bequeathed his valuable Shakespeare, illustrated with near 1500 prints, to Lord Spencer; his Hogarth (perfect, with the exception of one or two pieces) he left to Mr. Windham; and his corrected copy of Shakespeare to Mr. Reid, together with a bequest of 200 guineas. His library is become the property of Miss Stevens, his relation, to whom he has left the bulk of his fortune, and who is his residuary legatee. There are only two or three other small legacies in money. Mr. Stevens died in January, 1800.

STEBURG, a sea-port of Sweden, in East Gothland, seated on the Baltic, 25 miles S. of Nöking, and 82 S.W. of Stockholm. Long. 16. 40. E. Lat. 58. 16. N.

STEIN, a small independent town of Switzerland, under

the protection of the canton of Zurich. It is seated on the Rhine, where it issues from the lake of Constance, 15 miles W. of Constance, and 25 N.E. of Zurich. Long. 8. 48. E. Lat. 47. 32. N.

STEINAU, a town of Silesia, capital of a circle, in the principality of Wohlau, 10 miles W.N.W. of Wohlau, and 20 S.E. of Glogau. Long. 16. 50. E. Lat. 52. 23. N.

STEINFURT, a town of Westphalia, in the county of Bentheim, with an academy, seated on the Vecht, 16 miles N.W. of Munster. Long. 7. 41. E. Lat. 12. 15. N.

STEINHEIM, a town of Germany, in the electorate of Mentz, seated on a hill, near the river Maine, with a castle, nine miles from Francfort. Long. 8. 54. E. Lat. 49. 52. N.

STEKE, a town of Denmark, on the N. coast of the isle of Mona, with a castle. It is almost surrounded by a lake. Long. 12. 15. E. Lat. 55. 4. N.

STENAY, a fortified town of France, in the department of Meuse, seated on the river Meuse, 24 miles N. by W. of Verdun. Long. 5. 19. E. Lat. 50. 28. W.

STENDAL, a town of Germany, in the marquise of Brandenburg, seated on the Ucht, 30 miles N. by E. of Magdeburg. Long. 12. 6. E. Lat. 52. 41. N.

STENNIS, a village in the island of Orkney. At this place, between Kirkwall and Stromness, is a curious bridge, or causeway, across a narrow neck of land, between two lakes. At the end of this causeway, some stones of astonishing magnitude, and 20 feet high, have been erected; and there are many huge masses of stone in the neighbourhood, similar to Stonehenge, on Salisbury Plain.

STEREOTYPE, a mode of letter-press printing, in which whole pages of a work are worked off from a solid block of metal, instead of those composed of single letters arranged by the side of each other. An account of the origin and progress of letter-press-plate or stereotype printing, appears in the Philologist Magazine, from which we draw the following particulars.

We have shewn in the article PRINTING, the progressive steps by which typography was brought to that state of perfection to which it has attained. It is a curious fact, however, that all the improvements followed each other in such quick succession, that in a few years from its first invention in Europe, we find the printers in possession of all our common modes of working, and producing specimens of their art, which even now cannot be surpassed. Some of the early-printed missals upon vellum are proofs of this.

But if we have reason to be surprised at the quick steps by which printing with moveable types was perfected, we have more cause to wonder why with the acquisition of moveable types the art became stationary. The transition from solid pages, cut at an expence and labour beyond the value of the interest of any capital that could be required to be sunk in printing an edition of any work, made it a desirable object to devise means for making the same letters do over and over, not only for different sheets in succession of the same work, but for subsequent publications. Hence came the first moveable types; which, however, as we have already observed, were all cut singly. The success which followed the attempts made to lessen this labour of cutting, by making well-formed letters, once cut, serve for ever, by the facility of multiplication which founding afforded, ought, one would think, instantly to have led to a further improvement. If founding could be applied to single letters, why not to pages, to get rid of a sacrifice of capital submitted to at first, because of the enormous expence of block cutting! *Founding of pages*, on the first view of it, promises many advantages in point of economy; and to science it holds out what can never otherwise be obtained—the possibility of procuring in a short time

immaculate editions. From books cast into solid pages, no more copies would be printed than might be wanted for immediate sale; the money thus saved from being sunk in paper, to be piled up in warehouses for years, as at present, would serve as surplus capital to print other works; and thus the printer, his workmen, and the bookfellers, would all be benefited; (for it would be easy to prove, did our present limits allow it, that not only the business of the pressmen, but of the compositors, would be materially benefited and increased by the general adoption of such an improvement); and all errors, as soon as discovered, could be rectified in the plates, to prevent them from appearing in after copies, instead of running through a large edition as at present.

It appears that this art, or one extremely similar, was practised many years by Mr. Foulis, and before him by Mr. Ged, concerning whom Mr. Nicholls has published an interesting pamphlet, entitled *Biographical Memoirs of William Ged*; including a particular account of his progress in the art of block-printing, 1781. The first part of the pamphlet was printed from a MS. dictated by Ged, some time before his death: the second part, written by his daughter, for whose benefit the profits of the publication were intended: the third was a copy of proposals that had been published by Mr. Ged's son, in 1751, for reviving his father's art; and to the whole was added, Mr. Mores's narrative of block-printing.

From this publication it appears, that so far back as the year 1725 Mr. Ged had begun to prosecute plate-making. In 1727 he entered into a contract with a person who had a little capital, but who, on conversing with some printer, got so intimidated, that at the end of two years he had laid out only 22l. In 1729 he entered into a new contract with a Mr. Fenner, Thomas James a type-founder, and John James the architect; and some time after, a privilege was obtained from the university of Cambridge to print Bibles and Prayer-books. But it appears that one of his partners was actually averse to the success of the plan, and engaged such people for the work as he thought most likely to spoil it. A straggling workman who had wrought there, informed Mr. Mores, that both Bibles and Common-prayer books had been printed, but that the compositors when they corrected one fault, made purposely half a dozen more, and the pressmen, when the masters were absent, battered the letter, in aid of the compositors. In consequence of these base proceedings, the books were suppressed by authority, and the plates sent to the king's printing-house, and from thence to Mr. Caillon's foundry.

After much ill usage, Ged, who appears to have been a person of great honesty and simplicity, returned to Edinburgh. His friends were anxious that a specimen of his art should be published, which was at last done by subscription. His son, James Ged, who had been apprenticed to a printer, with the consent of his master, set up the forms in the night-time, when the other compositors were gone, for his father to cast the plates from; by which means, Sallust was finished in 1736.

Besides the Sallust, another work, printed some years after, from plates of Mr. Ged's manufacture, is *The Life of God in the Soul of Man*, printed on a writing-pot, 12mo, and with the following imprint: Newcastle: printed and sold by John White, from plates made by William Ged, goldsmith in Edinburgh, MDCCLXII. It is a very neat little volume, and is as well printed as books generally were at the time. By the writer of this account, in conjunction with Mr. Foulis, of Glasgow, several small volumes were actually printed from plates of the stereotype, and the editions sold to the trade without any intimation of their being printed out of the

common way. The first essays were, in the lowest sense of the word, common: one or two small histories, and a cheap edition of the *Economy of Human Life*. They also printed a Greek volume, Xenophon's *Anabasis*, 1783; and had plates for several small volumes of the *English Poets* almost finished, but the latter were never put to press.

Twice, then, had this art been invented and practised in Britain, when about three years ago, Didot, the celebrated French printer, applied it to logarithmic tables, and afterwards to several of the Latin classics, and to various French publications, which he has executed with considerable accuracy. The press-work has been carefully attended to, and does great credit to the printer. Indeed, after what Didot has done, clamour and prejudice will attempt in vain, in future, to decry letter-press-plate, and his name will always be mentioned as a principal promoter of this useful art, the introduction of which will be marked as a distinct era in the history of printing. Some of his countrymen indeed (for we cannot suppose Didot would attempt it) wish to ascribe to him the whole merit of the invention, and to have it believed that it originated with himself. The facts stated, shew with how little justice this claim is made. It is true he may have discovered, for himself, the secret of the art; but it is hardly credible that he could be ignorant of Ged's progress, and of Foulis's, especially as it is well known that, when patents are obtained, a specification of the process is obliged to be put upon record, of which any one may obtain an office copy at a small expence.

Having stated what relates immediately to the invention of modern stereotype, it would not be ingenuous were we not to state that claims have been set up in favour of a Dutchman as having practised the art even prior to Ged. The following extract, translated from *Nieuw Algemeen Konst en Letter Boek*, 1798, No. 232, will put our readers in possession of all we have yet met with respecting this printer.

"Above a hundred years ago, the Dutch were in possession of the art of printing with solid or fixed types, which in every respect was superior to that of Didot's stereotype. It may, however, be readily comprehended that these letters were not cut in so elegant a manner, especially when we reflect on the progress which typography has made since that period. Samuel and J. Leuchtmans, bookfellers at Leyden, have still in their possession the forms of a quarto Bible which were constructed in this ingenious manner. Many thousand impressions were thrown off, which are in every body's hands, and the letters are still good.

"The inventor of this useful art was J. Vander Mey, father of the well-known painter of that name. About the end of the 16th century he resided at Leyden. With the assistance of Muller, the clergyman of the German congregation there, who carefully superintended the correction, he prepared and cast the plates for the above-mentioned quarto Bible. This Bible he published also in folio, with large margins ornamented with figures, the forms of which are still in the hands of Elwe, bookfeller at Amsterdam: also an English New Testament, and Schaaf's Syriac Dictionary, the forms of which were melted down; and likewise a small Greek Testament, in 18mo.

"As far as is known, Vander Mey printed nothing else in this manner; and the art of preparing solid blocks was lost at his death, or, at least, was not afterwards employed. The cause may readily be conceived; for, though this process in itself is very advantageous, it is far more expensive than the usual method of printing, except in those cases when such works are to be printed as are indispensably necessary, and of standing worth. The number of these, however, is certainly small; especially as we are acquainted with no instance

in the annals of Dutch printing, that any dependance can be placed on the sale of 150,000 copies, as was the case with the brothers Guyot.²⁹

The publisher of the preceding notice supposes, nay, asserts, that the expense of stereotype precludes its use, except in such instances as those adopted by Didot.

STEREOMETER, an instrument lately invented in France, for measuring the volume of a body, however irregular, without plunging it in any liquid. If the capacity of a vessel, or, which is the same thing, the volume of air contained in that vessel, be measured, when the vessel contains air only, and also when the vessel contains a body whose volume is required to be known, the volume of air ascertained by the first measurement, deducting the volume ascertained by the second, will be the volume of the body itself. Again, if it be admitted as a law, that the volume of any mass of air be inversely as the pressure to which it is subjected, the temperature being supposed constant, it will be easy to deduce, from the mathematical relations of quantity; the whole bulk, provided the difference between the two bulks under two known pressures be obtained by experiment.

Let it be supposed, for example, that the first pressure is double the second, or, which follows as a consequence, that the second volume of the air be double the first, and that the difference be fifty cubic inches, it is evident that the first volume of the air will likewise be fifty cubic inches. The stereometer is intended to ascertain this difference at two known pressures.

The instrument is a kind of funnel AB (fig. 1, Pl. 45.), composed of a capsule A, in which the body is placed, and a tube B, as uniform in the bore as can be procured. The upper edge of the capsule is ground with emery, in order that it may be hermetically closed with a glass cover M, slightly greased. A double scale is pasted on the tube, having two sets of graduations; one to indicate the length, and the other the capacities, as determined by experiment.

When this instrument is used, it must be plunged in a vessel of mercury, with the tube very upright, until the mercury rises within and without to a point C of the scale. See fig. 2.

The capsule is then closed with the cover, which being greased, will prevent all communication between the external air, and that contained within the capsule and tube.

In this situation of the instrument, in which the mercury stands at the same height within and without the tube, the internal air is compressed by the weight of the atmosphere, which is known and expressed by the length of the mercury in the tube of the common barometer.

The instrument is then to be elevated, taking care to keep the tube constantly in the vertical position. It is represented in this situation, fig. 2. second position. The mercury descends in the tube, but not to the level of the external surface, and a column DE of mercury remains suspended in the tube, the height of which is known by the scale. The interior air is therefore less compressed than before, the increase of its volume being equal to the whole capacity of the tube from C to D, which is indicated by the second scale.

It is known, therefore, that the pressures are in proportion to the barometrical column, and to the same column diminished by the subtraction of DE. And the bulks of the air in these two states are inversely in the same proportion; and again the difference between these bulks is the absolute quantity left void in the tube, by the fall of the mercury; from which data, by an easy analytical process, the following rule is deduced: multiply the number which expresses the less pressure by that which denotes the augmentation of capacity,

and divide the product by the number which denotes the difference of the pressures. The quotient will be the bulk of the air when subject to the greater pressure.

To render this more easy by an example, suppose the height of the mercury in the barometer to be 78 centimetres, and the instrument being empty, to be plunged in the mercury to the point C. It is then covered, and raised until the small column of mercury DE is suspended, for example, at the height of six centimetres. The internal air, which was at first compressed by a force represented by 78 centimetres, is now compressed only by a force represented by 78—6, or 72 centimetres.

Suppose it to be observed, at the same time, by means of the graduations of the second scale, that the capacity of the part CD of the tube which the mercury has quitted is two cubic centimetres. Then by the rule 72×2 give 24 cubical centimetres, which is the volume of the air included in the instrument when the mercury rose as high as C in the tube.

The body of which the volume is to be ascertained, must then be placed in the capsule, and the operation repeated. Suppose, in this case, the column of mercury suspended to be eight centimetres, when the capacity of the part CD of the tube is equal to two centimetres cube. Then the greatest pressure being denoted by 78 centimetres, as before, the least will be 70 centimetres, the difference of the pressures being 8, and the difference of the volumes two cubical centimetres. Hence 70×2 , gives the bulk of the included air under the greatest pressure 175 cubical centimetres. If therefore 175 centimetres be taken from 24 centimetres, or the capacity of the instruments when empty, the difference 65 cubical centimetres will express the volume of the body which was introduced. And if the absolute weight of the body be multiplied by its bulk in centimetres, and divided by the absolute weight of one cubic centimetre of distilled water, the quotient will express the specific gravity of the body in the common form of the tables where distilled water is taken as unity, or the term of comparison.

After this description and explanation of the use of his instrument, the author proceeds with the candour and acuteness of a philosopher to ascertain the limits of error in the results; an object seldom sufficiently attended to in the investigation of natural phenomena. From his results it appears, that with the dimensions he has assumed, and the method prescribed for operating, the errors may affect the second figure. He likewise gives the formulæ, by means of which the instrument itself may be made to supply the want of a barometer in ascertaining the greatest pressure.—He likewise adverts to the errors which may be produced by change of temperature. To prevent these as much as possible, the actual form of the instrument and arrangements of its auxiliary parts are settled, as in fig. 3, by which means the approach of the hand near the vessel and its tube is avoided. In this figure, the vertical position of the tube is secured by the suspension of the vessel, and a perforation in the table through which the tube passes. The table itself supports the capsule in its first position, namely, that at which the cover is required to be put on.

Mr. Nicholson, from whose Journal this abstract is immediately taken, supposes, with great probability, that the author of the invention had not finished his meditation on the subject, when the memoir giving an account of it was published. "If he had," says the ingenious journalist, "it is likely that he would have determined his pressures, as well as the measures of bulks, by weight. For it may be easily understood, that if the whole instrument were set to its positions by suspending it to one arm of a balance at H (fig. 3), the

quantity of counterpoise, when in equilibrio, might be applied to determine the pressures to a degree of accuracy much greater than can be obtained by linear measurement.

STERNBERG, a town of Germany, in the marquisate of Brandenburg. It carries on a great commerce in cattle, and is 20 miles N. E. of Francfort on the Oder. Long. 15. 11. E. Lat. 52. 30. N.

STERNBERG, a town of Lower Saxony, in the duchy of Mecklenburg, 16 miles S.E. of Wismar. Long. 11. 50. E. Lat. 53. 45. N.

STERTZINGEN, a town of Germany, in the Tyrol, seated at the foot of a mountain, on the river Eyloch, 12 miles N.W. of Brixen.

STEVENSWAERT, a fortress of Dutch Guelderland, seated on the Maese, 20 miles N.E. of Maestricht.

STEWART'S ISLANDS, five islands in the Pacific Ocean, discovered by Captain Hunter, in 1791, and named by him in honour of Admiral Keith Stewart. Long. 163. 18. E. Lat. 8. 26. S.

STEYNING, a borough in Suffex, with a market on Wednesday. It sends two members to parliament, and is 15 miles W. of Lewes, and 51 S. by W. of London. Long. 0. 15. W. Lat. 50. 56. N.

STEYRE, a town of Upper Austria, in the quarter of Traun. It carries on a great trade in iron, and is seated at the confluence of the Steyre and Enns, 20 miles S.E. of Linz. Long. 14. 23. E. Lat. 48. 6. N.

STEYREGG, a town of the archduchy of Austria, 36 miles E.S.E. of Passau, and 84 W. of Vienna. Long. 15. 20. E. Lat. 48. 15. N.

STICKHAUSEN, a town and citadel of Westphalia, in the county of E. Friesland, 18 miles E.S.E. of Emden. Long. 7. 13. E. Lat. 53. 14. N.

STILIGIANO, a town of Naples, in Basilicata, famous for its baths, and seated near the river Salandrella.

STIRUP; see *SADDLE, Supp.*

STIRUM, a town of Germany, in the duchy of Berg, seated on the Roer, 12 miles N. of Duffeldorp. Long. 6. 52. E. Lat. 51. 24. N.

STOCHEM, a town of Germany, in the bishopric of Liege, seated on the Maese, 12 miles N. of Maestricht. Long. 5. 42. E. Lat. 51. 4. N.

STOCKACH, a town of Suabia, in the landgrate of Nellenburg. Near this town, on March 25, 1799, the Archduke Charles gained a victory over the French, under General Jourdan. It is seated on a river of the same name, 12 miles N. of Constance. Long. 9. 10. E. Lat. 47. 50. N.

STOCKERAU, a town of the archduchy of Austria, situate on the Danube, six miles N.W. of Neuberg.

STOCKPORT, a town in Cheshire, with a market on Friday. It has a considerable manufacture of cotton and printed goods, and is seated on the Mersey, six miles S. of Manchester, and 175 N.N.W. of London. Long. 2. 18. W. Lat. 55. 35. N.

STOCKZOW, a town of Silesia, in the principality of Teschen, seated on the Vistula, 12 miles S.E. of Teschen. Long. 18. 32. E. Lat. 49. 45. N.

STOKESLEY, a town in the N. riding of Yorkshire, with a market on Saturday, 36 miles N. of York, and 239 N. by W. of London. Long. 1. 2. W. Lat. 54. 29. N.

STOLHOFFEN, a town of Suabia, in the marquisate of Baden, seated in a morass, near the Rhine, eight miles S.W. of Baden, and 12 N.E. of Straßburg. Long. 8. 10. E. Lat. 48. 41. N.

STOLPEN, a town of Upper Saxony, in Prussian Pomerania, seated in a valley, on a river of the same name, 50

miles N.E. of Colberg, and 66 N.W. of Dantzic. Long. 16. 45. E. Lat. 54. 32. N.

STONE, a town in Staffordshire, with a market on Tuesday, seated on the Trent, seven miles N. by W. of Stafford, and 140 N.W. of London. Long. 2. 6. W. Lat. 52. 54. N.

STONEHAVEN, or **STONEHIVE**, a town in Kincardineshire, with a good harbour secured by a stone pier. Near it are the ruins of the castle of Dunnotyre, on a lofty perpendicular rock, almost surrounded by the sea. Not far hence, is a precipitous cliff, called Fowl's Cleugh, remarkable for the resort of the birds called kittiwakes, the young of which are much fought after in the hatching season. In this town is a manufacture of canvas, and some trade in dried fish and oil. It is 14 miles S. by W. of Aberdeen.

STORKAU, a town of Upper Saxony, in the Ucker marche of Brandenburg, 24 miles E.S.E. of Berlin, and 26 W.S.W. of Frankfort on the Oder. Long. 13. 35. E. Lat. 52. 24. N.

STORMARIA, a principality in the duchy of Holstein, bounded on the N. by Holstein Proper, on the E. by Wageria and Lauenburg, and on the S. and W. by Lüneburg and Bremen, from which it is separated by the Elbe. Glückstadt is the capital.

STOSSEN, a town of Upper Saxony, in Thuringia, six miles S. of Weissenfels, and six S.E. of Naumburg.

STOURBRIDGE, a town in Worcesterhire, with a market on Friday. It is noted for its glass and iron works; and is seated on the Stour, over which is a bridge; 22 miles N. of Worcester, and 124 N.W. of London. Long. 2. 0. W. Lat. 52. 32. N.

STOURMINSTER, a town in Dorsetshire, with a market on Thursday. Near it are the ruins of an ancient castle, which was the seat of the W. Saxon kings. It is seated on the Stour, over which is a stone bridge, 20 miles N.E. of Dorchester, and 111 W. by S. of London. Long. 2. 37. W. Lat. 50. 56. N.

STOVE (*Encycl.*). In the *Annales de Chimie*, Citizen Guyton has given an account of the stoves used in Sweden, with apertures emitting heat.

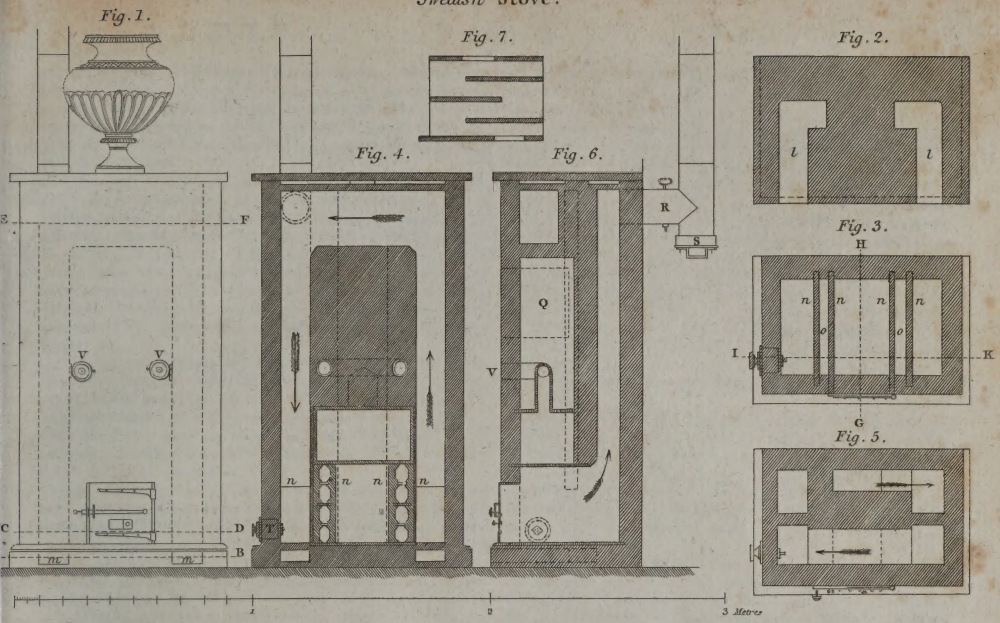
"It is well known," says he, "by the accounts of travellers, that the cold felt in Sweden, during a common winter, exceeds by several degrees that of our most severe winters in France; and yet in no country do the inhabitants defend themselves from the inclemency of the season at a smaller expence. But though these facts are well known, we cannot accumulate too many documents and proofs, when we would convert a vague tradition into a certain conviction, and induce mankind to abandon any ancient long-established custom."

"As to the construction of these stoves, the authors I have examined observe, that it costs very little, saves much of the iron formerly employed, and only requires bricks or square tiles."

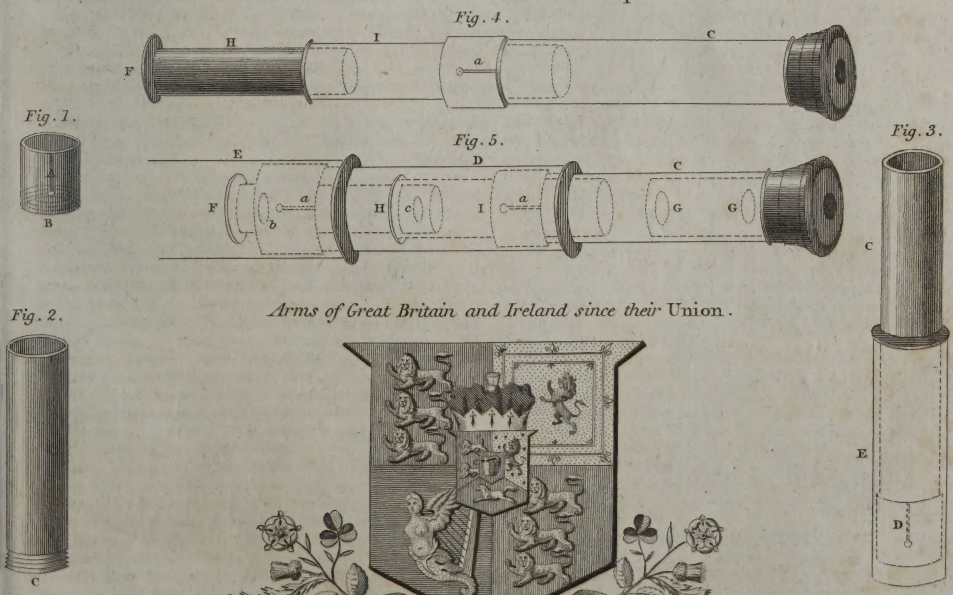
"They recommend laying them on their broadest side (de champ), to choose them as thin as possible for the interior walls, and to place the circulating flues so that the rain that falls down the flues of the chimney may never find its way into them."

"They also give some directions relative to the feeding these stoves, which is so easy, that in the largest public establishments, a single individual lights all the fires. This supply consists in putting in as much wood as the fire-place, which is very small, will hold, in only introducing sawed wood of equal length, and as soon as it is burnt, shutting the slide that cuts off the communication of the circulating flues with the chimney-flue; by which means, all the heat the fuel has produced, is retained in these channels, escaping slowly, and so

Swedish Stove.



M^r. Adams's Portable Telescope.



Arms of Great Britain and Ireland since their Union.



as only to spread itself through the apartment; whereas any piece of wood that could not have burnt out in an equal space of time, would require the flue to continue open, and the current of air necessary for its combustion would carry off, through the flue of the chimney, the greater part of the heat at first produced."

References to Plate 51.—Fig. 1, represents a front view of the stove, its height being 166 centimetres, or about 61 inches French, exclusive of the vase, which is merely an unconnected ornament standing on the flat surface at top. Its breadth is 85 centims, or about 31 $\frac{1}{2}$ inches French; its depth is 58 centimetres, or about 21 $\frac{1}{2}$ inches French; the height may vary according to that of the room, and may without inconvenience be extended to two metres. It may also be reduced for a laboratory stove, which ought to have a sand-bath breast-high.

The two other dimensions are determined by those of the bricks employed in constructing the internal circulating flues, which bricks ought to be, in certain fixed proportions, that the smoke may pass freely, and yet that it may not be accompanied by a quantity of air sufficient to condense it, or to lower the temperature below the degree of heat requisite for its complete combustion.

V.V. The external furniture of the two heating apertures; *mm*, apertures where the air enters, which afterwards issues from the heating apertures. These are closed whenever the air is brought in from without by a connected tube under the floor; which is far more favourable to the renewal of the respirable air of the apartment, and prevents the danger arising from currents of cold air attracted by the fire-place; which becomes necessary, whenever the volume of air in the apartment is insufficient to supply at once the consumption of the fire and the circulation in the heating tubes.

Fig. 2, is the plan of the foundation of the hearth at the line *AB*, in fig. 1; *ll*, are the vacancies to receive and conduct the air into the compartments where it is to be heated, previous to its issuing from the heating apertures, whether it be brought from without or through the apertures *mm*, in fig. 1.

Fig. 3, is a plan at the line *CD*, in fig. 1, that is below the door of the fire-place; *nn, nn*, the double cast-iron plates forming the compartments, where the air receives heat from the fire; *oo*, vacancies between these iron plates.

Fig. 4, is a front section at the line *IK* in fig. 3, the darts shewing the direction of the smoke in the circulating flues in front. The iron plates *nn*, are here again represented in their perpendicular position, with the tongues that form the compartments on each side of the fire-place. One of these plates is represented in front, fig. 7; *T*, is an aperture reserved at the bottom of the fourth circulating flue, to establish, if needful, the draught of air in the fire-place, by burning a few slips of paper, or other light combustible substance. This precaution, however, may be neglected, as soon as the stove has been sufficiently heated to expel all its internal moisture.

The door of this air-pump, as it were, must shut accurately. For this purpose it is enough to cut a piece of brick, which may be pierced so as to receive a handle, and affix upon it a piece of wrought iron as a covering.

Fig. 5, is a plan taken at the line *EF*, in fig. 1.

Fig. 6, is a lateral section at the line *GH*, in fig. 3, shewing the height of the fire-place, and the first direction of the flame. *V*, shews the disposal of the heating-flues: the dotted lines shew in profile, the partitions forming the four great circulating-flues; *R*, the tube that conveys the smoke from the circulating flues into the chimney, being furnished with a key to intercept the communication. This is a common flue-pipe of plate-iron; but it would be more advantageous to

use, in that part where the slide or stopple acts, some substance that is a worse conductor of heat, as for instance, a pipe made on purpose, of earthen-ware.

The angle formed by this tube in its way to the chimney, renders it unnecessary to repeat, that the first condition is that the body of the stove be detached from the wall. That now describing, is 25 centimetres from the nearest point of the niche where it stands; *S*, is an elongation of the perpendicular tube which enters the chimney; it is intended as a receptacle for the water that may be condensed in the upper part, and to prevent its penetrating into the interior of the stove. The cover that terminates this elongation, facilitates the cleaning the pipe without taking it to pieces. The dotted lines forming the square space *Q*, shew the place where a niche or oven, which actually exists in some of the Swedish stoves, may be fixed, and which advantageously varies the masonry-work that would otherwise fill that space. All these figures being drawn on the same scale, the proportions may be easily preferred throughout.

The construction of this stove is neither difficult nor expensive. The external surface may be coated with china tiles similar to those used in common stoves, that is to say, thin in the middle, and with a rim all round; which renders them more firm. They may also be fixed by a plate of metal in form of a girt. The back may be plain brick. The vase which stands on a slab of marble, or stone, is only an ornament.

In case heating apertures should not be wanted, the whole internal part may be built of bricks, of a convenient shape, cemented with diluted potters'-earth, and laid on their broad surface (*de champ*) for the circulating flues, without any other iron-work than a cast-iron plate over the fire-place, the door, and its frame.

The additional expense attending the heating-aperture, consists merely of the four cast-iron plates, with their tongues and grooves to form the compartments represented in fig. 7. All the rest is made of iron rolled and nailed; which being once bedded in brick-work, can never suffer the air to escape.

These iron plates with grooves, have been well known since the adoption of Dr. Franklin's stove, and there is an engraving of them in his works; but if there be any difficulty in procuring them, the deficiency may be supplied in two ways:

1st. By ends of cast-iron pipes placed vertically between each other, thus serving as sides to the fire-place, and communicating with each other by small channels above and below, constructed in the brick-work.

2d. By common smooth cast-iron plates, soft enough to be pierced with a drill, in order to affix, with rivetted nails, wrought iron-plates bent into squares throughout their length, which are a complete substitute for the tongues and channels in cast-iron, and as they are never exposed to the flame, there is no danger of their failing.

It may easily be perceived that this last method is the most advantageous, because it occupies less space, and yet offers a larger surface to receive the heat and communicate it to the air; but there are many objections to stoves of this kind.

STOWLEY, a town in Somersetshire, with a market on Tuesday, seven miles W. by N. of Bridgewater, and 145 W. by S. of London. Long. 3. 9. W. Lat. 51. 10. N.

STRABANE, a town of Ireland, in the county of Tyrone, situate on the Mourne, 11 miles S.S.W. of Londonderry, Long. 7. 19. W. Lat. 54. 50. N.

STRADELLA, a strong town of Italy, in the Milanese, with a castle, seated on the Verfa, near the Po, 10 miles S.E. of Pavia, and 47 N.W. of Parma. Long. 9. 12. E. Lat. 45. 5. N.

STRALEN, a town of the Netherlands, in Prussian Guel-

derland, five miles S.W. of Gueldres. Long. 5. 57. E. Lat. 51. 23. N.

STRANGFORD, a sea-port of Ireland, in the county of Down, seated on the narrow channel that connects Lough Strangford with the Irish Sea, seven miles E. of Down. Long. 5. 20. W. Lat. 54. 31. N.

STRANGFORD, LOUGH, a deep inlet of the sea, in the county of Down, on the E. coast of Ireland. It is 17 miles long, and five broad, and abounds with excellent fish, particularly smelts; and off the bar, about August, is a periodical herring fishery. The bar, or entrance into it from the Irish Sea, is three miles below Strangford. It contains 54 islands, that have names, and many others that are nameless. The burning of kelp profitably employs a great number of hands in these islands. Four of them are called Swan Islands, from the number of swans that frequent them.

STRATFORD-ON-AVON, a corporate town in Warwickshire, with a market on Thursday. It is memorable as the birth-place of Shakspere, who was buried there in 1616. It is governed by a mayor, and seated on the Avon, over which is a stone bridge, eight miles S.W. of Warwick, and 94 N.W. of London. Long. 1. 44. W. Lat. 52. 15. N.

STRATFORD, FENNY, a town in Buckinghamshire, with a market on Monday, seated on the Roman Watling-street, 12 miles E. of Buckingham, and 45 N.W. of London. Long. 0. 42. W. Lat. 51. 58. N.

STRATFORD, ST. MARY'S, a considerable village in Suffolk, which has a share in the woollen manufacture. It is 12 miles S.W. of Ipswich.

STRATFORD, STONY, an ancient town in Buckinghamshire, with a market on Friday. It has two churches; and is seated on the Ouse, and on the Roman highway, called Watling-street, eight miles N.E. of Buckingham, and 52 N.W. of London. Long. 0. 50. W. Lat. 52. 3. N.

STRATTON, a town in Cornwall, with a market on Tuesday. It is seated between two rivulets, which here unite and fall into the Bristol Channel at a small distance. It is 18 miles N.W. of Launceston, and 221 W. by S. of London. Long. 4. 43. W. Lat. 50. 55. N.

STRAUBINGEN, a town of Bavaria, capital of a territory of the same name. It is a large place, with broad streets, handsome churches, and fine convents. It was taken, in 1743, by the Austrians, who demolished the fortification; but it was restored in 1745. It is seated on the Danube, 22 miles S.E. of Ratibon, and 65 N.E. of Munich. Long. 12. 35. E. Lat. 48. 54. N.

STREBLA, a town of Upper Saxony, near which the Prussians were defeated by the Austrians in 1760. It is seated on the Elbe, 14 miles N.W. of Meissen, and 28 N.W. of Dresden. Long. 23. 15. E. Lat. 51. 30. N.

STRELITZ, OLD, a town of Lower Saxony, in the duchy of Mecklenburg Strelitz. It had a palace, which was burnt down in the night, in 1712; Duke Adolphus Frederic III. and his family, narrowly escaping. It is seated in a plain, almost surrounded by morasses, 55 miles S.W. of New Brandenburg.

STRELITZ, NEW, a town in the duchy of Mecklenburg Strelitz, which owes its origin to the destruction of the dual palace in Old Strelitz; in consequence of which, Duke Adolphus Frederic III. began to erect a magnificent palace, two miles from the site of the old one, at a place called Glienke, which was before his hunting seat; and, in 1733, he founded a new town adjoining to the palace, and ordered it to be called New Strelitz. It is regularly planned in the form of a star. The centre is a spacious market-place, and thence a number of streets branch out in straight lines. The

chief street leads to the palace, and the next to a pleasant lake.

STRENG, or **STRENGUES**, a town of Sweden, in Sudermania, with a bishop's see, and a college. It is seated on the lake Macler, 30 miles W. of Stockholm. Long. 17. 40. E. Lat. 59. 20. N.

STRIEGAU, a town of Silesia, in the principality of Schwidnitz, nine miles N.W. of Schwidnitz.

STROEMSHOLM, a town of Sweden, in Westmanland, situate on the lake Malar, 45 miles S.W. of Upsal. Long. 16. 24. E. Lat. 59. 30. N.

STROMBERG, a town of Westphalia, capital of a small district, in the bishopric of Munster. It is 20 miles S.E. of Munster, and 20 N.W. of Paderborn. Long. 7. 43. E. Lat. 51. 45. N.

STROMBERG, a town of Germany, in the palatinate of the Rhine, 26 miles W. of Mentz, and 48 E. of Treves. Long. 7. 21. E. Lat. 49. 57. N.

STROMSOE, a town of Norway, in the province of Aggerhus, 18 miles S.W. of Christiania. Long. 20. 20. E. Lat. 59. 43. N.

STROMSTADT, a town of Sweden, in the province of W. Gothland, celebrated for its shell-fish. Long. 11. 4. E. Lat. 59. 43. N.

STUHLWEISSENBERG, a strong town of Lower Hungary, capital of Ekekeridegwar. It had the title of regalis, or royal, because formerly the kings were crowned and buried here. It has been several times taken by the Turks, but has been in the hands of the house of Austria ever since 1688. It is seated on the Raauza, 20 miles S.W. of Buda, and 162 N. by W. of Belgrade. Long. 18. 40. E. Lat. 47. 19. N.

STULINGEN, a town of Suabia, subject to the Duke of Furttenberg, with a castle, 35 miles W. of Constance. Long. 8. 24. E. Lat. 47. 45. N.

STUTTGART, a city of Suabia, capital of the duchy of Wirtemberg. It is surrounded by walls and ditches, and has an ancient castle, with a rich cabinet of curiosities, a ducal palace, an orphan house, and a college. The streets are narrow in the city, and the houses generally of wood; but there are fine houses, and straight streets, in one of the suburbs. Stuttgart was taken by the French in June, 1796. It is seated in a plain among mountains, near the river Neckar, 36 miles E. of Baden, and 52 N.E. of Straßburg. Long. 9. 10. E. Lat. 48. 50. N.

SUANES, **SUANI**, or **SUANERI**, a poor and simple people of Asia, who inhabit one of the four divisions of Imeritia. They subsist by raising cattle, and by a little agriculture.

SUAQAM, a sea-port of the country of Abex, seated on a small island of the same name, on the W. side of the Red Sea. It is the residence of a Turkish governor under the Bashaw of Cairo, and was once a very flourishing place, but is now gone to decay. Long. 37. 55. E. Lat. 19. 56. N.

SUBBIACO, a town of Italy, in Campagna di Roma, with a castle, seated on the Teverone, 33 miles E. of Rome.

SUCCESS BAY, a bay of Tierra del Fuego. The S. promontory, at its entrance, called Cape Success, is 10 long. 65. 27. W. Lat. 55. 1. S.

SUCHTELEN, a town of Westphalia, in the duchy of Juliers, 12 miles E. of Rurmonde, and 21 N. of Juliers. Long. 6. 2. E. Lat. 51. 18. N.

SUDERHAMN, a town of Sweden, in the province of Hellingland. It has a considerable trade in linen, butter, timber, and flax. It is situate at the mouth of a river, near

the gulf of Bothnia, 20 miles N. of Gelle. Long. 17. 5. E. Lat. 63. 20. N.

SUDERKÖPING, a town of Sweden, in E. Gothland, 10 miles S. of Nordkoping, and 90 S.W. of Stockholm. Long. 15. 56. E. Lat. 58. 19. N.

SUDERMANIA, or **SUDERMANLAND**, a province of Sweden Proper, 62 miles long, and 42 broad; bounded on the N. by Upland and Wettermania, on the E. by the peninsula of Tarlo, on the S. by the Baltic, and on the W. by Nerica. It is the most populous part in Sweden, and abounds in corn, and mines of divers metals. Níkingop is the capital.

SUDERTELGE, a town of Sweden, in the province of Sudermania. It was formerly a considerable staple town, and has still a manufacture of worsted and silk stockings. It is 16 miles W.S.W. of Stockholm. Long. 18. 0. E. Lat. 59. 10. N.

SVENSBORG, a sea-port of Denmark, in the island of Funen, with the best harbour in the island. Here are manufactures of woollen and linen. It is 22 miles S. of Odensee. Long. 10. 37. E. Lat. 55. 9. N.

SUGELMESSA, or **SIGELMESSA**, a province of Barbary, bounded on the S. by the kingdom of Taflet, and on the N. by Mount Atlas. It is about 100 miles in length; abounds in corn, dates, and other fruits, and has mines of iron, lead, and antimony. The government is a republic. The capital, of the same name, is seated on the Zig, 150 miles N.N.E. of Taflet. Long. 5. 5. W. Lat. 29. 40. N.

SULLY, a town of France, in the department of Loiret, seated on the Loire, 20 miles S.E. of Orleans. Long. 2. 26. E. Lat. 47. 40. N.

SULMONA, a town of Naples, in Abruzzo Citeriore, with a bishop's see. It was anciently called Sulmo, and is remarkable for being the birth-place of Ovid. It is seated on the Sora, 26 miles S.W. of Chieti. Long. 14. 55. E. Lat. 42. 0. N.

SULPHURET, a new chemical name, applied to any combination of sulphur with other substances on which it is capable of acting. Dr. Higgins invented a *sulphuret of lime*, which he proposes to be used in the arts as a substitute for pot-ash. Four pounds of the flowers of sulphur and twenty of flaked lime in fine powder are mixed, and boiled in 16 gallons of water, about half an hour, stirring it now and then. Soon after the agitation of boiling has ceased, the clear sulphuret of lime is to be drawn off. On the dregs, 16 gallons of fresh water are added, and, after boiling and straining, 33 gallons more, for the purpose of obtaining the whole of the sulphuret. These dilutions are sufficient to render the liquid (when all is mixed together) of a proper strength for a *bleaching liquor*; and thus about 60 gallons are obtained from four pounds of brimstone.

SULTANIA, a considerable town of Persia, in Irac-Agemi. Here is a magnificent mosque, which contains the tomb of Sultan Chodabend. It is 50 miles N.W. of Calbin. Long. 51. 53. E. Lat. 36. 16. N.

SULTANPOUR, a town of Hindoostan Proper, in the province of Lahore, 62 miles S.E. of Lahore. Long. 73. 50. E. Lat. 30. 25. N.

SULTANPOUR, a town of Hindoostan Proper, in the province of Oude, 32 miles S. of Fyzabad, and 50 N. of Allahabad. Long. 82. 30. E. Lat. 29. 5. N.

SULTZ, a town of Suabia, in the duchy of Wirtemberg, near the Neckar, where are some salt-works sufficient to supply the duchy with salt. It is 13 miles S.E. of Freudenstadt, and 12 N. of Rothwell. Long. 8. 35. E. Lat. 48. 18. N.

SUTZ, a town of France, in the department of Upper

Rhine, with a medicinal spring, 12 miles S.S.W. of Colmar.

SULTZBACH, a town of Germany, in the palatinate of Bavaria, with a castle, subject to the Duke of Neuburg-Sultzbach. It is 10 miles N.W. of Amberg, and 32 N. of Ratibon. Long. 11. 56. E. Lat. 49. 38. N.

SULTZBURG, a town of Suabia, in the margravate of Baden-Durlach, with a fine palace. It is seated in a territory, fertile in good wine, eight miles S.W. of Friburg. Long. 7. 30. E. Lat. 47. 54. N.

SUMBUL, a town of Hindoostan Proper, in the province of Oude, 45 miles W.N.W. of Benilly, and 65 E. of Delhi. Long. 78. 55. E. Lat. 21. 25. N.

SUMBULPOUR, or **SUMELPOUR**, a town of the peninsula of Hindoostan, in the province of Orissa, 144 miles W.N.W. of Cattack, and 280 W. of Calcutta. Long. 83. 40. E. Lat. 21. 25. N.

SUMEH, a town of Turkey in Asia, in the province of Natolia, 14 miles E. of Pergamo.

SUMEREIN, a town of Lower Hungary, seated in the island of Schur, made by the river Danube. It is 16 miles S. of Preburg. Long. 17. 23. E. Lat. 48. 4. N.

SUNBURY, a sea-port of the United States, in Georgia, with a safe and convenient harbour. Several small islands interlocking with each other, render the passage to sea winding, but not difficult. The town being very healthy, is the resort of the planters from the adjacent places of Midway and Newport, during the sickly months. It is 34 miles S. of Savannah. Long. 81. 15. W. Lat. 35. 34. N.

SUNBURY, the county-town of Northumberland, in Pennsylvania, seated below the junction of the E. and W. branches of the Susquehanna, 126 miles N. of Philadelphia. Long. 76. 50. W. Lat. 40. 51. N.

SUNDERBUNDS, or **THE WOODS**, a tract of country, consisting of that part of the Delta of the Ganges, in Bengal, which borders on the sea. In extent it is equal to the principality of Wales. It is completely enveloped in woods, infested with tigers, and composed of a labyrinth of rivers and creeks, all of which are salt, except those that immediately communicate with the principal arm of the Ganges. Here salt, in quantities equal to the whole consumption of Bengal and its dependencies, is made and transported with equal facility; and here also is found an inexhaustible store of timber for boat building.

SUNDERBURG, a town of Denmark, in the island of Alsen, with a castle. It is seated on a strait, called Sundaburg Sound, 12 miles E. of Flensburg. Long. 10. 0. E. Lat. 54. 51. N.

SUNDERDOO, or **MELUNDY**, a fortified island and sea-port of the Deccan of Hindoostan, on the Concan coast, reduced by Commodore James in 1756. It is about 10 miles N.E. of Vingrola Rocks, and 36 N.N.W. of Goa. Long. 73. 26. E. Lat. 16. 3. N.

SUNDERLAND, a sea-port in the bishopric of Durham. It is a flourishing town, and, for the exportation of coal, is next in consequence, on that side of the kingdom, to Newcastle. Its port, at the mouth of the Wear, will not admit very large ships; but vessels hence can get out to sea much more readily than from the Tyne. The coal is brought down the Wear from numerous pits near its banks. Here are several glasshouses; and there is an exportation of grindstones and other articles. It is 13 miles N.E. of Durham, and 264 N. by W. of London. Long. 1. 14. W. Lat. 54. 56. N.

SUNDERLAND, a town of the United States, in Massachusetts, situate on Connecticut River, 100 miles W. of Boston.

SUNDI, a province of Congo, which lies along the river Zaire. Its rivers render it extremely fertile, and in the mountains are mines of several metals. The capital is of the same name. Long. 17. 55. E. Lat. 4. 50. S.

SUNDSWALL, a sea-port of Sweden, in the division of Norland, and province of Medelpadia. The chief trade is in tar, bark of birch trees, deals, and linen. It is seated near the gulf of Bothnia, 195 miles N. by W. of Stockholm. Long. 18. 5. E. Lat. 62. 45. N.

SUNNEBERG, or **SONNEBERG**, a town of Brandenburg, in the territory of Sternburg, with a castle, seated on the Darta, 50 miles E. by N. of Berlin. Long. 15. 10. E. Lat. 52. 41. N.

SUPERIOR LAKE, a lake of N. America, so called from its being the largest on that continent. According to the French charts it is 1500 miles in circumference. It contains many islands; two of them very large, especially Isle Royale, which is 100 miles long, and, in many places, 40 broad. The Indians suppose these islands to be the residence of the Great Spirit. Upward of 30 rivers enter this lake, some of which are of considerable size. It abounds with trout and sturgeon. Storms affect this lake as much as they do the Atlantic Ocean. It discharges its waters from the S.E. corner, through the straits of St. Marie, into Lake Huron.

SUPINO, an ancient town of Naples, in Molise, with a castle. It is seated at the source of the Tamara, at the foot of the Apennines, 17 miles N. by W. of Benevento.

SURE, a river of Ireland, in Tipperary, which flows by Clonmel and Carrick to Waterford, and falls into St. George's Channel.

SURGOOJA, a town of the peninsula of Hindoostan, capital of a province of the same name, in the country of Orissa. It is 180 miles S.S.W. of Patna.

SURINGIA, a commercial town of Japan, in the island of Nippon, capital of a province of the same name, with a castle, where the emperors formerly resided. Long. 139. 5. E. Lat. 39. 30. N.

SURSEE, a town of Switzerland, in the canton of Lucern, seated near the lake of Sempach, five miles S. of Lucern.

SURSOOTY, a town of Hindoostan Proper, in the province of Delhi, 114 miles N.W. of Delhi.

SUS, a river of Morocco, which forms the S. boundary of that empire, and enters the Atlantic, at Meffa. Like the Nile, its annual inundations enrich the country.

Sus, one of three great divisions of the empire of Morocco; bounded on the W. by the Atlantic, on the N. by Mount Atlas, on the E. by Gefula, and on the S. by the river Sus. It is a flat country, abounding in corn, sugar-canes, and dates. The inhabitants, who are chiefly Berbers, or ancient natives, are distinguished by their industry; and many of them, who live in towns, become opulent, and are much more polite than the natives of Fez and Morocco. In the mountainous part they are entirely free, and are governed by their own chiefs.

SUSA, a strong town of Piedmont, capital of a marquissate of the same name, with a fort. Here is a rich convent, called the abbey of St. Just, and a triumphal arch to the honour of Augustus Cæsar. It is seated on the Doria, among pleasant mountains, and is called the key of Italy; being the principal passage out of France into Italy. It was taken by the French in 1704, but restored to the Duke of Savoy in 1707. It is 30 miles N.W. of Turin. Long. 7. 24. E. Lat. 45. 20. N.

SUSDAL, a town of Russia, in the government of Vo-

lodiin, capital of a duchy of the same name, with an archbishop's see. It is built of wood, and seated on the Klafina, 90 miles N.E. of Moscow. Long. 40. 25. E. Lat. 56. 26. N.

SUSQUEHANNAH, a river of N. America, which issues from Lake Ortego. It crosses three times the line which divides the state of New York from Pennsylvania, and empties itself into the head of the bay of Chesapeake.

SUSSAC, a town of France, in the department of Upper Vienne, 15 miles S.E. of Limoges.

SUSTER, an ancient and celebrated, but now decayed, town of Persia, capital of Kustistan. It is seated on the Caron, 105 miles S.W. of Ispahan. Long. 51. 19. E. Lat. 31. 15. N.

SUSTEREN, a town of Westphalia, in the duchy of Juliers, two miles from the river Maese, and 12 S. of Ruremonde. Long. 5. 50. E. Lat. 50. 56. N.

SUTRI, a town of Italy, in the patrimony of S. Peter, with a bishop's see, seated on the Puzzolo, 22 miles N.W. of Rome. Long. 12. 25. E. Lat. 42. 10. N.

SUWOROW (Prince Alexander Bagliowitch), famed, on account of his military achievements at Rymnik and in Italy, Rymnikki and Italskoi, was born in the year 1730. His family was of the class of nobility, and of Swedish origin: one of his ancestors settled in Russia the latter end of last century, and having distinguished himself in the wars against the Tartars, was rewarded with lands and peasants. Basil, the father of Alexander, was godson to Peter the Great, and at his death enjoyed the two-fold rank of general and senator.

He intended his son for the profession of the law, but a preference very common in youth, impelled him to choose the military instead of the forensic line. He was at the age of twelve enrolled in the Russian army, but staid at home some years afterwards to improve in the sciences. He pursued the line of reading both professional and historical, calculated to form a soldier, with great diligence and success: he studied, besides, general history and philosophy on an enlarged scale, and made himself master of most European languages, which he spoke and wrote with correctness and facility.

Suworow began his career as a private soldier, being enrolled as a fusilier in the guards of Seimonow. In 1747 he served as a corporal, and was soon advanced to the rank of serjeant. His subsequent promotion was rapid: in 1754 he quitted the guards with the brevet of lieutenant in the army; in 1756 the conduct of provisions was entrusted to him: he was afterwards lieutenant to the auditor-general, and appointed to the command of Memel with the rank of lieutenant-colonel. He made his first campaign in the seven-years' war against the Prussians, and by his valour obtained the favourable notice of his commanding officer, Count Fermor, but he found no opportunity to acquire distinction. In 1761 he served in the light troop under General Berg, and made himself conspicuous in various encounters, particularly in an attack on the town of Golnau, where his horse was killed under him, and he received a dangerous contusion on the breast from the rebound of a musket ball. General Berg, in a subsequent action at Naugarten, intrusted him with the command of his right, which he conducted with great bravery, though the attack was unsuccessful. On the 16th of December, the campaign terminated by the surrender of Colonel de Heyde to Count Romanow. The affairs of the King of Prussia were considered as desperate, when he was, at length, saved by the death of the Empress Elizabeth. Her successor, on the 5th of May, 1762, made peace, and afterwards concluded an alliance with Frederick, and the Russians engaged no more in that war. Suworow was rewarded with the command of

the regiment of dragoons of Archangelgorod, and sent to Peterburgh with an especial letter of recommendation.

After the revolution which placed the late Empress Catharine on the throne, Suworow was treated with many marks of confidence and kindness, and obtained great applause for his activity in teaching the troops the new exercise. In 1768 he was advanced to the rank of brigadier: war being commenced against the confederates of Poland, he was ordered to repair thither, and began his march in the unfavourable month of November. In the course of this war he distinguished himself by his prudence in council, celerity in marching, and intrepidity in the field: the post of honour was always assigned to him, and he constantly maintained an eminent reputation. In the autumn of the year 1770, he fell into the Vistula, having by accident missed the pontoon in leaping from the bank, and was in great danger of being drowned. A grenadier at length succeeded in drawing him out by the hair, but in so doing struck his head against a pontoon with such violence as to occasion a contusion, which he did not recover for some months. He continued on service in Poland till the spring of 1773, and acquired the admiration of all judges of military discipline and tactics. The battle of Stalowitz, which he gained on the 11th of September, 1771, was peculiarly extolled by the King of Prussia: and the empress, being highly satisfied with Suworow's conduct, raised him to the rank of major-general, and conferred on him the order of St. Alexander Newsky, which she accompanied with a very flattering letter.

On quitting Poland, Suworow repaired immediately to Peterburgh, where he did not long remain, being in the spring of 1773 ordered to join the army which had then taken the field against the Turks. He reached Jassy in the beginning of May, and soon afterwards gained the famous and important battle of Turtukay, though two thousand Coffacs, promised by Potemkin, did not arrive till after the battle. Suworow's dispatch to Romanzow, the commander-in-chief, is a specimen of his usual laconism: "Honour and glory to God! Glory to you, Romanzow! We are in possession of Turtukay, and I am in it. Suworow." The empress, in token of approbation and gratitude, sent him the cross of the order of St. George, of the second class, accompanied with many expressions of satisfaction. In June the general was obliged to retire to Bucharest for the recovery of his health, which was assailed with a violent fever. Yet he attended military operations, and on the 27th of July, though in so weak a state that he could not walk, unless supported by two men, and his voice so feeble that he was obliged to have an officer near him to repeat the commands, he contributed materially to another important victory near Turtukay. In September he again defeated the Turks near Nitrow.

Previously to his last engagement, Suworow had received several dangerous hurts, particularly one in his leg, and another on his back, which was occasioned by a fall down stairs: his health was, in other respects, but partially re-established, and therefore, in October, he retired into Russia, and passed the winter there. In the ensuing spring, he returned to the army of the Danube, being advanced to the rank of lieutenant-general, and appointed to command the second division. On the 11th of June he gained a great victory at Kalladgi; but his ill health obliged him once more to return to Bucharest, and before he completely recovered, peace was concluded.

Suworow now intended to have returned to Russia, but, at Jassy, was met by an order to repair immediately to Warsaw, to assist Prince Wolguski in appeasing the troubles in the interior of that part of the empire. He arrived at Moscow, in August, 1774, and soon succeeded in quelling the insurrection,

and taking prisoner Pugatschew, the chief of the insurgents. Having performed this important service, and restored peace, he retired to pass some time on his estate.

From this retreat he was called in November, 1776, when he received a commission for the Crimea, where the government was unsettled, the people in insurrection, and exposed to the inroads of the Circassians, and the whole peninsula in disorder. Here he remained, with few intervals, for several years. He was in this period complimented by the empress with a snuff-box, containing her portrait set in diamonds; and, in 1783, the grand cross of the equestrian order of Saint Wolodimir.

In 1786, Suworow was promoted to the rank of commander-in-chief. In February, 1787, the empress paid a visit to the Crimea, now called Catherineopolis, and Taurida, of which Prince Potemkin was then governor. Suworow, on this splendid occasion, was appointed to command the corps distributed in the environs of Kiowie and Pultawa: he was much noticed by the Emperor Joseph II. who attended the empress under the title of Count Falkenstein. The empress presented Suworow with a box enriched with her cypher in diamonds. In August he assumed the command of the corps of Cherlon and Kinburn.

The Turks now commenced hostilities without a preliminary declaration, by an attempt to surprise two Russian vessels in the bay of Kinburn. After several unimportant attempts, they began to bombard the town, and on the 1st of October, invaded the island with very superior numbers. In this situation, Suworow had nothing to depend on but his valour and military skill; he gave strict orders that not a shot should be fired till the enemy were within 200 yards of the glacis. This prudent command was strictly obeyed; a spirited fire was opened at the precise moment, and the garison sallied: twice the Russians were overpowered by numbers, and compelled to retire as far as the glacis; but, at length, after a sanguinary contest of nine hours, victory declared in their favour. The Turks had sent away their boats to prevent retreat, and therefore out of 6000 who landed, not more than 700 escaped; the rest were either slain in battle, or drowned in the sea. Suworow was once in imminent danger; he was dismounted, and seeing a Turk leading a spare horse, mistook him for a Coffac, and demanded the beast: the Turk lifted his sabre to dispatch him, but was, in the same moment, thrust through the body with a bayonet. The general received a musket shot in the arm, which, for the moment, he only washed in salt water, and bound up with his cravat: it was afterwards properly attended to. Te Deum was performed at Peterburgh by the empress's order, who sent Suworow a letter highly complimentary, and afterwards the order of Saint Andrew for himself, and six crosses of Saint George, to be distributed according to his discretion.

He now directed a considerable share of attention to the fortifying of Kinburn, conceiving, that although the Turks had for a time retreated, they would soon return. He was not deceived in this expectation: Hassan Pacha made several attempts to destroy the Russian fleet, but, being generally defeated, was obliged to return to Constantinople. Prince Potemkin then resolved to attack Oczakow, and the siege began, in due form, on the 29th of August, 1788. From a rally made by the Turks on the preceding evening, a general engagement ensued, and Suworow, being pointed out by a Greek slave who had deserted, was aimed at, and wounded in the neck. He was, in consequence, obliged to retire to Kinburn, where his symptoms became dangerous and alarming; he was also attacked by the jaundice, but recovered from both. During his convalescence, his life was endan-

gered by the blowing up of a magazine, full of charged bombs, grenades, and various other combustibles; a bomb fell in his bed-chamber, tore his bed, broke down part of the wall, and wounded him in the face, breast, and knee. Thus he was incapacitated from attending the further progress of the siege, and obliged to remain at Cherfon and Kremienchuk for the recovery of his health. In the beginning of 1780 he went to Peterburgh, where he was most graciously received; the grateful and discerning empress presented him with a plume of diamonds for his casque, distinguished with the letter K in a cypher, as an acknowledgment for his defence of Kinburn.

Suworow shortly afterwards returned to the army, and, arriving at Berlats, eighteen miles from Jassy, took the command of the corps there; and, in conjunction with the Prince of Saxo-Cobourg, whom he joined by a most rapid and astonishing march, defeated the enemy at Forhani, and took the fortified convents of Saint Samuel and Saint John. At this period, Suworow sustained considerable injury from a small accident: a pin ran into his foot, the head broke off, and it could not be extracted. This made him rather lame, and the Turks, in derision, used to call him *Tuzak Bacha*, or the limping general.

After his co-operation with Cobourg, for which he received thanks in a very obliging letter from the emperor Joseph, Suworow returned to Berlar, but was soon summoned again to join the Austrians, as the Turkish army under the grand-vizier was advancing to give them battle. He effected the required junction, by a rapid and dangerous march; and on the 22d of September, 1789, they gained an important and decisive victory, near the river Rymnik. The Turks lost ten thousand men, and an immense booty, while the loss of the allies did not amount to three hundred. The number of the Turkish army was near one hundred thousand; that of their opponents about twenty-five thousand. The conduct of Suworow was highly extolled by both the allied sovereigns. The emperor Joseph conferred on him the dignity of count of the empire; the empress sent him a sword, enriched with diamonds, and the order of Saint Andrew, decorated with brilliants: in a short time after, he received the diploma of count of the empire of Russia, with the title of Rymnikski, and the order of Saint Andrew of the first class. These honours were accompanied with letters replete with friendship and gratitude.

In 1790 some attempts at pacification were made, but without success, though at length an armistice was agreed upon at Reichenbach. In the beginning of November, Suworow made his approaches to the important fortrefs of Ilimailow, which he was ordered by Potemkin to take at all hazards. This order was extremely difficult, from the advanced period of the year, and the great strength of the place, which the Turks deemed impregnable. Finding, from the smallness of his army, and the want of heavy artillery, that it was in vain to attempt a regular siege, he only made a feint of doing so, and resolved on a scalade. On the 6th of December, he sent a letter of Prince Potemkin, to which he added a few lines, requiring the seraskier to surrender: the answer displayed confidence in the strength of the place, and advised the Russians to retreat. "The next day, in answer to a message of the same import, the seraskier declared, "that the Danube should cease to flow, or the heavens bow down to the earth, before Ilimailow should surrender to the Russians." Suworow sent a third message, assuring the seraskier, on his word of honour, that unless he hung out a white flag on that very day, the place would be taken by assault, and all the garrison put to the sword. Many of the Ottomans were disposed to surrender, but the

seraskier and the majority rejected the proposition, and returned no answer.

Suworow now animated his troops by an admirable harangue, and though he received a dispatch from Potemkin, advising him, if not sure of success, to desist from the assault, he determined to take advantage of the ardour of his troops, and proceed. Some Cossack deserters apprised the enemy of the intended operations; and they were prepared; yet, notwithstanding the disproportion of numbers and strength, the Russians at length succeeded on every side. The Turks, after the Russians had entered, defended themselves with great obstinacy, and contested every foot of ground. The seraskier was unfortunately killed, after he had surrendered. After a most sanguinary assault, the victory was complete. The Turks defended themselves with great rage and fury; even women and children armed with poniards, fell on the Russian soldiers. Firing was kept up during the whole night by some Turks, who had secreted themselves in dwelling-houses: all who refused to surrender were put to the sword, but those who demanded quarter were spared. The Ottomans lost, according to the official report, thirty-three thousand killed or dangerously wounded, and about nineteen thousand prisoners. The loss of the assailants, was eighteen hundred and thirty killed, and two thousand five hundred wounded. The dead Turks were thrown into the Danube. Of the whole garrison, only one man escaped; he being slightly wounded, fell into the Danube, and reached the opposite bank. He carried the fatal news to the vizier. The plunder was estimated at ten millions of piastres: the soldiers, according to promise, were permitted to pillage for three days. Suworow would not retain for his own use the smallest article. His dispatch to Potemkin was in these words: "The Russian colours wave on the ramparts of Ilimailow." In January, 1791, Suworow returned to Peterburgh, where he was received with a degree of cordiality proportioned to his merits; he was appointed lieutenant-general of the Preobrazhenski guards, and a large medal in gold and in silver was struck by the empress's order, in commemoration of his important victory. In December, 1791, peace was concluded, and the empress shewed her gratitude by giving Suworow a ring and a ribbon ornamented with diamonds, valued at sixty thousand rubles.

Suworow's military talents were not again called into exercise till the war in Poland in 1794, which ended in the total destruction of that kingdom. Many Poles had entered into the Russian army, but when Kosciusko appeared in arms in Poland, vast numbers deserted in large bodies, with their arms, drums, and colours, and joined their countrymen. Suworow was ordered to proceed by forced marches to Red Russia, with a corps of fifteen thousand men, in order to disarm the Poles who yet remained. This delicate and important service he executed with great dispatch, and without effusion of blood. On the 14th of August, 1794, he set out for Poland, at the head of eight thousand men, by forced marches. After several victories of small note, and a most important battle in which he utterly defeated the Poles near Theresopol, Suworow proceeded to the siege of Praga. Having made the necessary preparations, he admonished the garrison of the folly of resistance, and advised them to accept the amnesty, as the only means of preserving themselves from destruction. Infatuated with the visions of French licentiousness, one of the Polish chiefs sent him a letter couched in terms not sufficiently respectful; Suworow chastised the writer by an energetic answer, which produced great dismay among the confederates. On the 22d of October he advanced against Praga, with drums beating and colours flying. The assault and defence were conducted with great intrepidity,

both sides being animated by deadly animosity, but victory declared in favour of the Russians, who at nine in the morning, after four hours' fighting, remained masters of the place. Thirteen thousand Poles were left dead on the field of battle, and two thousand drowned in the Vistula: fourteen thousand six hundred and eighty were taken prisoners.

Suworow announced his victory in his usual laconic style, in a letter to the King of Prussia: *Praga est à moi, et Varsovie tremble*. In fact, the council at Warlaw soon sent a message of capitulation, and obtained terms much more lenient than they expected.

After some delays, Suworow with his army entered Warsaw the 28th of October: when the keys were presented, he pressed them to his lips, and holding them up towards heaven, said, "Almighty God, I render thee thanks, that I have not been compelled to purchase the keys of this place as dear as—" and turning his face towards Praga, burst into tears. He saluted the magistrates with cordiality, and embraced every one whose countenance displayed satisfaction, especially common people of an advanced age. The people, overjoyed at the expected return of order, rent the air with shouts of "Long live Catherine! Long live Suworow!" He had the satisfaction of restoring to liberty 1376 Russian prisoners, whom a wretch named Kolontay had proposed to the revolutionary committee to massacre. The termination of this unexampled campaign, the success of which was entirely due to Suworow, was highly propitious to Russia, as the Polish rebels were entirely defeated, disarmed, and dispersed, and the submission of the country amply secured. The partition of the kingdom speedily ensued.

All the sovereigns interested in this event vied in shewing gratitude to Suworow. The King of Prussia sent him, by an extraordinary messenger, the order of the red and black eagle; the emperor presented him with his portrait enriched with diamonds, estimated at fifty thousand crowns; the empress wrote him a letter, announcing his elevation to the rank of field marshal, and sent him a baton for the occasion, the jewels of which were equally valuable with the emperor's present; she also gave him an estate of 7000 peasants of both sexes, in the district of Kobin.

During the continuance of Catherine's reign, he was treated with constant attention, and undiminished regard, and appointed to the government of an army of 80,000, including the command of four extensive provinces. On the accession of Paul I. Suworow enlisted himself to his esteem, not by the courtly mode of flattery, but by a display of honest and frank disinterestedness and spirit. A great number of military officers being dismissed by the emperor without a trial, the general received them kindly, employed several in his own division, and liberally shared his house and table with others, till they should be re-appointed. Paul was angry at this conduct, and reproached Suworow, who replied, "I know them; they are loyal and brave: some are entirely blameless, others have committed only trivial errors. But granting them to be more culpable, they are poor and neglected—Are they to turn rogues and robbers?—I should not want to be a loyal Russian, if I could suffer it:—I have taken them into my protection." The emperor justly appreciated the field-marshal's frankness, and many of the officers were promoted on his recommendation.

The general events of the campaign of 1799, when Suworow gained so much additional renown, and was exalted to the rank of Prince, with the surname *Italiskoy*, are too recent and too well known to be enumerated in this sketch. The causes which occasioned some disasters at the close of the campaign are not yet sufficiently understood. The strange and unaccountable mode of conduct subsequently adopted by

Paul I. baffles conjecture, and is referable to no fixed principle. The neglect and displeasure he shewed towards Suworow from the time of his recall to Russia, shew his character in a very unfavourable view. The brave and estimable veteran, who in an active and vigorous career of upwards of forty years, had rendered his country the most important services, and contributed so largely to elevate her rank among the powers of Europe, died indignant at unmerited neglect, and broken-hearted at observing a system of politics which tended to counteract all that the sagacious Catherine had effected. He was buried with uncommon pomp and splendor, and the immense multitudes who with grief attended his funeral were the most emphatical reproach to the emperor.

In 1774 he married Barba Nanowna, princess Proisrowski, by whom he had two children who survived him:—Natalia countess Suworow, who married Count Nicola Zoubow; and Arcadius, who is now about 18 years of age, and serving in the Russian army.

The peculiarities of Suworow's manners have been often described and delineated; their basis seems to have been a rigid attention to health and discipline, and that honest simplicity of character which constitutes a hero: in this he was truly great. He was zealous and sincere in religion; direct and honest in patriotism; candid and upright in his views, and no less alert than judicious in the use of his means. No mean art was practised by him to captivate admiration, no delusion was exercised to facilitate a proposed end. His friendship and his humility were alike frank and open. Riches, which he did not overvalue, though he received them from the sovereigns whose cause he had served, were not used by him as the means of promoting a dishonest ambition, exhibiting an absurd vanity, or encouraging an effeminate voluptuousness: they were moderately enjoyed by himself, and generously disbursed at the call of friendship. It is truly asserted by M. Seume, an intelligent German officer who published some anecdotes respecting him, that he possessed more originality, energy, sagacity, personal probity, and humanity, than any other military public character of the age.

SUZANNE, St. a town of France, in the department of Maine. It has a considerable paper manufacture, and is 24 miles W. of Mans.

SWAFFHAM, a town in Norfolk, with a market on Saturday, seated on a hill, 34 miles N.N.E. of Newmarket, and 64 N.E. of London. Long. 0. 46. E. Lat. 52. 43. N.

SWALE, a river in Yorkshire, which rises on the confines of Westmoreland, and running S.E. by Richmond and Thirsk, falls into the Ouse.

SWALLY, a town of the Deccan of Hindoostan, in Cambaya. It has a harbour, where ships receive and deliver their cargoes for the merchants of Surat, being 12 miles N.W. of that place. Long. 72. 15. E. Lat. 21. 18. N.

SWANSEA, a town of the United States, in Massachusetts, situate on the Taunton, 36 miles S. of Boston.

SWANSEY, a sea-port and corporate town in Glamorganshire, with a market on Wednesday and Saturday, an old castle, and two churches. It is seated at the mouth of the Tawy, is governed by a portreeve, and has plenty of coal in its neighbourhood. Of these it sends great quantities to Ireland and the S. coast of England; and it has a considerable trade to Brittol. Here are great works for the smelting of copper and lead ore. Many ships have been built here, and it is resorted to for sea-bathing. It is 24 miles W.N.W. of Cowbridge, and 205 W. of London. Long. 4. 0. W. Lat. 51. 38. N.

SWANSHALS, a town of Sweden, in W. Gothland, 25 miles W.S.W. of Lindköping.

SWARTEBERG, a town of Sweden, in W. Gothland, 18 miles N.W. of Uddevalla.

SWARTSLUYS, a town and fortrefs of the United Provinces, in Overysfel, feated on the Vecht, four miles from its mouth, and five N.N.W. of Haffelt.

SWERNICH, a town of Turkey in Europe, on the confines of Servia and Boshia, feated on the Drino, 70 miles S.W. of Belgrade. Long. 19. 32. E. Lat. 44. 42. N.

SWINDON, a town in Wilshire, with a market on Monday, feated on the top of a hill, near a rich vale, 28 miles N. of Salisbury, and 83 W. of London. Long. 1. 45. W. Lat. 51. 30. N.

SYA, a town of Sweden, in West Gothland, 13 miles S.W. of Lindköping.

SYDNEY BAY, a bay on the fouth side of Norfolk Island, in the Pacific Ocean, formed by Point Hunter and Point Rofs, which are near two miles afunder. Here is a fettlement of convicts from England. Long. 168. 12. E. Lat. 29. 4. S.

SYDNEY COVE, the town or fettlement of convicts, founded at Port Jackson, in New South Wales, in 1788. The ground about it was then covered by a thick foreft; but, in 1790, fome good buildings had been erected, and greateft part of the civil and military officers were comfortably lodged. The governor's houfe is built of ftone, and has a very good appearance, being 70 feet in front. The lieutenant-governor's houfe is of brick, as are alfo thofe belonging to the judge and the commiffary. The reft of the houfes are built with logs and plastered, and all the roofs are either covered by ftingles or thatched. Long. 151. 28. E. Lat. 33. 50. S.

SYRIAN, a town of Pegu, feated near the bay of Bengal, on a river of the fame name, which is one of the extreme branches of the Ava. Long. 96. 40. E. Lat. 16. 50. N.

SZEBEN, a town of Hungary, on the river Tareza, 30 miles N. of Caffovia. Long. 21. 25. E. Lat. 44. 20. N.

SZEKELY, a town of Hungary, 18 miles E.S.E. of Debreczen. Long. 22. 15. E. Lat. 47. 26. N.

SZUCCA, a town of Western Pruffia, in the palatinate Culm, feated on the Viftula, 12 miles S. by W. of Culm. Long. 18. 24. E. Long. 53. 14. N.

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TAAFE, or **TAVE**, a rapid river in Glamorganfhire, which enters the Briftol Channel at Cardiff. On this river, near Caerphilly, is a ftone bridge called Pont y Pryddal, of one arch, 140 feet in the fpan and 34 high, planned and executed by the felf-taught genius of a common mafon in this county.

TAAIF, a town of Arabia, in the province of Hedjas. It has a confiderable trade in fruits, rafins, and almonds; and is fituete on a lofty mountain, 60 miles S.E. of Mecca. Long. 41. 35. E. Lat. 21. 5. N.

TAA8, a city of Arabia, in the province of Yeman, where is the tomb of a faint, who, according to tradition, was king of the country. When M. Niebuhr was here it had a garrifon of 600 men. It is 48 miles E.N.E. of Mocha. Long. 44. 10. E. Lat. 13. 45. S.

TAATA, a town of Upper Egypt, one mile from the Nile. It is the refidence of a governor, has many curious remains of antiquity, and is 200 miles S. of Cairo. Long. 31. 25. E. Lat. 26. 56. N.

TABAGA, an ifland in the bay of Panama, four miles long and three broad. It is a mountainous place, abounding with fruit trees. Long. 80. 16. W. Lat. 7. 50. S.

TABARIA, the ancient Tiberias, a town of Paleftine, fituete on the weft fide of a lake, formerly called the fea of

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Tiberias, 50 miles N.N.E. of Jerufalem, and 70 S.S.W. of Damafcus. Long. 35. 45. E. Lat. 32. 40. N.

TABASCO, a province of New Spain, in the audience of Mexico; bounded on the N. by the bay of Campeachy, on the E. by Yucatan, on the S. by Chiapa, and on the W. by Guaxaca. It is 100 miles in length, and nearly as much in breadth, and its chief riches confift in cocoa nuts. The air is extremely moift, and there are fhowers every day for nine months in the year.

TABASCO, an ifland of New Spain, in the province of Tabafco, formed by a river of the fame name, and by that of St. Peter and St. Paul. It is 30 miles long and 10 broad, and is 10 miles from the bay of Campeachy.

TABASCO, a town of New Spain, capital of the province of Tabafco. The Spaniards call it Nuefta Senora de la Victoria, from a great victory obtained here by Cortes, on his firft arrival. It is fituete in the ifland of the fame name. Long. 58. 15. E. Lat. 17. 40. N.

TABLE ISLAND, one of the New Hebrides, in the Pacific Ocean. Long. 16. 67. E. Lat. 15. 38. N.

TABLE-MOUNTAIN, a promontory of Africa, near the Cape of Good Hope. The bay at the foot of it is called Table Bay.

TABOONYAMANOO, or **SAUNDER'S ISLAND**, an ifland

in the S. Pacific Ocean, near that of Huahine, to which it is subject.

TABOR, a town of Bohemia, in the circle of Bechin, on a mountain, which the Hussites, under their celebrated general Ziska, fortified and made their principal retreat. It is 25 miles N. by E. of Budweis, and 45 S. by E. by Prague. Long. 14. 56. E. Lat. 49. 23. N.

TABRISTAN, a province of Persia, on the S. shore of the Caspian Sea, bounded by Afrabad on the E. and Ghilan on the W.

TACHAU, or **TACHOW**, a town of Bohemia, in the circle of Pilsen, 28 miles W. of Pilsen. Long. 13. 27. E. Lat. 49. 45. N.

TADIVAN, or **TADUAN**, a town of Parfistan, 60 miles S. of Schiras. Long. 54. 15. E. Lat. 28. 45. N.

TADOUSAC, a town of Lower Canada, which is a place of great resort for trading with the Indians, who bring thither furs to exchange for cloth and other European goods. It is situated at the mouth of the Saguenay, 98 miles N.E. of Quebec. Long. 69. 35. W. Lat. 48. 5. N.

TAFALA, or **TAFALLA**, a town of Spain, in Navarre, with a castle, seated on the Cidazzo, in a country producing good wine, 18 miles S. of Pampeluna. Long. 1. 36. W. Lat. 42. 29. N.

TAFILET, a kingdom of Barbary, in the empire of Morocco; bounded on the N. by Fez and Tremefan, on the E. by the Berberies, on the S. by the desert of Barbary, and on the W. by Sus, Morocco, and Fez. It is divided into three provinces, Dras, Saro, and Tuet. It is a mountainous sandy country, but produces wheat and barley by the sides of the rivers. The inhabitants live upon camels' flesh and dates, and they breed horses to sell to foreigners. The Arabs live in tents, and the Berberies, the ancient inhabitants, dwell in villages. Tafilet, the capital, is a trading place, with a castle, and seated on a river, 275 miles S.E. of Morocco. Long. 5. 45. W. Lat. 28. 2. N.

TAGASTA, a town of Algiers, in the province of Constantina, formerly a considerable place, but now greatly reduced. It is famous for being the birth-place of St. Augustine.

TAGE, a town of Arabia Felix, with a castle on a mountain, 60 miles E. of Mecca. Long. 42. 5. E. Lat. 21. 45. N.

TAGHMON, a borough of Ireland, in the county of Wexford, seven miles W. of Wexford.

TAGLIACCOZZO, a town of Naples in Abruzzo Ulteriore, 28 miles S.W. of Aquila, and 33 E.N.E. of Rome. Long. 12. 57. E. Lat. 45. 50. N.

TAGOST, a town of Morocco, the largest in the province of Sus. A great many Jews live here, who carry on a considerable trade. It is seated in a fertile plain, 37 miles S. of Taradant. Long. 8. 5. W. Lat. 29. 23. N.

TAGUMADERT, a town of the kingdom of Tafilet, with a strong castle on a mountain, seated on the river Dras. Long. 6. 43. W. Lat. 27. 10. N.

TAHOOROWA, one of the smallest of the Sandwich Islands, lying off the S.W. part of Mowee, from which it is distant three leagues. It is destitute of wood, and the soil seems to be sandy and barren.

TAJO, anciently **TAGUS**, a river which has its source on the confines of Arragon, in Spain, runs through New Castile, by Toledo and Talavera, whence it proceeds to Alcantara, in Estremadura; when entering Portugal, it washes Santaren, below which it forms the harbour of Lisbon, and then falls into the Atlantic Ocean. This river was formerly famous for its golden sands.

TAIN, a borough and sea-port in Rotheshire, remarkable for a large square tower, adorned with five spires, and for a collegiate church, still pretty entire. It is seated on the frith of Dornoch, 12 miles N. of Cromarty.

TAI-PING-FOU, a city of China, in the province of Kiang-nan, seated on the river Kiang. It has only three cities in its district. Long. 107. 15. E. Lat. 32. 20. E.

TAI-TCHEOU-FOU, a city of China, in the province of Tche-kiang. It has six cities in its district. Long. 121. 2. E. Lat. 28. 55. N.

TAI-TONG-FOU, a strong city of China, in the province of Chang-fi, built near the great wall. Its jurisdiction contains four cities of the second, and seven of the third class.

TAI-YUEN-FOU, a city of China, capital of the province of Chan-fi. It is eight miles in circumference, but is much decayed since it was the residence of the princes of the blood of the last imperial family of Tai-ming-tchao. Its district contains five cities of the second, and 20 of the third class. It is 160 miles S.W. of Peking.

TAILEBOURG, a town of France, in the department of Lower Charente, seated on the Charente, 30 miles S.E. of Rochelle. Long. 0. 40. W. Lat. 45. 46. N.

TALAMONE, a sea-port of Tuscany, 15 miles N. of Orbetello. Long. 11. 6. E. Lat. 42. 30. N.

TALavera, a town of Spain in New Castile, with a fort. It belongs to the Archbishop of Toledo, and is seated on the Tajo, in a valley abounding in corn, fruits, and excellent wine, 58 miles S.W. of Madrid. Long. 4. 1. W. Lat. 39. 41. N.

TALAUERUELA, a town of Spain in Estremadura, seated on the Guadiana, 14 miles E. of Badajoz. Long. 6. 34. W. Lat. 38. 34. N.

TALAGUANA, a sea-port of Chili, on the S.E. shore of the bay of Concepcion. It is now the only Spanish settlement in the bay, and nine miles from the new city of Concepcion. Long. 73. 0. W. Lat. 36. 42. S.

TALLAGH, a borough of Ireland, in the county of Waterford, situate near the river Bride, 23 miles W.N.W. of Cork, and 32 W.S.W. of Waterford.

TALLANO, a sea-port of Corsica, and capital of a district in the French division. It is situate on a bay, called the gulf of Tallano, 24 miles N. of Bonifacio, and 30 S.S.W. of Corte. Long. 9. 18. E. Lat. 51. 20. N.

TALLARD, a town of France, in the department of Upper Alps, seated on the Durance, 47 miles S. of Grenoble. Long. 6. 20. E. Lat. 44. 28. N.

TALMONT, a sea-port of France, in the department of Lower Charente, seated on a peninsula of the Gironde, 20 miles S.E. of Saintes, and 260 S.W. of Paris. Long. 0. 50. W. Lat. 45. 32. N.

TAMALAMECA, a town of Terra Firma, in the government of St. Martha, seated on the Rio de la Magdalena. Long. 74. 45. W. Lat. 9. 6. N.

TAMAR, a river of England, which runs from N. to S. divides Cornwall from Devonshire, and forming the harbour of Hamoaze, enters Plymouth Sound.

TAMARA, a sea-port on the N. coast of the island of Socotora, near the strait of Babelmandel. Long. 52. 25. E. Lat. 11. 30. N.

TAME, a river, which rises in Staffordshire, and entering Warwickshire, runs first E. and then N. till it re-enters into its native county of Tamworth, falling soon after into the Trent.

TAMM, a rivulet in Oxfordshire, which flows into the Thames, at Dorchester, and has been erroneously supposed to give name to the Thames.

TAME, a town in Oxfordshire, with a market on Tuesday, a famous free-school, and a small hospital. It is seated on a rivulet of the same name, 12 miles E. of Oxford, and 45 W. by N. of London. Long. 0. 55. W. Lat. 51. 46. N.

TAMIEH, a town of Egypt, on a canal which runs into the Nile, 12 miles N.E. of Fayoum.

TAMWORTH, a borough in Staffordshire, with a market on Saturday. It sends two members to parliament, and is seated on the Tame, eight miles S.E. of Lichfield, and 114 N.W. of London. Long. 1. 38. W. Lat. 52. 49. N.

TANARO, a river of Piedmont, which rises in the Apennines, and flows by Cherasco, Alba, and Asti, to Alexandria, in the Milanese, and falls into the Po.

TANASSERIM, a town of the kingdom of Siam, capital of a province of the same name, 220 miles S.W. of Siam. Long. 98. 0. E. Lat. 11. 50. N.

TANBOF, a government of Russia, formerly a part of the government of Voronez. Its capital, of the same name, is seated on the Zua, which falls into the Mokcha.

TANCOS, a town of Portugal, in Estremadura, seated on the Zerara, near its fall into the Tajo, 60 miles N.E. of Lisbon. Long. 8. 30. W. Lat. 39. 20. N.

TANCROWALL, a town of Vignitia, seated on the Gambia, where the English have a fort, 30 miles E. of James River.

TANDA, of **TANRAH**, a town of Hindooestan Proper, in Bengal, of which souab it was the capital in the 17th century. There is little remaining of it but the rampart; and the period when it was deserted is not certainly known. It is seated on the Ganges, 120 miles N.W. of Dacca. Long. 87. 56. E. Lat. 23. 25. N.

TANGATABOO, one of the Friendly Islands, in the S. Pacific Ocean, the residence of the sovereign and the chiefs.

TANGERMUNDE, a town of Germany in the old marche of Brandenburg, with a castle, seated on the Tanager, where it falls into the Elbe, 24 miles N.W. of Brandenburg, and 28 N.E. of Magdeburg. Long. 13. 30. E. Lat. 52. 46. N.

TANJORE, a province of Hindooestan, on the coast of Coromandel. It is an appendage of the Carnatic, but subject to its own rajah, who pays an annual subsidy to the English East-India Company.

TANJORE, a city of Hindooestan, in the Carnatic, capital of a province of the same name. It is seated on the Caavery, 156 miles S. by W. of Madras, and 166 S.E. of Seringapatam. Long. 79. 12. E. Lat. 10. 46. N.

TANKIA, or **TINKIA-LING**, a town and fortress of Thibet, at the foot of Mount Langur, 275 miles W. by S. of Lassa.

TANNA, a fertile island, in the Pacific Ocean, one of the New Hebrides, on which is a volcano. The inhabitants are brave and hospitable, and their arms are bows and arrows, slings, spears, and clubs. Long. 160. 46. E. Lat. 19. 30. S.

TANNING (*Encycl.*). To what has been there offered we purpose to add the following experiments on the tanning principle, and reflections on the art of tanning, published by M. Guillet in the *Annales de Chimie*.

"The length of the process described by M. Proust," says he, "to obtain tan, induced me to make some experiments, and to seek a more expeditious method of procuring it: the following are the results:

1. "I infused bark, reduced to a fine powder, in water; I let it stand several days, filtered the infusion, and treated it with lime-water; I obtained a precipitate in considerable quantity, which I collected on a filter, dried it, and afterwards applied alcohol, to ascertain whether it was soluble

in this menstruum; but the alcohol was not even tinged by it.

2. "Being desirous of discovering if the lime possessed a greater affinity to acids than to the tan with which it was combined, I treated four grammes of the precipitate mentioned above with nitric acid diluted with water; with the assistance of a very gentle heat, a moderate effervescence was produced, with a separation of carbonic acid; after twenty-four hours' infusion, I filtered the liquor, which had assumed a very deep colour, and there remained on the filter a granulated, black, shining substance, having a sour and rather bitter taste; this residuum weighed something less than two grammes.

3. "To ascertain whether the nitric acid had dissolved the lime, I treated the liquid which I had filtered with acidulated oxalate of potash, and obtained an abundant precipitate, which made me conjecture that since the nitric acid had dissolved the lime, the substance which I had obtained on the filter must be tan, since the precipitate obtained by the mixture of the lime-water and infusion of bark was produced by the union of the tanning principle and lime: to convince myself of this, I treated one portion with water, and the other with alcohol; I let the infusion of these substances stand on a sand-bath twenty-four hours, the water was deeply coloured, and the alcohol still more; but all the tan (hitherto I only supposed it such) was not dissolved; the alcohol dissolved rather more than half, and the water less. I treated these two liquids, after having filtered them, with a dissolution of pape, and obtained a precipitate resembling that produced by a mixture of the infusion of bark with the same solution, but of a deeper colour, and rather less elastic. When treated with the nitrate of tin, I obtained a precipitate that became gelatinous: when treated with lime-water, the tan united with the lime, and reproduced the tanate of lime formed before.

"Could I suppose that with these properties it was not the pure tan? No, because it gives the same results as that obtained by M. Proust's process.

"If purer tan be required than that obtained by the dissolution of the lime of the tanate of this substance by an acid, the infusion of alcohol must be evaporated, and tan of the purest quality will be left.

"Muric acid produced the same effects as nitric acid.

"The expedition with which the upper leathers are tanned, by the process of M. Seguin, who, in manufacturing them, merely subjects them to the preparations of washing and finishing with lime-water, without afterwards swelling them, and then tans them, caused me to suppose that in this case a combination is formed between the tan and the lime contained in the skin thus finished, independent of the combination of the tan with a gelatinous substance contained in the skin, which accelerates the fabrication. May it not hence be presumed, that the fabrication of these leathers would be accelerated if, after having washed them and finished them with lime-water, they were to be swelled in *juice*, or water in which old bark, which has been once used for tanning, is infused. Under this circumstance the small quantity of tan dissolved in this water would combine with the lime with which the skin would be charged in the finishing, and would form a tanate of lime. The swelling would probably take place by this method with less celerity than by the sulphuric acid; but it would perhaps be preferable, as the skin in swelling would begin to be charged with tan, whilst, by the sulphuric acid, the lime with which the skin is impregnated after having been finished with this substance dissolved in water—the lime, I say, combines with the sulphuric acid employed to make it swell, which I presume must give leather a brittle quality that it would perhaps not have by this method. Perhaps, likewise,

after having swelled the skins in the infusion of old bark, their fabrication might be accelerated by putting them at first into an infusion of bark, according to the method of M. Seguin, and afterwards dipping them alternately in lime-water and the infusion of bark, always taking care to leave them but a short time in the lime-water, which might perhaps alter them, if they were suffered to remain in it too long. Under this circumstance the lime-water with which the leather would be charged would, when the latter is put into an infusion of bark, produce a more speedy precipitation of the tan, and its union with the lime, as well as with the gelatinous substance contained in the leather. I think, likewise, that by this method leather would acquire a greater weight, a quality aimed at by tanners, and would perhaps become less permeable to water.

"These conjectures I have ventured to advance, because they appear to be suggested by the theory of the art of tanning. Perhaps in this instance, as in many others, practice will not accord with theory. I leave it to artists to try this method, which I myself shall not fail to do when a favourable opportunity presents itself."

The following is extracted from the specification of a patent granted to Mr. Francis Brewin, of Bermondsey, in the county of Surrey, for an improved method of tanning. It is dated November 18, 1801.

"My improved process of tanning," says Mr. Brewin, "consists principally in consolidating floaters and taps, that is by drawing the oozes for the vats, and handlers from the floaters, and working the oozes through the floaters in every respect as though they were a set of taps, and using them at the same time in the nature of floaters, by handling the greenest packs in them. These vats I call floating taps. The process I describe more particularly as follows: twenty or twenty-five vats I consider as constituting one complete tanyard; and my vats being nearly of one size, I take two or three of the centre vats, which I use as spenders; four or six immediately next to these I make my floating taps, each containing an eye and a false bottom. The remainder are vats and handlers, in which I use all my fresh bark. One floating tap I keep empty, that it may contain the whole of the ooze and bark in a vat or handler, into which floating vat I draw the ooze and bark, from that vat or handler which I conceive most necessary to be drawn. I draw off by a pump from this floating tap, now the best, my oozes into the vat or handlers from which it last came, making up the deficiency from the second floating tap, late the best; but working it first through the one now made, I put the goods down in the drawn oozes, with about three times the quantity of bark that is generally used with one pack. I continue to work the whole of the floating taps as though they were one set of taps; but first I throw up each pack of goods, and after the floating taps are worked through, I shift the floating packs as in a set of handlers. The bark in the late worst floating tap, being after the whole has been worked through thrown into the spender, causes such floating tap to become the empty floating tap, ready to receive the ooze and bark from the vat or handler next to be drawn. Experience perhaps may prove it to be most advantageous, particularly where the number of floating taps exceed six, to draw the oozes from one of the more backward floating taps instead of the best; in this case those floating taps only that follow the one drawn from must be considered as floating taps, and the others worked merely as floaters, by shifting the packs only. In this case, some labour in pumping would be saved, and the goods before they go into the fresh bark would be more tanned. The precise number of floating taps in a yard is not very material, but more than ten I conceive will seldom be found most advantageous, or less

than four. By disposing of the spenders, floating taps, vats, and handlers, as before described, barrows or long floats will seldom if ever be required to convey the bark or ooze from the vats or handlers to the floating taps, or from the floating taps to the spenders, as such vats or handlers may be drawn as lie next to the empty floating tap, and such floating tap is so disposed as to lie next to the spender that has received its bark, as may be seen by the following plans of two of my yards.

V	H	V	H	V
H	Empty. F.T.	S 3	F.T. 1	H
V	F.T. 5	S 2	F.T. 2	V
H	F.T. 4	S 1	F.T. 3	H
V	H	V	H	V

V	H	V	H	V
H	Empty. F.T.	S 2	F.T. 1	H
V	F.T. 3	S 1	F.T. 2	V
H	V	H	V	H

"I draw so many vats or handlers into each floating tap, as that when the goods and oozes are out of them the bark will about one half fill them: but as I generally put as much bark into a vat or handler as will be sufficient for this purpose, I do not often draw more than one vat or handler into one floating tap; one spender will contain two floating taps, from which, if the spenders are just half the number of the floating taps, which I consider as a proper proportion, the whole will both be worked round, or emptied in the same time, of course the floating tap that is to be cast will always continue to be near the spender, that is to receive the bark. Three or four times handling the goods after they have been regularly through the floating taps, besides when drawn for, I find sufficient. I seldom handle the floating taps but when the ooze is drawn, excepting the greenest pack, which I generally handle once in two or three days at least. The size of the vats, handlers, floating taps, and spenders, should be at

least equal in size to the handlers and vats. This general rule should be observed, not to draw so often, or more vats or handlers into a floating tap, as that the floating tap will not contain goods sufficient to spend the bark to your satisfaction. By the above process the oozes in the vats and handlers may always be kept about twice as strong as such oozes generally are, as so much more bark is used at one time with each pack of goods; and as each pack of goods may be drawn for while the ooze continues to be very strong, and of course will cause the drawn oozes to be very strong also, and yet by the process the bark goes through in the floating tap it will be, before thrown away, more completely spent than by any other process, from the water being made to go through the bark after it has been used in the vats or handlers so many more times than is done by the usual process before it comes to be used with the fresh bark, but above all from the green goods, after the oozes are drawn from it, spending the bark at the same time that it is spending, by the water being worked through it. The great advantages derived from this process are, the leather is made of a superior quality, being more solid and weighty than other leather, and is manufactured in less time, from the oozes in the vats and handlers containing double the quantity of the tanning quality than is contained in common oozes. The leather when carried will be much more water-proof than common leather, as it will take in more oil in the process of currying, provided the oozes in the handlers and vats are not kept stronger than oozes in general are. The leather will be much tougher than other leather, as by this process it is not put into old acid oozes while green, by which the texture of leather in general is much injured. The leather in manufacturing requires less labour than by any other process, as the labour of drawing oozes from the large quantity of bark used in each ooze is considerably abridged, and there is a saving of bark from its being more completely spent than by any other process, and as the quantity of bark permitted to stand without goods is much less than usual. Elm-bark, or weaker barks than oak, may by this process be used with particular advantages, since the bark is thereby so completely spent, and the labour so much abridged, and inasmuch as it enables the keeping of the oozes in the vats and handlers much stronger than by any other process; by which means the leather tanned by elm, or other weak barks, becomes as solid and weighty as common leather tanned by oak-bark."

TANORE, a sea-port of Hindoostan, on the coast of Malabar. Long. 75. 50. E. Lat. 10. 55. N.

TANTALLAN, a ruinous castle in Haddingtonshire, two miles E. of North Berwick. It is seated on a high rock, washed on three sides by the German Ocean. It was destroyed by the Covenanters in 1639.

TAOO, the most southern of the Friendly Islands, in the South Pacific Ocean, about ten leagues in circuit. It has several springs inland, and a small stream of good water, which reaches the sea when the springs are copious. The S.E. side rises with great inequalities immediately from the sea: so that the plains and meadows, of which there are some of great extent, lie all on the N.W. side; and are adorned with tufts of trees, intermixed with plantations, and intersected by paths leading to every part of the isle.

TAOUKAA, an island of the Pacific Ocean. Long. 145. 9. W. Lat. 14. 30. S.

TAPOOR, a town of the peninsula of Hindoostan, in the Mysore country, 15 miles S.S.W. of Darampoory, and 83 E.S.E. of Seringapatam.

TAPTY, a river of the Deccan of Hindoostan, which rises at Maltoy, 84 miles to the N.W. of Nagpore, and falls into the gulph of Cambay, about 20 miles below Surat.

TAR (*Engel.*). The following observations on the

pine-tree, and instructions relative to the manner of extracting the tar, and other refinous principles, from it, by M. Chaptal, appear in the *Journal des Arts et Manufactures*.

"There are few trees from the cultivation of which so many advantages are likely to result as that known by the name of the pine. It grows in dry and sandy grounds, in the midst of rocks; it crowns the summits of mountains with its agreeable verdure; it appropriates to itself soils which seem to be flunned by every other vegetable; it shoots up rapidly, requires scarcely any culture, and its uses and products are as multifarious as they are useful. The young plants, and the shoots lopped off from the trees of all ages, furnish a large supply of props for the vines. The wood of the pine affords very good fuel; its flame is brisk, and is attended with no other inconvenience than that of producing too much smoke. In all countries where the pine abounds, those pieces of its wood which contain the most resin are used instead of candles. The trunks of these trees are very proper for making planks: they are likewise employed for forming the bodies of pumps, for water-pipes, for beams, for the side planks of the decks of ships, for masts, &c. Its fruit is an alimentary substance of some consequence: many domestic animals are very fond of feeding upon it. Of the wood of the pine a species of charcoal is made, which is found to be very useful in metallurgical operations. These trees, when arrived at a certain size, afford an annual crop of twelve or fifteen pounds of resin. The trees which fall down with age, and those which are torn out of the ground, or broken off from their roots by the wind, as also the chips cut from the trunks when they are made into beams, the roots, &c. afford still a large quantity of tar. Proprietors of lands cannot therefore be too strongly urged to cultivate so valuable a tree.

"It would require nothing more than to scatter the fruit on such lands as are adapted to the nature of the tree, in order to insure its production. We must take care not to sow the pine-fruit in any other spots than such as are sheltered from the rays of the sun; for exposure to the sun proves destructive to the young plants. On this account the trees in the pine-forests are not filled in a regular manner, but only here and there, in order to insure an uninterrupted re-production."

The following are described to be the processes for extracting the refinous principles of the pine.

"All pines yield a refinous juice, but some in larger quantities than others. Those which contain the greatest quantity of resin are the Cyprus pine, the grey, the white, and the red pines. Soil, age, and size, have less influence upon the quantity of resin than the exposure of the plant, and the thickness of the bark: the pines exposed to the south, and to the rays of the sun, yield it in large quantities, whilst those whose bark is very thick yield less. Pines that grow too near to each other contain scarcely any resin; the interval between them ought to be twelve feet. The distance ought to be determined by the situation of the ground, and the position of the trees with respect to exposure to the sun. The young branches that shoot out from the stem should be carefully lopped off, by which means the tree grows to a greater height, and its trunk is more exposed to the action of the sun. Pines become more refinous in rich grounds, and in rainy seasons; but then the resin is not equally good. Young pines yield resin as well as the old ones, but the extraction of it enables them. The resin flows particularly during the summer season. Pines yield resin during the space of twenty or twenty-five years, and the extraction of it is generally commenced when they are twenty years old.

"The resinous juice flows out almost solely from the woody part of the tree, and runs down between the wood and the bark; the exterior layers yield it in greater quantity than the interior ones: only a few drops of good resin transude through the bark. The roots also yield a great quantity of juice. The knots contain more resin than the rest of the tree, the roots more than the branches, &c.; and the woody part in the vicinity of notches or wounds of the stem yields still more.

"When the pines have arrived at the age of about twenty years, they have acquired a circumference of three or four feet, and are sufficiently strong to admit of the extraction of a part of the resinous juice which circulates in the different parts of the tree. The resinous juice begins to flow in the spring, and it is during this season that incisions are begun to be made into the trees; in order to extract their produce. The juice continues to flow till the autumn. It generally begins to flow during the month of May, and ceases in September.

"In order to facilitate this flow, and determine it to a single point, a space, three inches in breadth, and six or eight in length, is pitched upon at the foot of the trunk, quite near to the earth, on the side exposed to the south, and in a part which appears to abound most in resin, and to be most disposed to let it run off: in this place the bark is peeled off, and a chip cut out of the wood, from whence the resin immediately begins to flow, and is seen transuding through the ligneous fibres, in small transparent drops; it runs down upon the bark of the lower part of the trunk, and is received into a hole made at the root of the tree, or into a vessel placed there for that purpose. When the flow of the resin begins to grow languid, the wound of the tree is enlarged at its upper part, and a new layer of the woody part is cut off. The wound must be renewed in this manner once every fortnight. Thus the wound is progressively enlarged, and at the end of the year it is a foot in length. The operation is discontinued as soon as the return of the frost hardens the resin, and stops its flow.

"In the following spring, the wound is again renewed, and at the end of five or six years it has acquired a height of five or six feet. When it has been enlarged to this height, a new cut is made at the foot of the trunk, almost close to the former, and is gradually carried higher up, parallel with the first. Whilst the resin is discharged by this second wound, the first heals up in such a manner, that the operation may be successively performed round the whole circumference of the tree, and repeated upon the places where the former wounds had been made. In renewing the wounds, we must use the precautions, to cut the chips very thin. For this purpose, the workman must be provided with very sharp instruments. Upon these precautions the health of the tree, and the quantity of resin produced, materially depends.

"In this manner a single person may manage from two thousand five hundred to two thousand eight hundred feet of trees. He pours into barrels the resin collected in the vessels placed for receiving it at the foot of the trees, and it is then fit to be introduced into commerce.

"The resin obtained in this manner in Guienne is known by the name of *galipot*; that of Provence, is termed *Perinne vierge*. In some parts of Provence, it is the practice to make a small hole at the bottom of that which receives the resin, and to separate the one from the other, by laying some twigs of rosemary over the orifice of the second. By this means the more fluid part of the resin filtrates into the smaller hole, and the resin obtained in this manner is termed *bijon*.

"A healthy tree yields annually from twelve to fifteen

pounds of resin. From the autumn to the spring, the small quantity of resin which flows from the tree hardens upon the surface, from which it is detached by means of iron scrapers fixed to the end of a pole. This resin is known at Bourdeaux by the name of *barras*.

"In order to form the yellow species of resin, known in commerce by the name of *brai sec*, and in Provence by that of *rafle*, they place upon a stove a copper boiler, the sides of which are bent into a lip, several inches in breadth, which is provided, at some point of its circumference, with a gutter, six or eight inches in length, under which is placed a trough hollowed into a piece of a pine-trunk, and filled with water.

"Both the liquid and the solid resin that has been obtained from the pine is put into the boiler. This substance is melted by a moderate heat: as soon as it is melted, a quantity of water is poured upon it, upon which the resin puffs up, and a part of it runs into the trough, which the workman continually pours back into the boiler, mixing the whole mass well together; and this manœuvre he continues till the whole of the water is dissipated. Towards the end of the operation, the melted resin becomes more tranquil, and acquires a yellow colour, in which state it is poured into another trough, where it filtrates through straw, and runs thence into moulds carefully formed in the sand. These moulds are round holes, the sides of which are rendered compact by being well beaten. The cakes of resin, which assume the shape of these moulds, weigh about two hundred pounds.

"If, instead of boiling the resin in an open vessel, we boil it in an alembic with water, it forms a species of oil of turpentine, termed *eau de rafle*, which, however, is greatly inferior to the genuine oil of turpentine.

"When the *galipot* is put into troughs composed of several planks fastened together, and exposed to the sun, the part which oozes through the crevices is known by the name of *San Turpentine* (*terébenthine de Joëil*). The term of *turpentine of the boiler* (*terébenthine de chaudrière*) is applied to the *galipot* that has been melted in one of these vessels. Even the most liquid *galipot* has been classed amongst the turpentine; but this species is the worst of all in its qualities, being inferior to that of the larch, and still more so to that of the fir.

"The living tree does not give out the whole of its resin by the wounds made in its trunk; but after it is dead, it is subjected to an operation, by which every particle is extracted; and it is this resinous substance, extracted from the dead tree, that is known by the name of *tar* (*goudron*).

"In order to extract the tar, all that is required is, to apply to those parts of the wood in which it is contained, a degree of heat sufficient to soften it, and make it run, without either setting fire to, or volatilizing it. This end is obtained by disposing the wood of the pine, previously cut into small pieces, in a heap, the sides of which are covered with earth, sods, or bricks. The whole mass is heated by means of fire applied to the upper part, and all the resin that runs down to the bottom is carried off from the heap by gutters. The kilns, in which this smothered combustion is performed, are of different forms and dimensions. But all the processes which have hitherto been made known have certain principles and operations in common with each other, of which we shall give some account. For extracting tar, the heart of the tree, the knots, and all the resinous veins, are chosen. The red parts of the wood are taken in preference to the rest. The bark and leaves are rejected, as the tar which they furnish is of an inferior quality. The tar is extracted also from the straw, which has served for filtrating the *brai sec*,

and from the chips that have been cut off from the trunk, in order to renew the wounds of the tree.

"In preparing tar, use is also made of trees exhausted of their resin, and particularly of those decayed by age, of those that have been broken off, or rooted up by the wind, and of the chips produced in various species of labour for which this wood is employed.

"The tar is the better in proportion as the trees from which it is extracted are more resinous, the more attention is paid to the separation of the bark and young shoots, and the more care is taken to prevent the combustion and volatilisation of the resin. In order to obtain good tar, it is also of essential advantage to employ wood that is neither too green nor too dry; that which is in a state of half-dryness is the best. The trees may be felled at any season of the year, but it is principally during the autumn that they are hewn down for this purpose, and the extraction of the tar is performed during the winter. It is further necessary that the wood should be cut into small pieces, as equal as possible in size, in order that the whole of the resin which it contains may be melted out at one and the same time.

"The management of the fire demands likewise great attention; for, 1st, too active a fire burns and dissipates the resin; 2dly, too violent a heat volatilises it, and produces tar of too dry a nature; and, 3dly, if the heat be too low, it extracts only a part of the resin, and leaves combined with the tar the watery particles which existed in the vegetable. A kiln, filled with very red and resinous wood, yields a quarter of its weight of tar; but this substance is generally obtained in the proportion of not more than 10 or 12 per cent. to the whole.

"Each species of kiln that has been employed for the extraction of tar appears to me to possess certain advantages and disadvantages of its own. In the mountains of Provence, the kilns are shaped like large pitchers, partly sunk into the ground; they are eighteen inches in diameter at the bottom, six feet in the belly, and two at the top. The wood is cut into pieces eighteen inches long, and an inch and a half wide; these are disposed in layers of the form of a gridiron, having the interstices filled up by other pieces placed perpendicularly.

"In the neighbourhood of Bourdeaux they dig a circular pit, thirty-six or forty feet in circumference, where a hearth is formed by bricks, placed upon the ground, and well cemented together. A small canal is made at the centre for receiving the tar, and conveying it into a receptacle, which is termed the *vault (cave)*, and in which a quantity of water is kept, in order to purify the tar. The vault is emptied as fast as it fills, and the tar put into the barrels, in which it is transported from place to place. The hearth of the kiln is covered with wood cut into small pieces, and piled into a heap eight or ten feet high. The sides of the heaps are covered with sods, and clods of earth; and the upper part of the cone, where they place a layer of wood drier than the rest, is set on fire. The heat communicates itself to the whole mass, and when the fire slackens, openings are made to increase the draught, by taking out some of the clods in different parts of the sides. When the operation is completed, all the draught-holes are closed, and the charcoal that has been formed is taken out of the kiln.

"The kilns used in *Louisiana* differ very little from those which we have just described; only the ground is not covered with bricks, but the tar is made to run merely by the slope of the earth, which is strongly beaten, and thence it is conveyed, by very long gutters, into reservoirs dug into the ground.

"The method used in the *Valais*, for extracting the tar,

is practised by all the peasants; and as it presents to us all the means proper to be employed for avoiding any waste of the tar, and obtaining it of good quality, we shall describe it with more minuteness than the others, introducing at the same time some variations, which, from our observations and experience, appear to us to be necessary.

"A kiln is constructed of a form similar to that of an egg placed upon one end. Its dimensions may be varied according to the quantity of wood we have to burn: it ought, in general, to be twice as high as it is broad. The largest may be ten feet in height, five in diameter, and two and a half at the superior orifice. In constructing this kiln, the first operation is the marking out of its dimensions at the base, after which the walls are raised of stone, to the height of two-thirds of the whole height of the kiln. The inside is paved with free-stone, well joined together; or, where this cannot be procured, with bricks laid upon the ground, and well cemented. The bottom is concave, and of the form of an egg-shell. Six inches from the bottom an orifice is made, eighteen lines in diameter, which terminates on the outside and at the bottom of the kiln, sloping down six or eight inches, and to this is adapted a large tube, resembling a musket-barrel, of a large bore, for the purpose of conveying the tar into the barrels destined to receive it.

"At the distance of twenty or twenty-five inches from the bottom of the kiln, bars of iron are placed, parallel with each other, for supporting the wood, and letting the tar, which is melted out by the heat, run down to the bottom. The construction of the kiln is completed with fragments of stone and earth, and at the top an open space is left, two feet and a half in diameter, for the convenience of filling the kiln. It is plastered over both within and without, and any cracks or flaws that may be formed are immediately stopped up. It is also of advantage to make some perforations in the walls of the kiln, which may be used, as occasion requires, for increasing the draught, and graduating the heat at pleasure.

"When a kiln of this kind has been constructed, a man goes into the inside, and disposes the wood, cut into billets two inches broad and eighteen long, upon the grate, and with these he fills up the whole cavity, taking great care to leave no empty spaces, and the top of the kiln he fills with dry chips. The orifice at the top is closed up with flat stones, or plates of iron or copper, so as to leave only one opening, or chimney, about four inches in diameter. The chips are then set on fire, and, when the fire is well kindled, this orifice is closed with a flat stone, which is covered over with earth. The melting now commences, and the tar runs down to the bottom, whence it is conveyed, by the tube inserted there, into the barrel. If the melting should cease, the orifice must be opened again, and even a draught of air let in through the holes in the sides of the kiln. If the smoke finds a vent through the sides of the building, the holes must be stopped with wet earth, sods, or other substances.

"When the kiln has cooled, it is opened, and the charcoal produced by the operation is taken out. The impurities collected at the bottom are then extracted, and the kiln is filled again.

"By a kiln of this construction, which is neither laborious, expensive, nor difficult, all unnecessary waste is avoided; and the tar must necessarily be more pure, as, on account of the solidity of the structure, the materials cannot be mixed with it, besides that the tar preserves all those principles which the other furnaces suffer to be dissipated.

"The expence which attends the construction of such a furnace cannot be placed in competition with the advantages

which it affords. Besides, it is built in the midst of the forests, and consequently surrounded with all the materials that are required. Moreover, it is a stable and permanent establishment, whilst the other one is obliged to demolish and rebuild for every single operation.

"Another refinous preparation, known in commerce by the name of *brai-gras*, is obtained by filling the kiln with alternate layers of green wood and resin or dry chips, making the uppermost layer of dry chips. The orifice by which the juice might run out is closed, and fire applied to the kiln. Great care is taken to prevent the production of flame, and to produce a dead heat, which is kept up for seven or eight days. By this means, the resin is melted, mixes with the sap, and runs to the bottom of the kiln. When the operation is finished, the orifice is unclosed, and the *brai-gras* runs out. Sometimes the tar which is obtained from very refinous wood is used instead of the *brai-gras*. By mixing *brai-fee* with very refinous wood, and not opening the vent-hole till the refinous substance has boiled, we obtain *brai-gras*.

"In order to make *lamp-black*, small pieces of the refuse of all these refinous substances are put into iron pots, and placed in the middle of a close chamber, entirely lined with canvas or paper; after which the pieces of resin are set on fire. A thick smoke is thus produced, which settles upon the walls, and forms the substance termed *lamp-black*. The places chosen for performing this operation ought always to be in a perfectly insulated situation."

TAR, or PAMLICO, a river of North Carolina, which flowing by Tarborough and Washington, enters Pamlico Sound, 40 miles S.E. of the latter town.

TARAGALLA, a town of the kingdom of Tafilet, with a castle, seated on the Dras, 27½ miles S.W. of Tafilet. Long. 6. 3. W. Lat. 27. 40. N.

TARARE, a town of France, in the department of Rhone and Loire, seated on the Tordive, at the foot of a mountain of the same name, 23 miles N.W. of Lyons. Long. 4. 43. E. Lat. 45. 52. N.

TARASCON, a town of France, in the department of the Mouths of the Rhone, with a castle, seated on the Rhone, opposite Beaucaire, with which it communicates by a bridge of boats. Its commerce consists in oil, brandy, starch, and stuffs that are much worn, one sort being of coarse silk, and the other of the same material and wool. It is 10 miles N. of Arles, and 37½ S. by E. of Paris. Long. 4. 30. E. Lat. 43. 48. N.

TARASCON, a town of France, in the department of Arriège, seated on the river Arriège, seven miles S.E. of Foix.

TARBES, a populous town of France, capital of the department of Upper Pyrenées, with a bishop's see, an ancient castle, and a college. It is seated on the Adour, 42 miles S.W. of Auch, and 112 S. by E. of Bourdeaux. Long. 0. 3. E. Lat. 43. 14. N.

TARBOROUGH, a town of the United States, in North Carolina, seated on the river Tar, 40 miles N.W. of Washington.

TARENTESIA, a province of Savoy, which is a barren country, full of dreadful mountains. Moutier is the capital.

TARGA, a town of the kingdom of Fez, on the Mediterranean, with a castle on a rock. It is seated in a plain surrounded by mountains and thick forests, which is considered as a desert; but there are good wells and fine pastures. Long. 4. 56. W. Lat. 35. 20. N.

TARGOROD, a town of Turkey in Europe, in Moldavia, 50 miles S.W. of Jassy. Long. 26. 29. E. Lat. 46. 49. N.

Vol. X.

TARIFFA, a town of Spain, in Andalusia, with a castle, seated on an eminence, on the straits of Gibraltar, 17 miles W.S.W. of Gibraltar. Long. 5. 40. W. Lat. 30. 0. N.

TARKU, the capital of Daghestan, seated on the West coast of the Caspian Sea, 52 miles S.E. of Terki, and 300 N.E. of Tauris. Long. 47. 5. E. Lat. 45. 50. N.

TARN, a department of France, including part of the late province of Languedoc. It takes its name from a river, which has its source in the department of Lozhere, and having watered Mithoud, Alby, Guillac, Montauban, and Moissac, falls into the Garonne. Castres is the capital.

TARNOWITZ, a town in Silesia, in the principality of Oppelen, near which is a silver mine, 38 miles S.E. of Oppelen. Long. 18. 15. E. Lat. 50. 20. N.

TARO, or BORGO-DI-VAL-DI-TARO, a town of Italy, in the duchy of Parma, capital of the territory of Val-di-Taro. It is seated on the river Taro, 25 miles S.W. of Parma. Long. 10. 9. E. Lat. 44. 36. N.

TARODANT, or TARUDANT, a town of Morocco, in the province of Sus, seated near the Atlantic, 120 miles S.S.W. of Morocco. Long. 8. 10. W. Lat. 30. 0. N.

TARRAGA, or TARREGA, a town of Spain, in Catalonia, seated on a hill, near the river Cervera, 15 miles E. by S. of Lerida, and 60 W. of Barcelona. Long. 1. 3. E. Lat. 41. 28. N.

TARRAGONA, a strong sea-port of Spain, in Catalonia, with a bishop's see, and a university. It was built by the Phœnicians, was very powerful in the time of the Romans, and has many noble monuments of antiquity. It is surrounded by walls built by the Moors, and is defended also by regular works. It is neither so large nor so populous as it was formerly; for though there is room for 2000 houses within the walls, there are not above 500, which are all built with large square stones. It carries on a great trade, and is seated on a hill on the Mediterranean, 35 miles N.E. of Tortosa, and 220 miles E. by N. of Madrid. Long. 1. 15. E. Lat. 41. 5. N.

TARREGA, a town of Spain, in Catalonia, situate on the Cervera, five miles W. of Cervera, and 30 N. of Terragona.

TARTAS, a town of France, in the department of Landes. The Midouze runs through it; and on one side of this river it rises in the form of an amphitheatre; the other is seated on a plain. It is 12 miles N.E. of Dax. Long. 0. 48. W. Lat. 43. 50. N.

TARVIS, or TARWIS, a town of Germany, in the duchy of Carinthia, 28 miles W.S.W. of Clagenfurt, and 46 N.N.W. of Trieste. Long. 13. 40. E. Lat. 46. 34. N.

TASSACORTA, a sea-port of the ile of Palma, one of the Canaries. It lies S.W. of St. Cruz, and being exposed to westerly winds is little frequented, but by boats. Long. 17. 58. W. Lat. 28. 38. N.

TASSASUDON, the capital of Bootan, a feudatory country of Thibet. It is 260 miles S. by W. of Lassa. Long. 89. 0. E. Lat. 27. 43. N.

TASSING, an island of Denmark, between Funen, Langeland, and Arroe. It is separated from the former by a strait, and contains a few towns and villages.

TASSO, an island of the Archipelago, near Romania, at the entrance of the gulf of Costefia. It is 35 miles in circumference; and was formerly famous for mines of gold, and quarries of beautiful marble. The capital, of the same name, has a good harbour, and several castles.

TASSO, a mountain of Italy, between Bergamo and Como, from which the illustrious family of the poet Tasso took their name, which was originally Torregiani. They were lords of

Bergamo, Milan, and other towns in Lombardy, but being expelled by the Visconti, they settled on the most advantageous spots of this mountain.

TATTA, or **SINDE**, a city of Hindoostan Proper, capital of the province of Sindy. It is seated on a branch of the river Sinde or Indus, called the Richtol River. In the 17th century, it was very extensive and populous, possessing manufactures of silk, wool, and cotton; and it was celebrated for its cabinet-ware. Little of these now remain, and the limits of the city are very circumscribed. On the shores of the Indus, above the Delta, considerable quantities of felpetre are made; and within the hilly tract, which commences within three miles on the N.W. of Tatta, are mines of iron and salt. The Indus, and its branches, admit of an uninterrupted navigation from Tatta to Moultan, Lahore, and Cashmere, for vessels of near 200 tons; and a very extensive trade was carried on between those places, in the town of Aurnagzebe; but, at present, very little of this trade remains, owing to a bad government in Sindy, and to a hostile disposition of the Seiks, the present possessors of Moultan and Lahore. Tatta is 741 miles N.W. of Bombay. Long. 67. 37. E. Lat. 24. 50. N.

TATTAH, a town on the common frontiers of Morocco, Drah, and Zanghaga, and in the route from Morocco and Sus to Tombuctou. It is 170 miles S.E. of Morocco.

TATTERSHALL, a town in Lincolnshire, with a market on Friday. It was formerly of note for its castle, and is seated on the Bane near its confluence with the Witham, 20 miles S.E. of Lincoln, and 127 north of London. Long. 0. 8. W. Lat. 53. 6. N.

TAVASTUS, a town of Sweden, in Finland, capital of the province of Tavasteland, seated on a river which falls into the lake Wana, 62 miles N.E. of Abo.

TAUCHEL, a town of Poland in Pomerellia, seated on the Vêrd, 30 miles N.W. of Culm, and 55 S.W. of Marienburg. Long. 18. 5. E. Lat. 53. 38. N.

TAVERNA, a town of Naples, in Calabria Ulteriore, seated on the Coraca, 20 miles E. of Naccaro, and 70 N.E. of Reggio. Long. 16. 44. E. Lat. 39. 11. N.

TAUMACO, a town of Turkey in Europe, in the province of Janna, 18 miles N.W. of Zeiton.

TAUMAGO, an island of the South Pacific Ocean, discovered by Quiros in 1606. Long. 176. 45. W. Lat. 13. 0. S.

TAUREAU, an ile of France, in the department of Finistère, lying at the mouth of the river Morlaix. On this island is a castle, which defends the port of Morlaix. Long. 3. 51. W. Lat. 48. 40. N.

TAUS, a town of Bohemia, in the circle of Pilsen, 26 miles S.S.W. of Pilsen, and 50 S. of Saatz. Long. 13. 45. E. Lat. 49. 25. N.

TAVY, a river in Devonshire, which rises in Dartmoor Forest, and watering Tavistock, enters the harbour of Hamozze, above Plymouth.

TAW, a river in Devonshire, which rises in the centre of the county, flows to Barnstaple, and joins the Towridge, at its mouth in the Bristol Channel.

TAWY, a river in Glamorganshire, which flows parallel to the Neath, and enters the Bristol Channel, at Swansea Bay.

TAY, Loch, a lake in Perthshire, through which flows the river Tay. It is 15 miles long, and in many parts above one broad. On the 12th of September, 1784, this lake was seen to ebb and flow several times in a quarter of an hour, when all at once the waters rushed from E. to W. in opposite currents, so as to form a ridge, leaving the channel dry to the distance of almost 100 yards from its usual boundary. When the opposing waves met, they burst with a clashing noise and

much foam: the waters then flowed out at least five yards beyond their ordinary limits. The flux and reflux continued gradually decreasing for two hours. A similar motion was observed several days, but in a less degree. The banks of this lake are finely wooded; and it has a small tufted island, on which are the ruins of a priory, built by Alexander I.

TEHANG-TCHA-FOU, a city of China, the capital of the S. part of the province of Hou-quang. It has one city of the second and eleven of the third class under its jurisdiction, and is seated on a large river, which has a communication with an extensive lake, called Tong-ting-hou, 62 1/2 miles S. by W. of Pekin. Long. 112. 25. E. Lat. 48. 11. N.

TCHANG-TCHEOU-FOU, a city of China, in the province of Fo-kien. It is very considerable, on account of its trade with Emou, Pong-hou, and Formosa. Long. 117. 35. E. Lat. 24. 32. N.

TCHANG-TE-FOU, one of the most northern cities of Honan, in China. It is remarkable for a fish, like a crocodile, the fat of which is of such a singular nature, that, when once kindled, it cannot be extinguished. Long. 111. 5. E. Lat. 29. 2. N.

TCHE-KIANG, a province of China, one of the most considerable in that empire, in extent, riches, and population. It is bounded on the N. and W. by Kiang-nan, on the S.W. by Kiang-si, on the S. by Fokien, and on the east by the ocean. In this province, whole plains may be seen covered with dwarf mulberry-trees, purposely checked in their growth; and prodigious quantities of silk-worms are bred here. Their silk stuffs, in which gold and silver are intermixed, are the most beautiful in China. The tallow tree grows here, and here are found the small gold fish, with which ponds are stocked.

TCHERNIGOF, a government of Russia, formerly a part of the Ukraine. Its capital, of the same name, is seated on the Dniepr.

TCHING-KIANG-FOU, a strong city of China, in the province of Kiang-nan, the key of the empire on the sea-coast. Its situation and trade, and the beauty of its walls, give it a pre-eminence over the other cities of the province; but its jurisdiction is confined to three cities of the third class. It is 25 miles E. by N. of Nan-king. Long. 118. 55. E. Lat. 32. 14. N.

TCHING-TCHEOU-FOU, a city of China, in the province of Hou-quang, seated near the canal through which all barks must pass in going from Sou-tcheou, to Kiang. Under it are five cities of the third class, in which a kind of plain earthen ware is prepared; highly valued by the Chinese, who prefer it to the most elegant porcelain. It is 630 miles S.S.W. of Pekin. Long. 109. 40. E. Lat. 28. 23. N.

TCHING-TING-FOU, a large city of China, in the province of Pe-tcheli. Its district contains five cities of the second and 27 of the third class; and it is 110 miles S. by W. of Pekin. Long. 114. 21. E. Lat. 38. 9. N.

TCHING-TOU-FOU, a city of China, the capital of Setcheuen, formerly the residence of the emperors, and one of the largest and most beautiful cities in the empire; but, in 1646, it was almost entirely destroyed, during the civil wars that preceded the last invasion of the Tartars. Its district contains six cities of the second and 15 of the third class. Long. 103. 44. E. Lat. 30. 40. N.

TCHI-TCHEOU-FOU, a city of China, in the province of Kiang-nan. It is seated on the river Kiang, and has under it six cities of the third class. Long. 117. 0. E. Lat. 30. 45. N.

TCHONG-KING-FOU, a city of China, one of the most commercial provinces of Setcheuen. It is seated on a

mountain, rising in the form of an amphitheatre, at the confluence of the Hin-cha-kiang and Yang-tse-kiang. Under it are three cities of the second and 11 of the third class. It is 637 miles S.W. of Pekin. Long. 106. 20. E. Lat. 29. 42. N.

TCITICAR, the most northern of the three departments of Eastern Chinese Tartary. Its capital, of the same name, is a modern city, built by the Emperor of China, to secure his frontiers against the incursions of the Russians. It is 450 miles N.E. of Pekin.

TEAKI, an island in the Mediterranean, 20 miles long and four broad. It is the ancient Ithaca, the kingdom of Ulysses. Long. 20. 54. E. Lat. 38. 47. N.

TEBESSA, a town of the kingdom of Tunis, with several remains of antiquity. It is seated at the foot of a mountain. Long. 8. 5. E. Lat. 34. 51. N.

TEBZA, a strong town of the kingdom of Morocco, capital of a province of the same name. It carries on a good trade, and is seated on the side of one of the mountains of Atlas. Long. 4. 55. W. Lat. 32. 50. N.

TECUT, a town of Morocco, in the province of Sus, seated on the river Sus, in a country abounding in dates and sugar-canes, four miles E. of Meffa. Long. 8. 25. E. Lat. 29. 10. N.

TECOANTEPECA, a considerable sea-port of New Spain, in the audience of Mexico and province of Guaxaca, seated on a bay of the same name, in the Pacific Ocean. It has a fortified abbey, and several handsome churches. Long. 95. 15. W. Lat. 15. 28. N.

TECORT, or **TICARTE**, a strong town of Barbary, capital of a kingdom of the same name, in Biledulgerid. It is seated on a mountain, 420 miles S.W. of Tripoli. Long. 7. 55. E. Lat. 29. 35. N.

TECRIT, a town of Turkey in Asia, in the government of Mosul, 130 miles S. of Mosul.

TECULET, a sea-port of the kingdom of Morocco, with an old castle, seated on the side of a mountain, at the mouth of a river of the same name. Long. 9. 5. W. Lat. 30. 45. N.

TEDELEZ, a strong town of Algiers, in a province of the same name, on the coast of the Mediterranean, with a castle, 50 miles N.E. of Algiers. Long. 3. 5. E. Lat. 47. 5. N.

TEDLA, or **TADILA**, a province of Morocco, which extends along the E. side of Mount Atlas, to the borders of Fez and Algiers.

TEDNEST, a large town of Morocco Proper, capital of the province of Hea. It was taken by the Portuguese in 1517, but they were driven away soon after. It is almost surrounded by a river. Long. 8. 35. W. Lat. 30. 30. N.

TEDSI, a commercial town of Morocco, in the province of Sus, seated in a plain abounding in corn, 20 miles S.E. of Taroiant.

TEFEZARA, a strong town of Algiers, in the province of Tremesen, 12 miles from the city of that name. There are a great many mines of iron in its territory.

TEGAZA, a town of Zahara, capital of a territory of that name, to the N.E. of Senegal. It is remarkable for mountains of salt. Long. 6. 30. W. Lat. 21. 40. N.

TEGLIO, a town of the county of the Grisons, capital of a government of the same name, in the Valteline. It is situate on the top of a mountain, nine miles from Tirano, and 12 from Sondrio.

TEIGN, a river in Devonshire, composed of two branches, which rise in the centre of the county, and uniting, enter the English Channel at Teignmouth.

TEIGNMOUTH, a sea-port in Devonshire, reckoned part of the port of Exeter. It sends a number of vessels to the

Newfoundland fishery, and has a considerable coasting trade, especially in carrying tobacco-pipe clay to Liverpool, whence are brought back coal, salt, earthen ware, &c. This is the place where the Danes first landed, and where they committed several outrages. It was almost entirely destroyed by the French, who landed and set fire to it in 1690. It is seated at the mouth of the Teign, 12 miles S. of Exeter, and 288 W. by S. of London. Long. 3. 29. W. Lat. 50. 32. N.

TEISENDORF, a town of Bavaria, in the archbishopric of Salzburg, 12 miles W.N.W. of Salzburg.

TEISSE, a river of Hungary, which rises in the Carpathian mountains, passes by Tockay and Segedin, and falls into the Danube, near Titul.

TELEGRAPH (*Encycl.*). The following is the specification of a patent granted to Mr. Boaz, manufacturer in Glasgow, for an improved method of communicating thoughts, information, and intelligence, to and from different places, at a distance from each other.

This invention consists in representing, at pleasure, by means of lights or luminous bodies, and also by means of opaque bodies, or by means of both combined, any letter of the alphabet, or any numerical figure, or any appearance or appearances which it may be desirable to exhibit as a sign, symbol, or signal, such as a circle, a semicircle, a segment of a circle, a square, one side of a square, or two or three sides of a square, a cross, a triangle, and other such like. This may be effected in various ways, and a smaller or larger number of lights or bodies; but perhaps, in regard to luminous bodies, and where correct circular appearances are not necessary to be represented, as simple a mode as any is the following. Take five-and-twenty lamps, dispose of them on a board or frame, so as to form a square; that is by fixing them in five rows, and five lamps in each row, at equal distances from each other. Affix a cover or blind (made of any opaque substance) before each lamp, of a round or rather an oval shape, having a handle or neck made so as to move backwards and forwards, or up and down, round a pin, nail, or pivot, fixed in the board or frame. Fix a small line (made of small twine or rope, according to the size of the machine, or of catgut, or a small metal chain, or any other pliable and connecting substance) around the handle or neck of each of these covers or blinds. Connect each of these lines with a pulley at one side of the board or frame. Raise this board or frame perpendicularly upon a square or oblong frame. Fix in this last square or oblong frame as many thin oblong pieces of wood or metal as there are lamps and lines attached to them; such thin or oblong pieces of wood or metal moving upon two pivots in the side of the square or oblong frame in which they are placed; and these thin or oblong pieces of wood or metal being placed in their frame in such manner as that their oblong direction may run from side to side of their frame upon the pivots fixed on which they move, and so that each of these thin oblong pieces may, when not pressed upon as after mentioned, remain perpendicular to its frame, and all of them, when at rest, may be parallel to each other. One of the lines affixed to the lamp-covers, or blinds, and connected with its pulley, being fixed to the upper edge of one of these thin oblong pieces of wood or metal, that is, the one extremity of such line being affixed to the handle or neck of the lamp-cover, or blind; and the other extremity being affixed to the upper edge of one of the thin oblong pieces of wood or metal; then, upon turning the thin or oblong pieces of wood or metal, so as to make it incline, the lamp-cover, or blind, will be drawn up; and by thus making as many of the thin oblong pieces of wood or metal incline as lamps are wanted to be uncovered, the letter of the alphabet or figure wished to be represented will be made to appear. In order the more easily to give the necessary in-

inclination or turning to these thin oblong pieces of wood or metal (which, seeing they act by their inclined positions, shall be called incliners), place a piece of wood or metal, nearly of the same size with the incliners, so as to be easily moved backwards and forwards (in grooves for example) in the frame in which the incliners are placed at right angles to them, and so that the upper edges of such pieces of wood or metal may come near to the under edges of the incliners. By fixing in such pieces of wood or metal pins or teeth (made of wood or metal), the piece of wood or metal having such pins or teeth being pushed in (and which shall be called the pusher, seeing it acts by being pushed in), the pins or teeth which are fixed in it striking against the under edge of the incliners, give them the inclined direction which is necessary to pull the lines affixed to the lamp-covers; and thus, by affixing in each of these pushers as many pins or teeth as lamps are meant to be uncovered, and so that these pins or teeth may strike against the under edge of the incliners (connected as they are by means of lines and pulleys with the covers, or blinds of the lamps meant to be uncovered), as many lamps will be uncovered as are necessary to represent the letter of the alphabet, or other sign or appearance meant to be exhibited; and, by having a double set of lamp-covers or blinds, and lines and pulleys, that is, by having lamp-covers or blinds behind as well as in front of the board or frame, and lines and pulleys, to connect them with the incliners in the same manner as the covers and blinds in front are connected with the incliners, the same lamps may be rendered visible behind, which are made visible in front, of the board or frame; or other lamps may be rendered visible behind, which are not made visible in front, of the board or frame. Upon drawing back the pusher the lamp-covers or blinds fall down by their own weight, and cover the lamps, and the incliners also resume their former position. For the greater facility and ease in producing the desired effect, there may be a pusher, having pins or teeth fixed therein as aforesaid for each letter of the alphabet, and for each numerical figure or other sign or appearance wished to be represented, and these pushers may further be marked on the outside of their frame, from whence they are pushed in, with the letter of the alphabet or numerical figure, or other sign or appearance, which, upon being pushed in, they represent by means of the lamps which they uncover; and a handle or knob may be fixed to the end of the pusher at which the letter or figure, or sign, is marked, for the greater convenience in pushing it in and pulling it back; and the letter, figure, or sign, may be marked upon the handle or knob. Cranks will do equally well as the thin oblong pieces of wood or metal, which form the incliners to which the lines are attached, which connect them with the lamp-covers or blinds; but thin oblong pieces of wood or metal are suggested as being more simple in their configuration and construction; and these thin oblong pieces of wood or metal, or cranks, acting as incliners, may be placed in a perpendicular as well as in a horizontal direction. Instead of lines and pulleys, the lamps too might be uncovered, and again covered, by means of wires and keys pressing upon them, as in a piano-forte: but lines and pulleys are suggested, as being more simple in their construction, and less liable to go out of repair. Various other modes of construction might also be easily adopted to produce the same effect. For instance, in place of having lamps with covers or blinds, and lines and pulleys, and incliners and pushers, the lamps might be made with an opaque and a shining side; and by means of a screw or levers, as well as by means of lines and pulleys, the lamps may be made to turn, so as to exhibit their opaque or their shining side that is to be made visible or invisible at pleasure. In order to comprehend this invention the more distinctly, a drawing is annexed (Plate 52, fig. 1) agreeably to the de-

scription first given, in which the machine is supposed to represent the letter H. The black square represents the board or frame behind which the lamps are placed, having a hole or aperture, through which each lamp shines; that is, having as many holes or apertures in it as there are lamps affixed behind it. The oval figures (a) represent the lamp-covers or blinds. The lines represent the lines attached to the lamp-covers and incliners. The five dots at the bottom of the black square represent the pulleys (which, though only five in appearance, represent twenty-five pulleys, the number of pulleys being equal to the number of lamps and incliners). The oblong figures, immediately below the black square, represent the incliners. The dark oblong figure at the bottom of the whole represents the pusher, with its pins or teeth, which, striking against each of the five outward incliners and three of the middle ones, is supposed to uncover each of the five outward lamps and three of the middle ones, at right angles to the former, and thereby represent the letter H; the small white circles representing the lamps supposed to be uncovered, and the oval figures raised upwards, shewing the lamp-covers or blinds of the lamps supposed to be uncovered, while the other oval figures represent the other lamp-covers or blinds supposed to shut the holes or apertures, and cover the lamps, by remaining down from their own weight. To prevent these lamp-covers from going wrong by rising too high upon being pulled up, small pins are placed (represented by small dots), to confine them to their position when raised; and other pins are placed (also represented by small dots) to prevent them from falling too low. In order to give additional power or glare to the light, the lamps may be made with reflectors, or a lens or refractor may be placed before each lamp. The frame attached to the black square in the annexed drawing (fig. 1), represents these lenses or refractors so placed in a frame as that a lens or refractor may come before each lamp, the frame in which they are placed being attached by hinges to the back-board or square in which the lamps are placed, so that the frame containing these lenses or refractors may be opened and shut at pleasure.

The annexed drawing (fig. 1) supposes the lamps to be first covered, and then such of them to be uncovered as represent the letter H, which is meant to be represented. But it is evident that the same effect might be produced by having all of the lamps uncovered in the first instance, and then covering all of them but those necessary to represent the appearance of the letter. Five-and-twenty lamps, with their covers or blinds, are also here represented; and the same number of lines and pulleys, and incliners, are also supposed to be represented. But nine lamps, with their covers or blinds, and as many lines and pulleys, and incliners (as represented in the annexed paper of drawings in the figure marked fig. 9, where the letter H is also supposed to be represented), would produce nearly the same effect; and a similar effect may be produced by a greater or a smaller number of lamps than five-and-twenty (as many pushers being always made use of as there are letters of the alphabet, or separate signs meant to be represented), so that it is not in the number of lamps made use of, or in the particular configuration or construction of the machine, that the invention consists, but it is in being able to represent, by means of lamps or luminous bodies (and also by means of opaque bodies, or by both combined, as after mentioned), any letter of the alphabet, and any numerical figure, or any appearance or appearances to be used as signs, signals, or symbols. For although lamps are supposed to be made use of, candles or phosphoric substances would produce a similar effect, though perhaps in an inferior degree: and one large lamp may be so placed or suspended as to produce a similar effect upon mirrors or reflectors, which might be covered or uncovered at pleasure.

M^r Boaz's Telegraph.

Fig. 1.

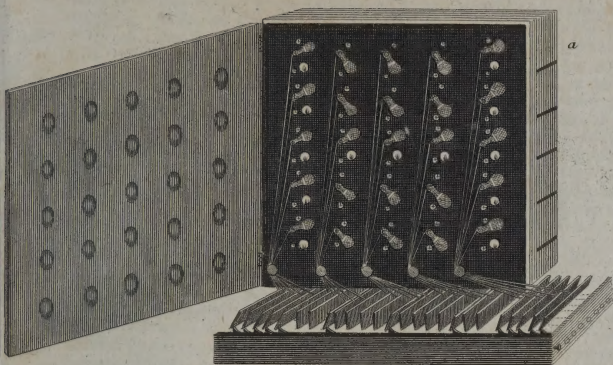


Fig. 2.

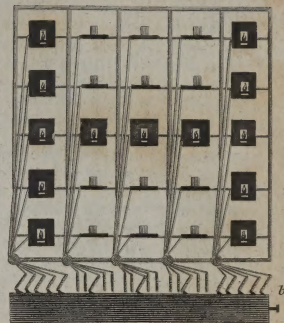


Fig. 3.

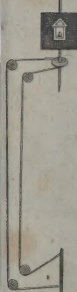


Fig. 4.

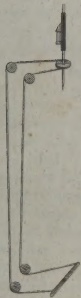


Fig. 5.

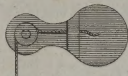


Fig. 6.



Fig. 9.

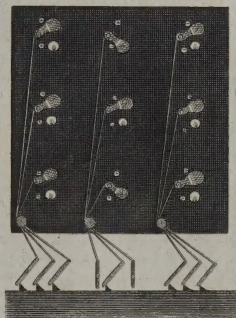


Fig. 10.

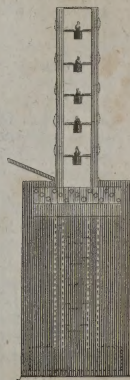


Fig. 8.



Fig. 7.



Fig. 11.

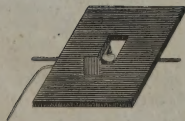


Fig. 12.

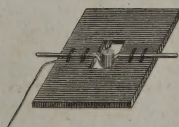


Fig. 13.



as the lamps above mentioned. It is also obvious, that almost any form, figure, or shape, may be represented by the disposition or arrangement of lamps or luminous bodies, rendered visible or invisible at pleasure, in the manner that has been described. But it is further obvious, that by combining the representations of two or more letters or figures together, as many different varieties of signs or appearances may be produced as there are combinations of letters or figures, which may be represented separately. In order the more easily to comprehend the form of the lamp-covers or blinds above described, two drawings are given of the same in the annexed paper of drawings, viz. fig. 5, in which a front view of the lamp-cover is seen, with its line attached to it, and fig. 6, in which a side view is given of it. A drawing is also given in the annexed paper of drawings of the incliner, viz. fig. 7. The whole figure taken together represents the incliner as made of a thin piece of wood or metal. The black part of it represents the crank, which may accomplish its purpose equally well with the thin piece of wood or metal. A drawing is also given in the annexed paper of drawings, viz. fig. 8, of a smaller frame, in which the lamps may be first fixed, which smaller frame may be easily made to slide into a case, or in grooves behind or before, or may be otherwise attached to the larger frame in which the lamps are placed in the rows in which they are wanted. The drawing marked fig. 13, in the annexed paper of drawings, shews the manner in which the pushers may be placed in their frame, running in grooves or cases. The whole machine may, for the sake of preservation, be inclosed in a box or case, which box or case may, for the sake of convenience, run on castors; and the machine may be raised to the top of its box either by means of a pulley or by the hand, if of small dimensions. A representation of the machine and its box is given in fig. 10, of the annexed paper of drawings, shewing a front view of the ends of the pushers, and a lateral-view of the lamps. The description hitherto given relates to the modes by which any letter of the alphabet, and any numerical figure, or any appearance or appearances necessary to be used, as signs, signals, or symbols, may be effected by means of lamps or luminous bodies.

Mr. Boaz next shews how these effects may be produced by means of *opaque bodies*. For this last purpose, take a frame, having bars or divisions, running either in a perpendicular or horizontal direction in the frame. For instance, take a square or oblong frame, having four rims or sides; place horizontally in it five bars or divisions; place at equal distances, on each of these bars, five boards, or thin pieces of wood or metal, of any shape or size, thinner than the bar to which they are to be attached, leaving a space between each board or piece of metal. When the boards or pieces of metal are parallel to each other, and present their edge or thin side to the front of the frame or bars, they are not seen at a distance; the whole exhibiting at a distance only the appearance of the bars. The boards may be so constructed as always to remain of themselves in this position; that is to say, let the boards be fixed, by means of pivots or hinges, to the upper side of the front of the bars; the pivots or hinges being placed on the board, not at its middle, but near one edge of it, so that the greater weight of that part of the board, the edge of which is furthest from the hinges or pivots, would bring that part of it downwards, and make the board hang perpendicularly, were it not for the bar below, to which it is attached; which bar below being made broader, or as broad as the breadth of that part of the board, the edge of which is furthest removed from the hinges or pivots, catches such part of the board, and, keeping it in an horizontal position, prevents it from falling, as it otherwise would do, to its perpendicular. In order to raise the board, fix to it, in that part of it, the edge of which is least removed

from the hinges or pivots, a line (made of twine or rope, or other pliable substance, according to the size of the machine), and connecting it with a pulley at the under part of the frame, affix the extremity of such line to the under edge of the incliner as in the preceding part of the description. The pusher, upon being pushed in, will produce its effect as in the former part of the description, by bringing the incliner to its inclined position, which will raise the board with which it is connected by the line and pulley, as above mentioned; and here, as in the former case, there being an equal number of boards and lines, and pulleys and incliners, and as many pushers as there are letters, numerical figures, or signs, meant to be represented, the letter, numerical figure, or sign, wished to be represented, may be exhibited at pleasure by the opaque body in the same manner as by the luminous body, by pushing in the pusher, and, upon pulling back the pusher, the boards will fall down by their own weight, and the incliners will then also resume their former positions. The same effect may be produced by making each board turn horizontally on a pivot, in the horizontal bars; and in order to turn each board so as to make it present its flat surface or its thin edge at pleasure, to the front of the frame or bars, let a small wheel be fixed to the pivot; the edges of which wheel may be grooved, the better to keep the lines to be attached to them in their proper position. Affix at opposite sides of the groove in this wheel the ends of two lines, so that the one line upon being pulled will turn the wheel one way, and the other line being pulled will make it turn the other way. Pass these lines, the ends of which are so fixed in the groove of the wheel, through two pulleys, placed in such manner on the bars as that the lines may be pulled opposite ways. The lines dropping to the bottom of the frame or bars will then be passed through two corresponding pulleys at the bottom thereof; and the end of the one line being fixed to the upper edge of the incliner, and the end of the other line being fixed to the under edge of the incliner, the incliner, upon receiving its inclined position, by means of the pusher, will turn the board so that its flat surface or its thin edge may be presented to the front of the frame or bars at pleasure. And in this construction there being no other means to make the boards resume their first position, the under edge of the incliner should, in this mode of construction, be made heavier than the upper, so that the pusher being pulled back, the weight of the under edge of the incliner may bring it to its perpendicular position, and thus turn the board to its original position. For the sake of strengthening the frame in which the boards are placed, perpendicular as well as horizontal bars may be used and fixed together as they pass each other at right angles. And it may be easily perceived, without any particular description, how the boards may be moved by means of pivots placed in the perpendicular bars, or be made to move round the perpendicular bars connected with the incliners by means of lines and pulleys, in the manner which has been mentioned. What has been hitherto stated regards the modes by which any letter of the alphabet, or any numerical figure, or any appearance or appearances necessary to be used as signs, signals, or symbols, may be represented by means of lamps or luminous bodies, or by means of opaque bodies separately.

Lastly, we are shewn how these effects may be produced by means of *luminous bodies and opaque bodies combined*. For this purpose, apertures must be made in the boards above described, and lamps must be placed in the apertures of the boards, in such manner as that the lamps remaining stationary do not interfere with the movements of the boards. This may be effected by means of a small seat or rest attached to the bar to which the boards are fixed, as represented in fig. 12. The flame or light of the lamp will then be seen through the

aperture of the board when its flat surface is presented to the front of the frame or bars; and, in order to prevent the flame or light from being seen when the thin edge of the board is presented to the front of the frame or bars, let a thin piece of wood or metal, rather larger than the aperture in the board (as represented in fig. 11 of the annexed paper of drawings), be fixed at right angles to the board below the aperture, so that when the thin edge of the board is presented to the front the thin piece of wood or metal is raised up, and hides the lamp; and thus the lamps are visible through the apertures of the boards only when the flat surfaces of the boards are presented to the front of the frame or bars.

In order that the nature of this invention may be the better understood, a drawing is given in fig. 2, of the machine, as shewing its combined effects by means of opaque and luminous bodies. The drawing, as in the first part of the description, represents the machine as forming the letter H. The lines in this drawing, running perpendicularly and horizontally, exhibit the frame and bars. The black squares represent the boards, with their flat surfaces in front of the frame or bars, forming the letter H. The small white oblong spaces in these black squares represent the apertures in them, through which the light or flame of the lamps is seen. The small white lines appearing under these white oblong spaces, represent the thin edges of the thin pieces of wood or metal which cover the lamps when the thin edge of the boards is in front of the frame or bars. The black oblong figures represent the boards, having their thin edges in front of the frame or bars. The small elevations arising from these black oblong figures, shew the thin pieces of wood or metal which hide the flame or light of the lamps when the thin edge of the boards is in front of the frame or bars. The lines represent the lines fixed to the boards and incliners, connected by their pulleys. The dots at the bottom of the bars represent these pulleys. The figures (b) immediately under these dots represent incliners; and the black oblong figure at the bottom of the whole represents the pulser, with its teeth or pins, which producing its effect upon the incliners connected with their lines and pulleys with the boards, exhibits, by means of the boards or lamps, or both combined, the appearance of the letter H. Two drawings are also given, in the annexed paper of drawings, of a board, with its lamp turning horizontally upon a pivot, viz. fig. 3 and fig. 4. Fig. 3, represents a front view of the board and lamp, so that when the flat surface of the board is in front, the flame or light of the lamp is visible. Fig. 4, represents a side or lateral view of the board and lamp, so that when the thin edge of the board is in front, the light or flame of the lamp is invisible; and the lamp, according to this mode of construction, is fixed in the board, and turns with it. These flame figures, viz. figs. 3 and 4, also shew that lamps, with an opaque and a shining side, mentioned in a previous part of this description, may be made to turn by means of lines and pulleys, so as to exhibit their opaque or their shining side, that is, to be made visible and invisible at pleasure.

TELEMONA, a town of Tuscany, with a small harbour, and a strong fort. It is seated at the mouth of the Ofra, at the extremity of a point of a craggy rock, 10 miles from Orbitello. Long. 11. 11. E. Lat. 42. 28. N.

TELESCOPE (*Encycl.*). Mr. Dudley Adams, of Fleet-street, London, obtained a patent, in 1800, for a method of rendering telescopes and other optical glasses more portable.

In order to produce the peculiar degree of portability that has been effected, it was found expedient to adopt a new species of spring, that would, from its principle and construction, occupy the least possible space, and at the same time render the telescopes, to which it was applied, strong and steady when drawn out. This was the more necessary, as, ac-

cording to the new construction, the number of joints or tubes would be augmented considerably beyond the number hitherto employed. It was necessary also to devise some means by which the several glasses, applied to the eye-ends of telescopes, should acquire their true positions and distances when the joints or tubes were drawn out, after having been compressed into a small space, and the frame be retained in every situation wherein they might be placed by the observer during the time the telescope was being adjusted for use.

The following are the references to Plate 51. in which this invention is delineated.

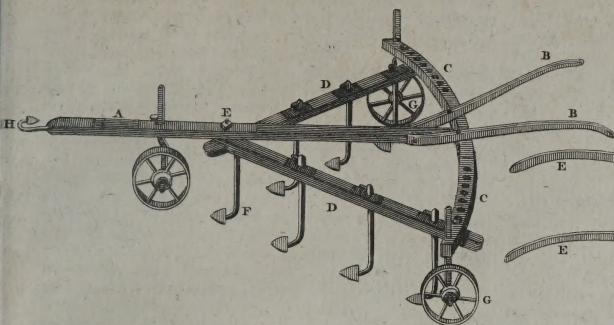
Fig. 1, A, represents the form and construction of the spring. It consists of a thin piece of metal tube, turned in a lathe strictly true and cylindrical, and to fit the inside of the drawer or tube in which it is intended to slide. It is then slit down, from the open end, in two, three, four, or more places, to give it elasticity: this latter circumstance is not however absolutely necessary. The dotted lines at B represent the underside of the spring perforated, in which a screw is cut, of the size to screw on the end of the tube at C, fig. 2, and made fast there.

This inverted cylindrical spring, simple as it is in its construction, affords all the advantages necessary; it occupies less space than the springs hitherto adopted, and by that means admits of more drawers, tubes, or joints, being added than could, according to the former mode, be used or applied within the same space; by its cylindrical form, that strength and steadiness is obtained, which is so essential to the constructing a good telescope with drawers. It preserves the axis therefore as one uninterrupted line, in every position of the drawers, whether they are drawn out to the fullest extent, or returned in part into their several tubes. It is also of superior advantage, and the best adapted to the construction of plated telescopes, whether plated in gold or silver, or whether the drawers or tubes are lacquered, painted, or japanned, &c. as by its action and principle all pressure and friction on their polished, plated, or painted surfaces, may be avoided, and the possibility of those surfaces being rubbed, scratched, or worn, thereby totally prevented. Fig. 3, represents the tube C with the spring thereon at D. E, represents the tube in which it slides.

The second part of the invention is effected in the following manner. Fig. 4, C, represents the tube called the eye-tube, or that which is placed next the eye when the telescope is being used; a, the spring thereon. H and I, two tubes, that are made to slide into the interior of the tube C. F, a broad circular plate, shoulder, or flaunch. To explain the action and principle of the tubes H and I more fully, another figure, viz. fig. 5, has been given. C, represents the tube to be placed next the eye; a, the new-invented cylindrical spring thereon. D, the next tube, in which the said spring slides, provided also with its spring a, which slides in the third tube E. The first and second glasses are contained in the eye-tube C, and are represented by dotted lines G, G. The third and fourth glasses are inserted in the tube H at b c. These tubes, as have been mentioned, are made to slide into the interior of the eye-tube C, when the instrument is closed, but when the tubes are drawn out, they will have nearly the effect represented. For when the tubes C, D, and E, are drawn out, the flaunch F will strike against the end of the tube D, and by that means the two tubes H and I will also be drawn out, and will retain their present position until all the tubes are nearly closed. For it is not until the flaunch F reaches one of the last tubes, that the two tubes H and I will be forced into the tube C. The glasses therefore contained in them will acquire and retain their true distances while being used.

The advantages of this part of the invention need not be

M. Lester's New Invented Implement for Tillage.



M. Munning's Turnip-Drill.

Fig. 2.

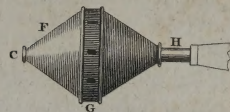
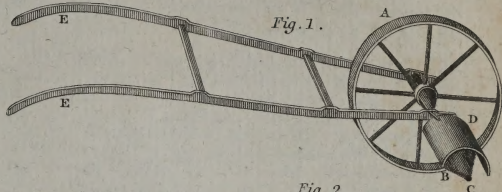


Fig. 1.



M. Knight's Turnip-Drill.

Fig. 1.

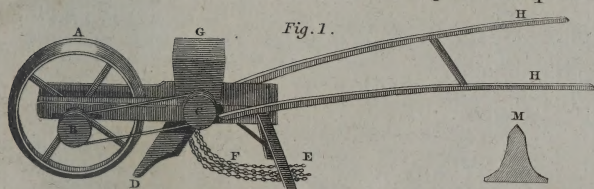
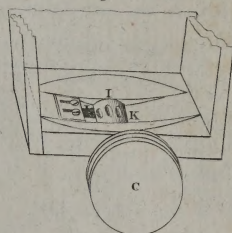


Fig. 2.



M. Jackson's Turnip-Drill.

Fig. 6.

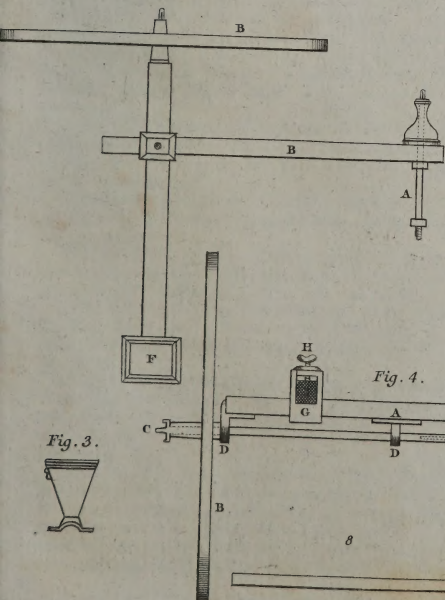


Fig. 2.

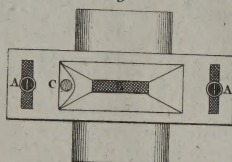


Fig. 1.

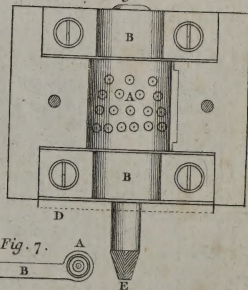


Fig. 7.

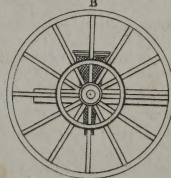


Fig. 4.

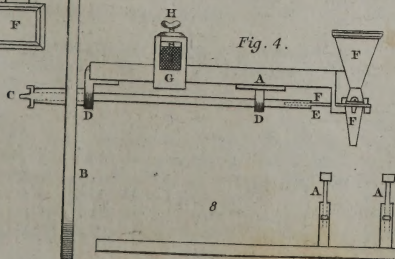
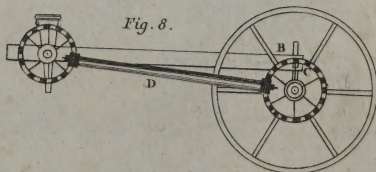


Fig. 3.



Fig. 8.



enlarged upon, as will appear obvious to every one who considers the subject, that by means thereof, together with the new spring, the utmost portability in telescopes may be effected, and their length in consequence be considerably extended beyond what is usually adopted if necessary.

The same degree of portability, and any degree of length, may be obtained by the addition of three, four, or more tubes, in the place of the two already mentioned; and the tube containing the first and second glasses might be constructed after the same manner, viz. to consist of two, three, or more tubes, and made to slide one within the other; and in some instances, where the telescopes are very long, one tube might be made perhaps to answer the purpose. These and other similar modes might hereafter be adopted without altering the principle of this invention, which establishes a rule whereby the several glasses at the eye-ends of telescopes may, from the manner in which they are placed, be brought near to each other, and afterwards placed at their proper distances, without inconvenience or prejudice to the telescope. Of the many modes that have been tried, the particular one adopted has been preferred; it is the most simple, and it moreover possesses all the advantages required.

TELGEIN, or **TELGA**, a trading town of Sweden, in Sudermania, seated on the S. bank of the lake Macler, 12 miles S.W. of Stockholm. Long. 17. 24. E. Lat. 59. 28. N.

TELLES, a sea-port of the kingdom of Fez, 120 miles E.S.E. of Tangier.

TELLICHERRY, a sea-port of Hindoostan, on the coast of Malabar, where there is an English factory. It is 30 miles N.N.W. of Calicut. Long. 75. 50. E. Lat. 11. 48. N.

TELTSCH, a town of Germany, in Moravia, seated on the frontiers of Bohemia, at the source of the river Teya, 36 miles W.N.W. of Znaim. Long. 16. 0. E. Lat. 49. 0. N.

TEMENDEFUST, a town of the kingdom of Algiers, seated on the Mediterranean, 10 miles E. of Algiers.

TEMESWAR, a town of Upper Hungary, capital of a territory called the bannat of Temeswar. It formerly passed for impregnable; but it was taken by Prince Eugene, in a dry season, in 1716. It is seated in a morass, 60 miles N.E. of Belgrade, and 150 S.E. of Buda. Long. 22. 20. E. Lat. 45. 37. N.

TEMPLIN, a town of Upper Saxony, in the Ucker marche of Brandenburg, which has a great trade in timber. It is 15 miles S.W. of Prenzlau, and 34 N. of Berlin. Long. 13. 25. E. Lat. 53. 5. N.

TEMROCK, a sea-port of Cuban, seated on the sea of Afrop, 20 miles E. of the straits of Caffa. Long. 37. 20. E. Lat. 45. 27. N.

TENASERIM, a town of Siam, capital of a province. It is situate on a river, of the same name, which falls into the bay of Bengal. Long. 98. 8. W. Lat. 12. 12. N.

TENBURY, a town in Worcestershire, with a market on Tuesday, seated on the Teme, 15 miles W. by N. of Worcester, and 130 W.N.W. of London. Long. 2. 13. W. Lat. 52. 16. N.

TENBY, a sea-port in Pembrokeshire, with a market on Wednesday and Saturday. Its castle was demolished in the civil wars, and its trade is inconsiderable. It is 10 miles E. of Pembroke, and 233 W. of London. Long. 5. 5. W. Lat. 51. 42. N.

TENCH'S ISLAND, an island in the Pacific Ocean, two miles in circumference, discovered by Lieutenant Ball in 1790. It is low, but entirely covered with trees, many of which are the cocoa nut. The natives observed in the canoes, that ventured to come somewhat near the ship, were remarkably stout men, quite naked, and of a copper colour; their hair resembling

that of the New Hollanders, and some of their beards reaching as low as the navel, with an appearance of much art having been used to form them into long ringlets. Two or three of the men had something like a bead or bone suspended to a string, which was fastened round the neck. The largest of their canoes appeared to be about 28 feet long, and made out of a large tree, with a long outrigger. Long. 151. 31. E. Lat. 1. 30. S.

TENDA, a town of Piedmont, capital of a county of the same name. It is seated at the foot of a mountain, on the river Boga, 52 miles S. of Turin. Long. 7. 45. E. Lat. 44. 10. N.

TENEDOS, a celebrated island in the Archipelago, on the coast of Natolia, and 10 miles S.W. of the straits of Gallipoli. It is 11 miles long, and seven broad, inhabited almost wholly by Greeks, and its muscadine wine is the best in all the Levant. On the E. side is a large town, seated at the foot of a mountain, with a fine harbour, commanded by a castle. On the 5th of June, 1794, after some severe shocks of an earthquake, a small volcanic island was discovered to have emerged from the sea, between this town and the Asiatic shore.

TENEN, or **KNIN**, a town of Venetian Dalmatia, on the borders of Bosnia, with a bishop's see. It has been several times taken and retaken by the Turks and Venetians. It is 48 miles S. of Bihaç. Long. 16. 30. E. Lat. 44. 5. N.

TENERIFF, a town of Terra Firma, in the government of St. Martha, seated on the Rio de la Madalena, 100 miles S. by W. of St. Martha. Long. 74. 15. W. Lat. 9. 47. N.

TENEZ, a town of Algiers, in the province of Tremesen, capital of a district of the same name, with a strong fort. It is seated on the side of a mountain, four miles from the sea. Long. 1. 0. E. Lat. 39. 20. N.

TEN-NGAN-FOU, a populous and commercial city of China, in the province of Hou-quang, with six cities dependent on it. It is 200 miles W. by S. of Nan-king. Long. 112. 21. E. Lat. 31. 0. N.

TENG-FONG-HIEN, a city of China, under the jurisdiction of Ho-nan-fou, in the province of Ho-nan. It is famous on account of the tower, erected for an observatory by the celebrated astronomer Tcheou-kong.

TENNASSEE, one of the United States of America, situate between the parallels of 35 and 36½ degrees of latitude; bounded on the S. by South Carolina and Georgia, on the W. by the Mississippi, on the N. by Kentucky and Virginia, and on the E. by the Iron and Bald mountains, which separate it from North Carolina, of which state it was lately the western part. It is upward of 400 miles in length, and 104 in breadth; and is divided into three districts, and 11 counties. The districts are Washington, Mero, and Hamilton; and the counties are Blount, Sullivan, Davidson, Greene, Hawkins, Jefferson, Knox, Sumner, Sevier, Tennessee, and Washington. Its principal rivers are the Mississippi, Tennessee, Cumberland, Holston, Clinch, and Duck; and it is abundantly watered by other rivers and creeks. The Cumberland mountains, a ridge near 30 miles broad, cut this state into the eastern and western divisions, and the latter is the largest part. The climate, soil, and produce of Tennessee are much the same as the adjoining state of Kentucky. It was admitted a member of the United States in 1796; and on taking the census in 1795, there appeared to be 77,262 inhabitants, of whom 66,649 were free persons. Knoxville is the capital.

TENNESSEE, a river of North America, formerly called the Cherokee River. It rises in the Iron mountains, on the confines of Georgia; and, after traversing the borders of the Cherokee country northward, is joined by the Holston branch, when it is called the Tennessee; thence it runs S.W. on the

E. side of the Cumberland mountains, into Georgia, where it makes a circuit to the W. called the Great Bend; it then re-enters the state of Tennessee, which it passes quite through, directly N. into that of Kentucky: here it soon turns to the N.W. and then falls into the Ohio. 60 miles above the confluence of that river, with the Mississippi. The Tennessee is 600 yards broad at its mouth, and thence navigable by vessels of great burthen for 260 miles, to the Muscle Shoals, in the Great Bend: here the river widens to between two and three miles, for nearly 30 miles; and these shoals can only be passed in small boats: hence it may be navigated, by boats of 40 tons burthen, at least 600 miles further, some trifling falls excepted.

TENNESTADT, a town of Upper Saxony, in Thuringia, near the rivers Seltenlein and Schambach, five miles from Erfurt.

TENNIS, a town of Egypt, situate on an island in a lake of the same name, 28 miles S.E. of Damietta. Long. 32. 15. E. Lat. 31. 2. N.

TEN-TCHEOU-FOU, a city of China, in the province of Chang-tong, with a good port, and eight cities in its jurisdiction. It is seated on the N. side of a peninsula of the Yellow Sea, 200 miles S.E. of Peking. Long. 115. 50. E. Lat. 35. 20. N.

TENTERDEN, a corporate town in Kent, governed by a mayor, with a market on Friday. The steeple of the church is very lofty, and at the time of the Spanish invasion, in 1582, was made use of as a beacon. It is 24 miles S.W. of Canterbury, and 56 E. by S. of London. Long. 0. 55. E. Lat. 51. 12. N.

TENTUGAL, a town of Portugal, in Beira, eight miles W.N.W. of Coimbra. Long. 8. 20. W. Lat. 40. 17. N.

TEPIC, a town of New Spain, in the audience of Guadalupe, 500 miles N.W. of the city of Mexico.

TEPLITZ, a town of Bohemia, in the circle of Leitmeritz, celebrated for its warm baths, 14 miles W.N.W. of Leitmeritz.

TERAMO, a town of Naples, in Abruzzo Ulteriore, with a bishop's see, seated at the confluence of the Violata and Tordino, 10 miles N.W. of Atri, and 25 N.E. of Aquileia. Long. 13. 39. E. Lat. 42. 37. N.

TERASSO, a decayed town of Turkey in Europe, in Carmania, with an archbishop's see. It was formerly called Tarsus, was the capital of Cilicia, and is the birth-place of St. Paul. It is seated on the Mediterranean. Long. 35. 55. E. Lat. 37. 10. N.

TERASSON, a town of France, in the department of Dordogne, seated on the Vézère, 20 miles N. of Sarlat. Long. 3. 10. E. Lat. 45. 5. N.

TERCHIZ, or TERHIZ, a town of Persia, in the province of Chorasan, 120 miles W.N.W. of Herat. Long. 57. 25. E. Lat. 35. 5. N.

TERGOVISTO, or TARYIS, a commercial town, capital of Walachia. It has a fine place, belonging to the wayode, and is seated on the Jalonitz, 30 miles N.W. of Bucharest. Long. 25. 26. E. Lat. 45. 45. N.

TERKI, a town of Circassia, where a prince resides dependent on the Russians, this being their frontier town against Persia. It is seated on a river of the same name, in a marshy place, one mile from the Caspian Sea, and 125 E. of Tefflis. Long. 47. 50. E. Lat. 43. 22. N.

TERMINI, a town on the N. coast of Sicily, in Val di Demona, with a strong castle. It is famous for its mineral waters, and has a fine aqueduct. It is seated at the mouth of a river of the same name, in a territory abounding in corn, oil, and wine, 20 miles S.E. of Palermo. Long. 13. 44. E. Lat. 38. 5. N.

TERMOLI, or TERMINI, a town of Naples, in Capitanata,

with a bishop's see, seated near the sea, 32 miles S.E. of Lanciano, and 70 N.E. of Naples. Long. 15. 20. E. Lat. 41. 50. N.

TERNATE, an island of the Indian Ocean, the principal of the Moluccas. It is mountainous, and has a great number of woods, which furnish much game; but it produces a great quantity of cloves, and other fruits proper to the climate. It lies a little to the W. of Gilolo, and 100 miles E. of Celebes. Long. 129. 0. E. Lat. 1. 0. N.

TERNAVASSO, a town of Piedmont, six miles N.E. of Carmagnola, and eight S. of Chieri.

TERNEUSE, a strong town and fort of Dutch Flanders, on the W. branch of the Scheldt, called the Hondt. It is eight miles N. of Sas-van-Ghent, and 25 W.N.W. of Antwerp. It was taken by the French in 1794. Long. 3. 45. E. Lat. 51. 50. N.

TERNOVA, an ancient town of Turkey in Europe, in Bulgaria, with an archbishop's see. It was formerly the seat of the princes of Bulgaria, and is seated on a mountain, near the Janera, 88 miles N.W. of Adrianople, and 97 N.E. of Sophia. Long. 26. 2. E. Lat. 43. 1. N.

TERRACINA, a decayed town of Italy, in Campagna di Roma, with a bishop's see. It was called Anxur, was the capital of the warlike Volci, and the principal church was originally a temple of Jupiter. It is seated among orange and citron groves, near the sea, on the side of a mountain, 46 miles S.E. of Rome. Long. 13. 15. E. Lat. 41. 24. N.

TERRANOVA, a town of Sicily, in Val di Noto. It belongs to the Duke of Monte-Leone, and is seated near the mouth of a river of the same name, 20 miles E.S.E. of Aliecia. Long. 14. 10. E. Lat. 37. 9. N.

TERRA NUOVA, an ancient sea-port, on the N.E. coast of Sardinia, seated at the bottom of a gulf of the same name, 65 miles N.N.E. of Sassari. Long. 9. 35. E. Lat. 41. 3. N.

TERRE DE SALINELLE. The following observations concerning an earth so named, and which contains magnesia, are given by Berard, ex-professor of chemistry at the Ecole de Médecine, at Montpellier, in the Annales de Chimie.

"The manufacture of artificial alum," says he, "in the large way, and by processes both simple and easily to put in practice, has for a long time been the object of my labours. For this purpose, I was obliged to look out for the argilla that abounded most in the alumine, and that were the nearest to the place in which the manufacture was carried on.

"The earth of Salinelle, near Sommières, in the département of Le Gard, is reckoned one of the best kinds of argill for taking stains out of cloth; it is even generally known in the country by the name of *Pierre de tache* (sellers'-earth); and this property induced me to examine it. I procured a certain quantity of it, upon which I immediately operated with a view to obtain alum. But what was my surprise, when in the first experiment, which was to impregnate it with sulphuric acid (at 40 degrees of Baume's hydrometer), I perceived, 24 hours afterwards, a very considerable efflorescence, and the small mass of the earth, that had been impregnated with the acid the day before, changed into a saline-earthly substance, full of small shining crystals. I soon discovered, both by the taste and the manner in which this first combination took place, that the salt that had been formed was not alum. Some experiments which I made led me to imagine that it was sulphate of magnesia. In order to ascertain this point, I immediately went to Salinelle, to examine the place from whence this earth was procured, and I afterwards subjected it to the experiments of which I am shortly to give an account.

"The village of Salinelle is situated at the distance of about

two kilometres from Sommières, upon the road from this town to Quidac, and almost close to the banks of the river called Le Vidourle. The whole village is built upon a soil under which this earth is generally found. A single individual at present employs himself in digging it, and furnishes it, as it is called for, to some merchants, factors, and druggists. The first of these conceal the use which their employers make of it, and it is suspected at Salinelle that some soap-manufacturers make use of it in the preparation of this compound. The druggists prepare from it the substance which is known in pharmacy by the name of *Terra Saginata*.

"The stratum of the terre de Salinelle is at the depth of about two metres and five decimetres from the surface of the ground: first we find six or seven decimetres of good vegetable earth; afterwards several close strata of white chalk; the whole about one metre five decimetres in thickness. In the middle of this thickness appears a vein of blackish semi-transparent flint, a decimetre and five centimetres thick. We afterwards meet with a small layer of terre de Salinelle, mixed with fragments of the superior strata, and at last we find the vein of good terre de Salinelle, two decimetres and five centimetres in thickness, under which we immediately meet again with a mixed stratum, and afterwards those of white chalk that had before been found above. The disposition of all these strata may easily be observed in digging wells, vaults, or foundations; in these cases the earth of which we are speaking is carefully collected.

"The terre de Salinelle, when dug out of its bed, is still soft, very moist, lamellated, and slightly transparent when divided into thin plates. It has a chocolate colour, nearly resembling that of the small roots of some trees that grow upon the same soil. This earth when dried in the air acquires a less deep colour; it becomes of a light grey, slightly tinged with red; and by being dried in this manner it loses about thirty parts in a hundred of its weight. It then acquires hardness, produces a strong sensation of atrangency when applied to the tongue: it does not lose its cohesion in the water, like the argills, but when moistened and kneaded it forms a paste pretty soft and fine to the touch; placed upon red-hot coals, it decrepitates and flies into splinters. In order to enable it to bear the action of the fire, I was obliged to pound it into a coarse powder, and form it into balls, by moistening it with a little water; I then heated it to whiteness, without the smallest decrepitation taking place. By this operation 100 parts that had already been dried in the air were reduced to 68; the earth became very light, and of a very beautiful white colour, much resembling that of the magnesia prepared in the laboratories. If we calcine it in powder, the evaporation of the water produces a bubbling even in this powder, which ceases as soon as the whole of the water is dissipated.

"Acids poured upon this earth, after it has been dried in the air, produce no sensible effervescence; they combine with a portion of its constituent principles, and the products are magnesian salts.

1. "Sulphuric acid, concentrated to 66°, becomes violently heated as soon as we mix it with this earth. When reduced to 40°, it does not become heated immediately; but if we form a paste with this acid and the same earth in powder, a disengagement of heat takes place at the end of half an hour, the paste puffs up, increases greatly in its volume, and is at last reduced to a very light pulverulent substance, in which we may observe an infinite number of small crystals. The salt thus formed has all the characters of true sulphate of magnesia. A certain quantity of earth is left behind, which has resisted the action of the acid; this appeared to me to be flint.

2. "The nitric and muriatic acids, poured upon this earth in sufficient quantity to form a paste, produce no disengage-

ment of heat nor efflorescence; the paste on the contrary attracts moisture from the atmosphere, but nitrates and muriates of magnesia are formed. All these salts yield, by means of the alkalies, an abundant precipitate of very white, light, and pure magnesia.

"I boiled at several times, and during several hours, the terre de Salinelle, dried in the air and reduced to powder, in the three above-mentioned acids, in the proportion of 100 parts of the earth to 600 of acid. I then lixiviated it with a large quantity of water and filtrated it: the earth that remained upon the filtre, calcined to redness, was reduced to 45 parts: this appeared to me to be flint; it is very white and fine.

"The same acids exert a far inferior operation upon this earth, when it has been calcined to redness. The concentrated sulphuric acid does not even produce any extrication of heat, and the earthy residuum is more considerable, though we take into the account the quantity of water that exists in the non-calcined earth.

"All the lixivia produced by combinations of any of the three acids with this earth are but slightly coloured, especially the muriatic, and they are hardly coloured at all when the earth has been calcined; however they all yield, with the prussiate of lime, a precipitate of iron in the state of Prussian blue.

"From the experiments which I have related, and from some others which it would be superfluous to describe, it appears, that 100 parts of the terre de Salinelle, dried in the air, and such as it is generally found some time after it has been dug out of the ground, form a natural mixture of 32 parts of water, 22 of pure magnesia, 45 of flint, and 1 of oxyd of iron; that this earth differs greatly from the magnesian mixtures known by the names of *Scintilles*, *albestes*, *micæ*, &c.; and that it stands in the same relation to magnesia as the argills do to alumine; in a word, that it is a genuine ore of magnesia, which, as far as I know, has not been hitherto described; but for giving a very accurate and detailed analysis of it, I neither possessed proper instruments, nor sufficient chemical knowledge. I therefore resolved to send a quantity of this substance to Citizen Vauquelin, whose profound genius for the art of chemical analysis is universally known, and who has engaged to ascertain the place in which this earth ought to be ranged in natural history and chemistry.

"A pupil and associate of Citizen Chaptal, and engaged for a long time, by profession, in the application of chemistry to the arts, I endeavoured to apply the terre de Salinelle to an useful purpose, and from the experiments which I have made upon a large scale, it appears, that 100 parts of this earth, and 100 parts of sulphuric acid, at 40°, produce, by simple mixture, by the lixiviation of this mixture, by condensation of the lixivium and crystallisation, 95 parts of beautiful sulphate of magnesia in fine silky crystals. The mother-waters, which have a yellow tinge imparted to them by a small quantity of sulphate of iron, may still contain 5 parts of sulphate of magnesia. This result presents the manufacturers of sulphuric acid with an advantageous method of preparing the sulphate of magnesia in the large way. Medicine will derive from it another advantage; namely, that of easily procuring this salt in a state of purity, as well as the common magnesia; for it is universally known that the sulphate of magnesia, or Epsom salt, such as is met with in commerce, and which is obtained from the water of salt marshes, is a mixture of various salts, such as sulphate of magnesia, sulphate of soda, muriate of magnesia, muriate of lime, &c.: it is also known that most druggists, by using the sulphate of magnesia of commerce, in order to extract the magnesia, obtain a mixture of this earth and lime. This mixture must necessarily produce

effects very different from those that belong to pure magnesia or its carbonate; and we shall be sure of obtaining these two substances pure, if we employ the sulphate of magnesia prepared with sulphuric acid and the terre de Salinelle."

TERREUEL, a town of Spain, in Arragon, with a bishop's see, seated in a large fertile plain, at the confluence of the Guadalquivir and Alhambra, 75 miles S.W. of Saragossa, and 112 E. of Madrid. Long. 1. 0. W. Lat. 40. 25. N.

TERROUEN, a town of France, in the department of the Straits of Calais, seated on the Lis, six miles S. of St. Omer.

TERVERE, or **VEERE**, a town of the United Provinces, in Zeland, on the N.E. coast of the isle of Walcheren, with a good harbour, and a fine arsenal, four miles N.E. of Middleburg. Long. 3. 42. E. Lat. 51. 36. N.

TESCHEN, a town of Upper Silesia, capital of a duchy of the same name, subject to the house of Austria. It was taken by the Prussians in 1757, but restored in 1763. It was surrounded on all sides by a morass, and seated near the source of the Vistula. At a little distance from it is an old castle, on an eminence, where the ancient dukes resided. The inhabitants carry on a trade in leather, woollen stuffs, and Hungary wines; and make pretty good fire-arms, and excellent beer. A treaty of peace was concluded here in 1779, between the Emperor Joseph II. and Frederic William III. of Prussia. It is 27 miles S.E. of Troppau, and 65 S.W. of Cracow. Long. 18. 17. E. Lat. 49. 52. N.

TESEGDELT, a town of Morocco Proper, surrounded by a craggy rock, which renders it impregnable. It is seated at the mouth of the Tschubi, 200 miles W. of Morocco.

TESINO, a river of Switzerland, which has its source in Mount St. Gothard, flows through the country of the Grisons, and the lake Maggiore; then running through part of the Milanese, it washes Pavia, and a little after falls into the Po.

TESSET, a town and district of Zahara, 170 miles S. of Morocco. Long. 6. 56. W. Lat. 15. 24. N.

TEST, or **TESE**, a river, which rises in the N.W. of Hants, and watering Stockbridge and Rumsey, falls into the bay of Southampton.

TETBURY, a town in Gloucestershire, with a market on Wednesday, and a considerable trade in cheese, yarn, and wool. It is 25 miles E.N.E. of Bristol, and 99 W. of London. Long. 1. 8. W. Lat. 51. 36. N.

TETICACO, a lake of Peru, in the audience of Lima and province of Callao, above 200 miles in circumference.

TETTNANG, a town of Suabia, and the principal place of a lordship of the same name. It is eight miles N. of Linthau, and 18 E.N.E. of Constance. Long. 9. 50. E. Lat. 47. 46. N.

TEVERONE, a river of Italy, the ancient Anio, which rises in the Apennines, 50 miles above Tivoli, glides through a plain till it comes near that town, when it is confined for a short space between two hills, covered with groves. These were supposed to be the residence of the sibyl Albunea, to whom a temple here was dedicated, the elegant form of which indicates its having been built when the arts were in the highest state of perfection. The river moving with augmented rapidity, as its channel is confined, at last rushes violently over a lofty precipice; the noise of its falls resounds through the hills and groves of Tivoli; a liquid cloud arises from the foaming water, which afterwards divides into numberless small cascades. Having gained the plain, it soon afterward receives the waters of the lake Solfatar, and flows quietly on till it loses itself in the Tiber.

TEVIOT, a river of Scotland, which rises in the mountains in the S.W. of Roxburghshire, and passing almost through the centre of that county, unites with the Tweed, near Kelso.

TEURART, an ancient town of the kingdom of Fez, seated on a mountain near the river Za.

TEUSCHNITZ, a town of Franconia, in the bishopric of Bamberg, 34 miles N.E. of Bamberg. Long. 11. 27. E. Lat. 50. 22. N.

TEUSERA, a town of Barbary, in Biledulgerid, divided into two parts by a river. It stands on the confines of Tunis, in a country abounding in dates. Long. 10. 16. E. Lat. 31. 28. N.

TEYA, a river of Germany, which rises near Telstih, in Moravia, flows E. by Znaim, on the borders of Austria, and enters the Moraw, on the confines of Hungary.

TEYN, a town of Bohemia, belonging to the archbishop of Prague, 52 miles S.W. of that city. Long. 13. 40. E. Lat. 49. 38. N.

TEZAR, a town of the kingdom of Fez, capital of the province of Cuzi. Here is a mosque larger than that of Fez, being half a mile in circumference. It is seated on a small river, 45 miles E. of Fez. Long. 4. 15. W. Lat. 33. 40. N.

TEZCUCO, a town of New Spain, and the capital of a large government. Here Cortez caused a canal to be dug, where he built 18 brigantines, to carry on the siege of Mexico. It is seated near the lake of Mexico, 30 miles E. of the city of that name. Long. 100. 4. W. Lat. 20. 3. N.

TEZELIA, a town of the kingdom of Algiers, in Tremesen, with a castle, 15 miles from Oran. Long. 0. 25. E. Lat. 35. 25. N.

TEZOTE, a town of the kingdom of Fez, seated on the point of a rock, eight miles from Melilla. Long. 1. 55. W. Lat. 44. 40. N.

THAINEE, a town of the kingdom of Tunis, near the mouth of a river of the same name, 120 miles S. of Tunis. Long. 10. 15. E. Lat. 34. 50. N.

THAMSBURCK, a town of Upper Saxony, in Thuringia, eight miles S.E. of Mulhausen, and 16 W.N.W. of Erfurt. Long. 10. 52. E. Lat. 51. 20. N.

THANHAUSEN, a town of Suabia, situate on the Mindel, 14 miles N. of Mindelheim, and 22 E. of Ulm. Long. 9. 50. E. Lat. 48. 17. N.

THASO, an island of the Archipelago, on the coast of Macedonia, at the entrance of the gulf of Contessa. It is 12 miles long, and eight broad, and abounds in all the necessities of life. The fruits and wine are very delicate; and there are mines of gold and silver, beside quarries of fine marble. The chief town, of the same name, has a harbour frequented by merchants. Long. 24. 32. E. Lat. 40. 59. N.

THAXTED, a corporate town in Essex, with a market on Friday. It is governed by a mayor, and seated near the source of the Chelmer, 20 miles N.W. of Chelmsford, and 43 N.E. of London. Long. 0. 21. E. Lat. 51. 56. N.

THEBAID, a country of Upper Egypt, reaching from Fayoum to the Red Sea. It is the least fertile, and the thinnest of people, of any province in Egypt, being full of deserts, and celebrated for the retreat of a great number of Christians, who lived here in a solitary manner. It is now inhabited by Arabs, who are robbers by profession.

THEBES, the ancient name of a city of Upper Egypt. It was celebrated for having 100 gates; and there are many magnificent remains of antiquity. Three villages, named Camack, Luxor, and Gournou, are seated among its ruins, which are hence called the antiquities of Carnack and Luxor.

THENGEN, a town of Suabia, situate on the Hegau, eight miles N. of Schaffhausen, and 22 N.W. of Constance. Long. 3. 40. E. Lat. 47. 46. N.

THERMIA, an island of the Archipelago, S. of the island of Zia, and near the gulf of Engia, 12 miles long and five

broad. The soil is good and well cultivated, and it has a great deal of silk. The principal town, of the same name, is the residence of a Greek bishop. Long. 24. 59. E. Lat. 37. 31. N.

THETFORD, a borough in Norfolk, with a market on Saturday. It is seated on the Little Ouse, and there is a high mount, which has been walled round, and fenced with a double rampart. It is governed by a mayor, sends two members to parliament, and has three churches, a good free-school, and a town-hall. The lent assizes for the county are kept here. The river, which here divides Suffolk from Norfolk, is navigable from Lynn; and a good deal of wool-combing is carried on here. It formerly had upwards of 40 churches, and was a bishop's see; but it was destroyed in the time of the Danes. It is 30 miles S.S.E. of Lynn, and 80 N.E. of London. Long. 0. 50. E. Lat. 52. 28. N.

THEUX, a village three miles N.W. of Spa, in the bishopric of Liege, where the French obtained a victory over the Austrians, in 1794.

THIBET, or GREAT THIBET, a country of Asia, lying between 81 and 102° E. long. and 25 and 40° N. lat. bounded on the N.W. and N. by the Desert of Kobi in Tartary, on the E. by China, on the S. by Affan and Burmah, and on the W. and S.W. by Hindoostan Proper and Bootan. This country is one of the highest in Asia; it being a part of that elevated tract which gives rise not only to the rivers of India and China, but also to those of Siberia and Tartary. Its length from E. to W. cannot be less than 1000 miles; its breadth is very unequal. It is divided into three parts, Upper, Middle, and Lower Thibet. The Upper lies toward the sources of the Ganges and Burmahpooter; the Middle is that in which Lassa, the capital, is seated; and the Lower, that which borders on China. Little Thibet is situate between Upper Thibet and Cathgur. But Major Rennell, who considers the geography of the whole country as very obscure, is very uncertain whether Little Thibet is subject to Lassa or not. Notwithstanding the very rough and sterile state of Thibet, and the severity of its climate, from its wonderful elevation, its inhabitants are in a high state of civilisation; their houses lofty and built of stone; and the useful manufactures in some degree of improvement. The Thibetians are governed by the grand lama, who is not only submitted to, and adored by them, but is also the great object of adoration for the various tribes of pagan Tartars, who walk through the vast tract of continent which stretches from the river Volga to Corea. He is not only the sovereign pontiff, the vicergerent of the deity on earth, but by the more remote Tartars is absolutely regarded as the deity himself. They believe him to be immortal, and endowed with all knowledge and virtue. Every year they come from different parts to worship, and make each offerings at his shrine. Even the Emperor of China, who is of a Tartar race, does not fail to acknowledge the lama, in his religious capacity, although, as a temporal sovereign, the lama himself is tributary to that emperor. The opinion of the most orthodox Thibetians is, that when the grand lama seems to die, either of old age or infirmity, his soul, in reality, only quits a crazy habitation, to look for another younger or better; and it is discovered again in the body of some child, by certain tokens known only to the lamas or priests, in which order he always appears. In 1774, the grand lama was an infant, who had been discovered some time before by the tayshoo lama, who, in authority and sanctity of character, is next to the grand lama, and, during his minority, acts as chief. The lamas, who form the most numerous, as well as the most powerful body in the state, have the priesthood entirely in their hands; and they constitute many monastic orders, which are held in great veneration among them. Beside the religious influence and authority of

the grand lama, he is possessed of unlimited power throughout his dominions. His residence is at Patoli, a vast palace, on a mountain, near the banks of the Burmahpooter, seven miles from Lassa. In 1774, the English East-India Company made a treaty with the lama. The religion of Thibet, though, in many respects, it differs from that of the Indian bramins, yet, in others, has a great affinity to it. The Thibetians have a great veneration for the cow, and highly respect also the waters of the Ganges, the source of which they believe to be in heaven. The sonniasies, or Indian pilgrims, often visit Thibet as a holy place; and the lama always maintains a body of near 300 of them in his pay.

THIEL, or TIEL, a strong town of Dutch Guelderland, taken by the French in 1704. It is seated on the Waal, 20 miles W. of Nimeguen. Long. 5. 16. E. Lat. 51. 56. N.

THIELT, a town of Austrian Flanders, in the châtellany of Courtray, 10 miles N. of Courtray.

THIERS, a town of France, in the department of Puy de Dome, famous for its statuary, hardware, and cutlery. It is seated on the side of a hill, 22 miles E. of Clermont, and 220 S. by E. of Paris. Long. 3. 38. E. Lat. 45. 51. N.

THIONVILLE, a strong town of France, in the department of Moselle. It was taken by the Prince of Condé in 1643. The Austrians bombarded it in 1793, but were obliged to raise the siege. It is seated on the Moselle, over which is a bridge defended by a hornwork, 14 miles N. of Metz, and 195 N.E. of Paris. Long. 6. 15. E. Lat. 49. 21. N.

THIRSK, or THURAK, a borough in the north riding of Yorkshire, with a market on Monday. It sends two members to parliament; and was formerly noted for its strong castle. It is 20 miles N.W. of York, and 230 N. by W. of London. Long. 1. 16. W. Lat. 54. 15. N.

THIVE, or THERESE, a celebrated city of Livadia, with a bishop's see. It is nothing now to what it was formerly, and yet it is four miles in circumference, but so full of ruins, that there are not above 4000 Turks and Christians in it. It is famous for a sort of white clay, of which bowls for pipes are made after the Turkish fashion; they are never burnt; but dry naturally, and become as hard as stone. Here are two mosques, and several Greek churches. It is seated between two rivers, 20 miles N.W. of Athens, and 280 S.W. of Constantinople. Long. 23. 40. E. Lat. 38. 17. N.

THIVIERS, a town of France, in the department of Dordogne, 18 miles N.N.E. of Perigueux. Long. 0. 55. E. Lat. 45. 25. N.

THOISSEL, a town of France, in the department of Ain, with a handsome college. It is seated in a fertile country, near the Saone and Chalcrone, 10 miles N. of Trevoaux, and 200 S.E. of Paris. Long. 4. 50. E. Lat. 46. 13. N.

THOMA, Sr. an island of Africa, lying under the equator, in 8° E. long. It was discovered in 1429, and is almost round, about 30 miles in diameter. The soil is fertile, and produces plenty of sugar-canes. On the same vine are blossoms, and green and ripe grapes, all the year round. It is a very unwholesome country, possessed by the Portuguese, and few live to a great age. It consists chiefly of hills, intermixed with valleys, which are constantly filled with a thick stinking fog; but it agrees very well with the cattle, which are larger and finer here than on the Gold Coast of Guinea.

THOMAS, Sr. one of the Virgin Islands, in the West Indies, with a harbour, a town, and a fort. After the capture of St. Eustasia, in 1781, it became the mart of that part of the West Indies. It is 15 miles in circumference, and belongs to the Danes. Long. 64. 51. W. Lat. 18. 21. N.

THOMAS, Sr. a town of Hindoostan, on the coast of Co-

romandel, with an archbishop's see. It is subject to the Portuguese, and three miles S. of Madras. Long. 80. 25. E. Lat. 13. 2. N.

THOMAS, St. a town of Guiana, seated on the Orinoko, and subject to Spain. In 1618, it was taken and burnt by Sir Walter Raleigh. Long. 63. 30. W. Lat. 7. 6. N.

THOMDAMM, a town of Lower Saxony, in the duchy of Saxe-Lauenburg, situate on the Elbe, 15 miles S.E. of Lauenburg, and 38 S.E. of Hamburg. Long. 11. 5. E. Lat. 53. 10. N.

THONON, a town of Savoy, capital of Chablais, with a palace, and several convents. It is seated on the lake of Geneva, at the mouth of the river Drama, 13 miles S.W. of Lausanne, and 16 N.E. of Geneva. Long. 6. 44. E. Lat. 49. 10. N.

THORN, or THOREN, a town of Westphalia, in the bishopric of Liege, with a noble abbey, seven miles S.W. of Ruremonde.

THORN, a town in the west riding of Yorkshire, with a market on Wednesday, situate on a marshy soil, near the river Don, 10 miles N.E. of Doncaster, and 167 N. by W. of London. Long. 1. 2. W. Lat. 53. 39. N.

THORNBURY, a corporate town of Gloucestershire, with a market on Saturday. It is governed by a mayor, and seated near the Severn, 24 miles S.W. of Gloucester, and 121 W. of London. Long. 2. 31. W. Lat. 51. 35. N.

THORNEY, a small island in the bay of the English Channel, near the coast of Suffex, with a village of the same name, at the mouth of the Lavant, seven miles S.W. of Chichester.

THOUARS, a considerable town of France, in the department of Two Seviés. The capital of its ancient dukes is on a rock, surrounded by walls 120 feet high, which, from the whiteness of the stone, might be supposed not more than ten years old. It is seated on a hill by the river Thoue, 32 miles S.E. of Angers, and 162 S.W. of Paris. Long. 0. 15. W. Lat. 46. 59. N.

THRAPSTON, a town in Northamptonshire, with a market on Thursday, seated on the Nen, over which is a bridge, seven miles N. of Higham-Ferrers, and 75 N.N.W. of London. Long. 0. 36. W. Lat. 52. 26. N.

THREE HILLS ISLAND, an island, one of the New Hebrides, in the South Pacific Ocean, lying to the S. of Malicollo.

THUIN, a town of Austrian Hainault, but subject to the bishopric of Liege. It is seated on the Sambre, eight miles S.W. of Charleroy, and 15 S.E. of Mons. Long. 4. 22. E. Lat. 50. 21. N.

THUN, a lake of Switzerland, in the canton of Bern, five leagues long and one broad. Its borders are richly variegated, and covered with numerous villages. The river Aar passes through it, and at the north-west extremity is the town of Thun.

THUN; a town of Switzerland, in the canton of Bern, with a castle, where the avoyer resides. It is seated on a lake of the same name, where the river Aar issues from it, partly in a small island, and partly on a hill, 15 miles S.S.E. of Bern. Long. 7. 20. E. Lat. 46. 45. N.

THUNDER BAY, a bay nine miles broad, at the north-west corner of Lake Huron, in North America; so called from the continual thunder that is heard there.

THUR, a river of Switzerland, which rises in the south part of the county of Toggenburg, and runs into the Rhine, seven miles S.S.W. of Schaffhausen.

THURGAU, a bailiwick of Switzerland, which lies along the river Thur, bounded on the east and north by the lake, town, and bishopric of Constance; on the south by the terri-

tory of the abbot of St. Gallen; and on the west by the canton of Zurich. It is the largest bailiwick in Switzerland, as well as the most pleasant and fertile; and is extremely populous. The sovereignty belongs to the eight ancient cantons. Frauenfeld is the capital.

THURSO, a borough in Caithnessshire, at the mouth of the river Thurlo, on the west side of Dunnet Bay. It has a considerable trade, and a manufacture of woollen and linen cloth. Long. 3. 16. W. Lat. 58. 36. N.

TIAGAR, a town of Hindoostan, in the Carnatic, 50 miles W.S.W. of Pondicherry, and 75 S. of Arcot. Long. 79. 0. E. Lat. 11. 25. N.

TIANO, a town of Naples, in Terra di Lavoro, with a famous nunnery. Near it is a mineral spring, said to be excellent for the stone. It is 15 miles N.W. of Capua. Long. 14. 8. E. Lat. 41. 14. N.

TIBUROON, a cape, at the most western extremity of the island of St. Domingo, with a town, on an open road, opposite Port Antonio in Jamaica. It was taken by the English and royalists in 1794, but retaken by the republicans the next year.

TICKELL, a town in the west riding of Yorkshire, with a market on Friday. It had a castle and fortifications, demolished in the civil wars, of which some ruins remain. It has a distinct liberty, called the Honour of Tickell, which is part of the duchy of Lancaster. It is five miles S. of Doncaster, and 155 N. by W. of London. Long. 1. 11. W. Lat. 53. 27. N.

TICKLEY, a town of the peninsula of Hindoostan, in the circar of Cicacole, 30 miles N.E. of Cicacole, and 70 S.W. of Ganjam. Long. 84. 30. E. Lat. 43. 50. N.

TICONDERAGO, a fort of the United States, in New York, built by the French in 1756, on the narrow passage or communication between the lakes George and Champlain. It had all the advantages that art or nature could give it. It was taken in 1759 by General Amherst, and in 1779 by General Burgoyne, but evacuated soon after the convention at Saratoga. It is 110 miles S. of Montreal, and 185 N. of New York. Long. 73. 25. W. Lat. 43. 45. N.

TIDESWELL, a town in Derbyshire, on the south confines of the Peak, with a market on Wednesday. It is remarkable for a well that ebbs and flows two or three times in an hour after great rains; the waters gushing from several cavities at once, for the space of five minutes: the well is three feet deep and broad, and the water rises and falls two feet. It is deemed one of the wonders of the Peak. Tideswell is 22 miles N.W. of Derby, and 158 N.N.W. of London. Long. 1. 46. W. Lat. 53. 15. N.

TIDOR, an island in the Indian Ocean, one of the Moluccas, to the east of Gilolo, and to the south of Ternate. It is 17 miles in circumference, and produces cloves and flax. The Dutch are masters of the island, though it has a king of its own. The woods and the rocks that surround it, render it a place of defence. Long. 126. 0. E. Lat. 0. 50. N.

TIENGEN, a town of Suabia, situate on the Wuotch, 29 miles E. of Balle, and 36 W. of Constance. Long. 8. 5. E. Lat. 47. 40. N.

TIERRA DEL ESPIRITU SANTO, the most western and largest island of the New Hebrides, in the Pacific Ocean, being 40 leagues in circuit. The land is exceedingly high and mountainous, and in many places the hills rise directly from the sea. Except the cliffs and beaches, every part is covered with wood, or laid out in plantations. Beside the bay of St. Philip and St. Jago, on the north side of it, the isles which lie along the south and east coast, form several good bays and harbours. Long. 165. 0. E. Lat. 16. 0. S.

TIERRA DEL FUEGO, several islands at the southern extremity of America. They take their name from a volcano on the largest of them, and are all very barren and mountainous. Upon the lower grounds and islands, that were sheltered by the high mountains, Mr. Forster found several forts of trees and plants, and a variety of birds. Among the trees was Winter's bark-tree, and a species of arbutus, loaded with red fruit of the size of small cherries, which were very well tasted. In some places there is also plenty of celery. Among the birds was a species of large duck, which ran along the sea with amazing velocity, beating the water with its wings and feet; at the Falkland Islands it is called the loggerhead-duck. There are also plenty of geese and falcons. The rocks of some of the islands are covered with large muscle-shells, the fish of which is well flavoured. The natives of this country are short in their persons, not exceeding five feet six inches, their heads large, their faces broad, their cheek-bones prominent, and their noses flat. They have little brown eyes, without life; their hair is black and lank, hanging about their heads in disorder, and besmeared with train-oil. On the chin they have a few straggling short hairs instead of a beard. The whole assemblage of their features forms the most loathsome picture of misery to which human nature can be reduced. They had no other clothing than a small piece of seal-skin, which hung from their shoulders to the middle of the back, being fastened round the neck with a string; the rest of their body was perfectly naked. Their natural colour seems to be an olive brown, with a kind of gloss, resembling that of copper; but many of them disguise themselves with streaks of red paint, and sometimes, though seldom, with white. Their whole character is a strange compound of stupidity, indifference, and inactivity. They have no other arms than bows and arrows, and their instruments for fishing are a kind of fish-gigs. They live chiefly on seal's flesh, and like the fat oily part most. There is no appearance of any subordination among them, and their mode of life approaches nearer to that of brutes, than that of rational creatures.

TILBURY, East, a village in Essex, near the mouth of the Thames, east of Tilbury Fort. It is supposed to be the place where the Emperor Claudius crossed the Thames, in pursuit of the Britons. In this parish is a field, called Cave Field, in which is a horizontal passage to one of the spacious caverns in the neighbouring parish of Chadwell. Of these Camden has given a sketch in his *Britannia*; and he describes them as in a chalk cliff, built very artificially of stone, to the height of ten fathoms. Dr. Derham measured three of the most considerable of them, and found the depth of one of them to be 50 feet, of another 70 feet, and of the third 80 feet. Their origin is too remote for investigation.

TILBURY, West, a village in Essex, situate on the Thames, north of Tilbury Fort. Here the four Roman provincial ways crossed each other, and, in 630, it was the see of Bithop Ceadda, or St. Chad, who converted the East Saxons. The marshes here feed a great number of Lincolnshire and Leicestershire sheep, for the London market. In this parish is a celebrated spring of alternative water, discovered in 1717. When the Spanish armada was in the Channel, in 1588, Queen Elizabeth had a camp here, which was where the windmill now stands, and some traces of it are visible.

TILBURY FORT, in Essex, situate on the Thames, opposite Gravesend, a regular fortification, which may be termed the key to London. It has a double moat, the innermost of which is 180 feet broad; with a good counterfarp, a covered way, ravelins, and terrails. Its chief strength on the land side consists in its being able to lay the whole level under

water. On the side next the river is a strong curtain, with a noble gate, called the Water-gate, in the middle; and the ditch is palliaded. Before this curtain is a platform in the place of a counterfarp, on which are planted 106 guns, from 26 to 46 pounders each, beside smaller ones planted between them; and the bastions and curtains are also planted with guns. It is 28 miles E. by S. of London.

TILLAGE, in agriculture, the process of moving and stirring land with a view to promote the growth of useful vegetables. This is effected in a great variety of ways, as the plough, spade, &c. The following description of an implement in Husbandry, called a **CULTIVATOR**, by the inventor, Mr. William Lester, of Northampton, is published in the *Transactions of the Society for the Encouragement of Arts, Manufactures, and Commerce*, who presented their silver medal to Mr. Lester for his invention.

"As," says he, "health and luxuriance of corn depend, in a great measure, on the pulverisation of the soil, previous to the seed being sown, the Society of Arts will, I am persuaded, give every encouragement in their power to the introduction of any implement that promises an abridgment of labour; and as all the tenacious soils are pulverised in the best manner in dry weather, when their particles are the most disjointed, and their contact broken, the propriety of taking the advantage of working them in that state will be obvious; and at the same time it follows, that an improved implement for the abridgment of labour would be a desirable thing, in a climate like England, where the seasons are so uncertain."

"In working on a rough fallow, my cultivator should be set at its greatest expansion, and contracted in proportion as the clods are reduced. I am confident that one man, a boy, and six horses, will move as much land in a day, and as effectually, as six ploughs; I mean land in a fallow state, that has been previously ploughed."

It will be requisite in some states of the soil to alter the breadth of the shares; but of this, I presume, the farmer will always be a proper judge. By the expansion and contraction of the cultivator, the points of the shares are, in a small degree, moved out of the direct line; but this is so trifling, that it is no impediment to its working."

The following is a description of the Cultivator as represented in Plate 53.

A, the beam; B, B, the handles; C, C, a cross-bar, of a semi-circular form, containing a number of holes, which allow the two bars D, D, to be placed nearer or further from each other; D, D, are two strong bars, moveable at one end, upon a pivot E, and extending thence in a triangular form to the cross-bar C. In these bars are square holes, which allow the shares F, placed therein, to be fixed to any height required. The seven shares marked F are shaped at their lower extremities like small trowels; the upper parts of them square iron bars. G, G, G, are three iron wheels, on which the machine is moved; they may be raised or lowered at pleasure. H, the iron hook, to which the swing-tree and horses are to be fixed.

When the machine is first employed on the land, the bars D, D, are expanded as much as possible. As the soil is more loosened, they are brought nearer to the centre: the shares then occupy a less space, and the soil will consequently be better pulverised.

A certificate from Mr. William Shaw, of Cotton-End, near Northampton, accompanied this letter; in which he states that he had used Mr. Lester's cultivator upon a turnip fallow last summer, and that he believes it to be a very useful implement for cultivating the land in a fallow state, by its working or scuffling off seven acres per day with six horses.

He adds, that from its property of contracting and expanding, it is calculated to work the same land in a rough or fine state, by which means it unites the principles of two implements in one; and, by the index on the axis, it may be worked at any given depth required.

A model of the above-described cultivator is reserved in the Society's repository, at which place it may be inspected by any one who pleases.

FILLIERES, a town of France, in the department of Eure, six miles N.E. of Verneuil, and 12 W. of Dreux. Long. 1. 3. E. Lat. 48. 46. N.

TILSTT, a town of Prussia, in the Lithuanian department. It has a considerable trade in linseed, butter, and other provisions; and the number of inhabitants is about 7050. It is situate on the Memel, 50 miles N.E. of Königsberg, and 95 S.S.W. of Mittau. Long. 22. 8. E. Lat. 55. 8. N.

TIMANA, a town of Terra Firma, in Popayan, capital of a territory of the same name, which abounds in fruits and pastures. It is seated on a river, 130 miles E.S.E. of Popayan. Long. 73. 55. W. Lat. 1. 35. N.

TIME-KEEPER (*Encycl.*). The following hints on the improvement of time-keepers, by David Rittenhouse, LL.D. President of the American Philosophical Society, appear in their Transactions.

"The invention and construction of time-keepers may be reckoned among the most successful exertions of human genius. Pendulum clocks especially have been made to measure time with astonishing accuracy; and if there are still some causes of inequality in their motions, the united efforts of mechanism, philosophy, and mathematics, will probably in time remove them.

"The least and least of those causes, which perhaps may be worthy of notice when all others of more importance are removed, is that arising from unequal density of the air, which by varying the actual weight of the pendulum will accelerate or retard its motion. The effects arising from this cause will be found very small: for if we suppose the greatest range of the barometer to be three inches, which indicates a change of density in the air of above one tenth of the whole; and supposing lead, of which pendulums are generally made, to be 8,800 times heavier than air, the variations of the actual weight of a pendulum may be one 88,000th part of its whole weight, and consequently the change in its rate of going one 176,000th part. And, as there are 86,400 seconds in a day, the clock may vary in its rate of going, from this cause, about $\frac{1}{2}$ a second in 24 hours. Mentioning the barometer seems naturally to point out a remedy for this cause of irregularity by means of that instrument. But my design at present," says Dr. Rittenhouse, "is to describe a very different and extremely fine method, which, though only a matter of curiosity at present, may at some future time perhaps be found useful; especially as the variation above mentioned is governed solely by the actual density of the surrounding air, and the barometer can only give the weight of an entire column, which does not strictly correspond with the density of its base; whereas the method I propose depends on the real density of the air surrounding the pendulum, and nothing else.

"Let AB (Plate 46, fig. 1) be a pendulum vibrating on the point A, and removed from the perpendicular line DE. Let the inflexible rod be continued from B A to C, and let a body C, of equal dimensions with the pendulum B, but hollow and light as possible, be fixed on the rod, making AC equal to AB. Now it is evident that B will be pressed upwards by a force equal to the weight of its bulk in air; and its descent retarded. But the body C will be equally pressed

upwards, and consequently the motion of the pendulum towards the perpendicular will be as much accelerated. These two forces therefore will destroy each other, and the pendulum will perform its vibrations in equal times, whether the air be light or heavy, dense or rare.

"I have for greater perspicuity described the most simple case, but perhaps not the most eligible, for if we can enlarge the vessel or body C, in any proportion, the distance of its centre from A may be diminished at the same rate.

"However plausible the above may appear in theory, no doubt difficulties will occur when we attempt to reduce it into practice. But I am persuaded they will not be so insuperable.

"The only experiment I have hitherto made on this subject has been merely to shew that a pendulum can be made in this manner which shall vibrate quicker in a dense medium than in one more rare, contrary to what takes place with common pendulums.

"I made a compound pendulum on the principles above mentioned, of about one foot in its whole length. This pendulum, on many trials, made in the air 37 vibrations in a minute. On immersing the whole in water it made 50 vibrations in the same time, shewing evidently that its motion was quicker in so dense a medium as water than in the air. When the lower bob or pendulum only was plunged in water it made no more than 44 vibrations in a minute; the remaining 15 being solely the effect of the pressure of the water against the upper vessel C."

TIMERYCOTTA, a town and fortress of the Deccan of Hindoostan, in the province of Golconda, 64 miles S.E. of Hyderabad, and 95 W. of Masulipatam. Long. 79. 26. E. Lat. 15. 20. N.

TIMORLAND, an island in the Indian Ocean, between Timor and New Guinea. Long. of the S. point 131. 54. E. Lat. 8. 15. S.

TIN (*Encycl.*). The following observations concerning the tin extracted from bell-metal, and the fixity which antimony acquires when it has been used as an alloy for tin, by M. Le Sage, are inserted in the Journal de Physique.

In order to separate the copper from bell-metal, recourse has been had to operations which scorch the tin, and a part of the copper. Metal was calcined in the reverberatory furnace; this oxyd was spread upon bell-metal kept in a state of fusion: the fire was kept up, the fused metal was run off, and pure copper was obtained in the proportion of 60 lbs. to the quintal of bell-metal; there remained blackish scoria intermixed with vitreous matter of a greenish colour. For want of means of reducing them, the scoria was abandoned to the purposes of mending roads and constructing dykes, as has been done at Romilly, near Rouen: however, the scoria contained still from 30 to 40 lbs. of tin and copper per quintal, as has been ascertained by the experiments of Citizen Ansfy, a pupil of the first Academy of Mines, who has been able to turn them to such great advantage, that he has reproduced at least fifteen hundred thousand weight of tin, and two millions of pure copper.

This chemist reduces the scoria by fusing it with a pretty considerable quantity of charcoal: he obtains a metallic alloy with shining facettes, composed of copper, tin, and antimony; it is surmounted with an enamel of a greenish grey colour, which contains a quarter of its weight of tin. This metallic alloy he fuses in the reverberatory furnace, takes away every hour what is oxydized, which is in the form of a dirty white powder, and which he separates from the copper by lixiviation. There remains in the furnace an alloy of copper and tin, the fracture of which is not in facettes, but similar to that of the bell-metal.

The copper is separated from the tin by the process indicated in the preceding paragraph.

The calx, or oxyd of copper, of a dirty white colour, when it has been reduced by the charcoal, produces an alloy of tin and copper; its colour is yellow, like that of the pyrites of copper, and its fracture exhibits striated lamina, or crystals. This alloy, when in the state of fusion, is furnished by a mixture of tin and the oxyd of this metal, which, when it has cooled, produces solid masses of a yellowish grey colour, the fracture of which presents a shining grain like the irregular martial pyrites.

The vitreous matter, which floats upon this metallic alloy, is of a yellowish-grey colour when it has cooled; it is a glass or rather an enamel of tin, in which three layers are distinguished; that which is in contact with the metal in a state of fusion, is grey, shining, contains a large quantity of tin in the metallic state; the intermediate layer presents an enamel of a yellowish-grey colour; and the superior layer, which was exposed to the contact of the air and fire, is scoriiform of a blackish colour. These three strata in which the tin presents itself, depend upon the quantity of charcoal, as Citizen Anfray has observed. The oxyd, or white calx of tin, cannot be nitrified without the addition of a little charcoal, and cannot be reduced unless with the aid of ten parts.

During all these operations a very fine sublimate is formed of the oxyd, or white calx of tin, which is extracted out of the chimneys of the reverberatory furnaces, in which the calcinations and reductions are performed.

It has been remarked, that the tin, which is extracted from the scoria of bell-metal, has more solidity than pure tin; that it is brittle, and exhibits a greyish metallic grain, which is not exhibited by pure tin. It owes this property to a portion of antimony which is employed by the pewterers in order to give durability to this metal. When this alloy has once been made, it is almost impossible to effect the separation of the two metals. As the bell-founders employ the tin of commerce, it is not to be wondered at that the tin which is extracted from the scoria of bell-metal contains antimony; perhaps also the founders themselves introduce some of it.

Being well convinced, by observing the solutions and effects of re-agents, that the tin extracted from bell-metal did not contain iron or copper in any perceptible quantity, and not being able to separate the antimony from it, Mr. Le Sage made alloys of this semi-metal with tin, in different proportions, and found, that tin, alloyed with a sixth part of antimony, was rendered similar to that extracted from bell-metal by the process of Anfray; that it had the same grain, the same durability, the same sound, and that it had also lost a part of its shrillness.

Though the tin extracted from bell-metal contains antimony, it may be employed in the fabrication of tin-plates, as he found by experience; it is more difficult to form into blocks than pure tin; it is more proper for tinning utensils than the tin employed by the pewterers for spoons, &c. which is besides alloyed with lead, bismuth, and copper.

The experiments quoted shew that the bell-metal does not consist merely of copper and tin, but that it also contains antimony.

The following are the mixtures employed by pewterers:

Best tin.—Tin 100 lbs. copper 4 lbs. bismuth 8 oz.

Pewterers metal.—Tin 100 lbs. copper 6 lbs. bismuth 1 lb. 8 oz.

Common tin.—Tin 100 lbs. brass 6 lbs. lead 15 lbs.

The pewterers always alloy this metal with more or less antimony.

TINA, a town of Turkey in Europe, in Bosnia, on the river Tis, 37 miles N.W. of Spalatro. Long. 17. 9. E. Lat. 44. 28. S.

TINA, or **TINOS**, the ancient Tenos, an island of the Archipelago, one of the Cyclades, to the west of Nicaria. It is 17 miles long and eight broad, and is subject to the Venetians. This island produces 16,000 pounds of silk every year, and the flockings made of it are very good; but nothing can equal the gloves which are knit here for the ladies. The fortress stands on a rock; and here is a bishop's see of the Latin church, though the Greeks have 200 papas or priests. St. Nicolo is the principal town. Long. 25. 24. E. Lat. 37. 30. N.

TINIAN, an island in the Pacific Ocean, one of the Ladrões, 12 miles in length and six in breadth. The soil is dry; and, being somewhat sandy, is the less disposed to rank and over-luxuriant vegetation. The land rises in gentle slopes from the shore to the middle of the island, intermixed with valleys of an easy descent; which are beautifully diversified with the mutual encroachments of the woods and lawns. The woods consist of tall and well-spread trees, and the lawns are covered with clean and uniform turf, producing fine trefoil, and variety of flowers. Here are at least 10,000 cattle, all milk white, except their ears, which are brown or black; also a vast number of fowls, which are easily caught, and plenty of wild hogs. In the woods are prodigious quantities of cocoa-nuts, cabbage-trees, guavaes, limes, sweet and four oranges, and bread fruit. Here are also vegetables proper for the scurvy; such as water-melon, dandelion, creeping purslain, mint, scurvy-grass, and sorrel. Here are some ruins of a particular kind, consisting of two rows of square pyramidal pillars, each pillar being about six feet from the next, and the distance between the rows is 12 feet; on the top of each there is a semi-globe, with the flat surface upward, and they are composed of sand and stone cemented together. The climate is extremely healthful, for the rains are not continual, but fall in frequent refreshing showers. There are no streams, but the water of the wells and springs is excellent. The principal inconvenience arises from the number of muskitoes, and other kinds of flies; and there are likewise insects called ticks, which fasten upon the limbs and bodies of men, and bury their heads under their skins. The road is inconvenient, and in some seasons, there is little security for a ship at anchor. Long. 146. 0. E. Lat. 15. 0. N.

TINMOUTH, a sea-port in Northumberland, at the mouth of the Tyne, nine miles east of Newcastle. It has a castle, seated on a high rock, inaccessible on the sea-side, and well mounted with cannon. There is a bar across the mouth of the river, which is not above seven feet deep at low water. There are dangerous rocks about it, called the Black Middins; but there are light-houses to guide the ships by night. Here ships take in their loading of coal, and of goods brought from Newcastle. Long. 1. 10. W. Lat. 55. 6. N.

TINTAGEL, a village in Cornwall, one mile west of Bosciney, noted for the remains of a remarkable fortification called King Arthur's castle. It is seated on a bold promontory, in the Bristol Channel; and is said to have been the birth-place and royal residence of Arthur.

TINTO, a river of Spain, which rises in the province of Seville, and has its name from the water being tinged of a yellow colour. Near its spring it has a petrifying quality, no trees or plants will grow on its banks, nor will any fish live in it; which properties continue till other rivulets run into it and alter its nature; for when it passes by Niebla it is not different from other rivers. It falls into the Atlantic about 18 miles below Niebla.

TINZEDA, a town of Barbary, in Mledulgerid. It is seated on a river of the same name, in a country fertile in

dates and barley, and abounding in indigo. Long. 6. 13. W. Lat. 27. 30. N.

TINZULIE, a strong town of Barbary, in Biledulgerid, seated on the river Dras. Long. 5. 43. W. Lat. 28. 25. N.

TIORN, an island on the west coast of Sweden, about 27 miles in circumference, and abounding in excellent pastures. Long. 11. 20. E. Lat. 58. 0. N.

TIPPERAH, or **TIPRAH**, a kingdom of Asia, in the dominions of the King of Burmah, lying under the tropic of Cancer, to the east of Hindoostan Proper.

TIPPERARY, a town of Ireland, in the county of the same name, nine miles S.S.W. of Calkeel.

TIRANO, a town of the country of the Grisons, capital of the Upper Terzerro. It contains several handsome buildings, but from the narrowness of the streets, and many ruinous houses, its general appearance is desolate. The river Adda divides it into two parts, which are joined by a stone bridge of a single arch. There are some remains of the stone walls by which it was formerly surrounded, and which, with an adjoining fortress, was built by Ludovico Sforza, against the incursions of the Grisons, but were dismantled by the latter, when they acquired possession of the Valteline. The staple commerce of this town consists in the exportation of wine and silk. Near the town on the other side of the Adda, is the magnificent church of the Madonna, or Virgin Mary, much visited by the Catholic pilgrims. The massacre of the Protestants of the Valteline, in 1620, began in this town. It is 17 miles S.W. of Bormio. Long. 9. 46. E. Lat. 46. 12. N.

TIREE, a small but rich island of Scotland, one of the Hebrides, lying to the S.W. of Col, and noted for its marble quarry and a handsome breed of little horses.

TIRSH, a town of Turkey in Asia, in Natolia, situate on the Meinder, 32 miles S.S.E. of Smyrna. Long. 27. 50. E. Lat. 38. 10. N.

TIRLEMONT, a village of Austrian Brabant, formerly one of the most considerable places in that duchy, but ruined by the wars. It is seated on the river Geet, over which are several bridges, 12 miles E.S.E. of Louvain, and 25 E. of Brussels. Long. 4. 41. E. Lat. 50. 48. N.

TIRNAU, a strong and considerable town of Upper Hungary, in the county of Neitra. It is seated on the Tirna, five miles W. of Leopoldstadt, and 22 N.E. of Presburg. Long. 17. 39. E. Lat. 48. 24. N.

TITAN, or **CARRROS**, an island of France, the most eastern of the Hieres, in the Mediterranean.

TITICACA, or **CHUCUITO**, an island of Peru, in the audience of Los Charcos. It is situate in a lake of the same name, which is one of the largest in South America.

TITLISBERG, one of the highest mountains in Switzerland, at the foot of which is the greatest part of the valley of Engelberg.

TITTMANNING, or **DITTMANNING**, a town of Germany, in the archbishopric of Saltzburg. It was almost desolated by the plague in 1310, and was reduced to ashes by lightning in 1571; but it has been since rebuilt. It is seated on the Saltza, 24 miles N.W. of Saltzburg. Long. 12. 46. E. Lat. 47. 54. N.

TITUL, a strong town of Upper Hungary, in the county of Bodrog. It is seated on the Teilde, near its confluence with the Danube, 23 miles E. of Peterwaradin, and 20 N.W. of Belgrade. Long. 20. 34. E. Lat. 45. 30. N.

TIVERTON, a borough in Devonshire, with a market on Tuesday. It is seated on the Ex, over which is a stone bridge, is governed by a mayor, and sends two members to parliament. It has a noble free-school (founded by a clothier of

this town), which has an endowment also for the maintenance of eight scholars at Balliol College, Oxford, and Sidney Sussex College, Cambridge. Tiverton has suffered very severely by fire, particularly in 1598, 1612, 1731, and 1794. This town has been noted for its great woollen manufacture, and is 14 miles N.N.E. of Exeter, and 161 W. by S. of London. Long. 2. 38. W. Lat. 50. 54. N.

TIUMEN, a town of Siberia, in the province of Tobolsk, on the Tara, 125 miles W. of Tobolsk.

TIVOLI, a celebrated town of Italy, in Campagna di Roma, with a bishop's see. It is now wretchedly poor; but boasts, however, of greater antiquity than Rome itself, being the ancient Tibur, which, Horace says, was founded by a Grecian colony. It was the favourite country residence of the ancient Romans, as Fregati is of the moderns. Near the bottom of the eminence on which Tivoli stands, are the ruins of the vast and magnificent villa built by Emperor Adrian. Other illustrious Romans had also their villas here; as Julius Caesar, Caius Cassius, Augustus, Catullus, Propertius, Mæcenas, &c. Horace is thought to have composed great part of his works in this favourite retreat. Near Tivoli are a celebrated cascade, a temple of Vesta, and another of the sybil Albunea, a magnificent villa belonging to the Duke of Modena, called the Villa Esteffe, and the remarkable lake of Solitara. Tivoli is seated on the Teverone, 12 miles E.N.E. of Rome, and 15 N.N.E. of Fregati. Long. 12. 43. E. Lat. 41. 59. N.

TIZZANO, a town of Italy, in the duchy of Parma, 13 miles S. of Parma.

TLASCALA, a province of New Spain, in the audience of Mexico; bounded on the N. by Panuco, on the E. by the gulf of Mexico, on the S. by Guaxaca and the Pacific Ocean, and on the W. by the audience of Mexico. In the west part of this province is the mountain of Tlascala, 12 miles in circumference: it is well peopled and cultivated, except on the summit, which is always covered with snow. There are also other mountains, covered with trees, in which are tigers and monkeys.

TLASCALO, a town of New Spain, capital of a province of the same name. It is seated on a river, partly on a mountain, and partly on a plain, 82 miles E.S.E. of Mexico. Long. 59. 22. W. Lat. 19. 30. N.

TOCAYMA, a town of New Granada, seated on the Pati, in a country abounding in fruit and sugar-canes. Here are hot-baths between two cold springs; and near the town is a volcano. Long. 73. 50. W. Lat. 4. 3. N.

TOCKAY, a strong town of Upper Hungary, in the county of Zimplin, with a castle. It is celebrated for its excellent wine; but being produced only by one vineyard, it is scarce even at Vienna. At some distance from it are large salt-works. It is seated at the confluence of the Bodrog and Teilde, 75 miles N.W. of Great Waradin, and 90 N.E. of Buda. Long. 21. 25. E. Lat. 48. 10. N.

TOCORT, or **TOGOURT**, a town of the kingdom of Algiers, 240 miles S.S.E. of Algiers. Long. 4. 40. E. Lat. 32. 40. N.

TODI, a town of Italy, in the duchy of Spoleto, with a bishop's see; seated on a hill, near the Tiber, 22 miles S. of Perugia, and 50 N. of Rome. Long. 12. 32. E. Lat. 42. 44. N.

TOGGENBURG, a county of Switzerland, depending on the abbey of St. Gallen. It is a narrow country, situate between high mountains, is fertile in corn and fruit, and is divided into the Upper and Lower. It contains 30 parishes, and upwards of 46,000 inhabitants. There are more Protestants than Catholics, but both religions are bound by oath to maintain reciprocal harmony.

TOISSEY, a town of France, in the department of Ain, seated near the confluence of the Saone and Chalarogne, 25 miles N. of Lyons. Long. 4. 52. E. Lat. 45. 20. N.

TOLAGA BAY, a bay of the island of New Zealand. Long. 178. 33. E. Lat. 38. 21. S.

TOLEN, a town of the Dutch Netherlands, in Zealand, in an island of the same name, separated by a narrow channel from Dutch Brabant. It is five miles N.W. of Bergen-op-Zoom. Long. 4. 20. E. Lat. 51. 30. N.

TOLENTINO, a town of Italy, in the marquise of Ancona, with a bishop's see. It is the place where the relics of St. Nicholds are kept, and is seated on the river Chiento, eight miles S.E. of St. Severino, and 88 N.E. of Rome. Long. 13. 11. E. Lat. 43. 14. N.

TOLESBURG, a sea-port of Russia, in the government of Riga, seated on the gulf of Finland, 60 miles W. of Narva. Long. 26. 4. E. Lat. 59. 38. N.

TOLFA, a town of Italy, in the patrimony of St. Peter. In the environs are mines of alum and iron, with warm baths, and quarries of alabaster and lapis lazuli. It is four miles from the sea coast, and 25 N.W. of Rome. Long. 12. 40. N. Lat. 42. 10. N.

TOLHUYS, a town of Dutch Guelderland, seated on the Rhine. Here the French army passed the Rhine in 1672. It is eight miles E. of Nimeguen. Long. 6. 0. E. Lat. 51. 56. N.

TOLMEZZO, a town of Italy, in Venetian Friuli, 30 miles N.E. of Belluno. Long. 12. 50. E. Lat. 46. 30. E.

TOLMINO, a town of Germany, capital of a district in the duchy of Carniola, 12 miles N. of Goritz.

TOLNA, a town of Lower Hungary, capital of a county of the same name. It is seated on the Danube, in a country producing excellent wine, eight miles S.W. of Colocza, and 45 S. of Buda. Long. 19. 28. E. Lat. 46. 33. N.

TOLNANI, a town of the Deccan of Hindoostan, in the country of Baglana, 75 miles W. of Burhampoor, and 124 E. of Surat. Long. 70. 3. E. Lat. 21. 15. N.

TOLOSA, a town of Spain, the capital of Guipuscoa, seated in a valley, between the Araxis and Oria, over which are two bridges, and near them several natural cascades. It is inhabited by a great number of artists, who make sword blades in high esteem. It was taken by the French in 1794. It is 37 miles S.W. of Bayonne, and 47 S.E. of Bilbao. Long. 2. 5. W. Lat. 43. 10. N.

TOMAR, a town of Portugal, in Estremadura, seated on the river Nabao, at the foot of the mountains, where there is a castle belonging to the knights of Christ. It is 40 miles S.E. of Coimbra, and 65 N.E. of Lisbon. Long. 7. 55. W. Lat. 39. 30. N.

TOMBEC, a town of Austrian Brabant, eight miles S. of Louvain, and 10 E. of Brussels. Long. 4. 49. E. Lat. 50. 45. N.

TOMBELAINE, a small island of France, with a town of the same name, on the coast of Normandy, in a small gulf between Avranches and St. Malo. This island, as well as that of St. Michael, in which there is a monastery, are every day joined, at low water, to the main land.

TOMBUCTOO, a kingdom of Nigritia, which lies to the south-east of the great desert of Zahara, and west of the empire of Cashna. It produces great plenty of corn, cattle, milk, and butter. The king has 300 horsemen, beside a great number of foot, who frequently take captives, and sell them to the merchants for slaves. The houses are built like bells, with walls of hurdles plastered with clay, and covered with reeds. The better sort of women have their faces covered, their religion being Mahometanism. Both men and women are very fond of dancing, and spend a great part of the night in that exercise.

VOL. X.

TOMBUCTOO, the capital of a kingdom of the same name, in Nigritia, with a stately mosque built of stone, and a royal palace. Here is a great number of weavers of cotton cloth; and hither the cloth and other merchandise are brought by caravans from Barbary. Instead of money, they make use of shells and small bits of gold. In the proceedings of the African Association, this place is mentioned as a luxurious, opulent, and flourishing city, subject to a severe police, and, as such, attracting the merchants of the most distant states of Africa. It is seated near the Niger, 270 miles S.W. of Moorsook. Long. 0. 8. W. Lat. 19. 59. N.

TOMBAMBAMBA, a town of Peru, in the audience of Quito, where was a temple of the Sun, whose walls, as the Spaniards assert, were covered with gold. It is 120 miles S. of Quito. Long. 77. 50. W. Lat. 2. 16. S.

TOMINA, a government of South America, in the vice-royalty of Buenos Ayres, and archbishopric of La Plata.

TOMINI, a town on the east coast of the island of Celebes, in a bay to which it gives name. Long. 119. 0. E. Lat. 0. 45. S.

TOMSK, a town of Siberia, in the province of Tomsk. On the highest part stands a wooden castle, defended by 14 pieces of cannon; and in it are a cathedral built of wood, the chancery, and an arsenal. The inhabitants carry on a great trade, this town lying on the great road through all the east and north parts of Siberia. It contains above 2000 houses, and is seated on the river Tom, 105 miles E.S.E. of Tobolsk. Long. 84. 59. E. Lat. 55. 45. N.

TONDEREN, or **TUNDEREN**, a town of Denmark, in the duchy of Sleswick, capital of a bailiwick of the same name, with a fort. It is seated in a fertile country, on the river Widaw, and on a bay of the German ocean, 25 miles S.E. of Ripen, and 30 N.W. of Sleswick. Long. 9. 40. E. Lat. 54. 58. N.

TONGATABOO, or **AMSTERDAM ISLAND**, one of the Friendly Islands, 20 leagues in circuit. It has the best harbour or anchoring-place to be found among these islands. It is wholly laid out in plantations, with roads or lanes for travelling; and is the seat of government for all the other islands, and the ordinary residence of all the principal chiefs. Long. 175. 5. W. Lat. 21. 8. S.

TONGRES, a town in the bishopric of Liège, formerly one of the richest and most flourishing cities in the Roman province of Gallia Belgica. It has severely suffered by the calamities of war; the first time by Attila, king of the Huns, and the last by the French in 1673 and 1677. It is seated on the Jecker, 12 miles S.W. of Maestricht, and 15 W. of Liège.

TONG-TCHANG-FOU, a city of China, in the province of Chang-tong, containing in its district, three cities of the second, and 15 of the third class. It is 150 miles S. of Pekin. Long. 115. 25. E. Lat. 36. 30. N.

TONG-TCHUEN-FOU, a fortified city in China, in the province of Se-tchuen. The inhabitants are all soldiers, who have followed the profession of arms from father to son. It is 867 miles S.W. of Pekin. Long. 101. 30. E. Lat. 25. 50. N.

TONGUSIANS, a people who inhabit the east part of Siberia, and are subject to the Russians. They are all Pagans, and chiefly subsist by grazing and hunting of saibles. They live in huts, which, when they remove their dwellings, they take down and set up elsewhere. These huts are composed of wooden poles, covered all over with hair and rubbish, except a hole left at the top to let out the smoke. Their fire is made in the middle, and they all sit round it upon turfs. Both sexes are very strong, and broad-

faced, and they all ride on horseback, not excepting the girls. Both men and women dress alike in a sort of frock, with boots of skins on their legs, and their common drink is water.

TONNA, a town of Upper Saxony, in the principality of Gotha, six miles N. of Gotha.

TONNAY BOUTONNE, a town of France, in the department of Lower Charente, seated on the river Boutonne, 17 miles N. of Saintes. Long. 0. 34. W. Lat. 45. 56. N.

TONNAY CHARENTE, a town of France, in the department of Lower Charente, with a castle and a small port. It is seated on the Charente, three miles from Rochefort, and 253 S.W. of Paris. Long. 0. 46. W. Lat. 45. 56. N.

TONNIENS, a town of France, in the department of Lot and Garonne, seated on the Garonne, two miles from its junction with the Lot, and seven E. of Marmande.

TONNERRE, a town of France, in the department of Yonne, famous for its good wines. It is seated on the Armancon, 27 miles S. of Troyes, and 102 E. of Paris. Long. 4. 4. E. Lat. 47. 51. N.

TONNINGEN, a town of Denmark, in the duchy of Sleswick, capital of a territory of the same name. It is seated on a peninsula formed by the river Eyder, where there is a commodious harbour, 25 miles S.W. of Sleswick, and 58 N.W. of Hamburg. Long. 9. 10. E. Lat. 54. 30. N.

TONSBERG, a sea-port of Norway, in the province of Aggerhuys, 30 miles W. of Frederickstadt. Long. 10. 20. E. Lat. 58. 50. N.

TOOBOUAL, an island in the Pacific Ocean, discovered by Captain Cook. It is not in any direction above six miles over; but there are hills in it of considerable elevation, covered with herbage, except a few rocky cliffs, with patches of trees interspersed to their summits. It is plentifully stocked with hogs and fowls, and produces several kinds of fruits and roots. Long. 149. 23. W. Lat. 23. 25. S.

TOOTH-ACH. See *ODONTALGIA*, *Supp.*

TOPCLIFF, a town in the North Riding of Yorkshire, seated on a considerable ascent on the Swale, 24 miles N. of York.

TOPEL, or **TOPL**, a town of Bohemia, in the circle of Pilsen, 24 miles N.W. of Pilsen, and 56 W. of Prague. Long. 14. 10. E. Lat. 50. 10. N.

TOPOLITZ, a town of Bohemia, in the circle of Leutmeritz, near which the Austrians defeated the Prussians in 1762. It is 14 miles W.N.W. of Leutmeritz. Long. 14. 10. E. Lat. 50. 36. N.

TOPOLITZA, a town of Turkey in Europe, in Moldavia, 12 miles S.W. of Niemez. Long. 26. 9. E. Lat. 46. 51. N.

TOPOLTZAU, a town of Hungary, 42 miles N.E. of Presburg, and 68 E. of Vienna. Long. 17. 30. E. Lat. 48. 35. N.

TOPSHAM, a town of Devonshire, with a market on Saturday. It is seated on the Ex, five miles S.E. of Exeter (of which it is the port), and 170 S.W. of London. Long. 3. 26. W. Lat. 50. 39. N.

TOR, or **ELTOR**, a town of Arabia Petrea, seated on the Red Sea, with a good harbour defended by a castle. Here is a Greek convent, in the garden of which are fountains of bitter water, pretended to be those which Moses rendered sweet, by throwing in a piece of wood. Long. 33. 45. E. Lat. 28. 27. N.

TORBLIA, a town of Piedmont, in the county of Nice.

Here is an ancient tower, of Gothic architecture, and in the environs are found many remains of Roman monuments. It is seven miles E. of Nice.

TORBOLE, a town of Italy, in the Trentino, 14 miles S.E. of Trent. Long. 11. 30. E. Lat. 45. 56. N.

TORCELLO, a town of Italy, in the territory of Venice. It is thin of people, on account of the unwholesome air, and seated in a small island, seven miles N. of Venice. Long. 12. 9. E. Lat. 45. 32. N.

TORDA, or **TORENBURG**, a town of Transylvania, famous for its salt-works. The Hungarian language is said to be spoken with the greatest purity in this town. It is 15 miles W.N.W. of Clautenburg, and 38 N.W. of Hermanstadt. Long. 23. 13. E. Lat. 46. 50. N.

TORDESILLAS, a fortified town of Spain, in Leon, with a magnificent palace; where Queen Joan, mother of Charles V. ended her melancholy days. It is seated in a country fertile in corn and wine, on the river Douero, 24 miles W. of Valladolid, and 75 S.E. of Leon. Long. 4. 56. W. Lat. 41. 48. N.

TORGAU, a town of Upper Saxony, in Saxony Proper. It has a castle, the stair-case of which is built in such a manner, that a person may ride in a chaise to the top of it. The inhabitants brew excellent beer, which they send to other places on the Elbe, on which the town is seated. Here the King of Prussia obtained a great victory over the Austrians in 1760. It is 27 miles N.E. of Leipzig, and 35 N.W. of Dresden. Long. 13. 3. E. Lat. 51. 34. N.

TORIGNY, a town of France, in the department of the Channel, with a magnificent castle, seated on a rivulet, seven miles S.E. of St. Lo. Long. 0. 42. W. Lat. 49. 0. N.

TORMES, a river of Spain, which rises in the mountains of Avila, in Castile, passes by Alva, Tormes, and Salamanca, and falls into the Douero, below Miranda-de-Douero.

TORNA, or **TORNAW**, a fortified town of Upper Hungary, capital of a county of the same name, with a castle. It is seated on an eminence, on the river Sayo, 22 miles W. of Cassovia. Long. 20. 43. E. Lat. 48. 50. N.

TORNE, a river of Sweden, which rises in the mountains of Norway, forms a lake of the same name, and flowing S.E. falls into the gulph of Bothnia, at Tornea.

TORNEA, a town of Sweden in West Bothnia, capital of a territory of the same name, with a good harbour. It is a place of some trade, because all the Laplanders in those parts come and exchange their skins and other articles, for what they want. The houses are low, and the cold so severe, that sometimes people lose their fingers and toes. It is seated at the mouth of the Torne, at the N. extremity of the gulph of Bothnia, 180 miles N.E. of Uma, and 420 N.N.E. of Stockholm. Long. 24. 17. E. Lat. 65. 51. N.

TORNOVA, a town of Turkey in Europe, in Janna, with a bishop's see. It is seated at the foot of Mount Dragonzia, on the river Salempria, 10 miles N.W. of Larissa. Long. 22. 36. E. Lat. 39. 52. N.

TORO, a town of Spain, in Leon, seated on a hill, on the river Douero, in a country fertile in corn and fruits, and whose vineyards yield excellent red wine. It is 37 miles N. by E. of Salamanca, and 100 N.W. of Madrid. Long. 5. 2. W. Lat. 41. 39. N.

TORELLA-DE-MONGRIS, a sea-port of Spain, in Catalonia, famous for a battle gained by the French over the Spaniards, in 1694. It is seated near the mouth of the Tor, in the Medierranean, at the foot of the Pyrenées, 19 miles E. by S. of Gironna, and 60 N.E. of Barcelona. Long. 3. 18. E. Lat. 41. 55. N.

TORPERLEY, a town in Cheshire, nine miles E. of Chester. It was formerly a borough, and had a market.

TORRE-DEL-GRECO, a town of Naples, in Terra-di-Lavoro, seated at the foot of Mount Vesuvius, on the bay of Naples, five miles S.E. of that city. It was destroyed by an eruption of Vesuvius in 1631; and in 1794 was overwhelmed by a torrent of lava, from that volcano. The inhabitants, however, to the amount of 18,000, escaped with their lives, about 15 excepted; and the town is now rebuilding on the lava that covered the former habitations.

TORRE DE MONCORVO, a town of Portugal, in Tra los Montes, surrounded with a wall, and defended by a bastion and a castle. It is 27 miles S.E. of Mirandela, and 42 S.S.W. of Braganza. Long. 5. 55. W. Lat. 41. 0. N.

TORRE DE LAS SALINAS, a town of Spain, in Valencia, near the coast of the Mediterranean, which carries on a great trade in salt, procured from a small lake formed by saline springs. This is the most considerable salt-work in all Spain. It is 20 miles S.E. of Origuella, and 37 N.N.E. of Cartagena. Long. 0. 50. W. Lat. 37. 58. N.

TORREJO, a town of Spain, in New Castile, 15 miles S. of Madrid. Long. 3. 21. W. Lat. 40. 10. N.

TORRES, a sea-port of Spain, in Granada, seated on the Mediterranean, 45 miles S.W. of Granada. Long. 3. 56. W. Lat. 36. 39. N.

TORRES NOVAS, a strong town of Portugal, in Estremadura, with a castle. It is surrounded by walls, and seated in a fertile plain, on the river Almonda, 55 miles N.E. of Lisbon. Long. 8. 8. W. Lat. 39. 10. N.

TORRES VEDRAS, a town of Portugal, in Estremadura, with a castle, seated near the Atlantic, in a country abounding in corn, fruits, and good wine, 17 miles S. of Lisbon.

TORRIGLIA, a town of Italy, in the territory of Genoa, 10 miles N. of Genoa. Long. 8. 44. E. Lat. 44. 34. N.

TORRINGTON, a corporate town in Devonshire, with a market on Saturday. It has two churches, a manufacture of stuffs, and is governed by a mayor. Some remains of a castle are still visible. It is seated on the Towridge, over which is a bridge, 11 miles S. by W. of Barnstaple, and 194 W. by S. of London. Long. 4. 0. W. Lat. 51. 4. N.

TORSIL, a town of Sweden, in Sudermania, seated on the S. bank of the lake Maeler, 43 miles W. of Stockholm. Long. 17. 20. Lat. 59. 20. N.

TORTOLA, the principal of the Virgin Islands, in the West Indies, 18 miles long and seven broad. It formerly belonged to the Dutch, who built a strong fort, from which they were expelled by the English in 1666. It produces excellent cotton, sugar, and rum, and of late years has undergone great improvements. Its fruits, of which there are no great variety, are but indifferent; some apples excepted. The entrance into the harbour is at the E. end of the island. Long. 63. 0. W. Lat. 18. 33. N.

TORTONA, a fortified town of Italy, in the duchy of Milan, capital of the Tortonese, with a bishop's see, and a castle on an eminence. It is deemed a considerable frontier place; was taken by the allies in 1744, by the Spaniards in 1745, and by the French in 1796. It is seated on the Scrivia, 28 miles S.E. of Casal, and 27 S.W. of Milan. Long. 8. 58. E. Lat. 45. 8. N.

TORTORELLA, a town of Naples, in Principato Citeriore, five miles N.E. of Policastro.

TORTOSA, a city of Spain, in Catalonia, with a bishop's see, a university, and a citadel. It is divided into the Old and New Town, both surrounded by modern fortifications. The entrance is over a large bridge of boats, on the river Ebro, whose head is fortified. It has a great number of

churches and religious houses; among which the cathedral, the royal college of Dominicans, and the convent of the Carmelites, are the most remarkable. It is situated in a country fertile in corn and fruits, and abounding with quarries and mines of silver, iron, alabaster, jasper of divers colours, and stones with veins of gold. Here is a great deal of silk and oil, and very fine potters-ware, which resembles porcelain. It is seated partly on a plain, and partly on a hill, 35 miles S.W. of Tarragona, and 180 E. of Madrid. Long. 0. 35. E. Lat. 40. 53. N.

TORTUGA, an uninhabited island near the coast of Terra Firma, 40 miles W. of the island of Margareta, and about 30 miles in circumference. The E. end is full of bare rugged broken rocks, which stretch a little way out to sea. At this end is a large salt pond, where the salt begins to kerm in April; and there have been 20 ships here at a time for salt. At the west end is a small harbour with fresh water; and it is full of low trees. There are a few goats on it; and the turtles or tortoises come upon the sandy banks to lay their eggs, whence this island has its name. It was formerly much frequented by the bucaniers. Long. 64. 50. W. Lat. 11. 38. N.

TORTUGA, an island of the West Indies, near the north coast of the island of Hispaniola, where the French bucaniers used to fortify themselves. It is about 80 miles in circumference, and has a safe harbour, but difficult of access. Long. 75. 10. W. Lat. 20. 10. N.

TOSA, a sea-port of Spain, in Catalonia, seated at the bottom of a bay, which forms a good harbour, where vessels are sheltered from all winds, except the S.W. It is built partly on a plain, and partly on a steep hill, which projects into the sea. On the top of the hill, nearer the sea, is a strong citadel, with other fortifications. It is 37 miles N.E. of Barcelona. Long. 2. 54. E. Lat. 41. 42. N.

TCSCANELLA, a town of Italy, in the patrimony of St. Peter, 35 miles N. of Rome. Long. 12. 35. E. Lat. 42. 20. N.

TOSENA, a town of Sweden, in West Gothland, 20 miles W.N.W. of Uddevalla. Long. 12. 2. E. Lat. 58. 33. N.

TOSSO, a town of Sweden, in West Gothland, 42 miles N.N.E. of Uddevalla. Long. 12. 15. E. Lat. 58. 51. N.

TOTNESS, a borough in Devonshire, with a market on Saturday. It is seated on the river Dart, on the side of a hill, and had formerly a castle and walls. It sends two members to parliament, is governed by a mayor, and has a manufacture of ferges. It is 27 miles S.W. of Exeter, and 106 W. by S. of London. Long. 3. 44. W. Lat. 50. 24. N.

TOUL, a town of France, in the department of Meurthe. Before the revolution it was a bishop's see, and the cathedral and late episcopal palace are handsome structures. It was an imperial town of Germany, till taken by the French in 1552. It is seated on the Moselle, in a plain almost surrounded by mountains, 10 miles west of Nancy, and 167 S.E. of Paris. Long. 6. 2. E. Lat. 48. 40. N.

TOULOMBA, or **TULMABINI**, a fortress of Hindoostan Proper, in Lahore, seated on the Rauvee, 70 miles E.N.E. of Moulton.

TOUR, a town of France, in the department of Puy de Dôme, 22 miles S. of Clermont. Long. 3. 10. E. Lat. 45. 25. N.

TOUR DE ROUSILLON, a town of France, in the department of Eastern Pyrenees, seated on a hill near the river Tet, two miles below Perpignan.

TOUR DU PIN, a town of France, in the department

of Here, seated on a river of the same name, 24 miles S. of Vienne.

TOUR LA BLANCHE, a town of France, in the department of Dordogne, 15 miles N.W. of Périgueux. Long. 0. 40. E. Lat. 45. 18. N.

TOUR LA VILLE, a town of France, in the department of Charente, separated from Cherbourg by a river.

TOURANCOURCHY, a town of Hindoostan, in the Carnatic, 35 miles S.S.W. of Trichinopoly. Long. 78. 36. E. Lat. 47. 50. N.

TOURINE, a town of Germany, in the bishopric of Liege, 13 miles N.E. of Namur. Long. 5. 0. E. Lat. 50. 36. N.

TOURNAN, or **TOURNANS**, a town of France, in the department of Seine and Marne, 22 miles E. by S. of Paris. Long. 2. 45. E. Lat. 48. 43. N.

TOURNAY, a considerable city of Austrian Flanders, capital of the Tournaysis, with a bishop's see, and a strong castle. It has several fine manufactures, and is particularly famous for good stockings. The cathedral, and the abbey of St. Martin, are very magnificent. It was taken by the allies in 1709, and ceded to the house of Austria by the treaty of Utrecht; but the Dutch were allowed to place a garrison in it, as one of the barrier towns. It was taken in 1745, by the French, who demolished the fortifications, but restored it in 1748. In 1781, the Emperor Joseph obliged the Dutch to withdraw their garrison. It was again taken by the French in 1792: they were obliged to abandon it in 1793, but re-entered it again, on the final conquest of Austrian Flanders, in 1794. It is seated on the Scheld, which divides it into two parts, that are united by a bridge, 14 miles S.E. of Lille, 30 S.W. of Ghent, and 135 N. by E. of Paris. Long. 3. 28. E. Lat. 50. 33. N.

TOURNEHEM, a town of France, in the department of Straits of Calais, nine miles N.W. of St. Omer.

TOURNIQUET (*Encycl.*). A patent was lately granted to Mr. Savigny, of King's-street, Covent-garden, for an improved tourniquet. The construction of it will be understood from the following description:—In a brass frame are placed two brass rollers, the one fixed, the other moveable on its axis. To the former of these rollers is fastened the bandage, which is to encircle the limb, and which, being drawn over the moving roller, is fastened by a kind of buckle. A plate of brass, being in shape a segment of a circle, is pressed against the limb by the turning of a screw, till it produce the requisite degree of tightness.

TOURNON, a town of France, in the department of Ardèche, with a fine college, and a castle. It is seated on the declivity of a mountain, near the river Rhone, 40 miles W. of Grenoble, and 280 S. by E. of Paris. Long. 4. 50. E. Lat. 45. 6. N.

TOURNUS, a town of France, in the department of Saône and Loire, seated on the Saône, in a country fertile in corn and wine, 15 miles S. of Chalons, and 202 S. by W. of Paris. Long. 5. 0. E. Lat. 46. 34. N.

TOURS, a considerable city of France, capital of the department of Indre and Loire. From an archiepiscopal see it has been lately reduced to a bishopric, suffragan to that of Bourges. It is seated on the Loire, and near the Cher. Over the former is one of the finest bridges in Europe, consisting of 15 elliptic arches, each 75 feet diameter: three of these were carried away by the breaking-up of ice in 1789. The principal church is remarkable for the delicacy of its structure, its curious clock, its mosaic pavement, and its rich library of manuscripts. Under the ministry of Cardinal Richelieu, 27,000 persons were here employed in the

silk manufacture; but now the whole number of inhabitants is only 22,000. The red wines of Tours are much esteemed. In one of the suburbs is the late abbey of Marmoutier, reputed the most ancient in the West. Near the city is Plessis-les-Tours, a late royal palace, built by the profligate and superstitious Lewis XI. who died here, in 1483, notwithstanding he had the precaution to be covered all over with relics. Tours is 62 miles N.N.E. of Poitiers, 54 E. of Angers, and 127 S.W. of Paris. Long. 0. 47. E. Lat. 47. 24. N.

TOUSERA, a town of Barbary, capital of Biledulgerid, seated in a country abounding in dates, and dependent on the kingdom of Tunis. Long. 10. 55. E. Lat. 32. 30. N.

TOWCESTER, a town in Northamptonshire, with a market on Tuesday. It was once strongly fortified, and is seated on a small river, 52 miles S.E. of Coventry, and 60 N.W. of London. Long. 1. 15. W. Lat. 52. 4. N.

TOWTON, a village in the West Riding of Yorkshire, S.E. of Tadcaster. It is famous for that bloody battle between the forces of the houses of York and Lancaster, so fatal to the latter, on Palm-Sunday, 1461.

TOWY, a river of S. Wales, which rises in Cardiganshire, enters Carmarthenshire at its N.E. extremity, and passing by Carmarthen, enters the British Channel.

TRAARBACH, a town of Germany, in the circle of Upper Rhine and county of Sponheim, 20 miles E.N.E. of Treves, and 34 S.W. of Coblenz. Long. 6. 45. E. Lat. 50. 2. N.

TRACHENBURG, or **DRACHENBURG**, a town of Germany, in Silesia, and capital of a principality of the same name. It is seated on the Barch, 12 miles N.E. of Wola, and 26 N. of Breslaw. Long. 17. 15. E. Lat. 51. 30. N.

TRAJANAPOLI, a town of Turkey in Europe, in Romania, with a Greek archbishop's see, though it is small and thin of people. It is seated on the Marica, 37 miles S.W. of Adrianople, and 112 N.W. of Constantinople. Long. 26. 18. E. Lat. 41. 15. E.

TRAJETTO, a town of Naples, in Terra di Lavoro, built on the ruins of the ancient Minturna. Here are the ruins of an amphitheatre and an aqueduct. It is seated near the mouth of the Garigliano, in the Mediterranean, 25 miles N.W. of Capua. Long. 14. 4. E. Lat. 41. 20. N.

TRAIN, a town of Germany, in Upper Bavaria, situate on the Ambs, five miles S. of Abensberg, and 20 E. of Ingoldstadt. Long. 11. 52. E. Lat. 48. 40. N.

TRAINA, a town of Sicily, in Val di Demona, seated on a high mountain, at the source of the river Traina, 22 miles W. of Mount Etna, and 70 S.W. of Messina. Long. 14. 30. E. Lat. 37. 46. E.

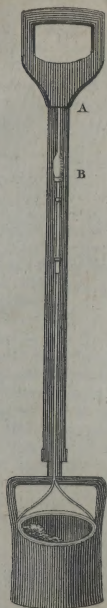
TRALEE, a borough and sea-port of Ireland, in the county of Kerry, seated near a bay of the same name, seven miles S.S.E. of Ardiert. Long. 9. 36. W. Lat. 52. 12. N.

TRALEBORG, a sea-port of Sweden, in the province of Schonen, near the Baltic, 19 miles S. of Uund. Long. 13. 5. E. Lat. 55. 20. N.

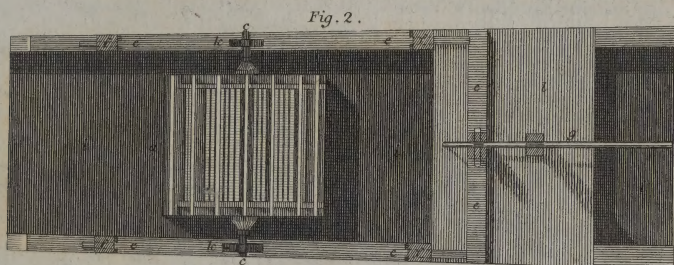
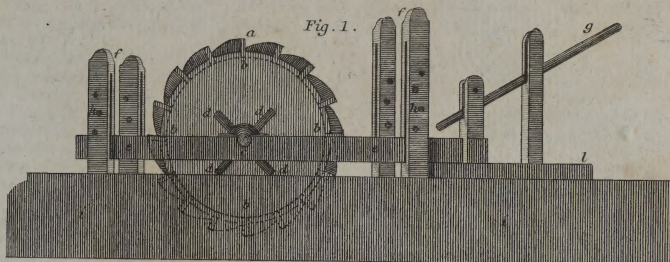
TRANCHIN, a town of Upper Hungary, capital of a county of the same name. The castle stands so high, that it may be seen at the distance of near 30 miles. There are two warm baths within a mile of this place, and a great number of mineral springs in the adjacent country. It is seated on the Waag, 50 miles N.E. of Preiburg. Long. 17. 50. E. Lat. 49. 56. N.

TRANCON, a town of Portugal, in Tra los Montes, with a castle, seated in a fertile country, 14 miles W. by S. of Pinhel. Long. 7. 0. E. Lat. 40. 44. N.

Transplanter.



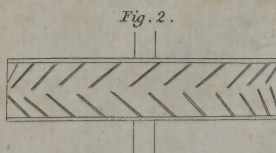
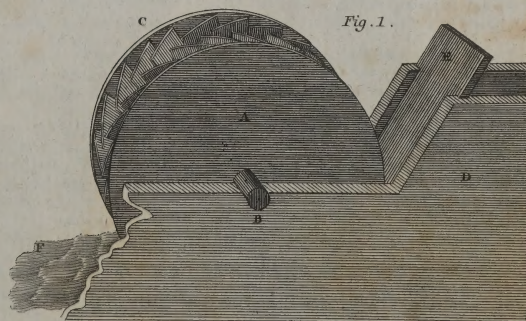
German Washing-Machine.



Tumbrel.



M^r Besant's Undershot Water-Wheel.



TRANI, a sea-port of Naples, in Terra di Bari, with a castle, and an archbishop's see. It is the usual residence of the governor of the province; but is much decayed since the harbour has been choked up with mud. It is seated on the gulf of Venice, 20 miles W. of Bars, and 125 N. by E. of Naples. Long. 16. 36. E. Lat. 41. 18. N.

TRANQUEBAR, a town of Hindoostan, on the coast of Coromandel, with a fort and factory, belonging to the Danes. It is seated at the mouth of the Cauvery; 65 miles S. of Madras. Long. 79. 47. E. Lat. 10. 44. N.

TRANSPLANTER, an instrument calculated for expeditiously raising plants with their roots, and configning them to other parts of the field in which they grow. Notwithstanding every precaution, it frequently happens in turnip-fields that large spots remain barren. In Pl. 54. we have given a representation of a simple instrument invented by Mr. Gray, of South Repps, Norfolk, for the purpose of filling up such vacant spaces from the adjoining parts of the same field; and which has also been employed for transplanting other vegetables.

The handle A, must be held with the left hand; and the short handle B, drawn up with the right. The planter should next be put over the vegetable intended to be taken up, and forced into the ground with the foot: it is then to be twisted round, and carefully drawn up, so that the earth may adhere to the root. A hole should, in the mean time, be made by an assistant, furnished with a similar instrument, for the reception of the turnip; the root may be conveyed in the first planter, and deposited in the cavity; after which, the right hand being kept steady, the left must be gradually raised; when the earth and plant will be left in the hole undisturbed.

TRAO, or **TRAU**, a strong town of Venetian Dalmatia, with a bishop's see. It is seated on the gulf of Venice, in a small island, joined to the mainland by a long bridge of wood, and to the isle of Buia by another of stone, 27 miles S.E. of Sebenico. Long. 17. 52. E. Lat. 44. 0. N.

TRAPANI, or **TRAPANO**, a sea-port on the W. side of Sicily, in Val di Mazara, with a fort, and an excellent harbour, in the form of a sickle, whence its ancient name Drepanum. It contains 20,000 inhabitants, and is a trading place, famous for its salt-works, and fisheries of tunnies and coral. It is seated on a small peninsula, 20 miles N. of Mazara, and 45 W. of Palermo. Long. 12. 20. E. Lat. 38. 10. N.

TRAPPE, a once celebrated monastery of France, in the department of Orne, situate in a large valley, surrounded by mountains. The monks were famous for their austerity, and keeping perpetual silence.

TRARBACH, a town of Germany, in the palatinate of Lower Rhine, and country of Spanheim, seated on the Moselle. Its fortress, which is on a mountain, and commands the passage of the Moselle, was taken by the French in 1794. It is 22 miles N.E. of Treves, and 28 S.W. of Coblenz. Long. 7. 7. E. Lat. 49. 55. N.

TRAVANCORE, a province of Hindoostan, extending along the coast of Malabar from Cape Comorin to 10. 15. N. lat. and bounded on the N. by Myfore, and on the E. by the Carnatic. It is subject to a rajah, who is an ally of the English East-India Company, and in defence of whom they engaged, in conjunction with the Mahrattas and the nizams of the Deccan, in the war against Tippoo Sultan.

TRAVANCORE, the capital of a province of the same name, in the peninsula of Hindoostan, 100 miles S.S.E. of Cochin. Long. 77. 8. E. Lat. 3. 15. N.

TRAVUNDE, a strong town of Germany, in the VOL. X.

duchy of Holstein, seated at the mouth of the Trave. It is the port of Lubec, to which it belongs, and is 12 miles N.E. of that city. Long. 10. 55. E. Lat. 54. 1. N.

TRAVERS, a town of Switzerland, in the county of Neuchatel, 11 miles W. of Neuchatel. Long. 6. 50. E. Lat. 47. 6. N.

TRAUNSTEIN, a town of Germany, in Upper Bavaria, seated on the river Traun. Near it are springs of salt-water.

TRAUTENAU, a town of Bohemia, in the circle of Koniggratz, 21 miles north of Koniggratz. Long. 16. 6. E. Lat. 50. 45. N.

TRAGUYERA, a town of Spain, in Valencia, 30 miles S. of Tortosa. Long. 0. 50. E. Lat. 40. 26. N.

TREBBIN, a town of Upper Saxony, in the middle marche of Brandenburg, 10 miles S.S.E. of Potsdam, and 20 S.S.W. of Berlin. Long. 13. 50. E. Lat. 52. 44. N.

TREBIA, a river of Italy, which rises in the territory of Genoa, washes Bobio in the Milanese, and falls into the Po, above Placentia. On the banks of this river the Romans, under the consul Sempronius, were defeated by Hannibal.

TREBIGNI, or **TREBIGNA**, a town of Turkish Dalmatia, with a bishop's see. The inhabitants are partly Turks and partly Greeks, and there are some Papists. It is seated on the gulf of Venice, on the river Trebignka, 14 miles N. of Ragusa. Long. 18. 11. E. Lat. 43. 4. N.

TREBISSIACI, a town of Naples, in Calabria Ulteriore, seated on the Tarento, five miles E. of Cassano.

TREBISOND, a large and strong sea-port of Turkey in Asia, in Natolia, with a Greek archbishop's see, and a castle. It is seated at the foot of a very steep hill. The walls are square and high, with battlements; and are built with the ruins of ancient structures, on which are inscriptions not legible. The town is not populous; for there are more woods and gardens in it than houses, and these but one story high. The castle is seated on a flat rock, with ditches cut in it. The harbour is at the E. end of the town, and the mole built by the Genoese is almost destroyed. It stands on the Black Sea, 104 miles N.N.W. of Erzerum, and 440 E. of Constantinople. Long. 40. 25. E. Lat. 40. 45. N.

TREBITZ, a town of Germany, in Moravia. It has a manufacture of cloth, and is seated on the Iglaw, 21 miles S.E. of Iglaw, and 52. N.W. of Budweis. Long. 16. 12. E. Lat. 49. 4. N.

TREBNITZ, a town of Germany, in Silesia, with a large nunnery. Near it is a hill consisting of a soft clay, or stone, which is immediately formed into vessels of all kinds; and on being exposed to the air, they become as hard as if they had been baked. It is 12 miles N. of Breslaw. Long. 17. 15. E. Lat. 51. 15. N.

TREFFURT, a town of Upper Saxony, in the landgrate of Hesse, with a castle. It belongs to the elector of Mentz, and is seated near the Verta, 22 miles W. of Saxe-Gotha. Long. 10. 19. E. Lat. 51. 8. N.

TREGANNON, a corporate town in Cardiganhire, with a market on Thursday. It is governed by a mayor, and seated on the Tyvy, 15 miles S.E. of Aberystwith, and 202 W. by N. of London. Long. 3. 56. W. Lat. 52. 13. N.

TREGONY, a borough in Cornwall, with a market on Saturday. It is much decayed, has no church, and only 150 houses poorly built, but is governed by a mayor, and sends two members to parliament. It is seated on a creek by Falmouth haven, 41 miles W. by S. of Plymouth, and 245 of London. Long. 4. 43. W. Lat. 50. 16. N.

TREGUIER, a sea-port of France, in the department of 12 X

the North Coast, seated near the English Channel, 22 miles N.W. of St. Brieux. Long. 3. 10. W. Lat. 48. 47. N.

TREILEBURG, a sea-port of Sweden, in the province of Schonen, seated on the Baltic, 50 miles S.E. of Copenhagen. Long. 13. 26. E. Lat. 55. 26. N.

TREMESEN, or TLEMSSEN, a province of the kingdom of Algiers, 370 miles long and 125 broad: bounded on the N. by the Mediterranean, on the E. by the province of Africa, on the S. by the desert of Zahara, and on the W. by the kingdom of Fez. It is dry, barren, and mountainous, except on the N. side, where there are plains abounding in corn, fruits, and pastures. The capital, of the same name, is surrounded by strong walls, and inhabited by poor Arabs, Moors, and Jews. Long. 1. 29. W. Lat. 34. 40. N.

TREMITI, three islands of Italy, in the gulf of Venice, 15 miles from the coast of Naples. They are called Capraria, St. Nicolo, and St. Domino.

TREMOUILLE, a town of France, in the department of Vienne, seated on the Benualle, 23 miles E. by S. of Poitiers. Long. 1. 10. E. Lat. 46. 29. N.

TREMP, a town of Spain, in Catalonia, seated on the river Noguera Pallaresa, 85 miles N.W. of Barcelona.

TREPTOW, a town of Upper Saxony, in Prussian Pomerania. It has a manufacture of stockings and woollen stuffs, and is seated on the Rega, near its mouth, in the Baltic, 43 miles N.E. of Stetin. Long. 15. 19. E. Lat. 54. 10. N.

TREPTOW, a town of Upper Saxony, in Anterior Pomerania, 50 miles S. of Stralsund, and 50 W.N.W. of Stetin. Long. 13. 12. E. Lat. 53. 39. N.

TRESEN, or TROSA, a sea-port of Sweden, in Sudermania, seated on the Baltic, 35 miles S.W. of Stockholm. Long. 17. 29. E. Lat. 53. 0. N.

TRETHIMROW, a strong town of Poland, in Volhnia, seated on the Dniester, 45 miles below Kiof.

TREUCENBRIETZEN, a town of Upper Saxony, in the middle marche of Brandenburg, 20 miles S. of Brandenburg, and 34 S.W. of Berlin. Long. 12. 43. E. Lat. 52. 5. N.

TREVI, a town of Italy, in Umbria, 23 miles S.E. of Perugia. Long. 11. 51. E. Lat. 42. 54. N.

TREVIGLIO, a town of Italy, in the duchy of Milan, 17 miles E.N.E. of Milan. Long. 9. 28. E. Lat. 45. 35. N.

TREVIGO, a town of Naples, in Principato Ulteriore, with a bishop's see, 23 miles E. of Benevento. Long. 15. 20. E. Lat. 42. 6. N.

TREVINO, a strong town of Spain, in Biscay, with a citadel, seated on a hill, near the river Aguda, 10 miles S.W. of Vittoria. Long. 3. 4. W. Lat. 42. 48. N.

TREVISANO, a marquitate of Italy, in the republic of Venice; bounded on the E. by Friuli and the gulf of Venice, on the S. by that gulf, the Dogado, and the Paduano, on the N. by the Feltrino and the Bellunese, and on the W. by the Vicentino. The soil is fertile, and produces corn, wine, and wood: and they export cattle, silk, and woollen cloth. Treviso is the capital.

TRIEST, a strong sea-port of Germany, in Carniola, with a bishop's see. The harbour is spacious, but not good; being open to the W. and S.W. winds. The inhabitants have a good trade in salt, oil, almonds, iron, &c. brought from Laubach; and they make good wines. It is seated on the side of a hill, on the gulph of Venice, eight miles N. of Capo d'Istria, and 80 N.E. of Venice. Long. 14. 4. E. Lat. 45. 56. N.

TRIM, the county-town of E. Meath, in Ireland, seated on the Boyne, 23 miles N.W. of Dublin.

TRINCOMALE, a town on the E. side of the island of Ceylon, with a harbour, reckoned the finest in the East Indies. It was taken from the Dutch, by the English, in January, 1782; retaken by the French in August following; retaken to the Dutch by the peace of 1783; and again taken by the English in August, 1795. It is seated on a gulf of the same name, 100 miles N.E. of Candy. Long. 81. 52. E. Lat. 8. 45. N.

TRING, a town in Hertfordshire, with a market on Friday, 22 miles W. of Hertford, and 31 W.N.W. of London. Long. 0. 36. W. Lat. 51. 46. N.

TRINIDAD, a sea-port of New Spain, in the audience of Guatimala, seated on the Pacific Ocean. It is an open town, but very important, there being no other harbour on this coast. A mile and a half hence is a place which the Spaniards call one of the Mouths of Hell; because it is continually covered by a thick smoke, and emits flames from time to time. It is 70 miles S.E. of Guatimala. Long. 89. 30. W. Lat. 12. 50. N.

TRINIDAD, a town of New Granada, seated on the Rio de la Magdalena, 58 miles N.W. of St. Fede Bogota. Long. 73. 45. W. Lat. 4. 45. N.

TRINITY, or LA TRINITE, a sea-port of Martinico. The harbour is spacious and safe, and the town carries on a considerable trade. Long. 61. 8. W. Lat. 14. 53. N.

TRINO, a fortified town of Italy, in Monterrat, subject to the King of Sardinia. It was taken, in 1704, by the French, who abandoned it in 1706. It is seated near the Po, eight miles N.W. of Casal, and 35 N.E. of Turin. Long. 8. 30. E. Lat. 45. 26. N.

TRINOMALY, a town of Hindoostan, in the Carnatic, near which the troops of Hyder Ally were defeated by the British under Colonel Smith in 1768. It is 45 miles S.S.W. of Arcot, and 52 W.N.W. of Pondicherry. Long. 78. 35. E. Lat. 12. 2. N.

TRIST, a small uninhabited island of New Spain, on the coast of Tabasco, in the bay of Campeachy, separated by a narrow channel, on the E. from the isle of Port Royal. Long. of the E. point 92. 45. W. Lat. 18. 0. N.

TRISTAN D'ACUNHA, an island in the South Atlantic Ocean, 15 miles in circumference. The land is extremely high, and rises gradually toward the centre of the island (where there is a lofty conical mountain) in ridges covered with trees of a moderate size and height. The coast is frequented by sea-lions, seals, penguins, and albatrosses. Long. 11. 43. W. Lat. 37. 8. S.

TRITCHINOPOLY, a strong town of Hindoostan, in the Carnatic, 208 miles S.S.W. of Madras. Long. 78. 46. E. Lat. 10. 49. N.

TRIVENTO, a town of Naples, in Molise, with a bishop's see, seated on a hill, near the river Trigno, or Trino, 15 miles N. of Bogano, and 62 E. of Naples. Long. 15. 37. E. Lat. 40. 50. N.

TROCHTELFINGEN, an imperial town of Suabia, 16 miles N.W. of Buchan, and 29 S. of Stutgard. Long. 9. 7. E. Lat. 48. 18. N.

TROGEN, a town of Switzerland, and the chief place of the Protestant part of the canton of Appenzell. It is celebrated for its manufacture of cloth. Near it is a mineral spring containing copper, sulphur, and alum, used externally for several complaints. It is seven miles N. of Appenzell, and seven S.E. of St. Gall.

TROJA, a fortified town of Naples, in Capitanata, with a bishop's see, immediately under the pope. It is seated at the foot of the Appennines, on the river Chilaro, 32 miles N.E. of Benevento, and 60 N.W. of Naples. Long. 15. 15. E. Lat. 42. 21. N.

TROIS RIVIERES, a town of Upper Canada, on the river St. Lawrence, 55 miles S.W. of Quebec. Long. 71. 20. W. Lat. 46. 35. N.

TROKI, a town of Lithuania, capital of a palatinate of the same name. It is seated among morasses, 15 miles W. of Wilna, and 85 N.N.E. of Grodno. Long. 25. 13. E. Lat. 54. 38. N.

TRON, St. a town of Germany, in the bishopric of Liege, with a famous Benedictine abbey, 21 miles W.N.W. of Liege. Long. 5. 22. E. Lat. 50. 48. N.

TROPEA, a populous town of Naples, in Calabria Ulteriore, with a bishop's see. It was half ruined by an earthquake in 1638, and is seated on the top of a rock, on the E. coast, 10 miles N.W. of Nicotera, and 45 N. by E. of Reggio. Long. 16. 24. E. Lat. 38. 42. N.

TROPEZ, St. a sea-port of France, in the department of Var, with a citadel. It is seated on the bay of Grimaud, in the Mediterranean, 12 miles S.W. of Fréjus, and 58 E. of Marseilles. Long. 6. 44. E. Lat. 43. 16. N.

TROPAPU, a strong and considerable town of Germany, in Upper Silesia, capital of a duchy of the same name, with an ancient castle. It was taken by the Prussians in 1741 and 1756, but restored to the house of Austria by a treaty subsequent to each capture. It is seated in a pleasant plain, on the rivers Oppa and Mohra, 40 miles N. by E. of Olmutz, and 72 S. by E. of Breslaw. Long. 17. 40. E. Lat. 50. 1. N.

TROWBRIDGE, a town in Wiltshire, with a market on Saturday. The inhabitants are principally clothiers, who make superfine broad-cloth and kerseymer, in a great degree by machinery. It is seated on a hill, 23 miles S.W. of Marlborough, and 58 W. of London. Long. 2. 6. W. Lat. 51. 19. N.

TROYES, a considerable city of France, in the department of Aube, with a bishop's see. It is surrounded by good walls, but almost all the houses are of wood, and good water is wanting. Among the objects of curiosity are St. Stephen's, the principal church; the public library of the late Cordeliers; and the castle in which the ancient counts of Champagne resided. Its commerce, once very flourishing, now consists only in some linens, dimities, fustians, wax-chandlery, canals, and wine. It is seated on the Seine, 30 miles E.N.E. of Sens, and 90 E.S.E. of Paris. Long. 4. 10. E. Lat. 48. 13. N.

TRUGILLO, a town of Terra Firma, in Venezuela, 120 miles S. of the lake Maracaybo. Long. 7. 40. W. Lat. 9. 46. N.

TRUNS, a town of the country of the Grisons, where the independence of the Grey League was first ratified, and an alliance concluded between the chiefs and communities. It is seated on the Rhine, seven miles W. of Ilanz.

TRURO, a borough in Cornwall, with a market on Wednesday and Saturday. It has the benefit of the coinage of tin, and its chief business is in shipping tin and copper ore, found in abundance in its neighbourhood. Here, after the battle of Naseby, the forces of Charles I. under Lord Hopeston, surrendered to General Fairfax. Truro is seated in a vale, between the rivers Kenwyn and St. Allen, and at the very head of Falmouth Haven, 10 miles N. of Falmouth, and 257 W. by S. of London. Long. 4. 55. W. Lat. 50. 16. N.

TRUXILLO, a considerable town of Spain, in Estremadura, seated among mountains, on the side of a hill, at the top of which is a strong citadel. It is the birth-place of the noted Francis Pizarro, and situate near the river Almont, 65 miles S.W. of Toledo, and 117 S.E. of Madrid. Long. 5. 23. W. Lat. 39. 6. N.

TRUXILLO, a rich commercial sea-port of Peru, in the audience of Lima, built by Francis Pizarro, in 1533. In its territory are above 50,000 native Americans, who are tributary to Spain. It is seated in a fertile country, on a small river, near the Pacific Ocean, 300 miles N.W. of Lima. Long. 78. 35. W. Lat. 8. 1. S.

TRUXILLO, a strong sea-port of New Spain, in the province of Honduras, seated on a gulf of the same name, between two rivers, and surrounded by thick groves. Long. 85. 50. W. Lat. 16. 20. N.

TRUXILLO, of NUESTRA SEÑORA DE LA PAZ, a town of Terra Firma, in Venezuela, 220 miles S. of Maracaybo. Long. 69. 15. W. Lat. 9. 21. N.

TSCHOFA, a town of Upper Saxony, in the circle of Erzeburg, celebrated for its blue manufactures, seven miles S.E. of Chemnitz.

TSCHUTSKI, a country in the E. extremity of Asia, opposite the N.W. of America, bounded by the Anadir on the S. The attention of the natives is confined chiefly to their deer, with which their country abounds. They are a well-made, courageous, warlike race, and are formidable neighbours to the Koriacs, who often experience their depredations. The Russians have long endeavoured to bring them under their dominion; and though they have lost a great number of men, in their different expeditions to accomplish this purpose, they have never yet been able to effect it.

TSI-NAN-FOU, a celebrated city of China, the capital of Chang-tong. It was once the residence of a long series of kings, whose tombs, rising on the neighbouring mountains, afford a beautiful prospect. In its district are four cities of the second and 26 of the third class. It is seated S. of the river Tsi or Tsiang-ho, 160 miles S. by E. of Peking. Long. 117. 25. E. Lat. 36. 30. N.

TSI-NING-TCHOU, a city of China, in the province of Chang-tong, and district of Yen-tcheou-fou. From its situation on the grand canal, it is little inferior to the capital of the province, either in extent, population, riches, or commerce.

TSONG-MING, an island of China, on the coast of the province of Kiang-nan, to which it belongs, and from which it is separated by an arm of the sea, 13 miles broad. It is 50 miles long and 13 broad. It was formerly a sandy desert, to which criminals were banished: those that first landed on it began to till the ground, that they might not perish with hunger; some poor Chinese families emigrated thither afterward; and, in less than ten years, the island was peopled and cultivated. Its principal revenue arises from salt, which is made in such abundance that it can supply most of the neighbouring countries. In this island is only one city of the third class; but villages are so numerous, that they seem to touch each other, and to form one continued city. The country is delightful, and intersected by many canals. Long. of its S.E. end 121. 55. E. Lat. 30. 15. N.

TSUEN-TCHOU-FOU, a city of China, in the province of Fo-kien. In its district are seven cities of the third class; and its situation, extent, commerce, triumphal arches, temples, and well-paved streets, secure it a distinguished rank among the most beautiful cities in the empire.

TUBAN, one of the strongest towns in Java, with a harbour, and a king of its own. It is seated on the N. coast of the island. Long. 114. 51. E. Lat. 6. 0. S.

TUBE (*Encycl.*). The following remarks on the phenomena of capillary tubes, by M. Milon, is taken from the *Journal de Physique*.

The phenomena of capillary tubes are as follow: 1st, If one of these tubes be plunged in a fluid, such as water, alcohol, &c. the fluid rises within it above its external level; and this

elevation is in direct proportion to the smallness of the tube. 2d. But if it be plunged in mercury, instead of rising as above described, it is depressed; and this depression is also in direct proportion to the smallness of the tube.

In times, when the sciences were cultivated with less accuracy than at present, and when chemistry in particular was not enriched with that beautiful theory which now forms its basis, philosophers have long debated on the cause of this phenomenon now generally attributed to molecular attraction; the only point on which they differ being, that some admit both the phenomena of ascension and those of depression, while others only admit those of ascension.

The celebrated Haüy, in the third volume of the first part of the *Séances de l'Ecole Normale*, p. 40, after having described the first of the above-mentioned phenomena, says, "Mercury on the contrary remains below the level, and its depression is in inverse proportion to the diameter of the tube. But these effects presuppose that the tube is applied without preparation; for we shall presently see, that by means of certain precautions, the elevation of mercury above the level may in like manner be obtained." And in support of this assertion, he quotes, page 50 of the same volume, an experiment made at Metz, by Citizen Calbois, from which it appears, that the depression of the mercury arises merely from the moisture contained in the mercury and the tubes employed; which moisture, interposing itself between the mercury and the glass, neutralizes the attraction which the glass may have for that fluid; and that, on removing this moisture, mercury is governed by the general law above stated, and rises in capillary tubes in the same manner as other fluids.

On the other hand, Citizen Libes, in his new and excellent *Traité élémentaire de Physique*, vol. II. page 23, &c. explains the depression of mercury by observations to the following effect: "That although the glass may have some attraction for the mercury (a fact, which he proves, by a very simple experiment), the mutual attraction of the molecules of this fluid for each other is more considerable." This is proved by the following experiment: if a globe of mercury adhering to a plate of glass be presented to a mass of that metal, the globe abandons the glass and unites with the mercury. Hence he draws several very just inferences.

This contrariety of opinions must necessarily give rise to doubts, which it is important to clear up. The following is the process which has contributed to fix the opinion of M. Milon on this subject.

"I first," says he, "made the ordinary experiment with pure mercury, when the fluid was as usual depressed. I then poured the mercury into a small long-necked matrafs, and exposed it to the fire of a simple furnace by means of a sand bath. I placed this apparatus out of a window, which I shut, in order to observe what passed without exposing myself to the dangerous influence of the mercurial vapour. After a while, the mercury began to boil, and then becoming volatile, it collected about the sides of the matrafs in small drops, which fell down again in proportion as their weight increased. This continued about a quarter of an hour, after which I thought I might consider the mercury as deprived of all moisture. I then heated to a white heat the capillary tubes I intended to employ, and having only allowed time for these as well as the mercury to return to the temperature of the place where I performed the experiment, I plunged them in the mercury thus deprived of its moisture, and observed the same depression as in my former experiment.

"To ascertain that the depression of the mercury did not arise from the moisture that might remain in the tubes, notwithstanding the precautions I had taken, I placed two of these tubes perpendicularly in the mercury, and, approxim-

ing them to each other, I perceived the same result as before; for the nearer they approached, the more was the mercury depressed between them.

"It may be replied, perhaps, that the mercury had already attracted the humidity of the air. But I would answer, 1st, That the weather was then very dry: a circumstance by no means indifferent. 2d, That although the attraction of mercury for a certain portion of moisture may be considerable, it is not sudden; and that its union with surrounding water only takes place after a considerable interval of time, as, for instance, eight or ten hours, and that I was careful to perform the experiment with great dispatch.

"Hence I think I am authorized to believe, that the depression of mercury is constant, that the moisture of the mercury makes no alteration in this phenomenon which is peculiar to it; and that, if it rose above the level in the experiment of Citizen Calbois, which, though very different from mine as to the process pursued, ought to lead to the same result, the success of that experiment certainly depends on peculiar circumstances, which it would be well to examine: for, if the phenomenon of ascension took place with mercury when well purified from water, it would follow, that it has a stronger affinity to glass than to itself, which is contrary to experience."

TUBINGEN, a fortified town of Suabia, in the duchy of Wirtemberg, with a university, and a castle. Here is a large house called New Bau, where a certain number of students in law are lodged and boarded gratis; and in the town-house is a very curious clock. It is seated on the Neckar, in a country abounding in corn and wine, 20 miles S. of Stuttgart, and 50 E. by S. of Strasburg. Long. 9. 4. E. Lat. 48. 30. N.

TUCUYO, a town of Terra Firma, in Venezuela, and in a valley of the same name. A river runs through the middle of the valley, and the soil abounds in sugar-canes, cotton, and all the necessaries of life. Long. 69. 2. W. Lat. 7. 31. N.

TUDDINGTON, a town in Bedfordshire, with a market on Saturday, five miles N. of Dunstable, and 38 N.N.W. of London. Long. 0. 32. W. Lat. 52. 0. N.

TUDELA, a considerable town of Spain, in Navarre, with a castle. It is seated in a country that produces good wine, on the river Ebro, over which is a handsome bridge, 45 miles N.W. of Saragossa, and 140 N.E. of Madrid. Long. 1. 10. W. Lat. 42. 9. N.

TVER, a government of Russia, once an independent principality, united to the empire by Ivan Basilowitz, in 1490, and comprised in the government of Novogorod, from which it has been separated. The population has increased to a surprising degree; a circumstance evincing the advantage arising from the new code of laws of Catharine II. It was the first province newly-modelled according to that code; and it has experienced the beneficial effects of these excellent regulations. The country produces abundantly all kinds of corn and vegetables. Its forests yield the most valuable timber. The quadrupeds, and the feathered race, are the same as in all the N. of Europe; and, beside the fishes common to most lakes and rivers, there is a fish peculiar to the waters of these northern regions, called the sterlet, the *acipenser ruthenus* of Linnaeus, and is a species of sturgeon, highly esteemed for the flavour of its flesh, and for its roe, of which the finest caviare is made.

TVER, a commercial city of Russia, capital of a government of the same name, seated at the confluence of the Tverza and Volga, along which is conveyed all the merchandise sent by water from Siberia, and the S. provinces, toward Peterburgh. It is divided into the old and new town: the former,

situate on the opposite side of the Volga, consists almost entirely of wooden cottages: the latter having been destroyed by a dreadful conflagration, in 1763, has risen with lustre from its ashes. Catherine II. ordered a regular and beautiful plan of a new town to be made. At her own expence, she raised the governor's house, the episcopal palace, the courts of justice, the exchange, the prison, and some other public edifices; and to every person who engaged to build a house of brick, she offered a loan of 300*l.* for a year, without interest. The streets are broad and long; extending in straight lines, from an octagon in the centre; and the plan, when completed, is to comprise two octagons. The houses are of brick, stuccoed white, and make a magnificent appearance. Here is an ecclesiastical seminary, which admits 600 students. In 1796 the empress founded a school for the instruction of 200 burghers' children; and, in 1779, an academy for the education of 120 of the young nobility of the province. Tver is 99 miles N.N.W. of Moscow. Long. 36. 5. E. Lat. 56. 7. N.

TUGGURT, a country of Barbary, lying S. of Algiers, and W. of Biledulgerid. The capital, of the same name, is 310 miles S.E.E. of Algiers. Long. 5. 10. E. Lat. 33. 0. N.

TULA, a government of Russia, formerly a province of the government of Moscow. Its capital, Resan, is seated on the Trubesh, 118 miles S.E. of Moscow. Long. 40. 45. E. Lat. 55. 25. N.

TULEBRAS, a town of Spain, in Navarre, situate on the Queios, seven miles W. of Tudela.

TULLAMORE, a town of Ireland, in King's County, situate on a river of the same name, 44 miles W.N.W. of Dublin.

TULLES, a commercial town of France, in the department of Correze, with a bishop's see. The cathedral is famous for its steeple, which is very high and curious. It is seated at the confluence of the Borreze and Solane, partly on a mountain, and partly below it, in a country surrounded by mountains and precipices, 37 miles S.E. of Limoges, and 62 S.W. of Clermont. Long. 1. 42. E. Lat. 45. 23. N.

TULLOW, a town of Ireland, in the county of Carlow, eight miles E.S.E. of Carlow, and 38 S.S.W. of Dublin.

TULN, a town of Austria, near the Wienerwald, or wood of Vienna, with a bishop's see. It is seated near the river Tuhn, in a country abounding in corn and wine, 15 miles W. of Vienna. Long. 16. 6. E. Lat. 48. 14. N.

TULSK, a borough of Ireland, in the county of Roscommon, nine miles N. of Roscommon.

TUMBEEZ, a town of Peru, in the audience of Quito, where the Spaniards first landed on their discovery of that country. It was then a place of some note, distinguished by a stately temple, and a palace of the incas or sovereigns of the country. It is seated on the Pacific Ocean, 270 miles S. by W. of Quito. Long. 79. 51. W. Lat. 3. 40. S.

TUMBREL, a machine employed chiefly in the county of Lincoln; for the purpose of giving food to sheep, during the winter.

In the 4th vol. of the *Repository of Arts*, &c. we meet with a description of a contrivance which is equally simple and useful: we have, therefore, been induced to give a figure of it in Pl. 54.

It consists of a circular cage or crib, which may be made of willow, osiers, or similar pliant brushwood. The whole is ten feet in circumference, being closely wattled to the height of one foot, above which it is left open for the space of about eighteen inches; when it is again wattled to the height of eight or nine inches; an opening, eighteen inches broad, being left at the top for the purpose of putting in turnips, or other provender. The staves, forming the skeleton of the

machine above described, are ten inches apart, so that twelve sheep may feed at one time from each tumbrel.

Considerable advantages are derived from this method of feeding sheep; as it greatly reduces the expence of provender, which is thus prevented from being soiled with dung, or trodden under foot. In such a state of separation, the strongest animals cannot drive away the weaker sheep; each being secured by the head, while they are eating. Further, the construction of the tumbrel being attended with no difficulties, it may be readily procured, and be daily conveyed to any part of a farm: if proper care be taken, this utensil may be preserved in constant use, for eight or ten years.

TUMEL, a rapid river in Perthshire, which, after exhibiting many beautiful cataracts, forms itself into a lake, called Loch Tumel, and then falls into the Garry.

TUMEN, a town of Siberia, in the province of Tobolsk, 125 miles W. of Tobolsk.

TUMPACH, a town of Bavaria, in the Upper Palatinate, 17 miles N.N.W. of Amberg, and 32 E.N.E. of Nuremberg. Long. 11. 55. E. Lat. 49. 40. N.

TUNGINSKOL, a town of Russia, situate on the Irkut, 80 miles S.W. of Irkutsk. Long. 103. 15. E. Lat. 51. 18. N.

TUNJA, a town of New Granada, capital of a district of the same name. It is seated on a high mountain, in a country where there are gold and emeralds, 30 miles S.W. of Truxillo. Long. 73. 5. W. Lat. 5. 0. N.

TURA, a town of Germany, in the county of Tyrol, 24 miles S.W. of Trent.

TURKHEIM, a town of France, in the department of Upper Rhine, remarkable for a victory gained here by Turrenne, over the Austrians, in 1675. It is seated near the river Colmar, one mile N.W. of Colmar.

TURCOMANS, **TEREKEMENS**, or **TRUKHMENTIANS**, a people of Asia, who speak the Turkish dialect of the Tartar language, and inhabit the eastern slope of Mount Caucasus, the coast of the Caspian about Boinak, Derbent, and Utenish, and the southern promontories between the sea and the river Alazan. Some of them are subject to the khan of Cuba; others to a chief who resides at Nukhu; and a third to the sovereign of Georgia.

TURENNE, a town of France, in the department of Correze, with a castle, 42 miles S. of Limoges. Long. 1. 30. E. Lat. 45. 9. N.

TURINGE, a town of Sweden, in the province of Sudermland, 24 miles W.S.W. of Stockholm. Long. 17. 54. E. Lat. 59. 10. N.

TURINSK, a town of Russia, in the government of Tobolsk, 144 miles W. of Tobolsk. Long. 63. 44. E. Lat. 58. 5. N.

TURKIN, a town of Russia, in the government of Caucasus, situate on the Caspian Sea, 140 miles S. of Astracan. Long. 47. 15. E. Lat. 44. 15. N.

TURNDORF, a town of Bavaria, in the Upper Palatinate, 21 miles N.N.W. of Amberg, and 32 N.E. of Nuremberg. Long. 11. 55. E. Lat. 49. 42. N.

TURNHOUT, a town of Austrian Brabant. Here, in 1596, Prince Maurice of Nassau, at the head of only 800 cavalry, totally defeated the Spaniards, consisting of 6000 horse. It is 24 miles N.E. of Antwerp. Long. 5. 0. E. Lat. 51. 22. N.

TURNIP-DRILL, an agricultural implement, by means of which turnip-seed may be sown after the manner of the drill culture. The following account of some experiments to determine the comparative advantage of the drill or broadcast method in the cultivation of turnips, and description of a new invented drill, by the Rev. T. C. Munnings, of East Dereham, in Norfolk, is published in the Transactions of the

Society for the Encouragement of Arts, Manufactures, and Commerce, who conferred on the author their silver medal and ten guineas.

"Residing in a country," says Mr. Munnings, "in which the turnip-crop is very deservedly considered as the basis of its husbandry, I have, for some time, directed my attention, and made some experiments, relative to the improvement of the cultivation of that valuable vegetable; conceiving that in whatever degree I could more advantageously produce turnips, or when produced could provide for a more economical expenditure of the crop, I might fairly be regarded as in the same degree promoting the general and lasting interests of the community. With this view I have made repeated trials, to ascertain the comparative advantage of the drill or broad-cast method in the cultivation of turnips; and as the result of an experiment which I made last year has not only been satisfactory to myself, but also to all who have witnessed the effects of it, I am induced to offer myself a candidate for the premium held out by the Society.

"But, before I proceed to a detail of my experiments, I think it right to observe, that I have, *by way of preparation for turnips*, given my land a deeper ploughing in the winter than is customary with the neighbouring farmers. For this purpose, I made use of a Scotch foot-plough; and I think that by such ploughing I bring land into action, which has been for some time dormant; and which is therefore better suited to the turnip than land which has been exhausted by the production of other crops. In every other respect my previous management of my land corresponds with the common practice of my neighbours.

"My land being thus prepared, instead of sowing the turnips *broad-cast* in the usual method, I invented a drill for this purpose, simple in its construction, and of easy management. It consists of a tin box, in the shape of a barrel, affixed to the axis of a wheel, about twenty-two inches in diameter, vertical with the fume, and its revolutions dropping the seed through small apertures in the middle of the barrel. The holes through which the seed falls are distant from the wheel about fourteen inches. (See Plate 53, figs. 1, and 2.)

"I began by having the tops of the different ridges set out with the common Norfolk *two-horse* plough; and, when the same plough took up the furrow next to the top, I immediately followed with my drill, and dropped the seeds upon the fresh mould the instant it was turned up. I was then followed by a one-horse plough, the over that mould of which was quickly buried the seeds. I was thus enabled to sow my seed as fast as the land was ploughed, and to deposit them in regular and straight rows, at equal distances of about eighteen inches; after which I harrowed or rolled my land, in the same direction in which it was ploughed; and the consequence has been, that my crop has grown as regularly as a gardener could plant cabbages. Nearly six acres of my field were thus drilled, and on the same day (in the third week of June) the remainder of the field, or something more than three acres, was sown broad-cast, after the usual practice of the country, and precisely at the same time when the farmers around me were sowing their lands in a similar manner.

"In the course of my observations on the turnip-crop, I had frequently lamented that, when the crop was indeed abundant, the advantages derived from its expenditure were far from corresponding, because no effectual method has yet been adopted, to protect the turnips from the severity of a winter's frost. This, in the common method of *broad-cast*

sowing, I considered as impracticable, and therefore resolved to attempt it in my drilled crop; and in that crop I have been enabled by pulling up the alternate rows to leave regular rows about a yard apart, and have had the land so ploughed, with a one-horse plough, as to mould up the turnips, on each side, most effectually, and to assume the appearance of what is called *two-furrow work*. I have therefore half my crop so buried, as to lessen very materially, if not absolutely to prevent, the danger arising from the frequently fatal effects of a cutting frost.

"I am truly happy that the mildness of the present season prevents my speaking with greater confidence, as to the success of this part of my experiment, though the very complete manner in which the turnips are now buried, leaves me without much doubt but that it fully answers my expectations. Many very-experienced farmers, who have witnessed my proceedings, honour them with their entire approbation, and look upon my method of protecting my plants as a grand discovery in the management of the turnip-crop. I am certainly aware, that I am not the first person who has drilled turnips; but I know of no one who has before done it in so simple a manner—in a manner attended with less expense—in a manner admitting of so much ease, in future operations, for the defence of the plants—or in a manner more likely to be clearly understood by all who may be desirous of making similar experiments. Of the superior produce of the drilled crop over the broad-cast, on equal quantities of land, every experiment that I have made has most powerfully convinced me; and I have the universal opinion of all who have viewed my present crop, to confirm my sentiments. It has been observed by Mr. Kent, in his General View of the Agriculture of the County of Norfolk, that the ground does not relish turnips so well as formerly; and he supposes (in my opinion, with much justice), that the present comparative ignorance of the use of turnips amongst the Hanoverians, has arisen from the ground in that country being injured by repeated crops of them. It is certainly a very obvious truth, that turnips will grow in the greatest abundance on land not accustomed to bear them; but it has frequently occurred to me, that one material reason of failure, in a crop of turnips sown broad-cast, has arisen from the seed not being sown soon enough after the plough; as I have, in numberless instances, taken notice of turnips vegetating very partially, when only a few furrows have been ploughed between one sowing and another; and, in such cases, I have always thought that, if the seed could have been deposited immediately after the plough, it would not have failed to grow uniformly. I trust it will be found that my experiment powerfully tends to confirm this conclusion.

"In a part of my field, from which the alternate rows have not yet been taken, I have, with very great effect, used the hoe-plough, and have not only cut and destroyed whatever weeds were growing between the rows, but have also partially moulded up the apples of the turnips; and I am induced to believe that even so partial a moulding up, executed in the autumnal months, would have a strong tendency to protect the plants, to facilitate a more complete moulding up when part of the crop is removed, and to admit the full benefit resulting from the exposure of the earth to a winter's frost. I am persuaded that such use of the hoe-plough serves likewise to retain necessary moisture, and to produce future pulverisation with much less than common labour. But I have more particularly noticed the very superior verdure of the moulded-up plants, compared with what are not so, and with the larger and almost uninjured

tops of the former, in comparison with the latter; for, during some late frosts, the effects of which were very perceptible in the exposed plants, those moulded up have continued to grow, and to branch luxuriantly, with all the vigour of vernal vegetation. I attribute this to the bulbs of such plants not having their juices stagnated by the keennels of the weather.

"As I am anxious to have this subject fully submitted to the Society for the Encouragement of Arts, &c. allow me to say, that I consider my drill for turnips as much superior to any other, from the single circumstance of its depositing the seed *to instantly* after the plough, as entirely to preserve the good effects of the first evaporation; and that I conceive such evaporation produces the uniform vegetation of such minute seeds. So remarkably uniform was the vegetation last year, that in the six acres of my drilled plants, I believe there was not a deficiency of six square yards; though on three acres of broad-cast, before rain fell, not one half, perhaps not one-third part of the seeds vegetated. I am indeed fully persuaded that the drill method, in the cultivation of turnips, will in all seasons be superior to the broad-cast; but that the very great and striking difference between the two methods will most effectually be perceived in a season of uncommon drought; and it is for this reason that I am solicitous to procure for the drill-method an extensive and impartial trial, that agriculturists in general may be satisfactorily convinced of its important advantages.

"Of the following advantages attending my method of drilling turnips, I am satisfactorily persuaded:—in a dry time, as was the case last season, the seed, by being immediately dropped upon the fresh turned up mould, has consequently an increased probability of successful vegetation. By being buried somewhat deeper than in the broad-cast method, it receives more moisture in its infant state of vegetation; and by having, if I may so say, new hold of the earth, is less liable to injury, from the effects of continued drought. In confirmation of these persuasions I must state, that turnips sown on the same day, in the same field, broad-cast, on land in every other respect treated previously in the same way, have not produced one half or one third of a crop, and that the same has been very generally the case with turnips sown broad-cast; but that every row of my drilled plants has succeeded to admiration. The advantages in the subsequent management of the crop I have already spoken of. If therefore it be desirable to grow turnips to advantage, if it be desirable to protect them when grown, and by such protection be enabled to give stock, sound, uninjured turnips, instead of what may be more than half-rotten, or frost nipt almost to putrefaction; I would willingly flatter myself that the Society for the Encouragement of Arts, &c. will be convinced that, as far as any conclusion can be drawn from a single experiment in favour of one method rather than another, I have, beyond dispute, established the superiority of the drill-method of cultivating turnips.

"Of my previous experiments I am not able to furnish the Society with any satisfactory particulars; yet I would by no means omit to declare, that each has been the mean of persuading me, that the broad-cast method of cultivating turnips can never be so advantageous as that of the drill, when properly managed; and I have much satisfaction in assuring the Society, that, from the extraordinary success of my last year's experiment, many of my neighbours have expressed a resolution to drill, and to protect their turnips far the time to come.

"In addition to the advantages I have before stated, that any drilled plants growing in such straight and equidistant

rows, any noxious weeds, such as charlock, thistles, or feed-weed, may be destroyed in the infant state of the plants, by hoeing the intermediate spaces; that when the alternate rows are removed, and the land ploughed for the defence of the remaining rows, it receives most of the benefits of a winter's frost, and is very much forwarded in preparation for the barley-crop; and that, above all, from my complete success, I have roused a spirit of emulation in the cultivation of turnips, among the farmers of the county of Norfolk.

"With regard to my turnips, it would be easy to multiply certificates, and be diffuse in my observations, because no agriculturist has viewed them without being surprised both at the abundance of the crop (considering the quality of my land), and at the very obvious simplicity of my management of it, from beginning to end. I shall only further observe, that it is now in my power to sow my seed at equal distances of nine, eighteen, twenty-seven, thirty-six inches, or at any given distance of inches, of which nine are an aliquot part; and that I consider this as no trifling convenience."

The following will explain the references to the figure in Plate 53. fig. 1. A is the wheel, with an iron rim. B, the tin barrel, or feed-box, fixed to the axis of the above wheel. C, the aperture by which the seed is introduced into the box:—this aperture is afterwards closed by a cover. D, a semicircular plate of tin, to prevent any dirt falling upon the feed-box. E E, the two handles of the machine.

Fig. 2. F represents the feed-box on a larger scale. G, the holes in the tin box, through which the seed falls upon the land. H, part of the axis of the wheel, to which the feed-box is fixed.

A drill machine for sowing turnip-feed has also been invented by T. A. Knight, esq. of Elton, near Ludlow. The following account of it appears in the Transactions of the Society for the Encouragement of Arts, &c. who voted Mr. Knight their silver medal.

"The small instrument for sowing turnips," says Mr. Knight, "which I have sent to the Society, I have tried on several different soils, and think I can venture to assert, that it will sow the seed, and cover it perfectly well, in any soil that is nearly in a proper state to receive it. It is necessary either to harrow the ground across, or to roll it, previously to the instrument being used, that the labourer may see the rows he has made; but I have always found the crop to succeed better after the roller than the harrow, though the ground has been very strong.

"In Plate 53. A is the iron wheel, which, running on its edge, formed by two concave sides, makes the groove into which the seeds fall. I have sometimes used a wheel with straight sides; but I think that concave sides, when well executed, are to be preferred in strong soils, and indeed in any soil. B is a wheel, moving on the same axis with A, and turning the wheel C (which gives out the seed) by means of a strap. I have several sizes of the wheel B, in order to increase or diminish the rapidity of C; and consequently to sow more or less seed. D, the tube through which the seed passes, and falls into the channel made by the iron wheel. E, the feet of the instrument. F, six lengths of jack-chain; which I find cover the feed remarkably well. The chain is perhaps preferable to any kind of harrow, because it can never become incumbered with loose straw, which is almost always found on, or close to, the surface, when the ground has been manured; and the iron cutting-wheel has a similar advantage over any kind of share. G, the feed-box. H H, the handles of the machine.

"The labour of using the instrument is very small. My workman usually accomplishes four statute acres, or something more, in a day: and one night, with the one I send, he sowed an acre and a half after six o'clock in the evening. There are two holes before the axis of the great wheel, which point out the proper width of the intervals between the rows. I usually place my rows at eighteen or twenty inches distance; and I wish my plants to stand at not more than six inches apart in the row; for I find that three small turnips weigh about as much as one large turnip, are more solid, and I think more nutritious, and certainly are much less apt to suffer by unfavourable weather. The ground between the rows is, of course, worked with the hoe.

"The angle which forms the edge of the wheel A, must be made more or less acute; and the instrument more or less heavy, proportional to the strength of the soil. I have sometimes added weights of lead over the axis of the wheel, but it will rarely be found necessary. I have tried the instrument on different soils, and I think it will answer on any. A great advantage may be derived by sowing turnips with it, at a time when horses, now commonly used for the same purposes, are engaged in other employments. A few days are frequently of importance in sowing turnips, which, by fortunate rains, have got a wonderful start of those which have been sown a day or two later.

"Fig. 3, is a section, on a larger scale, of the seed-box G, in fig. 2. The wheel, marked C, is also the same as in that figure: it is fixed upon the axis of the cylinder I, which is pierced upon the surface with holes at K, for the feed. This cylinder turns round within a groove at the bottom of the box, and is so well fitted therein, that no feed falls from the box but what is delivered by the holes K. A small brush, marked L, rubs against the cylinder, to clear out any seeds which may remain in the holes. M is a front-view of the wheel, exhibiting its edge.

"The seeds fall into the tube underneath the cylinder, and thence into the channel, made by the indenting rim of the iron wheel. The loose chains which follow cover the seeds with earth, as before mentioned."

Both these drill machines are placed in the Society's repository for the inspection of the public. We cannot conclude this article without noticing the patent granted to Mr. Jackson, of Basingwold, in the county of York, for a machine or drill for turnips, which is to be fixed to a plough-beam. The patent is dated Nov. 3, 1801. Mr. Jackson declares his invention to be according to the following description:

Fig. 1 (Plate 53.) consists of a brass plate or frame, wherein the brass roller A is fixed with two caps and screws at B, B. The brass roller hath three, four, or more sets of holes, consisting of different numbers, viz. from six to eighteen in each set or circumference.

Fig. 2 is a sliding cover, whose inside closely fits the roller A. The opening B moved over any of the different numbers of holes, and screwed fast by the two screws A, A, in one revolution will discharge different numbers of seeds. The row f holes with fix in it will sow the feed at sixteen inches distance from each other; and the row with eighteen holes in it will sow the feed five inches distance from each other: but the holes may be varied in their numbers, at the will of a purchaser. At C is a brass screw, hollowed at the lower end, and cemented, full of horse-tail hair, and of the diameter of the aperture B, in the centre of fig. 2.

Fig. 3 is a section of fig. 2, with the feed-box upon it.

Fig. 4, A is a sliding bar of wood, two feet long, two inches broad, and one inch and a half thick, B is a cast-iron

or wood wheel, thirty-one inches diameter, and fastened by a square hole and nut upon the end of the iron axletree C, which axletree runs, and is fixed, to the sliding-bar A, by the two collars at D, D. The axletree hath a square hole in the end at E, where it receives the square end of the arbor E, in fig. 1. FFF is the side view of the feed-box sprout, and fixing to the end of the sliding box, by means of the cock E, part of the plate or frame, as at D, in fig. 1, is screwed, so as to be in a direct line with the axletree of the wheel B. G is a sliding cap or box, through which the sliding-bar A moves backwards and forwards from D to D, and may be fixed in any part between, to suit the breadth of the furrow intended to be ploughed, through the upper part of the frame. The wood frame B, fig. 6, slides likewise to and fro, and may be fixed by the same screw (H, fig. 4); by which motion the feed may be dropped either under the furrow or upon the surface of the ground.

Fig. 6, A, the stud to go through the plough-beam as near the counter-hole as convenient, on the left-hand side of the beam. The frame B, two feet six inches in length, and three inches square, slides through the box or cap as at I, in fig. 4. At E, the wheels, axletree, and the arbor of the drill-roller, join and couple by means of a male and female square, or an universal joint.

Fig. 7, A, the stud, as at A, fig. 6, to put through the plough-beam, as near the counter-hole as convenient, on the right-hand side. The frame frame B, fig. 6. The same drill F and wheel B as described in fig. 4.

Figs. 8, 8, is a frame with two arms and two bolts, as at A A. The upper part of the wheel's axletree goes through the arm and frame at B, and rises and falls to suit the depth you plough, secured by the screw C, and in some measure answers the purpose of a single-wheel plough. The same wheel, and the same drill, as described above, upon each centre or contrate wheel, are fixed of equal sizes; and a rolling-shaft D, with a nut upon each end to suit each wheel; and, by varying the numbers of the nuts upon the shafts, you vary the quantity of feed to be sown. This drill may be used advantageously in sowing of rape and other small round seeds.

TURON, a town of Cochin-china, situate at the bottom of a bay of the same name. Long. 107. 30. E. Lat. 15. 15. N.

TURSI, a town of Naples, in Basilicata, seated on the river Sino, eight miles from the gulf of Tarento, and 50 S.W. of Bari. Long. 16. 50. E. Lat. 40. 36. N.

TUSIS, a town and community of Switzerland, in the country of the Grisons, seated near the torrent Nolla, at the beginning of the valley of Tomilascia, 16 miles S. by W. of Coire.

TUTBURY, a town in Staffordshire, with a market on Tuesday. It had a large castle, which stood on an alabaster hill; several of the towers and a small part of the wall still remain. It is 15 miles E. of Stafford, and 134 N.E. of London. Long. 1. 40. W. Lat. 53. 0. N.

TUTACORIN, a town of Hindostan, in the Carnatic, opposite the island of Ceylon. Here the Dutch have a factory. It is 60 miles N.E. of Cape Comorin. Long. 76. 40. W. Lat. 8. 15. N.

TUTURA, a town of Russia, in the government of Irkutsk, situate on the Lena, 160 miles N. of Irkutsk. Long. 105. 40. E. Lat. 54. 40. N.

TUXFORD, a town in Nottinghamshire, with a market on Mondays; seated in a clayey soil, 13 miles N.W. of Newark, and 137. N. by W. of London. Long. 0. 50. W. Lat. 53. 16. N.

TUY, a town of Spain, in Galicia, with a bishop's see. It is surrounded by strong walls and ramparts, and well furnished with artillery, being a frontier town toward Portugal. It is seated on the top of a mountain, near the river Minho, in a fertile and well cultivated country, 62 miles S. of Compostella, and 254 W. of Madrid. Long. 8. 12. W. Lat. 42. 4. N.

TUZLA, a town of Turkey in Asia, in Caramania, situate at the western extremity of a lake to which it gives name, 28 miles N. of Cogni. Long. 35. 55. E. Lat. 38. 20. N.

TYCOKZIN, a town of Poland, in Polachia, with a castle and a mint. It is seated on the Narew, 22 miles N.W. of Bielsk. Long. 23. 40. E. Lat. 53. 0. N.

TYNE, a river in Northumberland, formed of a branch from the county of Durham, and another from the hills on the borders of Scotland. These uniting a little above Hexham, form a large river, which flows to Newcastle, and enters the German Ocean at Timmouth.

TYNE, a river which rises in the mountains in the S. of Haddingthorpe, waters Haddington, and enters the German Ocean to the W. of Dunbar.

TYPE. See *STEREOTYPE*, *Supp.*

TYRNAW, a large fortified town of Upper Hungary, in the palatinate of Trentschin, 30 miles N.E. of Presburg. Long. 17. 33. E. Lat. 48. 23. N.

TYSTED, a town of N. Jutland, in the territory of Alberg, with a citadel, seated on the gulf of Limford, 44 miles N.W. of Wiburg, and 46 W. of Alburg. Long. 8. 25. E. Lat. 56. 54. N.

TYVY, or **TEIVY**, a river in Cardiganhire, which issues from a lake on the E. side of the county, waters Tregannon and Llanbader, and enters the bay of Cardigan, below the town of that name.

TZADURILLA, a town of Natolia Proper, near the river Sangar, or Acla, 63 miles S.E. of Iznik. Long. 31. 8. E. Lat. 39. 0. N.

TZARITZYN, a town of Russia, in the government of Saratof, seated on the Volga, 120 miles N.W. of Astracan. Long. 45. 25. E. Lat. 48. 0. N.

TZERNITZ, a town of Turkey in Europe, in Romania, near a river of the same name, 32 miles N.N.E. of Adrianople. Long. 26. 40. E. Lat. 42. 5. V.

TZIVILSK, a town of Russia, in the government of Kafan, 56 miles W. of Kafan. Long. 47. 25. E. Lat. 55. 40. N.

V. U.

V A D

VAAST, ST., a town of France, in the department of the Channel, five miles from Harfleur, and eight from Valogne.

VABRES, a town of France, in the department of Aveyron. Though an episcopal see before the revolution, it is little better than a village; but has some manufactures of fergs, dimities, and cottons. It is seated at the confluence of two small rivers that fall into the Tarn, 30 miles S.E. of Rodez, and 32 E. of Alby. Long. 2. 55. E. Lat. 43. 57. N.

VACHA, a town of Germany, in the landgravate of Hesse-Cassel, 40 miles S.E. of Cassel. Long. 10. 12. E. Lat. 50. 55. N.

VACHE, an island of the West Indies, off the S. coast of St. Domingo, opposite St. Louis. It was formerly a rendezvous of the bucaniers, who began a settlement here in 1673.

VADA, a town of Italy, in Tuscany, seated on the Tuscan Sea, 20 miles S. of Leghorn. Long. 10. 20. E. Lat. 43. 15. N.

VADAGARY, a town of the peninsula of Hindoostan, in the province of Madura, 64 miles S.S.W. of Madura.

VADIN, a town of Turkey in Europe, in Bassarabia, situate on the Danube, 32 miles W. of Nicopoli. Long. 25. 0. E. Lat. 44. 25. N.

VADO, a sea-port of Italy, in the territory of Genoa, with a fort; taken by the French in 1795. It is three miles W. of Savona, and 24 S.W. of Genoa. Long. 8. 8. E. Lat. 44. 15. N.

VADSTEIN, a town of Sweden, in East Gothland, where the kings of Sweden had formerly a palace, now in ruins. It is seated on the E. side of the lake Wetter, near the river Motala, 32 miles W. of Nordkiöping. Long. 15. 55. E. Lat. 58. 12. N.

VOL. X.

V A L

VADUTZ, a town and castle of Suabia, in the principality of Lichtenstein, 26 miles S. Lida, and 34 S.S.E. of Constance. Long. 9. 22. E. Lat. 47. 7. N.

VAENA, a town of Spain, in Andalusia, seated at the source of the Caistro, 23 miles S.E. of Cordova. Long. 3. 50. W. Lat. 37. 40. N.

VAIHINGEN, a town of Suabia, in the duchy of Wurtemberg, seated on the Neckar, 34 miles S.W. of Hailbron. Long. 9. 3. E. Lat. 48. 58. N.

VAISON, a decayed town of France, in the department of Vaucluse, with a bishop's see. It was lately subject to the pope, and is seated on a mountain, on which there is a castle, near the river Ozeze, and the ruins of ancient Vaison, which was one of the largest cities of the Gauls. It is 15 miles E.N.E. of Orange, and 22 N.E. of Avignon. Long. 5. 6. E. Lat. 44. 15. N.

VAL DI DEMONA, a province in the N.E. angle of Sicily. It means the valley of demons, and is so called because Mount Etna is situate in this province, which occasioned ignorant and superstitious people, at the time of its fiery eruptions, to believe it was a chimney of hell. The capital is Messina.

VAL DI MAZARA, a province in the W. angle of Sicily, so called from the town of Mazara. It contains Palermo, the capital of the whole island.

VAL DI NOTO, a province at the S.E. extremity of Sicily; so called from the town of Noto, its capital.

VALCKOWAR, a town of Slavonia, seated on the Walpo, near its confluence with the Danube, between Eiseck and Peterwaradin, 70 miles N.W. of Belgrade. Long. 19. 51. E. Lat. 45. 55. N.

VALDAI, a town of Russia, in the government of Novgorod, on the side of a lake of the same name. It con-

tains several brick buildings; and even the wooden houses are more decorated than the generality of Russian cottages. Its environs rise into a variety of gentle eminences, and abound with beautiful lakes, sprinkled with woody islands, and skirted by forests, corn-fields, and pastures.

VALDASNES, a town of Portugal, in Tra los Montes, nine miles E.S.E. of Miranda.

VALDEBUREN, a town of Spain, in the province of Leon, 34 miles N.N.E. of Leon, 34 miles N.N.E. of Leon. Long. 4. 55. W. Lat. 43. 5. N.

VALDECONA, a town in Spain, in Catalonia, 15 miles S. of Tortosa. Long. 0. 35. E. Lat. 41. 15. N.

VALDIGEM, a town of Portugal, in Beira, situate near the Duero, four miles N.E. of Lamego.

VALENCE, a city of France, in the department of Drome, with a bishop's see, a citadel, and a school of artillery. It is surrounded by good walls, and the greatest part of the public places, and many private houses, are adorned with fountains. Beside the handsome cathedral, there are many other churches, as well as late convents, that are worthy of notice. It is seated on the Rhone, 30 miles N. by E. of Viviers, 335 S. by E. of Paris. Long. 4. 52. E. Lat. 44. 56. N.

VALENCE, a town of France, in the department of Lot and Garonne, situate on the Garonne, 12 miles S.E. of Agen.

VALENCA D'ALCANTARA, a considerable town of Spain, in Estremadura, with an old castle. It is surrounded by walls after the antique manner, flanked by some small bastions, and a few towers; is very strong by situation, being built on a rock, near the river Sagar, 20 miles S.W. of Alcantara, and 40 N. of Badajoz. Long. 6. 30. W. Lat. 39. 26. N.

VALENCEY, a town of France, in the department of Indre, with a castle, seated on the Nabon, 15 miles S. of Romorentin.

VALENZO-DO-MINHO, a fortified town of Portugal, in Entre-Minho-e-Douro, seated on an eminence, near the river Minho, three miles S. of Tuy. Long. 8. 11. W. Lat. 42. 2. N.

VALENTINE, a town of France, in the department of Upper Garonne, nine miles N.E. of St. Bertrand. Long. 0. 57. E. Lat. 43. 1. N.

VALENZA, or **VALENTIA**, a strong town of Italy, in the Milanese, capital of the Lomeline, and subject to the King of Sardinia, to whom it was ceded in 1707. It has been often taken and retaken, and is seated on a mountain, near the river Po, 12 miles E. of Casal, and 35 S.W. of Milan. Long. 8. 56. E. Lat. 44. 58. N.

VALESTRA, a town of Italy, in the duchy of Modena, 42 miles S.W. of Modena. Long. 10. 52. E. Lat. 44. 26. N.

VALETTE, a town of France, in the department of Charente, 10 miles S. of Angoulême. Long. 0. 15. E. Lat. 45. 30. N.

VALKENBURG, or **FAUQUEMONT**, a town of Dutch Limburg. In 1568 it was sacked by the Spaniards, and in 1672 was taken by the French, who demolished the fortifications. It is seated on the Geule, eight miles E. of Maestricht. Long. 5. 50. E. Lat. 50. 52. N.

VALLELONGA, a town of Naples, in Calabria Ulteriore, 18 miles E.N.E. of Nicotera. Long. 16. 40. E. Lat. 38. 44. N.

VALLEMONT, a town of France, in the department of Lower Seine, with a castle, 16 miles N. by W. of Caudebec. Long. 1. 25. W. Lat. 49. 46. N.

VALLENCAY, a town of France, in the department of Indre, 20 miles N. of Chateauroux, and 22 E. of Loches. Long. 1. 26. E. Lat. 47. 10. N.

VALLENGIN, a town of Switzerland, capital of a county of the same name, in the principality of Neuchâtel. It is seated near the lake of Neuchâtel, 25 miles N.W. of Bern. Long. 6. 40. E. Lat. 47. 0. N.

VALLERS, a town of France, in the department of Indre and Loire, noted for mineral waters. It is four miles N.W. of Tours. Long. 0. 41. E. Lat. 47. 24. N.

VALLERY, St. a commercial town of France, in the department of Somme, at the mouth of the river Somme, whose entrance is very dangerous. It is 10 miles N.W. of Abbeville, and 100 N. by W. of Paris. Long. 1. 37. E. Lat. 50. 11. N.

VALLERY-EN-CAUX, St. a sea-port of France, in the department of the Lower Seine, 15 miles W. by S. of Dieppe, and 105 N.W. of Paris. Long. 0. 41. E. Lat. 49. 52. N.

VALLIER, St. a town of France, in the department of Ardeche, seven miles N.E. of Tournon. Long. 2. 5. E. Lat. 49. 10. N.

VALOGNE, a town of France, in the department of the Channel, noted for cloth and leather. It is seated on a brook, eight miles from the sea, and 158 W. by N. of Paris. Long. 1. 26. W. Lat. 49. 30. N.

VALONA, a sea-port of Turkey in Europe, in Upper Albania, with an archbishop's see. It was taken, in 1690, by the Venetians, who abandoned it after they had ruined the fortifications. It is seated on the gulf of Venice, near the mountains of Chimera, 50 miles S. of Durazzo. Long. 19. 23. E. Lat. 41. 4. N.

VALPARISO, a town of Chili, with a well-frequented harbour, defended by a strong fort. It is seated on the Pacific Ocean, at the foot of a high mountain. Long. 72. 14. W. Lat. 33. 3. S.

VALPERGA, a town of Piedmont, in the county of Casavefe, 11 miles S.S.W. of Ivrea, and 16 N. of Turin. Long. 7. 44. E. Lat. 45. 21. N.

VALREES, a town of France, in the Venaissin, 12 miles E. of St. Paul Trois Châteaux.

VALS, a town of France, in the department of Ardeche, remarkable for mineral springs. It is seated on the Ardeche, three miles N. of Aubenas. Long. 4. 26. E. Lat. 44. 48. N.

VALTELINE, called by the inhabitants **VALLE-TELINO**, a fertile valley of Switzerland, subject to the Grisons. It extends from the confines of Bormio to the lake of Chiavenna, about the length of 50 miles, and is inclosed between two chains of high mountains. The N. chain separates it from the Grisons, the S. from the Venetian territories; on the E. it borders on the county of Bormio; and is bounded on the W. by the duchy of Milan. The Valte-lines have no manufactures; but they export wine, silk, planks, cheese, butter, and cattle. On the 20th of July, 1620, there was a general massacre of the Protestants in this valley. The inhabitants are computed to be 62,000, and are all Roman-catholics.

VALVA, a town of Naples, in Abruzzo Citeriore, 18 miles S.S.W. of Civita di Chieti, and 36 N.W. of Molise. Long. 14. 12. E. Lat. 42. 21. N.

VALVERDE, a town in Portugal, in Beira, on the confines of Spain, 30 miles N. by W. of Alcantara, and 38 S.S.E. of Guardia. Long. 6. 19. W. Lat. 39. 44. N.

VALVERDE, a town of Spain, in Estremadura, eight miles from Elvas, and eight from Badajoz.

VAN, a town of Turkey in Asia, in Armenia, near the frontiers of Persia. It is a populous place, defended by a castle, seated on a mountain. It is likewise a beglerbeglic, under which there are nine fangicates, or particular go-

vernments. The Turks always keep a numerous garrison in the castle. Long. 44. 30. E. Lat. 38. 30. N.

VAN DIEMEN'S ROAD, a road of the island of Tongataboo, one of the Friendly Islands. Long. 174. 56. W. Lat. 21. 4. S.

VANIAMHADDY, a town of the peninsula of Hindoostan, in the Myfore country, 105 miles S.W. of Madras, and 112 E. of Seringapatam. Long. 78. 45. E. Lat. 12. 41. N.

VANNES, a sea-port of France, in the department of Morbihan, with a bishop's see. Its principal trade is in wheat and rye for Spain; and it has a trade also in pilchards and sea-eels. It is seated on the gulf of Morbihan, three miles from the Atlantic, 56 S.W. of Rennes, and 255 W. by S. of Paris. Long. 2. 46. W. Lat. 47. 39. N.

VAR, a department of France, including part of the late province of Provence. It takes its name from a river which has its source in the county of Nice, and falls into the Mediterranean, four miles W. of Nice.

VARALLO, a strong town of Italy, in the Milanese, 28 miles N.N.W. of Novara, and 47 W.N.W. of Milan. Long. 8. 25. E. Lat. 45. 42. N.

VARAMBON, a town of France, in the department of Ain, seated on the Ain, 14 miles N.N.W. of Bourg. Long. 5. 15. E. Lat. 46. 23. N.

VARRELLA, a cape on the E. coast of the kingdom of Ciampa. Behind it is a mountain, remarkable for having a high rock, like a tower, on its summit. Long. 109. 17. E. Lat. 12. 50. N.

VARENDORF, a fortified town of Germany, in the bishopric of Munster, seated on the river Emba.

VARENNE, a town in France, in the department of Allier, seated on an eminence near the river Allier, 14 miles S.E. of Moulins. Long. 3. 31. E. Lat. 46. 22. N.

VARHELY, a town of Transylvania, 60 miles E. of Temeswar. Long. 17. 10. E. Lat. 45. 40. N.

VARIOLÆ VACCINÆ, the disease popularly named the Cow-Pox. See Cow-Pox. *Supp.*

VARNA, a considerable sea-port of Turkey in Europe, in Bulgaria, capital of the territory of Drobugia, with an archbishop's see. It is seated near the mouth of the Varna, in the Black Sea, 22 miles N. of Mesembria, and 145 N.W. of Constantinople. Long. 28. 28. E. Lat. 42. 44. N.

VARZEY, a town of France, in the department of Yonne, with a castle, 32 miles from Auxerre.

VASIL, a town of Russia, in the government of Novogorod, situate on the Volga, 60 miles E. of Novogorod. Long. 45. 44. E. Lat. 56. 16. N.

VASSERBURG, a town of Bavaria, in the territory of Munich, with a castle. It is surrounded by high mountains, and seated on the river Inn, 28 miles E. of Munich. Long. 12. 15. E. Lat. 48. 10. N.

VASSI, a town of France, in the department of Upper Marne, seated on the Blaise, 10 miles N.W. of Joinville, and 115 E. of Paris. Long. 5. 10. E. Lat. 48. 27. N.

VATAN, a town of France, in the department of Indre, seated in a fine plain, eight miles N.W. of Loudun. Long. 1. 56. E. Lat. 47. 2. N.

VATICA, a sea-port of Turkey in Europe, in the Morea, situate in a large bay to which it gives name, 44 miles S.E. of Mistra. Long. 23. 2. E. Lat. 36. 38. N.

VAUCOLEURES, a town of France, in the department of Meuse, seated on the side of a hill, on the river Meuse, 10 miles W. of Toul, 22 S.W. of Nancy, and 150 E. of Paris. Long. 5. 40. E. Lat. 48. 36. N.

VAUCLUSE, a new department of France, including the county of Venaissin and territory of Avignon. It takes

its name from the fountain of Vaucluse. The chief town is Avignon.

VAUCLUSE, a village and fountain of France, in the department of the same name, 12 miles E. of Avignon, celebrated by Perarch.

VAUD, PAYS DE, a country of Switzerland, in the canton of Bern. It extends along the lake of Geneva, rising gradually from the edge of that lake, and is richly laid out in vineyards, corn fields, and meadows, and chequered with continued villages and towns. It was wrested from the Duke of Savoy, by the canton of Bern, in 1536. Lausanne is the capital.

VAUDABLES, a town of France, in the department of Puy de Donné, five miles from Issoire, and 240 S. by E. of Paris.

VAUDEMONT, a town of France, in the department of Meurthe, with a castle. It is seated in the most fertile country for corn in all Lorraine, 15 miles S.E. of Toul, and 18 S.W. of Nancy. Long. 5. 57. E. Lat. 48. 26. N.

VAUDOIS, VALLEY OF, in Piedmont. They lie N. of the marquise of Saluzo, and the chief town is Lucerna. The inhabitants are called Vaudois; also Waldenses, from Peter Waldo, a merchant at Lyons, who exposed the superstitions of the church of Rome, in 1160, and being banished from France, came here with his disciples. The Vaudois underwent the most dreadful persecutions in the 17th century, particularly in 1655, 1656, and 1696.

VAUDREVANGE, a decayed town of France, in the department of Meurthe, seated on the Sare, near the strong fortrefs of Sar Louis, 50 miles N.E. of Nancy. Long. 6. 36. E. Lat. 49. 28. N.

UBEDA, a town of Spain, in Andalusia, with a strong castle, seated in a fertile country, abounding in corn, wine, oil, and fruits, especially figs. It is five miles N.E. of Baeza, and 158 S.E. of Madrid. Long. 3. 13. W. Lat. 37. 48. N.

UBERLINGIN, a free imperial city of Suabia, in the county of Furttenburg. The inhabitants, who are partly Roman-catholics and partly Protestants, carry on a great trade in corn, which they send to Switzerland; and not far hence are very famous baths. It is seated on a high rock, near the lake of Constance, 12 miles N. of Constance. Long. 9. 10. E. Lat. 47. 50. N.

UBERSKO, a town of Bohemia, in the circle of Chrudim, 10 miles E.N.E. of Chrudim.

UBIGAU, a town of Upper Saxony, in the electorate of Saxony, 28 miles S.E. of Wilttemberg. Long. 13. 12. E. Lat. 51. 34. N.

UBY, or PULO UBY, an island in the Indian Ocean, at the entrance of the bay of Siam, 20 miles in circumference. It yields good water and plenty of wood. Long. 105. 56. E. Lat. 8. 25. N.

UCKER, a river of Germany, which issues from a lake of the same name, near Prenzlau, in the Ucker marche of Brandenburg, runs N. through Pomerania, and being joined by the Rando, enters the Frischen Haf, a bay of the Baltic.

UCKERMUNDE, a town of Upper Saxony, in Prussian Pomerania, with a castle, seated on the Frischen Haf, a bay of the Baltic, 25 miles N.W. of Stettin. Long. 14. 12. E. Lat. 53. 53. N.

UDDEVALLA, a town of Sweden, in West Gothland, situate on a bay of the Categate. The houses are built of wood painted red and yellow, and the streets are spacious. It contains 3000 inhabitants, has a trade in iron, planks, and herrings, and is 50 miles N. of Gotheborg.

UDENSKOI, a town of Siberia, in the government of Irkutsk, seated on the lake Balkul, on the road from Te-

boldt to China, 1000 miles N.W. of Pekin, and 1200 E. of Tobolsk. Long. 96. 30. E. Lat. 53. 0. N.

UDINA, or UDINE, a city of Italy, capital of Venetian Friesland, with a citadel. It contains 16,000 inhabitants, and is seated in a large plain, near the rivers Tagliamento and Jisenzio, 10 miles N. of Aquileia, and 55 N. by E. of Venice. Long. 13. 3. E. Lat. 46. 12. N.

UDSKOI, a town of Russia, in the government of Irkutsk, situate on the Uda, 1100 miles E.N.E. of Irkutsk. Long. 135. 30. E. Lat. 55. 16. N.

VECHTA, a fortified town of Westphalia, in the bishopric of Munster, 30 miles N. of Osnaburg. Long. 8. 22. E. Lat. 52. 54. N.

VEDENSKOI, a town of Russia, in the government of Archangel, situate on the Vokicha, 200 miles E.S.E. of Archangel. Long. 46. 44. E. Lat. 58. 45. N.

VEGA, a town of Spain, in the province of Asturias; 84 miles N.W. of Oviedo. Long. 6. 5. W. Lat. 43. 45. N.

VEGLIA, an island in the gulf of Venice, on the coast of Dalmatia, with a bishop's see, a good harbour, and a citadel. It is the most populous island on this coast, abounds in wine and silk, and has small herds in high esteem. The only town of the same name, is seated on the sea, on a hill commanded by two mountains, 17 miles N.W. of Arbe, and 110 S.E. of Venice. Long. 14. 56. E. Lat. 45. 22. N.

VEGLIANA, a town of Piedmont, in the marquisate of Sufa, seated on an eminence, near the river Doria, 12 miles N.W. of Turin. Long. 7. 34. E. Lat. 45. 7. N.

VEIROS, a town of Portugal, in Alentejo, with a castle, seated on the Anhaloura, 10 miles S.S.W. of Portalegre. Long. 7. 34. W. Lat. 38. 57. N.

VEIT, Sr. a strong town of Germany, in Carinthia, with an old castle, seated at the confluence of the Glan and Wunich, eight miles N. of Clagenfurt, and 173 S.W. of Vienna. Long. 14. 20. E. Lat. 47. 1. N.

VELA, a cape of the N. coast of Terra Firma, 160 miles E.N.E. of St. Martha. Long. 71. 25. W. Lat. 12. 30. N.

VELDEN, a town of Bavaria, in the principality of Neuburg, 22 miles N.W. of Ratisbon. Long. 11. 50. E. Lat. 40. 10. N.

VELDENTZ, a town of Germany, in the palatinate of the Rhine, capital of a county of the same name, with a castle. It is seated on the E. side of the Moselle, 13 miles N.E. of Treves. Long. 7. 3. E. Lat. 49. 52. N.

VELETRI, or VELLETRI, a town of Italy, in Campagna di Roma. It is the residence of the Bishop of Ostia, whose palace is magnificent; and there are large squares adorned with fine fountains. It is seated on an eminence, surrounded by hills, eight miles E.S.E. of Albano, and 20 S.E. of Rome. Long. 12. 56. E. Lat. 41. 46. N.

VELEZ, a town of Spain, in New Castile, with a castle, 45 miles N.E. of Toledo, and 50 S.E. of Madrid. Long. 2. 23. W. Lat. 40. 0. N.

VELEZ MALAGA, a town of Spain, in Granada, with a castle, seated in a large plain, near the Mediterranean, 12 miles N.E. of Malaga, and 52 S.W. of Granada. Long. 3. 24. W. Lat. 36. 42. N.

VELIKA, a town of Slavonia, seated on the river Bakawa, 10 miles E. of Cruetz, and 60 N.W. of Pofega. Long. 10. 50. E. Lat. 46. 18. N.

VELIKI USTIUG, a province of Russia, in the government of Vologda. Ustug is the capital.

VELORE, a town of Hindoostan, in the Carnatic. It is a post of great importance, commanding the great road from Mysore into the Carnatic. It consists of three strong forts on as many hills, and is deemed impregnable to an Indian army. During the last war against Hyder Ally, it was relieved by Sir

Eyre Coote, in the face of the whole army of that chief. It is 90 miles W. of Madras.

VENA, or MONTI-DELLA-VENA, mountains of Carniola, on the confines of Istria, on the S. of the lake Czernie.

VENAFRO, a town of Naples, in Terra di Lavoro, with a bishop's see, seated near the Volturno, 27 miles W. of Capua, and 43 N. of Naples. Long. 14. 19. E. Lat. 43. 32. N.

VENAISSIN, a small but fertile territory of France, lately depending on the pope, but now decreed a part of the republic of France, and included in the department of Vaucluse.

VENANT, Sr. a town of France, in the department of the Straits of Calais. It can be laid under water at any time, which is its chief defence, and is 27 miles S.E. of Dunkirk, and 22 N.W. of Arras. Long. 2. 39. E. Lat. 50. 38. N.

VENASQUE, a town of Spain, in Arragon, in a valley of the same name, with a strong castle. It is seated on the Eßara, in a country producing good wine, 35 miles E. of Balbastro. Long. 0. 25. E. Lat. 41. 58. N.

VENEATIGHERY, a town of the peninsula of Hindoostan, in the Mysore country, 51 miles E. of Bangalore, and 54 W. of Arcot. Long. 78. 38. E. Lat. 13. 5. N.

VENCE, a town of France, in the department of Var. Before the revolution, it was a bishop's see. It is eight miles from the Mediterranean, and 10 W. of Nice. Long. 7. 13. E. Lat. 43. 43. N.

VENDEE, a department of France, including part of the late province of Poitou. It is so called from a small river of the same name. Fontenay-le-Compte is the capital.

VENDEN, a town of Russia, in the government of Riga, situate on the Aa, 36 miles N.E. of Riga. Long. 25. 15. E. Lat. 57. 12. N.

VENDOME, a town of France, in the department of Loir and Cher, seated on the river Loir, 30 miles N.E. of Tours, and 95 S.W. of Paris. Long. 1. 8. E. Lat. 47. 50. N.

VENDRELL, a town of Spain, in Catalonia, 25 miles W.S.W. of Barcelona. Long. 1. 50. E. Lat. 41. 12. N.

VENZUELA, a province of Terra Firma, bounded on the N. by the Caribbean Sea, on the E. by Caracass, on the S. by New Granada, and on the W. by St. Martha. When the Spaniards landed here in 1499, they observed some butts built upon piles, in an Indian village, in order to raise them above the stagnated water that covered the plain: and this induced them to give it the name of Venezuela, or Little Venice. Near the sea-coast are high mountains, the tops of which are barren, but the lower parts in the valley are fertile, producing plenty of corn, rich pastures, sugar, tobacco, and fruits. There are also plantations of cocoa-nuts, which are exceedingly good; and gold is found in the sands of the rivers. This province was bestowed by the Emperor Charles V. on the Vellers of Augburg, the most opulent merchants, at that time, in Europe, in consideration of large sums they had advanced to him. They were to hold it as an hereditary fief of the crown of Castile, on condition of conquering the country and establishing a colony within a limited time. Unfortunately, they committed the execution of their plan to some of the soldiers of fortune with which Germany abounded in the 16th century, by whose rapacity and extortion the country was so desolated, that it could hardly afford them subsistence, and the Vellers were obliged to relinquish their property. The Spaniards immediately resumed possession of it; but, notwithstanding its many natural advantages, it is still one of their most languishing and unproductive settlements.

VENZUELA, the capital of a province of the same name, in Terra Firma, with a bishop's see. It stands on a peninsula, on the E. side of the gulf of Venezuela, 70 miles N.E. of Maracaybo. Long. 70. 15. W. Lat. 10. 43. N.

VENEZUELA, a gulf on the N. coast of Terra Firma, which communicates with the lake of Maracaybo, by a narrow strait.

VENLO, a strong town of Dutch Guelderland, formerly in alliance with the Hanseatic towns. It was more than once taken and retaken in the wars between the Dutch and Spaniards. In 1752 it surrendered to the allies, and was confirmed to the states-general by the barrier treaty in 1715. It was taken by the French, October 28, 1794. It is seated on the E. side of the Maas (on the opposite side of which is Fort St. Michael), 19 miles N. of Ruremonde, and 35 N.W. of Juliers. Long. 5. 50. E. Lat. 51. 20. N.

VENOSA, a town of Naples, in Basilicata, with a bishop's see. It is seated in a fertile plain, at the foot of the Apennines, 13 miles N.W. of Acerenza, and 72 N.E. of Naples. Long. 15. 52. E. Lat. 40. 54. N.

VENTA-DE-CRUZ, a town of Terra Firma, in the isthmus of Darien, seated on the river Chagre. Here the Spaniards used to bring the merchandise of Peru and Chili on mules from Panama, and embark it on the river for Porto Bello. Long. 79. 0. W. Lat. 9. 20. N.

VENZONE, a town of Italy, in the country of Friuli, situate on the Tajamento, 18 miles W.N.W. of Friuli, and 32 E.N.E. of Belluno. Long. 13. 40. E. Lat. 46. 22. N.

VERA, a sea-port of Spain, in Granada, with a bishop's see. It is 43 miles N.E. of Almeria, and 32 S.W. of Cartagena. Long. 1. 30. W. Lat. 37. 15. N.

VERA PAZ, a province of New Spain, in the audience of Guatemala; bounded on the N. by Yucatan, on the E. by the bay and province of Honduras, on the S. by Guatemala Proper, and on the W. by Chiapa. It is 88 miles in length, and nearly as much in breadth, and is full of mountains and forests; but there are many fertile valleys, which feed a great number of horses and mules. There are also many towns and villages of the native Americans. The capital, of the same name, has a bishop's see, but is inconsiderable. It is 120 miles N.E. of Guatemala. Long. 89. 0. W. Lat. 15. 10. N.

VERBERIE, an ancient town of France, in the department of Oise, seated on the river Oise, 10 miles N.E. of Senlis. Long. 2. 51. E. Lat. 49. 22. N.

VERCELLI, a strong town of Piedmont, capital of a lordship of the same name, with a bishop's see, a citadel, and a castle. The town-house, the governor's palace, and the hospital, are handsome structures. It is seated at the confluence of the Sesia and Cerva, 10 miles N.W. of Casal, and 40 N.E. of Turin. Long. 8. 24. E. Lat. 45. 31. N.

VERCHOLENSK, a town of Russia, in the government of Irkutsk, seated on the Lena, 120 miles N. of Irkutsk. Long. 105. 35. E. Lat. 54. 0. N.

VERCHOTURE, a town of Russia, in the government of Perm, with a bishop's see. This was the first town the Russians built in Siberia. It is situate 120 miles N. of Catharinenburg. Long. 60. 15. E. Lat. 58. 45. N.

VERDEN, a duchy of Germany, in the circle of Lower Saxony, 28 miles long and nearly as much broad; bounded on the E. and S. by the duchy of Lunenburg, on the W. by the Wefer and the duchy of Bremen, and on the N. by the duchies of Bremen and Lunenburg. It consists chiefly of heaths and high dry lands; but there are good marshes on the river Wefer and Aller. In 1712, the Danes wrested this duchy from Sweden, and, in 1715, ceded it to the Elector of Hanover; which cession, in 1718, was confirmed by the Swedes. The inhabitants are Lutherans.

VERDEN, a town of Lower Saxony, capital of a duchy of the same name. It contains four churches, and is seated on a branch of the Aller, 26 miles S.E. of Bremen. Long. 9. 0. E. Lat. 53. 10. N.

VERDUN, a town of France, in the department of Meuse, VOL. X.

with a bishop's see, and a strong citadel. Its fortifications were constructed by the Chevalier de Ville and Marshal de Vauban; the latter of whom was a native of this place. In 1755 great part of the cathedral was destroyed by lightning. Verdun was taken by the Prussians in 1792, but retaken soon after. The inhabitants are noted for making fine sweatmeats. It is seated on the Meuse, which runs through the middle, 42 miles S.W. of Luxemburg, and 150 E. of Paris. Long. 5. 22. E. Lat. 49. 9. N.

VERDUN, a town of France, in the department of Upper Garonne, seated on the Garonne, 22 miles N.W. of Toulouse. Long. 1. 20. E. Lat. 43. 54. N.

VEREA, a town of Turkey in Europe, in the province of Macedonia, and the see of a Greek metropolitan. It is 48 miles W. of Salonichi, and 115 E. of Valona. Long. 22. 18. E. Lat. 40. 40. N.

VERERIA, a town of Russia, in the government of Moscow, 56 miles W.S.W. of Moscow. Long. 25. 50. E. Lat. 55. 18. N.

VERINA, a town of Terra Firma, in the province of Comana, celebrated for its tobacco. It is situate on a gulf of the Atlantic, 45 miles E. of Comana. Long. 63. 44. W. Lat. 10. 8. N.

VERMANDOIS, a late territory of France, in Picardy; which, with the late province of Soissonnois, is now included in the department of Aisne. It abounds in corn, and excellent flax.

VERMANTON, a town of France, in the department of Yonne, seated on a river, 10 miles S.E. of Auxerre. Long. 3. 49. E. Lat. 47. 40. N.

VERMONT, one of the United States of America; bounded on the N. by Canada, on the E. by the river Connecticut, which divides it from New Hampshire, on the S. by Massachusetts, and on the W. by New York. It is 157 miles long and 65 broad, and divided into eleven counties. A chain of high mountains, running N. and S. divides the state nearly in the centre, between the river Connecticut and Lake Champlain. The natural growth upon this chain is hemlock, pine, spruce, and other ever-greens: hence it has always a green appearance, and obtained the descriptive name of Vermont, from the French *Verd Mont*, Green Mountain. The country is generally hilly, but not rocky. It is finely watered, the soil is very fertile, and there is not a better climate in the world. The inhabitants have lately been estimated at 100,000. The principal town is Bennington.

VERNEUIL, a town of France, in the department of Eure, seated on the Aure; 22 miles S.W. of Evreux, and 65 W. by S. of Paris. Long. 0. 59. E. Lat. 48. 42. N.

VERNEUIL, a town of France, in the department of Allier, three miles from the river Allier, and 15 S. of Moulins. Long. 3. 25. E. Lat. 46. 20. N.

VERNON, a town of France, in the department of Eure, with an ancient castle, and a fortress at the end of the bridge, over the Seine, 27 miles S.E. of Rouen, and 42 N.W. of Paris. Long. 1. 42. E. Lat. 49. 6. N.

VERNOIS, a considerable town of Russia, in the government of Rezan, seated on a mountain, near a river of the same name, which a little lower falls into the Don. Long. 42. 20. E. Lat. 53. 15. N.

VEROLI, an ancient and populous town of Italy, in Campagna di Roma, with a bishop's see. It is seated on the Cosa, at the foot of the Apennines, 45 miles S.E. of Rome. Long. 13. 15. E. Lat. 41. 28. N.

VERREZ, a town of Piedmont, in the duchy of Aosta, with a fortress deemed impregnable. It is 15 miles S.S.E. of Aosta, and 35 N. of Turin.

VERRIERES, a town of Switzerland, in the principality of

Neuchâtel. The environs are celebrated for excellent cheese. It is six miles E.N.E. of Pontarlier, and 20 W.S.W. of Neuchâtel.

VERSOI, a village of France, in the department of Ain, seated on the lake of Geneva, near the mouth of the river Versoi, six miles S.E. of Gex, and seven N. of Geneva. It goes by the name of *Choisel's Folly*; for Geneva having fallen under the displeasure of France, the Duke de Choiseul (then prime-minister) endeavouring to take advantage of the troubles in 1768, formed a plan to ruin that city, and monopolize the whole trade of the lake. With this view, he fixed on Versoi as a proper situation for a large town, and began to sink a pier, to make a harbour, &c. But when the harbour was nearly completed, and 125,000l. had been expended on the project, it was suddenly relinquished.

VERTUS, a town of France, in the department of Marne, seated in a plain, at the foot of a mountain, on which are vineyards, producing very good wines, 17 miles S.W. of Châlons, and 78 N.E. of Paris. Long. 4. 2. E. Lat. 48. 53. N.

VERUN, or VERRUA, a town of Piedmont, in the county of Asti. It was besieged in 1705, by the French, who did not carry it till after six months, when it was reduced to a heap of ruins, because the commander had blown up all the fortifications. It was afterward restored to the Duke of Savoy. It is seated on a hill, near the river Po, 20 miles W. of Casal, and 23 N.E. of Turin. Long. 8. 2. E. Lat. 45. 13. N.

VERVIERS, a town of the Netherlands, in the bishopric of Liege, seated on the Weze, four miles S.W. of Limbourg, and 17 S.E. of Liege.

VERVINS, a town of France, in the department of Aisne, famous for a treaty, in 1598, between Henry IV. of France and Philip II. of Spain. It is seated on the Serre, 110 miles N.E. of Paris. Long. 4. 0. E. Lat. 49. 50. N.

VERULAM, the vestiges of a celebrated Roman town in Hertfordshire, close by St. Alban's. In the time of Nero it was a *municipium*, or town, the inhabitants of which enjoyed the privileges of Roman citizens. By Tacitus it is called *Verulamium*, and by Ptolemy *Urolanium*. After the departure of the Romans, it was entirely ruined in the wars between the Britons and Saxons; and nothing remains of it but the ruins of walls, tessellated pavements, and Roman coins, which are still sometimes dug up.

VERZUOLO, a town of Piedmont, in the marquise of Saluzzo, with a castle. It is surrounded with an ancient wall, flanked with towers; and is three miles S. of Saluzzo.

VESLEY, a town of France, in the department of Aisne, seated on the river Aisne, 10 miles E.N.E. of Soissons.

VESOUL, a town of France, in the department of Upper Saône. Since the revolution it has been created a bishop's see. In its vicinity is a well, similar to that near Orans. It is seated at the foot of a mountain, called *Motte de Vesoul*, near the river Durgeon, 22 miles N. of Besançon, and 200 S.E. of Paris. Long. 6. 8. E. Lat. 47. 36. N.

VESPERIN, or WEISBRIN, a strong town of Lower Hungary, capital of a county of the same name, with a castle, and an episcopal see, whose bishop is chancellor to the King of Hungary, and has a right to crown him. It is seated on the lake Balaton, at the mouth of the river Sarwie, 50 miles S.W. of Strigonia, and 83 S.E. of Vienna. Long. 17. 57. E. Lat. 47. 14. N.

VEVAY, the ancient Vibiscum, a town of Switzerland, capital of a bailiwick of the same name, in the canton of Bern. The famous General Ludlow retired to this place, on the restoration: here he died in 1693, and is interred in the church. Vevay is surrounded by vineyard hills, and the wine is in great estimation. It stands in a small plain, on the edge of the lake of Geneva, 37 miles S.W. of Bern. Long. 7. 4. E. Lat. 46. 28. N.

VEUDRE, a town of France, in the department of Allier, seated on the river Allier, 17 miles N.W. of Moulins.

VEZELAY, a town of France, in the department of Nièvre. In 1560, this town, being in the possession of the Calvinists, was besieged by the troops of Charles IX. without success, after the loss of 1500 men. Theodore Beza was a native of Vezelay. It is seated on the top of a mountain, near the river Cure, 20 miles S. of Auxerre, and 117 S. by E. of Paris. Long. 3. 42. E. Lat. 47. 26. N.

VEZELIZE, a town of France, in the department of Meurthe, seated on the Brenon, 12 miles S. of Nancy, and 14 S.E. of Toul. Long. 6. 10. E. Lat. 48. 20. N.

UFA, a government of Russia, formerly included in the government of Orenburgh. It is divided into the two provinces of Ufa and Orenburgh.

UFA, a town of Russia, capital of a government of the same name. It is seated on the Bielaï, below the mouth of the Ufa, 760 miles from Moscow. Long. 57. 0. E. Lat. 54. 40. N.

UFFENHEIM, a town of Franconia, in the principality of Anspach, 18 miles S.S.E. of Wurtburgh, and 22 N.N.E. of Anspach.

UGENTO, a town of Naples, in Terra d'Otranto, with a bishop's see, eight miles W. of Alessano, and 20 S.W. of Otranto.

UGLIANI, a town of Piedmont, in the duchy of Aosta, nine miles N. of Ivrea, and 16 E.S.E. of Aosta. Long. 7. 47. E. Lat. 25. 30. N.

UGOCZ, a town of Upper Hungary, capital of a county of the same name, with a castle. It is seated on a small river that falls into the Neißé, 15 miles N. of Zatmar. Long. 22. 34. E. Lat. 48. 5. N.

UGOGNA, a town of Italy, in the duchy of Milan, seated on the Tofa, 16 miles N. of Varallo, and 45 N.W. of Milan. Long. 8. 24. E. Lat. 45. 52. N.

VIADANA, a town of Italy, in the duchy of Mantua, seated on the Po, eight miles N. of Parma, and 17 S. of Mantua. Long. 10. 35. E. Lat. 44. 58. N.

VIANNA, a town of Spain, in Navarre, seated near the Ebro, three miles N. of Logronno, and 46 S.W. of Pampeluna. Long. 2. 20. E. Lat. 42. 32. N.

VIANA, a town of Portugal, in Entre-Douro-e-Minho, seated at the mouth of the Lima, with a good harbour, defended by a fort, 15 miles W. of Braga, and 36 N. of Oporto. Long. 8. 29. W. Lat. 41. 39. N.

VIANDEN, a town of Austrian Luxembourg, capital of a county of the same name. It is divided into two towns by the river Uren. In the one is a castle, on an inaccessible mountain. It is 22 miles N. of Luxembourg, and 22 N.W. of Treves. Long. 6. 13. E. Lat. 49. 55. N.

VIANEN, a town of the United Provinces, in Holland, with a castle. It was taken, in 1672, by the French, who demolished the fortifications. It is seated on the Leck, seven miles S. of Utrecht. Long. 5. 8. E. Lat. 52. 0. N.

VIATKA, a government of Russia, which was formerly a province of Kasan. It takes its name from the river Viatka, which runs through it.

VIATKA, a town of Russia, capital of a government of the same name, with a bishop's see, and a castle. It was formerly called Khlynof, and is seated on the river Viatka, 100 miles N. of Kasan. Long. 54. 15. E. Lat. 57. 25. N.

VIC, a town of France, in the department of Meurthe, seated on the Seille, 12 miles E.N.E. of Nancy, and 197 E. of Paris. Long. 6. 38. E. Lat. 48. 47. N.

VIC, a town of France, in the department of the Upper Pyrenées, situate on the Adour, 12 miles N. of Tarbes. Long. 0. 9. E. Lat. 43. 24. N.

VIC, or VICE, a town of Spain, in Catalonia, with a bishop's see. The cathedral is adorned with a fine portico,

supported by large pillars; and the market-place is very spacious. It is seated in a fertile plain, on a small river that falls into the Tar, 30 miles N. of Barcelona, and 26½ E.N.E. of Madrid. Long. 2. 13. E. Lat. 41. 55. N.

VIC-FEZENSAC, a town of France, in the department of Gers, seated on the Douze, 15 miles W. of Auch.

VIC-LE-COMTE, a town of France, in the department of the Puy de Dôme, with a palace, where formerly the counts of Auvergne resided, and about a mile from it are mineral springs. It is seated near the Loire, 15 miles S.E. of Clermont, and 130 S. of Paris. Long. 3. 22. E. Lat. 45. 36. N.

VICEGRAD, or **VIZEGRAD**, a strong town of Lower Hungary, with a castle on the top of a rock, where the kings of Hungary formerly resided. It was taken from the Turks, in 1634, by the Austrians. It is seated on the S. side of the Danube, eight miles S.E. of Gran, and 16 N.W. of Buda. Long. 19. 7. E. Lat. 47. 35. N.

VICENTINO, a territory of Italy, belonging to the Venetians; bounded on the N. by Treviso and Feltrino, on the E. by Treviso and Paduano, on the S. by Paduano, and on the W. by the Veronese. It is 35 miles long and 27 broad; and so very pleasant and fertile, that it is called the garden of Venice. The wine is excellent, and the butter and cheese very good. Here are also great numbers of mulberry-trees, for silkworms; and there are mines of silver and iron, and quarries of stone, almost as fine as marble.

VICENZA, a strong town of Italy, the capital of Vicentino, with a bishop's see. It is without walls, but is a large place, adorned with several palaces, and has a fine square, with piazzas under the houses. There are also several other squares, and fine churches. Here is an academy, whose members meet in the Olympic theatre, a masterpiece of workmanship by Palladio. It is seated between the rivers Barchigione and Rerone, and two mountains, in a fertile plain, 13 miles N.W. of Padua, 31 W. of Venice, and 135 N. of Rome. Long. 11. 43. E. Lat. 45. 26. N.

VICHY, a town of France, in the department of Allier, famous for the mineral waters near it. It is seated on the Allier, 15 miles S.E. of Gennat, and 180 S. by E. of Paris. Long. 3. 22. E. Lat. 46. 0. N.

VICO, a town of Naples, in Terra di Lavoro, with a bishop's see. It was almost ruined by an earthquake in 1694, and is seated near the bay of Naples, 15 miles S. by E. of Naples. Long. 14. 28. E. Lat. 40. 38. N.

VICO, a town of Naples, in Principato Citeriore, 17 miles S.S.E. of Naples. Long. 14. 30. E. Lat. 40. 43. N.

VICO, a town of Corsica, in which is the cathedral of the bishop of Sagona, a town now in ruins. It is 15 miles S.W. of Corte, and 30 S. of Calvi. Long. 9. 16. E. Lat. 41. 55. N.

VICOVARO, a town and principality of Italy, in the province of Sabina, seated near the Teverone, eight miles E. of Tivoli, and 40 N.E. of Rome. Long. 13. 8. E. Lat. 42. 30. N.

VIELSK, a town of Russia, in the government of Vologda, situate on the Vaga, 156 miles N.N.E. of Vologda. Long. 41. 45. E. Lat. 61. 40. N.

VIENNE, a considerable town of France, in the department of Isère. It is seated on the Rhone, over which it had formerly a bridge, of which only some piers remain, that render the navigation dangerous. Under the Romans it was the capital of a colony, and the seat of a senate. In the 5th century, the Burgundians made it the capital of their kingdom. Its commerce consists in wines, silk, and sword-blades, which last are highly esteemed. Before the revolution, it was the see of an archbishop. The cathedral is a handsome Gothic structure. In 1311, a general council was held here, at which Pope Clement V. presided, and Philip the Fair of France, Edward II. of England, and James II. of Arragon, assisted. This council

is famous for the suppression of the order of the Knights Templars of Jerusalem. Near Vienne, on the banks of the Rhone, are produced the excellent wines of Côte-Rôtie, in a soil where the grape, as the name imports, is almost parched up by the sun; and, a little further, are grown the famous hermitage wines, so called, because a hermit had his grotto there. Vienne is 15 miles S. of Lyons, and 26½ S.E. of Paris. Long. 4. 55. E. Lat. 45. 31. N.

VIENNE, a department of France, formed of part of the late province of Poitou. It takes its name from a river which rises in the department of Corrèze, and falls into the Loire between Chinon and Saumur. Poitiers is the capital.

VIENNE, UPPER, a department of France, comprising the late province of Limosin. Limoges is the capital.

VIERARDEN, a town of Germany, in the marche of Brandenburg, seated on the Vesse, near its confluence with the Oder, 24 miles S.E. of Prenzlau, and 30 N.W. of Custrin. Long. 14. 20. E. Lat. 53. 2. N.

VIERZON, an ancient town of France, in the department of Cher, famous for its forges. It is seated on the Cher and Yevre, in the most fertile part of the department, 17 miles N.W. of Bourges, and 100 S.W. of Paris. Long. 2. 10. E. Lat. 47. 12. N.

VIESTI, a town of Naples, in Capitanata, with an archbishop's see. It is seated on the gulf of Venice, in the place called the Spur of the Boot, and at the foot of Mount Garden, 25 miles N.E. of Manfredonia, and 117 of Naples. Long. 16. 40. E. Lat. 41. 51. N.

VIGAN, a town of France, in the department of Gard, 25 miles W. of Alais, and 25 N.W. of Nîmes.

VIGEVANO, a town of Italy, in the duchy of Milan, capital of the Vigevanasco, with a bishop's see, and a strong castle on a rock. It was formerly the residence of the dukes of Milan, but is now subject, with its territory, to the King of Sardinia. It is seated near the Tefino, 12 miles S.E. of Novaro, and 15 S.W. of Milan. Long. 8. 54. E. Lat. 45. 22. N.

VIGNAMONT, a town of the Netherlands, in the bishopric of Liege, two miles N. of Huy. Long. 5. 22. E. Lat. 48. 46. N.

VIGNOT, a town of France, in the department of Meuse, situate on the Meuse, 16 miles E. of Bar le Duc, and 24 S.S.E. of Verdun. Long. 5. 25. E. Lat. 48. 46. N.

VIGNUOLA, or **VIGNOLA**, a town of Italy, in the duchy of Modena, 15 miles S.E. of Modena.

VIHIERS, a town of France, in the department of Maine, seated on a lake, 20 miles S. of Angers, and 162 S.W. of Paris. Long. 0. 29. W. Lat. 47. 8. N.

VILAINE, a river of France, which rises in the department of Maine, waters Vitré and Rennes, divides the department of Morbihan from that of Lower Loire, and enters the bay of Biscay, below Roche Bernard. When Sir Edward Hawke defeated the French fleet, in 1759, several of their men-of-war took shelter in this river, in which they were obliged to lie several months.

VILLA-ARAGONESE, a town of Sardinia, 17 miles N.E. of Sassari. Long. 8. 50. E. Lat. 40. 56. N.

VILLA-BOHIM, a town of Portugal, in Alentejo, 10 miles S.W. of Elvas.

VILLA-DEL-REY, a town of Spain, in Estremadura, on the frontiers of Portugal, taken by the allies in 1706. It is seated on the Guadiana, 17 miles N.W. of Badajoz. Long. 7. 10. W. Lat. 38. 43. N.

VILLA-DE-CONDE, a sea-port of Portugal, in the province of Entre-Douro-e-Minho, at the mouth of the Ava, 10 miles E. of Barcelos, and 20 N.W. of Oporto. Near it is an ancient aqueduct. Long. 8. 23. W. Lat. 41. 14. N.

VILLA-DE-HORTA, the capital of the island of Fayal, one of the Azores. It is seated on the W. coast, and has a harbour, land-locked on every side except the E. and N.E. and defended by several forts. Long. 28. 36. W. Lat. 38. 32. N.

VILLA-FLOR, a town of Portugal, in the province of Tra-los-Montes, seated on a river, that falls into the Douero. It is 46 E. of Villa Real.

VILLA-REAL, a town of Portugal, in the province of Tra-los-Montes, and capital of Comarca. It is seated at the confluence of the Corgo and Ribera, 15 miles N.E. of Lamego, and 45 S.E. of Braga. Long. 7. 20. W. Lat. 41. 9. N.

VILLA-REAL, a town of Spain, in the province of Valencia, 26 miles N. of Valencia. Long. 6. 20. E. Lat. 39. 46. N.

VILLA-REAL, a town of Spain, in Guipuscoa, six miles S.S.W. of Placentia.

VILLA-VICIOSA, a fortified town of Portugal, in Alentejo, with an old castle, and a palace, where the dukes of Braganza formerly resided. In the suburb is an ancient temple, originally built to the honour of Proserpine. The soil about this town is extremely fertile, and there are quarries of fine green marble. It sustained a famous siege against the Spaniards, in 1667; which occasioned a battle in a neighbouring plain, the event of which placed the crown of Portugal on the head of the Duke of Braganza. It is 16 miles S.W. of Elvas, and 83 S.E. of Lisbon. Long. 7. 16. W. Lat. 38. 36. N.

VILLA-VICIOSA, a sea-port of Spain, in Asturia d'Oviedo, seated on the bay of Biscay, 22 miles N.E. of Oviedo. Long. 5. 24. W. Lat. 43. 22. N.

VILLA-VICIOSA, a town of Spain, in New Castile. Here, in 1710, General Siremberg defeated the French and Spaniards under the Duke of Vendome, although they were twice his number; but, from want of provisions, he was obliged to leave to the vanquished all the advantages of a complete victory, which, accordingly, they ascribed to themselves. Villa Viciosa is six miles N.E. of Erihuega, and 49 N.E. of Madrid.

VILLAC, a town of Germany, in the duchy of Carinthia, belonging to the Bishop of Bamberg, with a castle. It carries on a great trade with the Venetians; and near it are the baths of Toplitz. It is seated at the confluence of the Drave and Gell, surrounded by mountains, 12 miles S.W. of Clagenfurt, and 88 N.E. of Brixen. Long. 14. 3. E. Lat. 46. 50. N.

VILLAGER, the same as cottager, a village being only an assemblage of cottages or mean habitations. See VILLAGE, and also the article COTTAGER in this SUPPLEMENT.

VILLE DIEU, a town of France, in the department of the Channel, 12 miles N.E. of Avranches, and 18 S.E. of Coutances. Long. 1. 8. W. Lat. 48. 52. N.

VILLEFORT, a town of France, in the department of Lozere, 18 miles E. of Mende, and 19 N. of Alais. Long. 3. 50. E. Lat. 44. 27. N.

VILLA-FRANCA, a sea-port of Italy, in the county of Nice, with a castle and fort. In 1744 it was taken by the French and Spaniards, but restored; and was again taken by the French in 1792. It is three miles E. of Nice. Long. 7. 25. E. Lat. 43. 42. N.

VILLA-FRANCA, a town of Italy, in the Veronese, with a silk manufacture, 10 miles S. of Verona. Long. 11. 23. E. Lat. 45. 36. N.

VILLA-FRANCA, the capital of the island of St. Michael, one of the Azores. Long. 25. 35. W. Lat. 37. 50. N.

VILLEMUR, a town of France, in the department of Upper Garonne, seated on the Tarn, 12 miles N.N.E. of Toulouse.

VILLINA, a town of Spain, in the province of Murcia, with a castle, formerly of great strength. It is 55 miles

N.W. of Murcia, and 175 S.E. of Madrid. Long. 6. 49. W. Lat. 38. 40. N.

VILLENEUVE, a town of France, in the department of Lot and Garonne, seated on the river Lot, 17 miles N. of Agen.

VILLENEUVE, a town of France, in the department of Gard, 23 miles N.W. of Nîmes.

VILLENEUVE, a town of Switzerland, in the canton of Bern, celebrated for its trout fishery. It is situate on the east extremity of the lake of Geneva, three miles from the mouth of the Rhone, 15 E.S.E. of Lausanne, and 38 S.S.W. of Bern. Long. 6. 58. E. Lat. 46. 24. N.

VILLENEUVE-DE-BERG, a town of France, in the department of Ardeche, 10 miles N.W. of Viviers.

VILLERS-COTERETS, a town of France, in the department of Oise, with a castle, 10 miles S.E. of Compiègne. Long. 3. 12. E. Lat. 49. 14. N.

VILLINGEN, a town of Suabia, in the Brisgau, seated in the Black Forest, between the sources of the Danube and Neckar, 28 miles E. by S. of Friburg. Long. 8. 37. E. Lat. 48. 8. N.

VILSHOFEN, a town of Lower Bavaria. In 1703 it was taken by the Imperialists; and in 1745, the Austrians took it by storm. It is situate at the confluence of the Vils and Danube, 11 miles W. of Passau, and 72 E.N.E. of Munich. Long. 13. 20. E. Lat. 48. 20. N.

VILVORDE, a town of Austrian Brabant, seated on the canal from Brussels to the Scheldt, seven miles N.E. of Brussels. Long. 4. 31. E. Lat. 50. 56. N.

VIMIOSO, a town of Portugal, in the province of Tra-los-Montes, 15 miles W.N.W. of Miranda-de-Douero, and 17 S.E. of Braganza. Long. 6. 30. W. Lat. 41. 20. N.

VINCENT, CAPE ST. the most southern promontory of Portugal, 25 miles W. by S. of Cape Lagos. Long. 9. 0. W. Lat. 36. 44. N.

VINCENT, ST. one of the Cape Verd Islands, on the coast of Africa. It is uninhabited; but on the N.W. side of it is a good bay, where ships may wood and water, and wild goats be shot. It is said that more turtle is caught near this island than round all the rest, and that it abounds with salt-petre.

VINCENT, ST. a province of Brazil, extending along the coast of the Atlantic, from the province of Rio Janeiro in the N.E. to that of Del Rey in the S. The capital, of the same name, has a good harbour. Long. 46. 30. W. Lat. 44. 15. S.

VINCENT, ST. a town of Spain, in Old Castile, with a castle, seated on a hill, near the river Ebro, 138 miles N.E. of Madrid. Long. 2. 40. W. Lat. 42. 30. N.

VINEGAR (*Enceyl.*). To what has been there offered we wish to add the following important observations on vinegar, by Cit. Parmentier, published in the *Annales de Chimie*.

Vinegar, considered with a view to its economical, pharmaceutical, and chemical uses, is at present of such general utility; that it may be looked upon as an article of the first necessity.

Simple as the process by which it is prepared may appear to be, it is by no means unattended with difficulty; but it is principally when we wish to obtain this acid in its greatest perfection, that we find reason to acknowledge how much its qualities may be influenced by art, and how necessary it consequently is, that we should make ourselves well acquainted with what happens during the process of acetous fermentation, in order that we may be enabled to direct its progress, and calculate its product.

Influenced by these motives, the authors of the tenth and last volume of the *Cours complet d'Agriculture*, conceived that an Essay on Vinegar, as forming a natural appendix to

that which Chaptal had published on the manufacture of wine, would afford their readers an insight into the different changes which are experienced by liquors susceptible of the vinous and acetous fermentation, and thus enable them the better to appreciate the comparative worth of the processes followed in the common routine of manufacture, and those founded upon practice, enlightened by theory.

It is to Citizen Parmentier, one of the fellow-labourers of Rosier in the *Cours d'Agriculture*, that we are indebted for the essay on vinegar, of which we are about to present our readers with an extract.

Before entering upon this subject, the author has thought fit to inform us, that it is not the art of the vinegar-manufacturer that he means to publish; this art, he says, is fully explained in the *Collection of Arts and Manufactures*, printed in 4to. at Neuchâtel; but as the very copious and interesting details which it contains would be out of their place in a simple essay, which ought only to exhibit general views and the principal facts, he has thought it better to dwell upon the formation, preparation, preservation, and properties of the different sorts of vinegar most used in Europe, and to comprise, within a small treatise, all the advantages which may accrue from the employment of this acid to the arts, to pharmacy, and to economy.

In order to give a greater perspicuity to his treatise, Cit. Parmentier has divided it into several paragraphs: in the first, he presents us with general reflections on the theory of aceticification.

It appears that the ancients had but very confused ideas concerning the cause of conversion of wine into vinegar. And how, in fact, could they form any accurate notions upon this subject, when we know that they were far from being acquainted with the nature of the principles which act so important a part in the process of acetous fermentation?

We must acknowledge, that it is only since the gases and their properties have been discovered, that we have learnt to reason with greater precision concerning this species of fermentation; and it is also particularly since we have carefully observed all that happens during its different stages, that we have succeeded in establishing a theory, which lays the greater claim to adoption, as it is founded upon facts, the reality of which can no longer be called in question.

At the present day it cannot be disputed that oxygen, hydrogen, and carbone, are the principal agents that contribute to the formation of vinegar. These three principles, which are also found in the greater part of the other vegetable acids, cannot form vinegar, unless when combined in proportions so constant and so rigorously determined, that be they varied never so little, they immediately afford new products.

It is to this cause that we ought to attribute the frequent changes that take place in vinegar when the requisite precautions are not taken for maintaining, between the three principles which we have just mentioned, that species of equilibrium upon which the existence of this acid depends.

If the acetous fermentation exhibits phenomena analogous to those which accompany the vinous fermentation, it can also not be denied, that there are certain phenomena peculiar to each of these kinds of fermentation, and so open to observation, that it is very easy to distinguish them.

For example, it is very certain that, during the course of vinous fermentation, there constantly takes place an extrication of elastic fluids, which are formed at the expence of the liquid itself, which is subjected to the fermentation: whilst, in the acetous fermentation, the production and disengagement of æriform fluids take place only during certain stages of the process, and that at one period during its course a very sensible absorption may be observed.

Rosier, the first who insisted upon this fact, conceived that it was atmospherical air that was absorbed in this case; but it has since been proved, to demonstration, that the oxygen contained in the atmospherical air is the only principle that enters into combination with the other principles of the fermenting liquid, and that it essentially contributes to the formation of the acid which constitutes vinegar.

This being ascertained, we cannot be at a loss what to think of the assertion of Becher, who pretends that he has converted wine into very strong vinegar, by merely letting it digest for a long time over the fire, in a bottle hermetically sealed. If he really has succeeded, it could only be owing to his having operated upon a very small quantity of wine contained in a spacious vessel.

Amongst the number of operations formerly practised for converting wine into vinegar, many were useless or defective, the greater part did not answer the purpose for which they were intended; and it was undoubtedly for this reason that the necessity was felt of simplifying them, and substituting other more advantageous ones. *Caribeyser, Boerhaave, Demachy, Guyton-Morveau, Prozet, &c. &c.* have principally employed themselves on this subject. By pointing out the improvements which ought to be adopted, and the only operations which were proper to be employed, they rendered almost universally known the art of making vinegar, which was formerly practised only by a few individuals, whose processes were always concealed under a veil of mystery.

It must however be admitted, that the improvements proposed by the above-mentioned learned men, were not so generally adopted as was to have been wished. In many of the departments of France the ancient processes are still in use, and it is undoubtedly to the carelessness which exists with respect to this subject, that we have to ascribe the defective vinegars often met with in commerce, the quality of which is generally so bad as to render them altogether useless.

In the second paragraph, Citizen Parmentier points out the most general conditions requisite for the formation of good vinegar.

These are four in number:

1. The access of the external air into the vessel which contains the liquid intended to become acid.
2. A temperature higher than that of the atmosphere.
3. The addition of substances which perform the office of a ferment.
4. The presence of a certain quantity of alkali.

The access of the atmospherical air is so indispensably necessary to the formation of vinegar, that this acid cannot be produced without it. What has been said in an earlier part of this essay, concerning the manner in which this æriform fluid acts during the acetous fermentation, is so well known at the present day, that it seems unnecessary to revert to it. Neither can the necessity of the concurrence of heat be called in question; but the heat ought to be moderate. In general it ought not to exceed 18,20 degrees of Reaumur's thermometer: if a higher temperature is applied, it injures the quality of the product.

The following is a striking instance of the inconvenience which results from employing a higher degree of temperature than that which we have indicated.—A vinegar-manufacturer of Orleans, conceiving that the higher he raised the temperature in his workshop, the stronger his vinegar would turn out, heated his stove to such a degree as to raise the temperature of the atmosphere to 30°; but, upon examining the vinegar which he had obtained, he found, to his no small surprise, that it was not only very weak, but

also of a bad quality. He then applied to Citizen Prozet, who acquainted him with the proper degree of temperature, and since that time he has always obtained vinegar of very good quality.

But even though so conclusive an experiment should not be thought to prove the necessity of moderating the heat in the places where vinegar is manufactured, we need only reflect for a moment upon what happens in the process of acetous fermentation, to be convinced that if it be necessary to determine the formation of the different combinations from which, in their turn, an acid is to be produced, it is also necessary that, when these combinations have once been produced, we should prevent their separating from the liquid in which they are contained: now the surest means of preserving them is to avoid a too high degree of temperature, and it is precisely for this reason that pains have been taken to ascertain the degree at which we ought to desist from augmenting the temperature, which has been fixed at between 18° and 20° of Reaumur's thermometer.

The addition of substances proper for forming ferments, is a condition so indispensably necessary to the production of acetous fermentation, that it would be difficult to prove that it can be omitted without detriment. It is well known that the great art of the manufacturer of vinegar consists in establishing, at one and the same time, in the whole mass of vinous fluid, an internal motion, which agitates its constituent principles, compelling them to separate from each other, and afterwards re-unite into combinations different from those in which they previously existed. It would be in vain for us to expect to obtain such a motion by leaving the wine to itself; a part of this fluid might indeed become at length acidified, but before the whole could become completely so, it would require a great length of time, and then the first portions of acid that had been formed would be very near to a state of decomposition. Be that as it may, the choice of the substances proper for forming ferments is by no means a matter of indifference, and this choice ought always to be determined according to the quality of the fluid upon which one operates. The author enters into details relative to this subject, which are the more interesting as being the result of experience and observation.

Finally, the obligation imposed upon us, as the fourth condition, to employ wines of good quality if we wish to obtain excellent vinegar, is naturally deduced from the state of the constituent parts of these wines; it is easily conceived, that the more they possess of a species of perfection, the more they will also influence that of the new product which is about to be formed. Moreover, in this case experience entirely accords with theory, for it is universally admitted that the best kinds of vinegar are those that have been manufactured from generous wines.

The third paragraph presents us with a description of the operations requisite for the manufacture of different kinds of vinegar.

The author has not contented himself with describing the processes for making wine-vinegars; but he has also described those employed for obtaining the vinegars of cyder, of perry, of malt-liquors, of the bran of wheat, with such precision, that whoever may wish to repeat them may be spared the trouble of making any trials that may prove unsuccessful.

In the same paragraph, the author makes mention of several other acids, which, in certain places, are employed as substitutes for ordinary vinegar.

Such are verjuice, the acid of milk, that of honey, &c. &c.; though these acids, chemically considered, are somewhat different from those furnished by wine, it is no less true that

they afford great resources, and that in some departments of the republic, where they are principally consumed, they are in daily use, without producing any bad effects upon the health of the inhabitants.

The fourth paragraph is entitled, *Of the Acids used as Substitutes for Vinegar.*

The greater part of the vegetable acids stands in the same predicament with those that have been treated of in the preceding paragraphs. Though essentially different from wine-vinegar, they have, in certain respects, so great an analogy with the latter, that people have not hesitated to make use of them in its stead. It is for this purpose, undoubtedly, that the juice of the currant, barberry, &c. are expressly subjected to the acetous fermentation. The liquors procured by these means afford very useful substitutes for vinegar; but they have the disadvantage that they will not keep. In general they soon become covered with mould, soon after they have been prepared, and at length are entirely decomposed.

Before the revolution, vinegar formed a very important article of commerce with certain nations; the Dutch in particular carried on a very considerable traffic with it. The vinegars which they manufactured were exported to their colonial possessions, and, as they were of good quality, they bore long voyages without spoiling.

Citizen Parmentier imagines that this branch of commerce might also become very productive in the *Département de la Seine*, and that the inhabitants, by their commercial genius, might easily increase their exports, and thus add to the great advantages which they derive from their geographical position.

The manner of preserving vinegar forms the subject of the fifth paragraph.

Vinegar, be it ever so well prepared, is subject to the lot of all compound fluids; namely, that at the end of a certain period it undergoes sensible alterations.

There are however means by which these alterations may be retarded; they consist in defending the vinegar against the influence of the external air, by keeping it in proper vessels, well closed and placed in a cool situation.

Its alteration may also be retarded by depriving it of a portion of the water which it contains; for which purpose nothing more is necessary than to let it boil for an instant; but the vessels which are employed in this operation must not be made of copper.

The process proposed by Scheele, with a similar intention, is very simple: it consists in filling, with this acid, glass vessels, which are placed in boilers full of water. The water is then made to boil for a full quarter of an hour, after which the vinegar is taken out, and may then be kept for several years without undergoing any alteration.

Distillation has also been recommended as a means of preserving vinegar; but, besides that it is a tedious and difficult process, it deprives the acid of the agreeable smell and taste peculiar to it in its natural state, and which one always wishes to find in it.

In fact, distilled vinegar is not susceptible of alteration, and it is partly on this account, and partly also because it contains no substance foreign from its composition, that it is reserved for chemical operations, and employed in preference to the other in many pharmaceutical preparations.

The same is the case with vinegar that has been concentrated by freezing. The acid, by this simple process, becomes much stronger, and may be kept for a greater length of time; but it acquires an empyreumatic smell and taste, which render it unfit for being employed as a seasoning for aliments. This vinegar, like the distilled, is almost solely employed in chemical laboratories.

Finally, sea-salt, or muriate of soda, which some have recommended to be added to vinegar, as being able to preserve this acid, sometimes succeeds well enough; however it is not without its inconveniences; for the vinegars that contain this saline substance grow turbid, and at length lose their primitive qualities.

However, this process ought not to be neglected; and though it may not succeed quite so perfectly as we could wish, we may still employ it in certain cases with advantage, especially if the quantity of salt added to the vinegar be not too considerable.

The signs by which we may discover whether the vinegar be good, adulterated, or spoiled, form the subject of the sixth paragraph.

Nothing is more common than to meet, in commerce, with vinegars of bad quality. Two causes principally contribute to their being in that state: the first, that they have been manufactured with weak wines, or such as are already spoiled; the second, that they have either been mixed with acid substances, such as pimento, &c. or mineral acids, such as the sulphuric and muriatic, have been added to them.

When the buyer, unacquainted with the fraud, tastes these kinds of vinegar, he imagines that the effect which they produce upon his palate is to be ascribed to the strength of the vinegar, and frequently that alone is sufficient to make him conclude that the vinegar is of good quality. How grossly he is mistaken is very evident.

However, there is more easy than to detect such a fraud; it being sufficient to saturate a given quantity of potash with the vinegar that is suspected of being adulterated, and to compare the quantity of vinegar that we have been obliged to employ before we could obtain a complete saturation with that consumed in a similar experiment made with vinegar, the good quality of which we are assured of.

We ought afterwards to evaporate a portion of this vinegar till a pellicle is formed upon it, and examine if, when it has cooled, it has not deposited some saline precipitate. If it has, the form of the crystals will shew us what species of acid has been used for adulterating the vinegar.

As to the acid vegetable substances that may have been mixed with it, they will readily be recognized by their taste, which will be altogether different from that of vinegar, and which will become the more perceptible the more the acid has been concentrated by evaporation.

In general, vinegar that has not been adulterated, or which has not been spoiled by an incipient decomposition, is readily known by its acid taste, its transparency, and its agreeable smell, a smell which becomes still more developed when we rub some of the vinegar between the hands.

In the seventh and eighth paragraphs, the author treats of the use of vinegar in preserving fresh meat, fruits, and esculent vegetables.

Every one is acquainted with the great utility of vinegar in preserving flesh from the change which it speedily undergoes, particularly during the heat of the summer; it is also known that this acid, which is daily employed in our kitchens, has the property of giving to certain kinds of flesh meat an agreeable taste, and rendering them more tender, and consequently more fit to be eaten: but, in order to produce these effects, it is necessary that the vinegar should be of good quality; otherwise the result would be directly contrary to that which we hoped to obtain.

As to the preservation of fruits and esculent vegetables in vinegar, it is a practice almost universally in use: but in this case also it is necessary that the vinegar should be good; otherwise the fruits become soft, and at length unfit to be eaten.

The aromatic vinegars form the subject of the ninth paragraph.

The author dwells, in this article, upon the property which vinegar possesses of imbibing the aroma of plants; he mentions several aromatic vinegars, which are the most in use, both for the table and the toilet, and he points out the precautions that must be taken in order to make them keep for a long time. But this acid also imbibes the more active properties of the vegetables, and it is upon this that the art of making medicated vinegars is founded; the method formerly practised with the intention of forming such vinegars, by letting the medicinal plants ferment together with the wine, is now known to be grounded in an error.

In the tenth and last paragraph, Citizen Parmentier treats of the medicinal and economical uses of the vinegar itself: he shews the great utility of this acid in putrid and contagious diseases, whether administered internally, or applied externally. He quotes, under this head, the regulations by which the marine of France commands the captains of ships not to put to sea without a quantity of vinegar sufficient for washing their decks, cabins, &c. at least once every five days. He proves that it is frequently owing to a similar use of vinegar that crews have been preserved from the diseases prevalent in fleets, and that on this account alone more attention than ever ought to be paid to the execution of the regulations mentioned above.

Finally, the author dwells upon the utility of vinegar in the arts, and the impossibility of supplying its place by any other known acid.

From the exposition which we have given, it may be easy to see that the treatise on Vinegar in the *Cours complet d'Agriculture* fulfils all the conditions that were to be desired in such a treatise. If Citizen Parmentier has not thought it necessary to treat his subject with all the detail of which it was susceptible, it will at least be admitted, that he has dwelt upon those points which it was most essential to know, and that in this respect he has completely fulfilled the views proposed to themselves by the authors of the work for which this article was intended. We therefore have no doubt that the labours of Citizen Parmentier will be favourably received, and that, as we have already said, they will form a worthy counterpart to the article on wine by Citizen Chaptal, which, according to the avowal of all who have read and studied it, deserves to be ranked amongst the best productions of that chemist.

VINGORLA, a Dutch settlement in the peninsula of Hindoostan, on the coast of Concan, a little N. of Goa. Long. 73. 22. E. Lat. 15. 57. N.

VINGORIA ROCKS, rocks lying about seven miles from the coast of Concan, in the peninsula of Hindoostan, and 10 miles S.S.W. of the island of Melundy, or Sunderdoo. They are possessed by the Malwaans, a piratical tribe. Long. 73. 16. W. Lat. 15. 52. N.

VINTIMIGLIA, a town of Italy, in the republic of Genoa, with a bishop's see, a small harbour, and a strong castle on a high rock. It has been often taken and retaken, and is seated on the Mediterranean, at the mouth of the Rotta, 20 miles E.N.E. of Nice, and 70 S.W. of Genoa. Long. 7. 37. E. Lat. 43. 53. N.

VIRE, a town of France, in the department of Calvados, with several manufactures of coarse woollen cloths. It is seated on the Vire, 30 miles S.E. of Courances, and 150 W. of Paris. Long. 0. 45. W. Lat. 48. 48. N.

VIRGIN ISLANDS, about thirty islands and keys in the West Indies, between St. Juan de Puerto Rico and the Leeward Caribbee Islands. They were called *Las Virgenes* by the Spaniards, in honour of the 11,000 virgins of the legend. They are possessed by the English and Danes. In

the first division, belonging to the English, is Tortola, the principal, to which belongs Joff Van Dyke's and Little Van Dyke's, Guana ile, with Beef and Thatch Islands. In the second division is Virgin Gorda, to which belong Anegada, or Drowned Ile, Nicker, Prickly Pear, and Mulkito Islands, the Communes, Scrub and Dog Islands, the Fallen City (two rocky islets, close together, at a distance resembling ruins), the Round Rock, Ginger, Cooper's Salt Island, Peter's Island, and the Dead Chest. - Of the Danish division, the principal islands are St. Thomas and St. John. Long. from 63. 45. to 64. 55. W. Lat. from 17. 10. to 18. 30. N.

VIRNENBERG, a town and citadel of Westphalia, the capital of a county to which it gives name. It is 20 miles W. of Coblenz. Long. 7. 5. E. Lat. 50. 27. N.

VIRTON, a town of Austrian Luxemburg, 22 miles W. of Luxemburg. Long. 5. 41. E. Lat. 49. 36. N.

VISAGAPATAM, a town of the peninsula of Hindoostan, in the Circar of Cicacole, 50 miles S.W. of Cicacole, and 100 N.E. of Rajamundry. Long. 85. 40. E. Lat. 17. 45. N.

VISCHMA, a town of Russia, in the government of Tobolsk, 268 miles S.W. of Tobolsk. Long. 61. 22. E. Lat. 62. 36. N.

VISET, a town of the Netherlands, in the bishopric of Liege, seated on the Maese, seven miles N. of Liege. Long. 5. 40. E. Lat. 50. 44. N.

VISHNET-VLOTCHEK, a town of Russia, in the government of Tver, one of the imperial villages enfranchised by Catherine II. It has a canal, which, by uniting the Tverza and the Mafsa, connects the inland navigation between the Caspian and the Baltic; and the inhabitants, raised from the situation of slaves to that of freemen, seem to be awakened to a sense of their commercial advantages. The town is divided into regular streets. All the buildings are of wood, except the court of justice erected by the late empress, and four brick houses belonging to a rich burgher. It is seated on the river Zua, 50 miles N.W. of Tver. Long. 35. 0. E. Lat. 57. 23. N.

VISIAPOUR, or **BEJAPOUR**, a considerable city of the Deccan of Hindoostan, once the capital of a large kingdom of the same name, but now subject to the Poonah Mahrattas. It is 130 miles S.E. of Poonah, and 234 S.E. of Bombay. Long. 75. 19. E. Lat. 17. 26. N.

VISOGOROD, a town of Poland, in Masovia, with a castle, seated on the Visula, 50 miles N.W. of Warsaw.

UIST NORTH and SOUTH, two islands of the Hebrides, on the W. coast of Scotland; each about 20 miles in length, and of considerable breadth. They contain about 6,000 inhabitants. Kelp is the staple commodity, of which about 1100 tons are annually manufactured in these islands. North Uist is about 15, and South Uist 20 miles W. of the Isle of Skye.

VITERBO, a town of Italy, in the patrimony of St. Peter, with a bishop's see. It contains 10,000 inhabitants, 16 parish-churches, and many palaces and fountains. Near it is a spring, so hot, that it will boil an egg, and even flesh. It is seated at the foot of a mountain, from the top of which, the city of Rome and the Mediterranean Sea may be seen; the latter at the distance of near 50 miles. It is 20 miles S.E. of Orvieto, and 35 N. by W. of Rome. Long. 12. 26. E. Lat. 42. 25. N.

VITRE, a town of France, in the department of Isle and Vilaine. It has a trade in linen cloth, and knit stockings and gloves. It is seated on the Vilaine, 20 miles N.E. of Rennes, and 52 S.E. of St. Malo. Long. 1. 13. W. Lat. 48. 14. N.

VITRI LE-BRULE, a village of France, two miles N.E. of Vitri-le-François. It was formerly a considerable town, but was burnt (as its name imports) by Lewis VII.

VITRI-LE-FRANCOIS, a considerable town of France, in the department of Marne. It is well built, though the houses are of wood; and there is a fine square, in which the church stands. It has a great trade, particularly in corn; and is seated on the Marne, 15 miles S.E. of Chalons, and 100 E. of Paris. Long. 4. 38. E. Lat. 48. 44. N.

VITRING, a town of Germany, in the duchy of Carinthia, with an abbey of Cisterians. It is situate on a lake, called the Wordtsee, four miles S.W. of Clagenfurt.

VITRIOL, the name by which salts, produced by combining vitriolic (now called *sulphuric*) acid with different metals, has heretofore been distinguished. Thus we had *blue vitriol*, *green vitriol*, &c. according to the colour of the salt. The chemists of the new school call these substances *sulphates*, as the *sulphate* of copper; *sulphate* of iron, &c. (see Table of Nomenclature, CHEMISTRY); but the London College of Physicians call these substances by the name of *vitriolated*, and denominate the foregoing combinations, *vitriolated copper*, *vitriolated iron*, &c.

VITTEAUX, a town of France, in the department of Côte d'Or, seated on the river Braine, among the mountains, where there are quarries of marble, 12 miles S.E. of Semur, and 27 W. of Dijon. Long. 4. 27. E. Lat. 57. 20. N.

VITTORIA, or **VICTORIA**, a considerable town of Spain, capital of the province of Alaba, in Biscay. It is surrounded by double walls, and in the principal square are the town-house, two convents, and a fine fountain. The large streets are bordered with fine trees, which are a good defence against the heat of the sun. It has a great trade in hardware, particularly in sword-blades, which are made here in large quantities. It is seated on an eminence, at the end of a plain, fertile in corn and grapes, 32 miles S.E. of Bilbao, and 155 N. of Madrid. Long. 2. 56. E. Lat. 42. 55. N.

VIVARAIS, a late small province of France, part of that of Dauphiny, and now included in the department of Ardeche.

VIVERO, a town of Spain, in Galicia, seated at the foot of a steep mountain, near the river Landrova, whose mouth forms a large harbour on the Atlantic, 30 miles N.W. of Mondonnedo. Long. 7. 34. W. Lat. 43. 50. N.

VIVIER, a town of France, in the department of Ardeche, with a bishop's see. It is seated among rocks (on one of which the cathedral is built) on the river Rhone, 20 miles N. of Orange, and 70 N.E. of Montpellier. Long. 4. 46. E. Lat. 44. 20. N.

VIZA, a town of Turkey in Europe, in Romania, with a Greek archbishop's see. It is seated at the foot of a mountain, at the source of the river Glicenero.

UKENSKOI, a town of Russia, in the government of Tobolsk, situate at the confluence of the Irtisch and Oby, 196 miles N. of Tobolsk. Long. 69. 15. E. Lat. 61. 10. N.

ULEA, or **ULABONG**, a sea-port of Sweden, in East Bothnia. It is the largest town in East Bothnia, and situate at the mouth of a river of the same name, 320 miles N. of Abo. Long. 22. 20. E. Lat. 65. 40. N.

ULIERBECK, a town of Austrian Brabant, two miles E. of Louvain, and 11 S.E. of Mechlin. Long. 4. 52. E. Lat. 50. 53. N.

ULLSWATER, a lake of Westmoreland, 10 miles N. of Ambleside, and 14 S.W. of Penrith. It is eight miles long, and abounds with char, and a variety of other fish. The navigators of this lake find much amusement by discharging guns, or small cannon, in certain stations. The report is reverberated from rock to rock, promontory, cavern, and hill, with every variety of sound; now dying away upon the ear, and again returning like peals of thunder, and thus re-echoed seven times distinctly.

ULMEN, a town of Germany, in the archbishopric of Mentz, 30 miles N.E. of Treves. Long. 7. 8. E. Lat. 50. 7. N.

ULOTHO, or **VLOTHW**, a town of Westphalia, in the county of Ravenberg, near which is a medical spring. It is six miles S. of Minden.

ULRICSHAMN, a town in Sweden, in West Gothland, formerly called Bogefund, the present name being given it, in 1741, in compliment to Queen Ulrica Eleonora. It is 24 miles W. of Jonkioping, and 47 E. of Gotheborg. Long. 14. 22. E. Lat. 57. 10. N.

ULTZEN, or **VELTZEN**, a town of Lower Saxony, in the duchy of Lunenburg. It was formerly a hanseatic town, has now a considerable trade in wool, and is seated on the Ilmenau, 22 miles S. of Lunenburg. Long. 10. 38. E. Lat. 52. 55. N.

ULVERSTONE, a town in Lancashire, with a market on Monday. The country people call it Oulton, and it is seated at the foot of a swift descent of hills to the S.E. near a shallow arm of the Irish Sea. It is the port of the district of Furness. The principal inns are kept by the guides, who regularly pass the fands, to and from Lancaster, every Sunday, Tuesday, and Friday. It is 18 miles N.W. of Lancaster, and 267 N.N.W. of London. Long. 3. 12. W. Lat. 54. 14. N.

UMA, or **UMEA**, a town of Sweden, in West Bothnia, seated on the river Uma, in the gulf of Bothnia. The houses are built of wood; and it was twice burnt by the Russians. It is the residence of the governor of West Bothnia, and 280 miles N. of Stockholm. Long. 19. 9. E. Lat. 63. 58. N.

UMAGO, a sea-port of Venetian Istria, seated between the gulf Lagona and the mouth of the river Quieto.

UMBRIATICO, a town of Naples, in Calabria Citeriore, with a bishop's see, though now reduced to a small place. It is seated on the Lipida, 15 miles N. by W. of St. Severina. Long. 17. 10. E. Lat. 38. 20. N.

UNDERSWEN, or **UNDERSEEN**, a handsome town of Switzerland, in the canton of Bern, near which is the famous cavern of St. Pat. It is seated on the lake Thun, 25 miles S.S.E. of Bern, and 30 S.E. of Friburg. Long. 7. 32. E. Lat. 46. 32. N.

UNGHWAR, a town of Upper Hungary, capital of a county of the same name, in an island formed by the Ugh. It is strong from its situation among the mountains of Crapach, and is 47 miles E. of Cassovia. Long. 22. 23. E. Lat. 48. 48. N.

UNION (*Encycl.*). This term ceases to be applied exclusively to the political connection between England and Scotland; Ireland having, in 1800, experienced a similar fate. In Plate 91, we have given a sketch of the *enigms armorial of the united kingdom of Great Britain and Ireland*, as settled by the king in council. These are quarterly, first and fourth, England; second, Scotland; third, Ireland: on an escutcheon of pretence, the arms of his majesty's German dominions, ensigned with the electoral bonnet.

The union badges—the rose, thistle, and shamrock—issuant from the same stalk; namely, the rose between the thistle and shamrock, and alternated by the rose between the shamrock and thistle; both ensigned with the imperial crown.—See the plate.

The union flag combines the saltires of St. Andrew and St. Patrick, surmounted by the cross of St. George, as represented also in the plate.

The crest of Ireland is a tower, triple-towered proper; in the portal a hart, lodged, argent, attired, and hooped, or.

The badge of Ireland is a shamrock ensigned with the imperial crown.

The badge of the shamrock to be within the collar of St. Patrick, ensigned with the imperial crown.

The style of his majesty is as follows:—“*Georgius Tertius Dei Gratia Britanniarum Rex, Fidei Defensor, et in Terrâ*
Vol. X.

Ecclesiæ Anglicanæ e. Hibernicæ supremum Caput.” In English, “George the Third, by the Grace of God, of the united Kingdoms of Great Britain and Ireland, King, Defender of the Faith, and of the united Church of England and Ireland on Earth, Supreme Head.

The supporters, crest, and crown, remain without any alteration.

UNION, the county town of Fayette, in Pennsylvania, 14 miles from the Monongohela, and 58 S. of Pittsburg. Long. 79. 48. W. Lat. 39. 54. N.

UNNA, a town of Westphalia, in the county of March, formerly a considerable Hanseatic town. It is seated on a brook called Kottelbeck, 10 miles N.E. of Dortmund, and 35 S. of Munster. Long. 7. 49. E. Lat. 51. 28. N.

UNNA, a river of Turkey in Europe, which runs through Croatia, passes by Wihitsch and Dubitz, and falls into the Save.

UNNARY, a town of Sweden, in the province of Smoland, 43 miles W. of Wexio.

UNST, the most remote of the Shetland Islands, extending beyond 61° N. lat. It is eight miles long, and four broad.

UNTERSEEN, a town of Switzerland, in the canton of Bern, situate between the lakes of Brienz and Thun, 23 miles S.S.W. of Lucern, and 26 S.E. of Bern. Long. 7. 28. E. Lat. 46. 35. N.

UNZA, or **UNSHA**, a town of Russia, in a province of the same name, in the government of Kostroma. It is situate on the river Unza, 92 miles E.N.E. of Kostroma. Long. 44. 15. E. Lat. 57. 56. N.

VOERDEN, a town of the United Provinces, in Holland. It was taken by the French in 1672 and 1795. It is seated on the Rhine, 10 miles W. of Utrecht, and 20 S. of Amsterdam. Long. 4. 53. E. Lat. 52. 6. N.

VOGHERA, a fortified town of Italy, in the duchy of Milan and territory of Pavia. It is seated on the Staffora, 14 miles S.S.W. of Pavia, and 30 S. by W. of Milan. Long. 9. 10. E. Lat. 44. 59. N.

VOGLABRUCK, a town of the archduchy of Austria, which enjoys the privilege of granting protection to all slaves; and its burghers and merchants, together with their wares, are toll-free through all the Austrian countries. It is 27 miles S.S.E. of Passau. Long. 13. 40. E. Lat. 48. 1. N.

VOID, a town of France, in the department of Meurthe, seated on a rivulet of the same name, 10 miles from Toul.

VOIGTLAND, a territory of Upper Saxony, one of the four circles of the marquissate of Misnia; bounded on the E. by Bohemia, on the N. by the duchy of Altenburg, and on the W. by Thuringia and Franconia. Plawen is the capital.

VOIGTSEB, a town and citadel of Upper Saxony, belonging to the Elector of Saxony, 18 miles S.S.W. of Zurichau.

VOKELMARK, or **WOLCKEMARCK**, a town of Germany, in Carinthia, seated on the Drave, 26 miles S.E. of Clagenfurt. Long. 13. 56. E. Lat. 46. 45. N.

VOLANO, a sea-port of Italy, in the Ferrarese, seated on the gulf of Venice, at one of the mouths of the Po, 40 miles E. of Ferrara. Long. 12. 36. E. Lat. 44. 52. N.

VOLCANO, one of the most considerable of the Lipari Islands, in the Mediterranean, lying S. of the island of Lipari, from which it is separated by a deep channel, a mile and a half broad. It is 12 miles in circumference, and is a volcano, in the form of a broken cone, but now emits smoke only. Volcano, as well as all the rest of these islands, is supposed to have been originally the work of subterranean fire. Of the production of this island, in particular, Fazzello says, that it happened in the early time of the Roman republic, and is recorded by Pliny and others.

VOLGA, the largest river in Europe, which has its source in two small lakes, in the government of Plekorf, in Russia, about 80 miles W. of Tver. It begins to be navigable a few miles above that town, and is considerably augmented here by the junction of the Tverza, which is a broader, deeper, and more rapid river. By means of the Tverza, a communication is made between the Volga and the Neva, or, in other words, between the Caspian and the Baltic. This river waters some of the finest provinces in the Russian empire, passes by Yaroslaf, Kostroma, Nishnei-Novogorod, Kafan, Simbirsk, and Saratof, entering the Caspian Sea, by several mouths, below Astracan.

VOLHYNIA, a palatinate of Russian Poland, 300 miles long and 150 broad; bounded on the N. by Polesia, on the E. by Kiof, on the S. by Podolia, and on the W. by Austrian Poland. It consists chiefly of plains watered by a great number of rivers. Lucko is the capital.

VOLLENHOVEN, a town of the United Provinces, in Overijssel, capital of a territory of the same name, with a castle. It is seated on the Zuider Zee, eight miles S.W. of Steenwich, and 12 N.W. of Zwol. Long. 5. 42. E. Lat. 52. 44. N.

VOLO, a town of Turkey in Europe, in Janna, with a citadel and a fort. It was taken, and almost ruined, in 1655, by the Venetians. It is seated on a gulf of the same name, where there is a good harbour, 30 miles S.E. of Larissa. Long. 22. 55. E. Lat. 39. 21. N.

VOLODIMIR, or **VLADIMIR**, a government of Russia, formerly a province of the government of Moscow. The soil is extremely fertile, and in the forests are innumerable swarms of bees.

VOLODIMIR, or **VLADIMIR**, a town of Russia, capital of a government of the same name, and once the metropolis of the empire. It is seated on the Klafina, 110 miles E. by N. of Moscow.

VOLOGDA, a government of Russia, divided into the two provinces of Vologda and Veliki-Ustiug. It is a marshy country, full of forests, lakes, and rivers, and noted for its fine wool.

VOLOGDA, a town of Russia, capital of a province of the same name, and the see of an archbishop. It has a magnificent cathedral, several churches, a castle, and a fortress; and carries on a considerable trade. It is seated in a marsh, on the river Vologda, which falls into the Sukhona, 257 miles N. by E. of Moscow. Long. 39. 46. E. Lat. 59. 20. N.

VOLESK, a town of Russia, in the government of Saratof, situate on the Volga, 76 miles N.E. of Saratof. Long. 47. 45. E. Lat. 52. 15. N.

VOLTA, a river of Guinea, which runs from N. to S. and falls into the Atlantic Ocean, E. of Acra.

VOLTERRA, a town of Tuscany, in the territory of Pisa, with a bishop's see. It is surrounded by walls, contains several antiquities, is noted for its medicinal waters, and is seated on a mountain, 30 miles S.W. of Florence, and 32 S.E. of Pisa. Long. 10. 42. E. Lat. 43. 26. N.

VOLTRI, a town of Italy, in the Genoeve, near which the Austrians were defeated by the French in 1796. It is six miles W. of Genoa.

VOLTURNO, a river of Naples, which rises in the Apennines, passes by Isernia and Capua, and falls into the gulf of Gaeta.

VOLTURARA, a town of Naples, in Capitanata, with a bishop's see. It is seated at the foot of the Apennines, 20 miles W. of Lucera, and 52 N.E. of Naples. Long. 15. 14. E. Lat. 41. 26. N.

VOLVIC, a town of France, in the department of Puy de Dome. Here are immense quarries, formed by a current of

lava, which furnish materials for the buildings of the adjacent towns. The sculptors have employed no other for the statues in the churches, which are all of a black colour. Volvic is two miles from Riom.

VOORN, a fort of Dutch Guelderland, on an island formed by the junction of the Wahal and the Maese, at the E. end of the Bommel Waert.

VOORNLAND, a territory of the United Provinces, anciently part of Zealand. It consists of the islands of Voorn, Goree, and Overlackee.

VORALBERG, or **VORARLBERG**, a district of Upper Austria; bounded on the W. by the lake of Constance, on the E. by the mountains of Arlberg, which separates it from Tyrol, on the S. by the country of the Grisons, and on the N. by Suabia. It comprises the four counties of Feldkirch, Bregenz, Pludenz, and Sonnenberg.

VORDEN, a town of Westphalia, in the bishopric of Osnaburg, 10 miles E.N.E. of Osnaburg. Long. 8. 24. E. Lat. 52. 20. N.

VORINGEN, a town of Suabia, in the principality of Hohenzollern, situate on the Lauchart, 10 miles S.E. of Hohenzollern. Long. 9. 12. E. Lat. 48. 15. N.

VORONETZ, a government of Russia, the capital of which, of the same name, is seated on the Voronetz, below its junction with the Don, 217 miles S. by E. of Moscow. Long. 39. 14. E. Lat. 51. 36. N.

VOSGES, a department of France, including that part of Lorrain, which was lately a province of the same name. It is so called from a chain of mountains, covered with wood, that separates this department from the department of Upper Saone and Upper Rhine.

VOU-HOU-HIEN, a city of China, in the province of Kiang-nan, and jurisdiction of Tay-ping-fou; the most considerable, in point of riches, in that jurisdiction. It is 52 miles S.W. of Tay-ping-fou.

VOUILLE, a village of France, in the department of Vienne, 10 miles W. of Poitiers. Here Clovis gained a battle, in 507, against Alaric, king of the Visigoths, which extended the French empire from the Loire to the Pyrenées.

VOU-TCHANG-FOU, the capital of the province of Hou-quang, in China; the rendezvous, as it were, of all the commercial people in the empire. As every branch of trade is carried on here, its port, seated on the Yang-tse-kiang, is always crowded with vessels; the river being sometimes covered with them to the distance of two leagues. The beautiful crystal found in its mountains, the plentiful crops of fine tea, and the prodigious sale of the bamboo paper made here, contribute no less to make it famous than the continual influx of strangers. Its extent is compared to that of Paris. Its district contains one city of the second class, nine of the third, a fortified town, and several fortresses. It is 875 miles S. of Pekin. Long. 112. 25. E. Lat. 30. 30. N.

VOU-TCHEOU-FOU, or **FOU-TCHEOU-FOU**, a city of China, in the province of Kiang-nan, formerly one of the most beautiful in the empire; but, since the invasion of the Tartars, it has been a heap of ruins, which, however, still convey some idea of its ancient magnificence. Its district contains six cities of the third class. It is 350 miles S. by W. of Nanking. Long. 116. 25. E. Lat. 27. 30. N.

UPPINGHAM, a town of Rutlandshire, with a market on Wednesday; seated on an eminence, six miles S. of Oakham, and 90 N. by W. of London. Long. 0. 45. W. Lat. 52. 36. N.

UPTON, a town in Worcestershire, with a market on Thursday; seated on the Severn, 11 miles S. of Worcester, and 109 W.N.W. of London. Long. 1. 55. W. Lat. 51. 59. N.

URACH, a town of Suabia, in the duchy of Wirtemberg. Here are considerable manufactures of damask and other linens. It is 21 miles S.S.E. of Stuttgart, and 24 W. of Ulm. Long. 9. 15. E. Lat. 48. 27. N.

URAL, a river of Russia, which rises in Mount Caucasus, and watering Orenburg, Uralik, and Gurief, falls by three mouths into the Caspian Sea. See the next article.

URALIAN COSSACS, a Tartar tribe that inhabit the Russian province of Orenburg, on the S. side of the Ural. These Cossacs are descended from those of the Don; and are a valiant race. They profess the Greek religion; but there are dissenters from the established religion, whom the Russians called *Rokobukhi*, or Separatists, and who style themselves *Staroverkhi*, or Old Believers. These consider the service of the established church as profane, and have their own priests and ceremonies. The Uralian Cossacs are all enthusiasts for the ancient ritual, and prize their beards almost equal to their lives. A Russian officer having order a number of Cossac recruits to be publicly shaved in the town of Yaitik, in 1771, this wanton insult excited an insurrection, which was suppressed for a time; but, in 1773, the impetuous Pugatchef, having assumed the name of Peter III. appeared among them, and, taking advantage of this circumstance, roused them once more into open rebellion. This being suppressed by the defeat and execution of the impetuous, in order to extinguish all remembrance of this rebellion, the river Yaik was called the Ural; the Yaik Cossacs were denominated Uralian Cossacs; and the town of Yaitik was named Uralik. These Cossacs are very rich, in consequence of their fisheries in the Caspian Sea. Their principal fishery is for sturgeons and beluga, whose roe supplies large quantities of caviare; and the fish, chiefly salted and dried, afford a considerable article of consumption in the Russian empire.

URALSK, a town of Russia, in the government of Caucasus and province of Orenburg. It was formerly called Yaitik (see the preceding article), and is seated on the river Ural, 375 miles N.N.E. of Astracan. Long. 50. 10. E. Lat. 52. 0. N.

URANIENBURGH, once a magnificent castle of Denmark, in the island of Huen. It was built by Tycho Brahe, a celebrated astronomer, who called it Uranienburgh, or Castle of the Heavens, and here made his observations. It is now in ruins. Long. 12. 52. E. Lat. 55. 54. N.

URBANEA, a town of Italy, in the duchy of Urbino, with a bishop's see. It was built by Pope Urban VIII. on the river Metro, 12 miles S. of Urbino. Long. 12. 40. E. Lat. 43. 34. N.

URBANNA, a town of Virginia, on the river Rappahannock, 70 miles N.E. of Richmond.

URBINO, a duchy of Italy, in the Ecclesiastical State, 55 miles long and 45 broad; bounded on the N. by the gulf of Venice, on the S. by Perugia and Spoleto, on the E. by Ancona, and on the W. by Tuscany and Romagna. The air is not very wholesome, nor is the soil fertile.

URBINO, a town of Italy, capital of the duchy of Urbino, with a citadel, an archbishop's see, and a palace, where the dukes formerly resided. Great quantities of fine earthen ware are made here; and it is famous for being the birth-place of the illustrious painter Raphael. It was taken by the French in 1796. It is seated on a mountain, between the rivers Metro and Foglia, 18 miles S. of Rimini, 58 E. of Florence, and 120 N.E. of Rome. Long. 12. 40. E. Lat. 43. 46. N.

VREDEN, a town of Westphalia, in the bishopric of Munster, 26 miles W.N.W. of Munster, and 26 S.W. of Bentheim. Long. 7. 8. E. Lat. 52. 8. N.

URGANTZ, or **JURGANTZ**, a town of the country of the Turcomans, formerly a considerable place, four miles in cir-

cumference, but now in ruins, and no public buildings remain but a mosque. It is 240 miles E. of the Caspian Sea, and 70 S. of the lake Aral. Long. 60. 25. E. Lat. 40. 55. N.

URGEL, a town of Spain, in Catalonia, capital of a county of the same name, with a bishop's see. It is seated on the river Sagra, in a fertile plain, surrounded by mountains, planted with vineyards, 60 miles W. of Perpignan, and 75 N. by W. of Barcelona. Long. 1. 44. E. Lat. 42. 32. N.

URI, the most southern canton of Switzerland, and the fourth in rank. It is 30 miles long and 12 broad; bounded on the N. by the canton of Schweiz and the Lake of the Four Cantons, on the E. by the country of the Grisons and the canton of Glarus, on the S. by the bailiwicks of Italy, and on the W. by the cantons of Underwalden and Bern. See **SCHWEITZ**.

URMUND, a town of Westphalia, in the duchy of Juliers, 10 miles N.N.E. of Maastricht.

URSEL, a town of Germany, in the circle of Upper Rhine and county of Konigstein, five miles E.N.E. of Konigstein, and 18 N.E. of Mentz. Long. 8. 28. E. Lat. 50. 9. N.

URSEREN, a town of Switzerland, in the canton of Uri, situate on the Reufs, in a valley to which it gives name, 17 miles S.E. of Altorf. Long. 11. 20. E. Lat. 49. 8. N.

URSTIZ, Sr. a town of Switzerland, in the bishopric of Basle, capital of an extensive and populous though hilly bailiwick of the same name, in which steel is manufactured with great success. The town is indebted for its origin to a hermitage, built in the seventh century by St. Ursinus. It is seated on the Dubs, over which is a stone bridge, seven miles S. of Porentr.

USBEC TARTARY, a vast country of Western Tartary, bounded on the N. by the country of the Kalmucks, on the E. by Tibet, on the S. by Hindoostan, and on the W. by Persia and the Caspian Sea. These Tartars are divided into several tribes, governed by their respective khans, or princes. When under one sovereign, they were the most powerful of all the Tartarian nations. The principal khans pride themselves in being descended from Tamerlane, whose birth-place was the ancient city of Samarcand, the present capital of the country. The Usbeks, in their persons, are said to have better complexions and more engaging features than the Kalmucs. Their religion is Mahometanism; and they differ, in general, very little from the people of the northern provinces of Hindoostan.

USEDOM, an island of Prussian Pomerania, at the mouth of the river Oder, in the Baltic Sea, between which and the island of Wollin, is a passage called the Swin. It had formerly a considerable town of the same name, which was almost reduced to ashes in 1473. Long. 14. 11. E. Lat. 54. 6. N.

USERCHE, a town of France, in the department of Correze, seated on a steep craggy rock, at the foot of which flows the Vezere, 37 miles S.E. of Limoges, and 217 S. of Paris. Long. 1. 37. E. Lat. 45. 27. N.

USINGEN, a town of Germany, in the circle of Upper Rhine and principality of Nautau Weilburg, 22 miles N.E. of Mentz. Long. 8. 25. E. Lat. 50. 10. N.

USK, a town in Monmouthshire, with a market on Monday; seated on the river Usk, 12 miles S.W. of Monmouth, and 140 W. by N. of London. Long. 2. 56. W. Lat. 51. 41. N.

USSEL, a town of France, in the department of Correze, 32 miles N.E. of Tulle. Long. 2. 15. E. Lat. 45. 32. N.

USTANIO, a town of Italy, in the Cremonese, seated on the Oglio, 12 miles N.E. of Cremona. Long. 10. 8. E. Lat. 45. 17. N.

USTARTIZ, a town of France, in the department of

Lower Pyrenées, six miles S. of Bayonne. Long. 1. 30. W. Lat. 43. 23. N.

USTIUG, a town of Russia, in the government of Vollogda, and capital of the province of Veliki-Usting. It is seated on the Sukhona, 464 miles N.E. of Moscow. Long. 16. 30. E. Lat. 60. 56. N.

UTOXETER, a town in Staffordshire, with a market on Wednesday; seated on a rising ground, near the river Dove, 13 miles N.E. of Stafford, and 136 N.N.W. of London. Long. 1. 50. W. Lat. 53. 10. N.

UTRERA, a town of Spain, in the province of Seville, 20 miles S. of Seville. Long. 5. 20. W. Lat. 37. 12. N.

UTZNACH, a town of Switzerland, in a baliwic belonging to the cantons of Schwytz and Glarus. It was almost entirely burnt in 1762, but has since been elegantly rebuilt. It is three miles E. from the lake of Zurich, and 29 S.E. of the city of that name.

VURLA, a sea-port of Turkey in Asia, in Natolia, situate on the S. side of the gulf of Smyrna, on a bay to which it gives name, 21 miles W. of Smyrna. Long. 27. 58. E. Lat. 38. 27. N.

W

WAI

WAACKHAUSEN, a town of Lower Saxony, in the duchy of Bremen, 12 miles N. of Bremen.

WACHENHEIM, a town of Germany, in the palatinate of the Rhine, 15 miles W. of Mannheim, and 31 E. of Deux Ponts. Long. 8. 16. E. Lat. 49. 20. N.

WACHOVIA, a tract of land in North Carolina, situate between the rivers Dan and Yadkin, 10 miles S. of Pilot Mountain, in the county of Surry. It consists of 100,000 acres, purchased by the Moravians, in 1751, and named by them from an estate of Count Zinzendorf's in Austria. In 1755, by an act of assembly, it was made a separate parish, called Dobb's Parish, and it now contains several flourishing settlements, of which Salem is the principal.

WACHTENDONCK, a town of Prussian Guelderland, seated on a morass, on the river Niers, five miles S. of Gueeldres. Long. 6. 7. E. Lat. 51. 23. N.

WADSTENA, a town of Sweden, in the province of East Gothland, remarkable for its castle, built by Gustavas Vasa, in 1544, and inhabited by his son Magnus, who was assassinated. It is seated on the E. side of the lake Wetter, 160 miles S.W. of Stockholm. Long. 15. 37. E. Lat. 58. 18. N.

WAGENINGEN, a town of Dutch Guelderland, seated on the Leck, 10 miles N.W. of Nimeguen. Long. 5. 31. E. Lat. 52. 0. N.

WAGERIA, or WAGERLAND, a fertile territory in the duchy of Holstein, 20 miles in length, and 15 in breadth. Lubeck is the capital.

WAHREN, a town of Germany, in the duchy of Mecklenburg, seated on the lake Malcho, 10 miles S. of Malchin.

WAHLINGEN, a town of Suabia, in the duchy of Wurtemberg, seven miles E.N.E. of Stuttgart.

WAINFLEET, a town in Lincolnshire, with a market on Saturday. It is seated near the sea, in a fenny part of the country, and on the river Witham, 14 miles N.E. of

UXBRIDGE, a corporate town in Middlesex, with a market on Thursday. The Coln runs through it in two streams, and over the main stream is a stone bridge. A treaty was carried on here between Charles I. and the parliament, in 1644; and the house in which the plenipotentiaries met, is still called the Treaty House. Near this town are the remains of an ancient camp. Uxbridge is 15 miles W. by N. of London. Long. 0. 23. W. Lat. 51. 31. N.

UZEDA, a town of Spain, in New Castile, capital of a duchy of the same name, with a castle. It is seated on the Cogolludo, 20 miles N. by W. of Alcalá, and 26 N.N.E. of Madrid. Long. 3. 13. W. Lat. 40. 46. N.

UZEL, a town of France, in the department of the North Coast, 17 miles S.W. of St. Briceux. Long. 2. 52. W. Lat. 48. 16. N.

UZES, a town of France, in the department of Gard, seated in a country abounding in corn, oil, silk, and good wine, 12 miles N. of Nîmes, and 20 S.W. of Orange. Long. 4. 27. E. Lat. 44. 2. N.

WAL

Boston, and 130 N. by E. of London. Long. 0. 20. E. Lat. 53. 10. N.

WALTZEN, or WAITZ, a town of Hungary, with a bishop's see. A large annual fair is kept here. It has frequently been taken by the Turks, and retaken by the Imperialists. It is situate on the Danube, 72 miles E.S.E. of Preiburg. Long. 18. 38. E. Lat. 47. 29. N.

WALCOT, a village in Lincolnshire, on the borders of the fens, within one mile of Folkingham. It has a chalybeate spring, formerly much frequented.

WALCOUR, a town of the Austrian Netherlands, in the county of Namur, between the Meuse and Sambre. In 1615 it was entirely destroyed by fire. The French attempted to take it in 1689, but were defeated, and compelled to retire with great loss, by the Prince of Waldeck. It is seated on the Heura, 12 miles S. of Charleroy, and 27 S.W. of Namur. Long. 4. 30. E. Lat. 50. 10. N.

WALDBURGH, a town of Suabia, in a barony of the same name, 24 miles W. of Kempten. Long. 9. 50. E. Lat. 47. 40. N.

WALDECK, a principality of Germany, in the circle of Upper Rhine, 30 miles long and 20 broad; bounded on the E. and S. by Hesse-Cassel, and on the W. and N. by Westphalia. It is a mountainous country, covered with woods; and has mines of iron, copper, quicksilver, and alum.

WALDECK, a town of Germany, capital of a principality of the same name, with a castle, seated on the Steinbach, 25 miles W.S.W. of Cassel. Long. 9. 4. E. Lat. 51. 10. N.

WALDENBURG, a town of Upper Saxony, situate on the Muldaun. The old town of Waldenburg, which is directly opposite it on the other side of the Muldaun, is famous for its brown and white earthen ware. It is nine miles N. of Zwickau, and 44 W. of Dresden. Long. 12. 30. E. Lat. 50. 49. N.

WALDENBURG, or **WALLENBURG**, a town of Switzerland, in the canton of Basle, with a castle on a high rock. It is seated at the foot of Mount Jura, 15 miles S. of Basle, and 15 N.E. of Soleure. Long. 7. 35. E. Lat. 47. 22. N.

WALDKIRK, a town of Suabia, in Austrian Briggaw, and in an island formed by the river Elz, five miles from Friburg. Long. 8. 3. E. Lat. 48. 9. N.

WALDSCHUT, a strong town of Suabia, and one of the four Forest Towns, subject to the house of Austria. It is seated opposite the place where the Aar falls into the Rhine at the entrance of the Black Forest, eight miles N.E. of Lauffenburg, and 17 W. of Schaffhausen. Long. 8. 12. E. Lat. 47. 38. N.

WALDSTÄDTE, a name given to the Swiss cantons of Lucern, Uri, Schwitz, and Underwalden. It signifies *Forest Towns*; these cantons containing a great number of forests. This district must not be confounded with the Waldstädte, or Forest Towns of Suabia, which are Lauffenburg, Waldschut, Seckingen, and Rheinfelden.

WALDSTÄTTER SEE, or **LAKE OF THE FOUR CANTONS**, one of the finest lakes in Switzerland. It consists of three principal branches, called the lakes of Lucern, Schwitz, and Uri. The upper branch, or lake of Lucern, is in the form of a cross; the sides of which stretch from Kufnacht to Dullenwal, a village near Stantz. It is bordered toward the town by cultivated hills sloping gradually to the water, contrasted on the opposite side by an enormous mass of barren and craggy rocks; Mount Pilate, one of the highest mountains in Switzerland, rising boldly from the lake. Toward the E. of this branch, the lake contracts into a narrow creek, scarcely a mile across. Soon after, it again widens, and forms the second branch, or lake of Schwitz; on the W. side, the canton of Underwalden, on the E. that of Schwitz. Here the mountains are more lofty, and infinitely varied; some covered to the very summits with verdure, others perpendicular and craggy; here forming amphitheatres of wood; there jutting into the water in bold promontories. Near Brumen, commences the third branch, or lake of Uri, which takes a S.E. direction. It is deep and narrow, about nine miles long, bordered on both sides by rocks uncommonly wild and romantic, with forest of beech and pine growing down their sides to the very edge of the water.

WALHOF, a town of the duchy of Courland. In the year 1626 the Poles were defeated near this town by Gustavus, king of Sweden. It is 34 miles E. of Mittaw. Long. 24. 25. E. Lat. 56. 35. N.

WALKENREID, a town of Upper Saxony, in Thuringia, seated on the Sorge, 20 miles S.W. of Halberstadt. Long. 21. 5. E. Lat. 51. 33. N.

WALLENSTADT, a town of Switzerland, in the canton of Appenzel; incorporated into the bailiwick of Sargans, but enjoying many distinct privileges. It derives its existence from the passage of the merchandise transported from Germany, through the country of the Grisons, to Italy. The communication occasions the frequent resort of Italian merchants; and that language is understood by many of the inhabitants. This town is seated at the E. end of a lake of the same name, nine miles W. of Sargans, and 15 N.W. of Coire. Long. 9. 14. E. Lat. 47. 1. N.

WALLENSTADT, a lake of Switzerland, 12 miles long and two broad, bounded by high mountains, except to the E. and W. On the side of the canton of Glarus, the mountains are chiefly cultivated; enriched with wood or fine meadows; and studded with churches, cottages, and small villages; the Alps of Alarus rising behind, their tops covered with snow. On the other side, for the most part, the

rocks are grotesque, craggy, inaccessible, and perpendicular: but here and there a few cultivated necks of land are formed at the very edge of the lake, and at the bottom of these very rocks; exhibiting a beautiful contrast to the barrenness above and around them. Numberless waterfalls, occasioned by the melting of the snows, fall down the sides of the mountains from a very considerable height, and with an almost inconceivable variety. Through this lake flows the Mat, which, soon after, joining the Linth, forms the river Limmat.

WALLERSTEIN, a town of Suabia, with a castle belonging to the counts of Oettingen, six miles S.W. of Oettingen.

WALLINGFORD, a borough in Berkshire, with a market on Thursday and Saturday. It was once surrounded by a wall, and had a castle, now demolished, and four churches, of which one only is now in use. It is seated on the Thames, over which is a stone bridge, 14 miles N.W. of Reading, and 46 W. of London. Long. 1. 1. W. Lat. 51. 36. N.

WALLINGFORD, a town of the United States, in Connecticut, 13 miles N.E. of Newhaven.

WALNEY, an island on the coast of Lancashire. It is long and narrow, and serves as a bulwark to the hundred of Furness, against the waves of the Irish Sea.

WALPO, a town of Slavonia, capital of a county of the same name, with a castle. It is seated on the river Walpo, 20 miles W. of Ebeck, and 110 S. of Buda. Long. 19. 22. E. Lat. 45. 35. N.

WALPOLE (Horace), earl of Orford, was the youngest son of the celebrated Sir Robert Walpole, afterwards earl of Orford, by his first wife, Catherine, daughter of Robert Shorter, esq. of Bybrook in Kent. He was born 1716; and was educated, first at Eton school, and afterwards at Cambridge. At Eton he formed an intimate acquaintance with the celebrated poet Gray; and they went together on the tour of Europe, in the years 1739, 1740, and 1741. Unhappily they had a dispute in the course of their travels, which produced a separation.

Mr. Walpole was able to make a splendid figure during the remainder of his destined course; but poor Gray, after the separation, was obliged to observe a very severe economy. "This difference arose from the difference of their tempers: the latter being, from his earliest years, curious, pensive, and philosophical; the former, gay, lively, and inconsiderate. This, therefore, occasioned their separation at Reggio. Mr. Gray went before him to Venice; and staying there till he could find means of returning to England, he made the best of his way home, repassing the Alps, and following almost the same route, through France, which he had before gone to Italy. In justice to the memory of so respectable a friend, Mr. Walpole (says Mr. Mason, *Life of Gray*, 4to. p. 41) enjoins me to charge him with the chief blame in their quarrel, confessing that more attention, complaisance, and deference, to a warm friendship, and superior judgment and prudence, might have prevented a rupture that gave much uneasiness to them both, and a lasting concern to the survivor; though in the year 1744 a reconciliation was effected between them, by a lady who wished well to both parties."—This event took place after their return to England; but the wound in their friendship left a scar that never was totally effaced.

We do not, indeed, think that Horace Walpole and Mr. Gray were formed, either by nature or by habits, to continue long in a state of intimate friendship. Gray appears to have been a man of the purest moral principles, a friend to religion, pensive, and at least sufficiently conscious of his in-

tellectual powers and intellectual attainments. Walpole's morality was certainly of a looser kind; he seems to have had no religion; he was often unreasonably gay; and to an equal share of intellectual pride, though without equal reason, he added the pride of birth. It can therefore excite no surprise that a man of Gray's independent spirit could not bear the supercilious freaks of such a character.

Mr. Walpole was nominated to represent the city of Norwich, when his father visited it July 23, 1733, having acquired consequence, not only as the son of the minister, but as having attended the Prince of Orange to England in that year. He was chosen member for Collington, in Cornwall, in the parliament which met June 25th, 1741; was a second time in parliament as representative for Castle-Rising, in Norfolk, in 1747; and for King's Lynn in 1754 and 1761; and at the expiration of that parliament he finally retired from the stage of politics, and confined himself wholly to literary pursuits. He held to his death the office of usher of his Majesty's exchequer, comptroller of the pipe, and clerk of the escheats. Upon the death of his nephew, George, third earl of Orford, in 1791, he succeeded to the title and estates; but that event made no little alteration in his mode of living, that we know not whether he ever took his seat in the house of peers. During almost the whole course of his life he was the victim of the gout, which at last reduced him to a cripple; but it never impaired his faculties; and, to the very moment of death, his understanding seemed to bid defiance to the shock of nature. He died at his house in Berkeley-square, in 1796, having just entered his 80th year; and was interred in the family vault at Houghton, in a private manner, agreeably to his particular directions.

Horace, lord Orford, was never married, and, by one of his biographers, his chief mistress through life is said to have been the muse. It is certain that he devoted the greater part of his life to *belles-lettres* and *virtu*, though he ridiculously affected, in his letters to his friends, to despise learning and learned men, for which he was very properly reprimanded both by Gray and Hume. It was an affectation peculiarly absurd in him, who was constantly publishing something, and who wrote with uncommon acrimony against all who presumed to call in question the fidelity of the picture which he had drawn of Richard III. or indeed to controvert any of his opinions. Hence his antipathy to Johnson, because he was a tory, a Christian, and a rigid moralist; whilst he himself was a whig, an infidel, and such a moralist as could retail, without blushing, all the scandalous anecdotes, whether true or false, of that august family, from whom he acknowledged his whole fortune to be derived. He had, indeed, another reason for disliking Johnson. Lord Orford shone in conversation, and surpassed all his contemporaries in that kind of talk, which, without dazzling by its wit, always delighted: while Johnson, when roused, knocked down, as by a flash of lightning, his lordship, and every one else who had the confidence before him to talk profanely. Johnson's wit was original: Lord Orford's consisted of ludicrous stories, and of literary and political anecdotes. His works, of which by far the most valuable part has long been in the hands of the public, were collected in 1798, and published in five volumes, 4to. They resemble his conversation, being rather amusing than profound or instructing.

WALPOLE, a town of the United States, in New Hampshire, situate on Connecticut River, 108 miles W. of Portsmouth.

WALLSALL, a corporate town in Staffordshire, with a market on Tuesday and Friday. It has several manu-

factures in iron, such as nails, bridlebits, stirrups, spurs, buckles, &c. and is governed by a mayor. It is seated on the side of a hill, 15 miles S. of Stafford, and 116 N.W. of London. Long. 1. 56. W. Lat. 52. 46. N.

WALTHAM, North, a town in Norfolk, with a market on Tuesday, 10 miles E. of Norwich, and 125 N.N.E. of London. Long. 1. 31. E. Lat. 52. 40. N.

WALTHAM, or BISHOP'S WALTHAM, a town in Hampshire, with a market on Friday. It obtained this last name from a palace of the Bishop of Winchester, once situate here; and here are the ruins of an abbey, called by the country people, the Bishop's Abbey. The statute 9 George I. commonly called the Waltham Black Act, was occasioned by a party of the inhabitants of this town, who had retired to a reclusel dell in the New Forest, whence, being in disguise, or with their faces blacked, they issued in the night, committing great depredations, killing deer, sheep, &c. for their subsistence. Hence they were called the Waltham Blacks. The place of their retreat was accessible only by a subterranean passage: they dressed like foresters, and the crofsbow was their weapon. They were dispersed, at last, by the activity of the neighbouring gentlemen. Waltham is eight miles S. of Winchester, and 65 W. by S. of London. Long. 1. 20. W. Lat. 50. 57. N.

WALTHAM ABBEY, or WALTHAM HOLY CROSS, a town in Essex, with a market on Tuesday. It received its second appellation from a holy cross, pretended to have been miraculously conveyed here; and it obtained its first name from a magnificent abbey, founded, in honour of this cross, by King Harold, some fragments of which remain. Harold, and his two brothers, after the battle of Hastings, were interred here. A plain stone is said to have been laid over him, with this inscription, Haroldus Infelix; and a stone coffin, supposed to have been his, was discovered in the reign of Elizabeth. At Waltham Abbey are some gunpowder mills, and some manufactures of printed linsens and pins. It is seated on the river Lea, which here forms several islands, 12 miles N. by E. of London. Long. 0. 3. E. Lat. 51. 42. N.

WALTHAM CROSS, or WEST WALTHAM, a village in Hertfordshire, which takes its first appellation from a cross erected here by Edward I. in honour of his queen Eleanor; and has its second name from its situation W. of Waltham Abbey. It is seated near the river Lea, 12 miles N. by E. of London.

WALTHAM ON THE WOULD, a town of Liceshire, with a market on Thursday, almost disused. It is 19 miles N.E. of Leicester, and 113 N. by W. of London. Long. 0. 46. W. Lat. 52. 51. N.

WALTINBRUCH, a town of Suabia, in the duchy of Wurtemberg, seated on the river Aich.

WANDERSLEBEN, a town of Upper Saxony, in the principality of Altenburg, nine miles S.W. of Erfurt.

WANDIWASH, a town of Hindoostan, in the Carnatic, 27 miles S.S.E. of Arcot, and 38 N.N.W. of Pondicherry.

WANGEN, an imperial town of Suabia. The inhabitants are papists, and carry on a great trade in paper and hardware. It is seated on the Overarg, 17 miles N.E. of Lindau, and 30. E. of Constance. Long. 9. 56. E. Lat. 47. 38. N.

WANGEN, a town of Switzerland, capital of the bailiwick of Wangen, in Upper Argau. It is seated on the Aar, 10 miles E. of Soleure, and 23 N.N.E. of Bern. Long. 7. 30. E. Lat. 47. 16. N.

WANGEN, a town of France, in the department of Lower Rhine, seated on the side of a mountain, and sur-

rounded by a wall. It is eight miles N.W. of Strasburg. Long. 7. 42. E. Lat. 48. 38. N.

WANGFRIED, a town of Germany, in the circle of Upper Rhine and principality of Hesse Rhinfelds, situate on the Werre, 13 Miles W. of Mulhausen, and 30 S.S.E. of Cassel. Long. 9. 58. E. Lat. 51. 5. N.

WANTAGE, a town of Berkshire, with a market on Saturday. It is famous for being the birth-place of King Alfred, and is seated on a branch of the Ock, 12 miles S. by W. of Oxford, and 60 W. of London. Long. 1. 16. E. Lat. 51. 35. N.

WANTZENAU, a town of France, in the department of Lower Rhine. It was taken by the Austrians in October, 1793. It is six miles N. of Strasburg.

WANZLEBEN, a town of Lower Saxony, in the principality of Magdeburg, 10 miles W.S.W. of Magdeburg.

WARADIN, GREAT, a strong town of Upper Hungary, capital of a county of the same name, with a citadel, and a bishop's see. It was taken by the Turks in 1669, but the Austrians retook it in 1692. It is seated on the Sebes Keres, 117 miles N.E. of Peterwaradin, and 150 E.S.E. of Buda. Long. 21. 50. E. Lat. 47. 5. N.

WARADIN, LITTLE, a strong town of Slavonia, capital of a county of the same name. It is seated on the Drave, 28 miles W.S.W. of Kamifca, and 34 N. by E. of Zagrad. Long. 16. 15. E. Lat. 46. 48. N.

WARANGOLE (the Ainkill of Persia), once the capital of Golconda, in the Deccan of Hindoostan. The site of it is still evident from the old ramparts, which are amazingly extensive. A modern fortress is constructed within it, and is in the possession of the Nizam of the Deccan. Its 62 miles N.N.E. of Hydrabad. Long. 79. 30. E. Lat. 18. 6. N.

WARBURG, a sea-port of Sweden, in the province of Halland, with a castle, 30 miles S. of Gottenburg. Long. 11. 46. E. Lat. 57. 12. N.

WARBURG, a town of Germany, in the bishopric of Paderborn, formerly imperial and hanseatic. It is seated on the Dymel, 20 miles S.E. of Paderborn. Long. 9. 19. E. Lat. 51. 33. N.

WARDE, a town of Denmark, in North Jutland, near the mouth of a river of the same name, 15 miles N. of Ripen.

WARDHUY, a sea-port of Danish Lapland, on a small island of the same name, near the continent. It has an old fort, where the governor resides, and is 120 miles S.E. of the North Cape. Long. 31. 6. E. Lat. 70. 22. N.

WARBRIDGE, or WARDBRIDGE, a town in Cornwall, with a market on Saturday. It has a bridge over the river Camel, which is the handsomest in the county, and supported by 20 arches. It is 13 miles S.W. of Camelford, and 241 W. by S. of London. Long. 5. 9. W. Lat. 50. 36. N.

WAREHAM, a borough and sea-port in Dorsetshire, with a market on Saturday. It is seated between the Frome and Piddle, at their fall into Lochford Lake, the W. part of Poole harbour. It had several churches, now reduced to three; also a wall and castle; but has suffered much by the various turns of fortune, and the harbour is almost choked up. In 1762, two thirds of the town was destroyed by fire, but has been rebuilt. Above the bridge, over the Frome, is a good salmon fishery; and in the neighbourhood fine tobacco-pipe clay is dug, of which nearly 10,000 tons are annually exported to London, Liverpool, &c. Wareham is governed by a mayor, sends two members to parlia-

ment, and is 20 miles E. of Dorchester, and 114 W. by S. of London. Long. 2. 16. W. Lat. 50. 43. N.

WARKA, a town of Poland, in the palatinate of Masovia, seated on the river Pilä, Long. 21. 15. E. Lat. 51. 35. N.

WARMINSTER, a town in Wiltshire, with a market on Saturday, seated on the source of the Wilybourn, 22 miles N.W. of Salisbury, and 97 W. by S. of London. Long. 2. 15. W. Lat. 51. 11. N.

WARNEMUNDE, a sea-port of Germany, in the duchy of Mecklenburg. The Swedes had a house here to take toll; but, in 1710, when their affairs were upon the decline, the Duke of Mecklenburg put a garrison in it. It is seated on the Baltic, at the mouth of the Warne, 26 miles N.E. of Wismar. Long. 12. 26. E. Lat. 50. 4. N.

WARNETON, a town of Austrian Flanders, on the river Lis, eight miles N.W. of Lille. Long. 3. 4. E. Lat. 50. 45. N.

WARRINGTON, a town in Lancashire, with a market on Wednesday, and large manufactures of sailcloth, facking, cotton, pias, and glass. It is seated on the Mersey, over which is a bridge, 13 miles E. of Liverpool, and 183 N.N.W. of London. Long. 24. 5. W. Lat. 53. 23. N.

WARRIORE, a town of Hindoostan, in the Carnatic, 32 miles N.N.E. of Tanjore, and 55 S.S.W. of Pondicherry.

WARTA, a town of Great Poland, in the palatinate of Siradia, seated on the river Warta, 12 miles N. of Siradia, and 57 S.E. of Pofnania. Long. 18. 0. E. Lat. 51. 41. N.

WARTENBURG, a town of Silesia, capital of a lordship of the same name. In 1742 it was entirely reduced to ashes, except the castle. It is 22 miles N.E. of Breslaw. Long. 17. 42. E. Lat. 51. 10. N.

WARTON (Joseph, D. D.), was born either towards the end of the year 1721, or in the beginning of the year 1722. He was the eldest son of Thomas Warton, B. D. who had been fellow of Magdalen College, Oxford; poetry professor from the year 1718 to 1728, and vicar of Balinghoke in Hampshire, and of Cobham in Surrey. Where the subject of this memoir was born we have not learned, though, were we to hazard a conjecture, we would say that it was in Oxford, as his father probably resided in that city during his professorship.

Our knowledge of the private history of Dr. Warton is indeed extremely limited. We do not even know at what school, or in what college, he was educated; though it was probably at Winchester school, and certainly in some of the colleges in the university of Oxford. For many years, he was successively under and upper master of Winchester college; but resigned the last of these offices when he found the infirmities of age coming upon him; and was succeeded by Dr. Goddard, the present excellent master. He was likewise prebendary of the cathedral church of Winchester, and rector of Wickham in Hampshire, where he died, aged 78.

His publications are few, but valuable. A small collection of poems without a name, was the first of them, and contained the Ode to Fancy, which has been so much and so deservedly admired. They were all of them afterwards printed in Doddsley's Collection. He was also a considerable contributor to the Adventurer, published by Dr. Hawkesworth; and all the papers which contain criticisms on Shakspeare were written by him and his brother Thomas Warton, the subject of the next article.

The first volume of his Essay on the Life and Writings of Pope was published, had passed through several editions,

and an interval of between twenty and thirty years had elapsed before he gave a second volume of that elegant and instructive work to the world. He had not only meditated, but had collected materials for a literary history of the age of Leo X.; and proposals were actually in circulation for a work of that kind; but it is probable that the duties of his station did not leave him the necessary leisure for an undertaking which required years of seclusion and independence. His last and late work, which he undertook for the booksellers at a very advanced age, was an edition of Pope's Works, that has not altogether satisfied the public expectation. He retained, with great propriety indeed, many of the notes of Warburton; but is severely reprehended by the author of the Pursuits of Literature for suppressing the name of that prelate on his title-page, or including it only, as subordinate to his own, in the general expression *others*.

Dr. Warton was cheerful in his temper, convivial in his disposition, of an elegant taste and lively imagination: with a large portion of scholarship, and a very general knowledge of the belles-lettres of Europe, it may be presumed that Dr. Warton possessed, beyond most men, the power of enlightening classical society. He was the intimate friend of Dr. Johnson; was seen at the parties of Mrs. Montague, as well as at the table of Sir Joshua Reynolds, and was an original member of the Literary Club. He possessed a liberal mind, a generous disposition, and a benevolent heart. He was not only admired for his talents, and his knowledge, but was beloved for those qualities which are the best gifts in this imperfect state.

WARTON (Thomas), the brother of the preceding, was born in the year 1728. He received, as we have reason to believe, the first part of his education at Winchester; and at the age of 16 was entered a commoner of Trinity College, Oxford, under the tuition of Mr. Geering.

He began his poetical career at an early age. In 1745, he published five pastoral eclogues, in which are beautifully described the miseries of war to which the shepherds of Germany were exposed. Not long after, in the year 1748, he had full scope afforded for the exertion of his genius. It is well known that Jacobite principles were suspected to prevail in the university of Oxford about the time of the rebellion in the year 1745. Soon after its suppression, the drunkenness and folly of some young men gave offence to the court, in consequence of which a prosecution was instituted in the court of King's Bench, and a stigma was fixed on the vice-chancellor and some other heads of colleges in Oxford. Whilst this affair was the general subject of conversation, Mr. Mason published his *Isis*, an elegy, in which he adverts to the above-mentioned circumstances. In answer to this poem, Mr. Warton, encouraged by Dr. Hurd, the president of his college, published, in 1749, *The Triumph of Isis*, which excelled more in many expostulation and dignity than the poem that produced it did in neatness and elegance. With great poetical warmth, and a judicious selection of circumstances, he characterises the eminent men who had been educated in Oxford, and draws a striking and animated portrait of Dr. King, the celebrated public orator of that time. The whole poem shews the early maturity of his genius, and is finished with happy diligence.

In the year 1751 he succeeded to a fellowship of his college, and was thus placed in a situation easy and independent, and particularly congenial with his habits of retirement and study. In 1753 appeared his *Observations on The Faery Queene of Spenser*, in 8vo, a work which he corrected, enlarged, and republished, in two volumes crown octavo, in the year 1762. He sent a copy of the first edition

to Dr. Johnson, who, in a letter to him upon the subject, expressed this handsome compliment: "I now pay you a very honest acknowledgement for the advancement of the literature of our native country; you have flown to all, who shall hereafter attempt the study of ancient authors, the way to success, by directing them to the perusal of the books which these authors had read."

In 1754 Dr. Johnson visited Oxford for the first time after he had quitted residence there. Much of his time was spent with Mr. Warton; and there appeared to have been a considerable degree of confidential intercourse between them upon literary subjects, and particularly on their own works. A pleasing account of this visit was communicated by Mr. Warton to Mr. Boswell, afterwards inserted in his *Life of Johnson*.

In 1755 Mr. Warton exerted himself to procure for his friend the degree of master of arts by diploma from the university of Oxford; an honour which Johnson esteemed of great importance to grace the title-page of his dictionary which he was about to publish. In 1756 Mr. Warton was elected professor of poetry, which office he held for the usual term of ten years. His lectures were remarkable for elegance of diction and justness of observation. One of them, on the subject of pastoral poetry, was afterwards prefixed to his edition of Theocritus. In 1758 he contributed to and assisted Dr. Johnson in the subscription to his edition of Shakespeare, and furnished him with some valuable notes. The doctor remarks, in a letter to him, when soliciting his further aid, "It will be reputable to my work, and suitable to your professorship, to have something of yours in my notes."

From the Clarendon press, in the year 1766, he published *Anthologie Græcæ*, a Constantino Cephalâ condita, *Libri tres*, in two vols. 12mo. He concludes the learned and classical preface to this work, which is replete with accurate remarks on the Greek epigram, in the following words, which mark this publication for his own: "*Vereor ut hæcenus, in plexendis florum corollis otium nimis longum pertraxerim. Proximè sequetur, cui nunc omnes operas et vires intendo Theocritus. Interea quæ promulgidum convivii Lectoribus meis elegantias hæcæ vetustatis eruditæ propino.*"

In 1770 the academical press produced his *Theocritus*, in two vols. 8vo. He undertook this work by the advice of Judge Blackstone, then fellow of All-Souls College, and an ardent promoter of every publication that was likely to do credit to the Clarendon press. This elaborate publication reflects no small credit on the learning, diligence, and taste of the editor.

In 1771 he was elected a fellow of the Antiquarian Society, and was presented by the Earl of Lichfield to the small living of Kiddington, in Oxfordshire, which he held till his death. He likewise in this year published an improved account of "*The Life of Sir Thomas Pope*, Founder of Trinity College, Oxford. In composing these memoirs, he bestowed much labour and research, and shewed great judgment in the arrangement of his materials. But possibly, in his ardour to pay a debt of gratitude, he has not sufficiently considered what was due to his own fame. The same strength of description and vigour of remark would have better suited the life of some eminently distinguished character, and extended the reputation of the author as a biographer beyond the circle of those academical readers who are influenced by the same feelings of veneration, respect, and gratitude, which prompted Mr. Warton to compose this work. The preface contains some excellent remarks on biographical writing.

The plan for a history of English poetry was laid by Pope, enlarged by Gray: but to bring an original plan nearly to a completion was reserved for the perseverance of Warton. In 1774 appeared his first volume; in 1778, the second and third; which brings the narrative down to the commencement of the reign of Elizabeth in 1581. This work displays the most singular combination of extraordinary talents and attainments. It unites the deep and minute researches of the antiquary with the elegance of the classical scholar and the skill of the practised writer. The style is vigorous and manly; the observations acute and just; and the views of the subject are extensive and accurate.

In 1777 he collected his poems into an octavo volume, containing miscellaneous pieces, odes, and sonnets. This publication may be considered in some measure original; there being only seven pieces that had before appeared, and near three times that number which were then printed for the first time.

In vindication of the opinion he had given in his second volume of *The History of Poetry*, relative to the ingenious attempt of Chatterton to impose upon the public, he produced, in 1782, *An Enquiry into the Authenticity of the Poems attributed to Rowley*. In this excellent pamphlet the principles of true criticism are laid down, an appeal is properly made to the internal evidence of the poems; and upon these grounds it is proved, in the most satisfactory manner, that they could not have been written by a monk of the fourteenth century.

The year 1785 brought him those distinctions which were no less honourable to those who conferred than to him who received them. He was appointed poet-laureat on the death of Whitehead, and elected Camden professor of ancient history on the resignation of Dr. Scott. His inauguration-lecture was delivered in a clear and impressive manner from the professorial chair. It contained excellent observations on the Latin historians, and was written in a strong, periphrastic, and classical style. In his odes, the vigour and brilliancy of his fancy were not prostituted to an insipid train of courtly compliments; each presents an elegant specimen of descriptive poetry, and as all of them have only a slight relation to the particular occasion on which they were written, and have always a view to some particular and interesting subject, they will be perused with pleasure as long as this species of composition is admired.

He made occasional journeys to London to attend the Literary Club, of which he was some years a member; and to visit his friends, particularly Sir Joshua Reynolds. At his house he was sure to meet persons remarkable for fashion, elegance, and taste.

His last publication, except his official odes, consisted of Milton's smaller poems. A quarto edition appeared in 1790, with corrections and additions. The great object of these notes is to explain the allusions of Milton, to trace his imitations, and to illustrate his beauties.

Until he reached his sixty-second year, he continued to enjoy vigorous and uninterrupted health. On being seized with the gout, he went to Bath, and flattered himself, on his return to college, that he was in a fair way of recovery. But the change that had taken place in his constitution was visible to his friends. On Thursday, May the 20th, 1790, he passed the evening in the common room, and was for some time more cheerful than usual. Between ten and eleven o'clock he was struck with the palsy, and continued insensible till his death, which happened the next day at two o'clock. On the 27th, his remains were interred in the college chapel with the most distinguished academical ho-

nours. The inscription upon the flat stone which is placed over his grave contains only an enumeration of his preferences.

The following is a list of Mr. Warton's works: 1. "Five Pastoral Eclogues," 4to. 1745. Reprinted in *Pearch's Collection of Poems*. 2. "The Pleasures of Melancholy," written in 1745; first printed in *Dodley's Collection*, and afterwards in the *Collection of Mr. Warton's Poems*. 3. "Progress of Discontent," written in 1746. First printed in the *Student*, a periodical paper. 4. "The Triumph of Isis, a Poem," 4to. 1750. 5. "Newmarket, a Satire," folio, 1751. 6. "Ode for Music," performed at the theatre in Oxford, 1751. 7. "Observations on the Faerie Queene of Spenser," 8vo. 1754. 8. "Inscriptionum Metricarum Dilectus," 4to. 1758. 9. "A Description of the City, College, and Cathedral, of Winchester," 8vo. no date. 10. "The Life of Sir Thomas Pope," in the 5th volume of the *Biographia Britannica*, republished in 1772. 11. "The Life and literary Remains of Ralph Bathurst, M.D. Dean of Wells, and President of Trinity College in Oxford," 1761. 12. "A Companion to the Guide, and a Guide to the Companion," 12mo, 1762. 13. "The Oxford Sausage," in which are several Poems by Warton. 14. "Anthologie Græcæ a Constantino Cephala conditæ Libri tres," 2 tom. 1766. 15. "Theocriti Syracusii quæ supersunt, cum Scholiis Græcis," 8cc. 2 tom. 4to. 1770. 16. "History of English Poetry, from the Cloze of the 11th to the Commencement of the 18th Century," 4to. vol. I. 1774.; vol. II. 1778.; vol. III. 1781. 17. "Poems," 8vo. 1777. 18. "Specimen of a History of Oxfordshire," 1783. 19. "An Enquiry into the Authenticity of the Poems attributed to Thomas Rowley," 8vo. 1782. 20. "Verses on Sir J. Reynolds's painted Window in New College Chapel," 4to. 1782. 21. "Poems on several Occasions, by John Milton, with Notes critical and explanatory," 8vo. 1785.

WARWICK, a town of the state of Rhode Island, the chief town of Kent County. It is situate at the head of Narraganset Bay, eight miles S. of Providence.

WARWICK, a town of Maryland, in Cecil County on the east shore of Cheapeake Bay, 57 miles S.W. of Philadelphia.

WARWICKSHIRE, a county of England, 47 miles long and 30 broad; bounded at its N. extremity by a point of Derbyshire, on the N.W. by Staffordshire, on the N.E. by Leicestershire, on the W. by Worcestershire, on the E. by Northamptonshire, on the S.W. by Gloucestershire, and on the S.E. by Oxfordshire. It lies partly in the diocese of Lichfield and Coventry, and partly in that of Worcester; contains four hundreds and one liberty, one city, 12 market towns, and 158 parishes; and sends six members to parliament. The air is very mild, pleasant, and healthy. The north part, called the Woodlands, is divided from the south, called the Feldon, by the river Avon; and the soil of both is rich and fertile. It produces corn, malt, wood, wool, cheese, coal, iron, and limestone. The principal rivers are the Avon, Tame, and Arrow. The capital is Warwick, but Birmingham is the largest town.

WASHING-MACHINE, an invention calculated to render more expeditious and effectual the necessary periodical operation of cleansing family linen, with the help of soap and alkaline solutions. Many of these have been invented, though few are free from some objection or other. We shall only, therefore, describe (from the *Domestic Encyclopedia*) a washing machine that has lately been invented in Germany by M. M. Fischer and Kerzig; and which promises to be superior to any similar contrivance hitherto suggested.

In Pl. 54. fig. 1. is a section of the washing cylinder, with its 16 ladles, projecting four inches; but of these ladles only 13 E

4 jut out internally, as represented by the dotted line *b, b, b, b*, *c*, the iron roller, which is on the outside, fixed to the bottom of the cylinder, by means of an iron cross at *d, d, d, d*, with screws or nails: it rests on the beam *e*, so as to be upheld in the four excavated columns or posts *f, f, f, f*, by the lever *g*, and to be either raised or lowered, and afterwards secured by the pins *h, h*, according to the greater or less depth of water: *i*, the cistern, at the sides of which the four posts are firmly inserted.

Fig. 2, is a plan or bird's-eye view of the machine. The laths between the ladies may be here distinctly seen, together with the roller *c, c*, as it rests on the beam or supporter *e, e, e, e*, and is secured by a cap, *K*: *l*, the boarded floor above the cistern or reservoir of water, on which the person stands, when the cylinder is to be placed higher or lower.

By means of this excellent contrivance, we understand from the inventors, by whom it was first used for cleansing the felts in an extensive paper-mill, that from 14 to 18 shirts may be completely washed within one hour; and that the friction is far less than in performing that operation by the hand; while the foul water is not suffered to flow back into the linen, but is continually renewed. If table-cloths, &c. happen to be greasy, they must be whirled round in the machine for the space of from 20 to 30 minutes; when it will be necessary to take them out; and, after rubbing them well with soap, to expose them again to the action of the engine for half an hour, when they will be found thoroughly cleaned. Fine linen may be inclosed in a bag, and washed in a similar manner, so as to prevent it from being injured by friction. There are, however, two points which ought to be strictly attended to; namely, the agitation of the water should not be too violent; and a sufficient quantity of foul linen must be thrown in at a time, in order to amount to such weight as will cause it to descend, after having been carried to the uppermost part of the cylinder. The only obstacle to the general introduction of this machine is, that it cannot be adopted in those situations which are not provided with a current or stream of water to work it; but, wherever a brook or rivulet occurs, such apparatus will be found highly serviceable in work-houses, great schools, prisons, and hospitals, not less than in private families; as 200 shirts may be washed by one person in the space of 12 hours. It may be erected in a mill-reach, so as to be set in motion by the immediate pressure of the water; or by connecting its mechanism with the main cylinder of the water-wheel.

WASHINGTON (George), whose name is likely to live as long as that of any monarch, was born on the 11th of February, 1732, in the parish of Washington, Virginia. He was descended from an ancient family in Cheshire, of which a branch had been established in Virginia about the middle of the 17th century. We are not acquainted with any remarkable circumstances of his education or his early youth; and we should not indeed expect any marks of that disorderly prematureness of talent, which is so often fallacious, in a character whose distinguishing praise was to be regular and natural. His classical instruction was probably small, such as the private tutor of a Virginian country gentleman could at that period have imparted; and if his opportunities of information had been more favourable, the time was too short to profit by them. Before he was twenty he was appointed a major in the colonial militia, and he had very early occasion to display those political and military talents, of which the exertions on a greater theatre have since made his name so famous throughout the world.

The plenipotentiaries who framed the treaty of Aix-la-Chapelle, by leaving the boundaries of the British and French territories in North America unfixed, had sown the seeds of

a new war, at the moment when they concluded a peace. The limits of Canada and Louisiana, negligently described in vague language by the treaties of Utrecht and Aix-la-Chapelle, because the greater part of these vast countries was then an impenetrable wilderness, furnished a motive, or a pretext, for one of the most successful, but one of the most bloody and wasteful wars in which Great Britain had ever been engaged.

In the disputes which arose between the French and English officers on this subject, Major Washington was employed by the governor of Virginia, in a negotiation with the French governor of Fort du Quebec (now Pittsburgh), who threatened the English frontiers with a body of French and their Indian allies. He succeeded in averting the invasion; but hostilities becoming inevitable, he was in the next year appointed lieutenant-colonel of a regiment raised by the colony for its own defence; to the command of which he soon after succeeded. The expedition of Braddock followed in the year 1755; of which the fatal issue is too well known to require being described by us. Colonel Washington served in that expedition only as a volunteer; but such was the general confidence in his talents, that he may be said to have conducted the retreat. Several British officers are still alive who remember the calmness and intrepidity which he shewed in that difficult situation, and the voluntary obedience which was so cheerfully paid by the whole army to his superior mind. After having acted a distinguished part in a subsequent and more successful expedition to the Ohio, he was obliged by ill health, in the year 1758, to resign his military situation. The sixteen years which followed of the life of Washington supply few materials for the biographer. Having married Mrs. Custis, a Virginian lady of amiable character and respectable connections, he settled at his beautiful seat of Mount Vernon, of which we have had so many descriptions; where, with the exception of such attendance as was required by his duties as a magistrate and a member of the assembly, his time was occupied by his domestic enjoyments, and the cultivation of his estate, in a manner well suited to the tranquillity of his pure and unambitious mind. At the end of this period he was called by the voice of his country from this state of calm and secure though unostentatious happiness.

For almost half a century symptoms of disaffection to the mother-country had been so visible in the New England provinces, that so early as 1734 the celebrated Bishop Berkeley had predicted a total separation of North America from Great Britain. That prelate, when a private clergyman, had lived three years in Rhode Island, and was an attentive and sagacious observer of the manners and principles of the people, among whom he perceived the old leaven of their forefathers fermenting even then with great violence. The middle and southern provinces, however, were more loyal, and their influence, together with perpetual dread of the French before the peace of 1763, put off the separation to a more distant day than that at which we have reason to believe, the bishop expected it to take place. Virginia, the most loyal of all the colonies, had long been in the habit of calling itself, with a kind of proud pre-eminence, *his Majesty's ancient dominion*; and it was with some difficulty that the demagogues of New England could gain over that province when the time arrived for effecting their long-meditated revolt. At last, however, they succeeded; and we find Mr. Washington as a delegate from Virginia in the Congress which met at Philadelphia on the 26th of October, 1774. As no American united in so high a degree as he did, military experience with respectability of character, he was appointed to the command of the army which had assembled in the New England provinces, to hold in check the British army which was then encamped under General Gage at Boston.

At this period there is some reason to believe that neither Mr. Washington nor his constituents entered heartily into the views of the New Englanders; but afraid lest the army of those rebellious fanatics, after shaking off the yoke of Great Britain, might give law to the continent, he took upon himself the command of that army in the month of July, 1775. To detail his conduct in the years which followed, would be to relate the history of the American war, which has been already related in a great variety of ways. Within a very short period after the declaration of independence, the affairs of America were in a condition so desperate, that perhaps nothing but the peculiar character of Washington's genius could have retrieved them. Activity was the policy of invaders. In the field of battle the superiority of a disciplined army is displayed. But delay was the wisdom of a country defended by undisciplined soldiers against an enemy who must be more exhausted by time than he could be weakened by defeat. It required the consummate prudence, the calm wisdom, the inflexible firmness, the moderate and well-balanced temper of Washington to embrace such a plan of policy, and to persevere in it: to resist the temptations of enterprise; to fix the confidence of his soldiers without the attraction of victory; to support the spirit of the army and the people amidst those slow and cautious plans of defensive warfare which are more dispiriting than defeat itself; to contain his own ambition and the impetuosity of his troops; to endure temporary obscurity for the salvation of his country, and for the attainment of solid and immortal glory; and to suffer even temporary reproach and obloquy, supported by the approbation of his own conscience and the applause of that small number of wise men, whose praise is an earnest of the admiration and gratitude of posterity. Victorious generals easily acquire the confidence of their army. Theirs, however, is a confidence in the *fortune* of their general. That of Washington's army was a confidence in his *wisdom*. Victory gives spirit to cowards, and even the agitations of defeat sometimes impart a courage of despair. Courage is inspired by success, and it may be stimulated to desperate exertion even by calamity; but it is generally palsied by inactivity.—A system of cautious defence is the severest trial of human fortitude; and by this test the firmness of Washington was tried. It must not, however, be concealed, that some of the British commanders gave him advantages, which he surely did not expect; for more than once, as it appears to us, they had it in their power to annihilate his army, merely by following up their victories. The issue of the contest is known.

Much has been said by the British and American democrats of the magnanimity of Washington during the ravages of a civil war, in which he acted so conspicuous a part; and we feel not ourselves inclined to refuse him the praise which he may have merited on this or any other account. But granting that duty required him to execute as a spy the accomplished *André*, true magnanimity would have prevented him from insultingly erecting, in the view of that unfortunate officer, the gallows on which he was to be hung, several days before his execution! When Earl Cornwallis was overpowered by numbers, and obliged at York-town to surrender to the united armies of America and France, a magnanimous conqueror would not have maliciously claimed, contrary to the usage of civilized war, the sword from the hands of that gallant nobleman. On these two occasions, and on some others, the conduct of Washington agreed so ill with his general character, that we are inclined to believe that he must have been influenced by the leaders of the French army, Rochambeau and Fayette. One thing is certain, that he was so little pleased either with his own conduct on particular occasions, or with

the general principle of the American revolution, that he never could be forced to talk on the subject. An Italian nobleman, who visited him after the peace, had often attempted, in vain, to turn the conversation to the events of the war. At length he thought he had found a favourable opportunity of effecting his purpose; they were riding together over the scene of an action where Washington's conduct had been the subject of no small animadversion. Count — said to him, "Your conduct, Sir, in this action has been criticized." Washington made no answer, but clapped spurs to his horse: after they had passed the field, he turned to the Italian and said, "Count —, I observe that you wish me to speak of the war; it is a conversation which I always avoid. I rejoice at the establishment of the liberties of America. But the time of the struggle was a horrible period, in which the best men were compelled to do many things repugnant to their nature." This, we think, is the language of a good man not altogether satisfied with the part which he had been compelled to act, and who, though he rejoiced at the establishment of the liberties of America, probably foresaw that she would reap no benefit from her favourite independence.

The conclusion of the American war permitted Washington to return to those domestic scenes, from which no views of ambition seem to have had the power to draw him. But he was not allowed long to enjoy this privacy. The supreme government of the United States, hastily thrown up, in a moment of turbulence and danger, as a temporary fortification against anarchy, proved utterly inadequate to the preservation of general tranquility and permanent security. The confusions of civil war had given a taint to the morality of the people, which rendered the restraints of a just and vigorous government more indispensably necessary. Confiscation and paper money, the two greatest schools of rapacity and dishonesty in the world, had widely spread their poison among the Americans. One of their own writers tells us, that the whole system of paper money was a system of public and private frauds. In this state of things, which threatened the dissolution of morality and government, good men saw the necessity of concentrating and invigorating the supreme authority. Under the influence of this conviction, a convention of delegates was assembled at Philadelphia, which strengthened the bands of the Federal Union, and bestowed on Congress those powers which were necessary for the purposes of good government. Washington was the president of this convention, as he, in three years after, was elected president of the United States of America, under what was called "The New Constitution," though it ought to have been called a *reform* of the republican government, as that republican government itself was only a *reform* of the ancient colonial constitution under the British crown. None of these changes extended so far as an attempt to new-model the whole social and political system.

Events occurred during his chief magistracy which convulsed the whole political world, and which tried most severely his moderation and prudence. The French revolution took place; Washington, who had experienced the evils of one revolution, augured, from the beginning, no good from the daring speculations of inexperienced visionaries; and the progress of the revolution was not calculated to cure his distrust. When, in the year 1793, France, then groaning under the most intolerable and hideous tyranny, became engaged in war with almost all the governments of the civilized world, it is said to have been a matter of deliberation with the President of the United States, whether the republican envoy or the agent of the French princes should be received in America as the diplomatic representative of France. But whatever might be his private feelings of repugnance and horror, his public

conduct was influenced only by his public duties. As a virtuous man, he must have abhorred the system of crimes which was established in France. But as the first magistrate of the American commonwealth, he was bound only to consider how far the interest and safety of the people whom he governed were affected by the conduct of France. He saw that it was wise and necessary for America to preserve a good understanding and a beneficial intercourse with that great country, in whatever manner she was governed; as long as she obtained from committing injury against the United States. Guided by this just and simple principle, uninfluenced by the abhorrence of crimes which he felt, and which others affected, he received M. Genet, the minister of the French Republic. The history of the outrages which that minister committed, or instigated, or countenanced, against the American government, must be fresh in the memory of all our readers. The conduct of Washington was a model of firm and dignified moderation. Insults were offered to his authority in official papers, in anonymous libels, by incendiary declaimers, and by tumultuous meetings. The law of nations was trampled under foot. His confidential ministers were seduced to betray him, and the deluded populace were so inflamed by the arts of their enemies, that they broke out into insurrection. No vexation, however galling, could disturb the tranquillity of his mind, or make him deviate from the policy which his situation prescribed. With a more confirmed authority, and at the head of a longer established government, he might perhaps have thought greater vigour justifiable. But in his circumstances, he was sensible that the nerves of authority were not strong enough to bear being strained. Persuasion, always the most desirable instrument of government, was in his case the safest. Yet he never overpassed the line which separates concession from meanness. He reached the utmost limits of moderation, without being betrayed into pusillanimity. He preserved external and internal peace by a system of mildness, without any of those virtual concessions of weakness, which so much dishonour and enfeeble supreme authority. During the whole of that arduous struggle, his personal character gave that strength to a new magistracy which in other countries arises from ancient habits of obedience and respect. The authority of his virtue was more efficacious for the preservation of America than the legal powers of his office.

During this turbulent period, he was re-elected to the office of the Presidency of the United States, which he held from April 1789 till September 1796. Probably no magistrate of any commonwealth, ancient or modern, ever occupied a place so painful and perilous. Certainly no man was ever called upon so often to sacrifice his virtuous feelings (he had no other sacrifices to make) to his public duty. Two circumstances of this sort deserve to be particularly noticed. In the spring of 1794 he sent an ambassador to Paris with credentials, addressed to his "dear friends the citizens composing the Committee of Public Safety of the French Republic," whom he prays God "to take under his holy protection." Fortunately the American ambassador was spared the humiliation of presenting his credentials to these bloody tyrants. Their power was subverted, and a few of them had suffered the punishment of their crimes, which no punishment could expiate, before his arrival at Paris. Readily as we admit the purity of the motives which induced him to send this embassy to Paris, we cannot possibly approve of his conduct in deviating so far from the usual diplomatic style, as to call Robespierre his friend: but he was beset by an absurd, though formidable, faction at home.

He had another struggle of feeling and duty to encounter, when he was compelled to suppress the insurrection in the western counties of Pennsylvania by force of arms. But here

he had a consolation. The exercise of mercy consoled his mind for the necessity of having recourse to arms. Never was there a revolt quelled with so little blood. Scarcely ever was the basest dastard so tender of his own life, as this virtuous man was of the lives of his fellow-citizens. The value of his clemency is enhanced by recollecting that he was neither without provocations to severity, nor without pretexts for it. His character and his office had been reviled in a manner almost unexampled among civilized nations. His authority had been insulted—his safety had been threatened. Of his personal and political enemies some might, perhaps, have been suspected of having instigated the insurrection; a greater number were thought to wish well to it; and very few shewed much zeal to suppress it. *Is habitus animorum fuit, at pessimum fascinus auderent pauci, plures vellent, omnes palerentur.* But neither repentment, nor fear, nor even policy itself, could extinguish the humanity of Washington. This seems to have been the only sacrifice which he was incapable of making to the interest of his country.

Throughout the whole course of his second Presidency, the danger of America was great and imminent almost beyond example. The spirit of change, indeed, at that period, shook all nations. But in other countries it had to encounter ancient and solidly established power; it had to tear up by the roots long habits of attachment in some nations for their government; of awe in others; of acquiescence and submission in all.—But in America the government was new and weak. The people had scarce time to recover from the ideas and feelings of a recent civil war. In other countries the volcanic force must be of power to blow up the mountains, and to convulse the continents that held it down, before it could escape from the deep caverns in which it was imprisoned:—in America it was covered only by the ashes of a late convulsion, or at most by a little thin soil, the produce of a few years' quiet.

The government of America had none of those salutary prejudices to employ, which in every other country were used with success to open the eyes of the people to the enormities of the French revolution. They had, on the contrary, to contend with the prejudices of the people in the most moderate precautions against internal confusion, in the most measured and guarded resistance to the unparalleled insults and enormous encroachments of France. Without zealous support from the people, the American government was impotent. It required a considerable time, and it cost an arduous and dubious struggle, to direct the popular spirit against a sister republic, established among a people to whose aid the Americans ascribed the establishment of their independence. It is probable, indeed, that no policy could have produced this effect, unless it had been powerfully aided by the crimes of the French Government, which have proved the strongest allies of all established governments; which have produced such a general disposition to submit to any known tyranny, rather than rush into all the unknown and undefinable evils of civil confusion, with the horrible train of new and monstrous tyrannies of which it is usually the forerunner. But of these circumstances Washington availed himself with uncommon address. He employed the horror excited by the atrocities of the French revolution for the most honest and praise-worthy purposes;—to preserve the internal quiet of his country; to assert the dignity, and to maintain the rights, of the commonwealth which he governed, against foreign enemies. He avoided war without incurring the imputation of pusillanimity; he cherished the detestation of Americans for anarchy, without weakening the spirit of liberty; and he maintained, and even consolidated, the authority of government, without abridging the privileges of the people.

The resignation of Washington in 1796 was certainly a measure of prudence, and we doubt not of patriotism; but the conduct of his successor has been such as to give the Americans reason to regret that the reins of government were thrown up by the only hand, perhaps, that was fit to guide them during so unsettled a state of public affairs. When he retired, he published a valedictory address to his countrymen, as he had before done when he relinquished the command of the army in 1783. In these compositions, the whole heart and soul of Washington are laid open. Other state papers have, doubtless, shewn more spirit and dignity, more eloquence, greater force of genius, and a more enlarged comprehension of mind; but none ever displayed more simplicity and ingenuities, more moderation and sobriety, more good sense, more prudence, more honesty, more earnest affection for his country and for mankind, more profound reverence for virtue and religion; or more ardent wishes for the happiness of his fellow-creatures, and more just and rational views of the means which alone can effectually promote that happiness.

From his resignation till the month of July, 1798, he lived in retirement at Mount Vernon. At this latter period, it became necessary for the United States to arm. They had endured with a patience, of which there is no example in the history of states, all the contumely and wrong which successive administrations in France had heaped upon them. Their ships were every-where captured, their ministers were detained in a sort of imprisonment at Paris; while incendiaries, clothed in the sacred character of ambassadors, scattered over their peaceful provinces the fire-brands of sedition and civil war. An offer was made to terminate this long course of injustice, for a bribe to the French ministers. This offer was made by persons who appeared to be in the confidence of M. Talleyrand, who professed to act by his authority; who have been since, indeed, disavowed by him; but who never will be believed not to have been his agents, till he convict them of imposture by legal evidence, and procure them to be punished for so abominable a fraud.

The United States resolved to arm by land and sea. The command of the army was bestowed on General Washington; which he accepted, because he was convinced that "every thing we hold dear and sacred was seriously threatened;" though he had flattered himself "that he had quitted forever the boundless field of public action, incessant trouble and high responsibility, in which he had long acted so conspicuous a part." In this office he continued during the short period of his life which still remained. On Thursday the 12th December, 1799, he was seized with an inflammation in his throat, which became considerably worse the next day; and of which, notwithstanding the efforts of his physicians, he died on Saturday the 14th of December, 1799, in the 68th year of his age, and in the 23d year of the independence of the United States, of which he may be considered as the founder. The same calmness, simplicity, and regularity, which had uniformly marked his demeanor, did not forsake him in his dying moments. He saw the approaches of death without fear—he met them without parade.—Even the perfectly well ordered state of the most minute particulars of his private business, bore the stamp of that constant authority of prudence and practical reason over his actions, which was a distinguishing feature of his character. He died with those sentiments of piety which had given vigour and consistency to his virtue, and adorned every part of his illustrious life.

WASHINGTON, the name of several counties in the United States of America: namely, in Rhode Island, in New York, in Pennsylvania, in Maryland, in Virginia, in Tennessee, in North Carolina, in South Carolina, and in Georgia.

These, and several towns of the same name, take their denomination from the illustrious General Washington, who was elected the first president of the United States in 1788.

WASHINGTON, a commercial town of the United States, in North Carolina, seated on the river Tar, 38 miles N. by E. of Newbern. Long. 77. 3. E. Lat. 34. 40. N.

WASHINGTON, a town in the State of Georgia, in the county of Wilkes. A mile and a half from this town, is a medicinal spring which has been found very beneficial in rheumatic cases: it rises from a hollow tree, the inside of which is covered with a coat of nitre, an inch thick; and the leaves around the spring are incrufted with a substance as white as snow. It is 50 miles N.W. of Augusta. Long. 82. 30. W. Lat. 33. 12. N.

WASHINGTON, a town of Pennsylvania, capital of a county of the same name, 300 miles W. of Philadelphia. Long. 80. 20. W. Lat. 40. 11. N.

WASSENBERG, a town of Westphalia, in the duchy of Juliers, nine miles E.S.E. of Ruremonde.

WASSERBURG, a town of Bavaria, with a castle. It is seated among mountains, 25 miles E. by S. of Munich, and 28 N.W. of Saltzburg. Long. 12. 13. E. Lat. 48. 4. N.

WATCHET, a town in Somersetshire, with a market on Saturday, seated on the Bristol Channel, at the mouth of a good harbour, much frequented by coal ships, which are freighted hence with lime-stone, alabaster, and kelp. It is 14 miles N.W. of Bridgewater, and 153 W. by S. of London. Long. 3. 25. W. Lat. 51. 12. N.

WATEEBOO, an island in the Pacific Ocean, discovered by Captain Cook. It is six leagues in circuit, composed of hills and plains, and the surface covered with verdure. The soil, in some parts, is light and sandy; but further up the country, a reddish cast was seen on the rising grounds, where the islanders build their houses, which are long and spacious. The manners of the people, their general habits of life, and their method of treating strangers, greatly resemble those of Otaheite, and its neighbouring islands. There is also a great similarity between their religious opinions and ceremonies. Long. 158. 15. W. Lat. 21. 1. S.

WATER (*Encycl.*). The following method of preserving fresh water sweet during long voyages at sea, by Samuel Bentham, esq. appears in the Transactions of the Society for the Encouragement of Arts, Manufactures, and Commerce, who conferred on the author their gold medal.

"The mode in which I conceived fresh water might be preserved sweet," says Mr. Bentham, "was merely by keeping it in vessels of which the interior lining at least should be of such a substance as should not be acted upon by the water, so as to become a cause of contamination. Accordingly, on board two ships, the greater part of the water was kept, not in casks, but in cates or tanks, which, though they were made of wood, on account of strength, were lined with metallic plates, of the kind manufactured by Mr. Charles Wyatt, of Bridge-street, under the denomination of *tinned copper-sheets*; and the junctures of the plates or sheets were soldered together, so that the tightness of the cates depended entirely on the lining, the water having no-where access to the wood. The shape of these cates was adapted to that of the hold of the ship, some of them being made to fit close under the platform, by which means the quantity of water stowed was considerably greater than could have been stowed, in the same space, by means of casks; and thereby the stowage-room on board ship was very much increased.

"The quantity of water kept in this manner on board

each ship, was about forty tons divided into sixteen tanks; and there was likewise, on board each of the ships, about thirty tons stowed in casks as usual.

"As the stowing the water in tanks was considered as an experiment, the water in the casks was used in preference; that in the tanks being reserved for occasions of necessity, excepting that a small quantity of it was used occasionally for the purpose of ascertaining its purity, or when the water in the casks was deemed, when compared with that in tanks, too bad for use.

"The water in thirteen of the tanks, on board one ship, and in all the tanks on board the other, was always as sweet as when first taken from the fource; but in the other three of the tanks, on board one ship, the water was found to be more or less tainted as in the casks. This difference, however, is easily accounted for, by supposing that the water of these tanks was contaminated before it was put into them; for in fact the whole of the water was brought on board in casks, for the purpose of filling the tanks, and no particular care was taken, to taste the water at the time of taking it on board.

"After the water kept in this manner had remained on board a length of time which was deemed sufficient for experiment, it was used out, and the tanks were replenished as occasion required: but in some of the tanks, on board one ship at least, the original water had remained three years and a half, as appears by the certificates herewith inclosed. About twenty-five gallons of the water, which had remained this length of time in the ship, are sent to the Society, in two vessels made of the same sort of tinned copper with which the tanks were lined."

A certificate from Capt. Bolton, commander of the vessel, accompanied this letter, stating that the water delivered to the Society was taken from a tank holding about seven hundred gallons, and which his predecessor, Capt. Portlock, had informed him had been poured into the tank in December, 1796, except about thirty gallons added in 1798, and had remained good during the whole time.

In a letter, dated January 27, General Bentham also states, that the water which had been preserved sweet on board his Majesty's sloops Arrow and Dart, and of which he had sent specimens to the Society, was taken from the well at the king's brew-house, at Weevil, from whence ships of war, lying at or near Portsmouth, are usually supplied with water for their sea-store, as well as for present use.

WATERLAND (*Encycl.*). Into the short account there given of Dr. Waterland, we wish to introduce a correction, equally necessary in all biographical works which we have yet seen. All say he was born at *Waseley*, in Lincolnshire. His baptism, however, is registered in the parish of *Walsby*, near *RASEN*, of which his father, Erasmus Waterland, had been rector and resident many years. We believe there is not any such place in the county of Lincoln as *Waseley*.

WATER-POTS, in Spain known by the name of *Alcarrazas*, are earthen vessels, extremely porous, destined to cool the water for drinking, by means of the continual evaporation which takes place on their whole surface. Every house in Madrid is provided with these vessels, which are known to have been introduced into the country by the Arabs, and to be equally used in Syria, Persia, China, Egypt, &c. Those of Madrid are made of a kind of marly earth, found on the banks of the river Tausoro, near the town of Auduxar, in Andalusia. On being carefully analysed, it is found to contain about one third of calcareous

earth, a third of alumine, a third of silex, and a very small portion of iron.

The process for manufacturing the *alcarrazas* is as follows: After the earth has been dried, it is separated into small lumps about the size of walnuts, which are thrown into a tub or vat, covered with water, and left to soak during twelve hours, after which it is kneaded. After it has been well wrought, it is spread in layers of about six fingers depth on a smooth surface covered with brick, over which has been sprinkled a small quantity of sifted ashes.

Here it is suffered to remain until it has become chapped: it is then cleared from the ashes, carried to a clean flagged floor, where it receives the addition of about the twentieth part of its weight of sea-salt if intended for the fabrication of large jars, or only a fortieth if destined to be made into vessels of smaller size. An observant traveller says, that a quantity of sand is also added.

This mixture is kneaded anew with the feet, and then wrought on the wheel, after having been sifted carefully cleaned from any bits of straw or gravel which might have adhered to it. The vessels, when made, are placed in the potter's oven, but not more than half baked. It is to this circumstance, and to the marine salt which they contain, that they are indebted to their porosity: for the very same earth is wrought into common pottery, without the addition of the salt, or the diminution of the baking.

In the hottest weather, water put into one of these vessels, and placed in the open air, more particularly in a current of air, becomes in a very short time agreeably cool.

In Estremadura, at a place called Salvatierra, are made red vases called *bucaros*, which serve also to preserve water cool. They impart to it a disagreeable clayey taste, which is, however, much admired by the women of Madrid. Girls are said to be particularly fond of this species of pottery, and eat it in the green-sickness. Nearly similar vases are used in Portugal for moistening snuff, which is done by placing them in water after they have been filled with the snuff.

WATER-PROOF, a term applied to those stuffs which have undergone certain chemical or mechanical processes, and thus become impermeable to moisture.

In 1801, a patent was granted to Messrs. Ackermann, Suardy, and Co. for their invention of a process, by which every species of cloth may be rendered *water-proof*.—As the patentees have not thought proper to publish the particulars of their process (though such concealment is contrary to the nature of *Letters Patent*), we shall briefly remark, from our own observation, that their method appears to be a simple impregnation of cloth with wax previously dissolved, and incorporated with water, by the addition of pure vegetable alkali, or pot-ash. This being the cheapest and most expeditious mode of reducing wax to a fluid state, we are further inclined to believe that our conjecture is well founded; because all the woollen cloth prepared in the manufactory of Messrs. Ackermann, Suardy, and Co. feels somewhat harder than such as has not been *waxed*: for the same reason, it will stand a shower of rain only so long as it has not been subject to friction; and we understand from those who have worn *patent water-proof coats*, that, in the sleeves particularly, they are very apt to admit moisture through the different folds. Nevertheless, their process is entitled to attention; and it deserves to be adopted principally in those cases where the manufacture is not liable to be impaired by friction; such as coverings for tents; for horries exposed to the rain when at rest; and espe-

cially for paper in which gunpowder, or steel and other goods, are to be packed.

The following simple process is stated to be that employed by the Chinese, for rendering cloth *water-proof*: Let an ounce of white wax be dissolved in one quart of spirit of turpentine, the cloth be immersed in the solution, and then suspended in the air, till it be perfectly dry. By this method, the most open muslin, as well as the strongest cloths, may be rendered impervious to the heaviest showers; nor will such composition fill up the interstices of the finest lawn; or in the least degree affect the most brilliant colours.

WATERSAY, one of the Hebrides, on the west coast of Scotland, about one mile fourth from South Uist, from which it is separated by a channel called Chifamul Bay.

WATER-WORKS (*Encycl.*) In a communication to the Editor of the Philosophical Magazine, Mr. Buchanan has justly observed, that there are many cases in which it is of importance to know the proportion of power necessary to give different degrees of velocity to a mill. But as the construction of mills, and the purposes they serve, are various, it is perhaps impossible to find any law of universal application. Mr. Banks, in his Treatise on Mills, pages 17, 18, 144, 145, 146, has drawn a conclusion, which he appears to consider as invariable, namely, that 'when a wheel acts by gravity, its velocity will be as the cube root of the quantity of water it receives.'

"But," says Mr. Buchanan, "if we suppose a wheel raising water, by means of cranks and pumps, on Mr. Banks's principle, it might easily, I think, be demonstrated, that, by reducing the velocity of the wheel to a certain degree, the wheel would raise more water than would be necessary to move it at that velocity; a thing evidently impossible.

"In this view, it would seem there is no actual case in which Mr. Banks's conclusions will hold true. But, however they may apply to other mills, the experiments which I am going to mention seem to me to prove, at least, that I do not apply to cotton mills. On the ground of these experiments, made at different times, and with all the attention in my power (and not from any abstract consideration), have I presumed to call in question an authority for which I entertain the highest respect.

"In January 1796 I measured the quantity of water the old Rothsay cotton mill required, 1st, when going at its common velocity; and, 2dly, when going at half that velocity. The result was, that the last required just half the quantity of water which the first did. It is to be observed, that in these experiments the quantities of water were calculated from the heads of water and apertures of the sluices.

"From these experiments I inferred, 'that the quantity of water necessary to be employed in giving different degrees of velocity to a cotton mill, must be nearly as that velocity.'

"I was satisfied with this experiment, and the inference I drew from it, till some gentlemen, well acquainted with the theory and practice of mechanics, expressed their doubts on the subject. I had then recourse to another experiment, which I considered as less liable to error than the former.

"The water which drives the old cotton-mill, falls, a little below it, into a perpendicular-sided pond, which serves as a dam for a corn-mill. To ascertain, therefore, the proportional quantities of water used by the old mill, nothing more was necessary than to measure the time the water took to rise to a certain height in that pond; and accord-

ingly, on the 1st of May, 1798, I made the experiments noted in the following table:

1	2	3	4	Number of experiments.
46	46	24	23	Revolutions of one of the upright shafts per minute.
5	5	5	5	Rise of water in the pond in inches
6.58	6.57	14.45	15.01	Time in minutes and seconds.

"The first and second experiments were made with the mill at its common velocity; the third and fourth at nearly half that velocity.

"The time which the mill required to use the same quantity of water in these experiments may be taken in round numbers; the proper velocity at seven minutes, and half that velocity at fifteen minutes.

"The result of these experiments approaches very nearly to that of 1796. The difference may be accounted for by the small degree of leakage which must have taken place at the sluices on the lower end of the pond; and the time being greater in the third and fourth experiments, the leakage would, of course, be greater.

"Mr. Smeaton and others have proved, in a very satisfactory manner, that 'the mechanical power which must be employed in giving different degrees of velocity to the same body, must be as the square of that velocity.' But it appears to me that the result of the above experiments may be easily reconciled to this proposition by considering what Mr. Smeaton says immediately afterwards:—'If the converse of this proposition (says he) did not hold true, viz. that if a body in motion, on being stopped, would not produce a mechanical effect equal or proportional to the square of its velocity, or to the mechanical power employed in producing it, the effect would not correspond with its producing cause.' Now, it is to be observed, that Mr. Smeaton's experiments were made on the velocity of heavy bodies *free from friction and other causes of resistance*; but in mills there is not only friction, but obstacles to be removed: and experiments made on friction have proved that the frictions of many kinds of bodies increase in direct proportion to their velocity. But the velocity of a cotton-mill at work may be considered as a mechanical effect, and, if so, must correspond with its producing cause."

The latest contrivance, within our knowledge, for facilitating the motion of machinery, is the *undershot water-wheel*, invented by the late Mr. Besant, of Brompton; on whose widow the Society for the Encouragement of Arts, &c. in 1801, conferred a reward of ten guineas: and, as it promises to be of great service in many situations, we have given a representation of it, in Pl. 54.

Fig. 1. A, represents the body of the water-wheel, which is hollow, in the form of a drum, and is so constructed as to resist the admission of water. B, is the axis on which the wheel turns. C, the float-boards, placed on the periphery of the wheel, each of which is firmly fixed to its rim, and to the body of the drum, in an oblique direction. D, is the reservoir, that contains the water. E, the pen-stock, for regulating the quantity of water which runs to the wheel. F, represents the current that has passed such wheel.

Fig. 2, is a front view of the water-wheel, exhibiting the oblique direction in which the float-boards, C, are placed on the face of the wheel.

In the common water-wheels, more than half the quantity of that fluid passes from the gate through the wheel, without affording it any assistance: the action of the floats

is resisted by the incumbent atmosphere, at the moment when these leave the surface of the tail-water; and, as a similar proportion of water with that which passed between the floats at the head, necessarily flows between them at the tail, the motion of the wheel is greatly impeded. On the contrary, by Mr. Besant's contrivance, no water can pass, excepting that which acts with all its force on the extremity of the wheel; and, as the floats emerge from the water in an oblique direction, the weight of the atmosphere is thus prevented from taking any effect. Although his new wheel is considerably heavier than those constructed on the old plan, yet it revolves more easily on its axis; the water having a tendency to float it. Lastly, repeated experiments have proved Mr. Besant's wheel to be so decidedly superior, that, when working in deep tail-water, it will carry weights in the proportion of three to one; on which account it will be particularly serviceable to tide-mills.

A machine, which is constructed on the principle of Hiero's Fountain, forms the subject of a plate in Dr. Darwin's admirable work, entitled "*Phytologia*," it is designed to raise water to a great perpendicular height, for the irrigation of land, in such situations as have the advantage of a small fall.

a b (Pl. 55.), is the stream of water; *b c c*, represents the water-fall, supposed to be ten feet; *d e*, are two leaden or iron vessels, containing a certain quantity of water, which may be computed to be about four gallons each; *f g h i k l*, are leaden vessels, each holding about two quarts; *o p*, two cocks, each of which passes through two pipes, opening the one and closing the other; *q r*, is a water-balance, that moves on its centre, *s*, and by which the two cocks, *o* and *p*, are alternately turned; *t u*, and *w x*, are two air-pipes of lead, both internally one inch and a quarter in diameter; *y z, y z, y z*, are water-pipes, each being one inch in diameter.

The pipe, *b c c*, is always full from the stream, *a b*; the small cisterns, *g i l*, and the large one, *d*, are supposed to have been previously filled with water. The fluid may then be admitted by turning the cock, *o*, through the pipe, *c e*, into the large cistern, *e*. This water, Dr. Darwin remarks, will press the air, confined in the cistern, *e*, up the air-pipe, *x z*, and will force the fluid out of the cisterns, *g i l*, into those marked *h k*, and *C*. At the same time, by opening *B*, the water and condensed air, which previously existed in the large cistern, *d*, and in the smaller ones, marked *f h k*, will be discharged at *B*. After a short time, the water-balance, *q r s*, will turn the cocks, and exclude the water, while it opens the opposite ones: the cisterns, *f h k*, are emptied in their turns by the condensed air from the cistern, *d*, as the water progressively enters the latter from the pipe, *b c*.

A curious machine, of which the figure, in Pl. 55. will convey an accurate idea, was executed at Oulton, in Cheshire, by Mr. Whitehurst, for the service of a brewhouse, and other offices, belonging to Philip Egerton, esq. Its design is, to raise water by the *momentum*, or force, which this fluid acquires when confined: it having effectually answered the purpose, we have been induced to give a description of its constituent parts, from the sixty-fifth volume of "*The Philosophical Transactions of the Royal Society*," for 1774.

A, represents the original reservoir, or spring; the upper surface of which corresponds with the horizontal line, *B C*, and also with the bottom of the reservoir, *K*. *D*, the main pipe, which is one inch and a half in diameter, and nearly two hundred yards in length. *E*, is a branch-pipe of simi-

lar dimensions, for the use of the kitchen-offices.—Mr. Whitehurst observes, that these offices are situated at eighteen or twenty feet, at the least, beneath the surface of the reservoir, *A*, and that the cock, *F*, is about sixteen feet below it. *G*, represents a valve-box; and *g* exhibits the valve. *H*, is an air-vessel; *o o*, represent the ends of the main pipe, which are inserted in the air-vessel, and are bent downwards, to prevent the air from being driven out, when the water is forced into it. *W*, denotes the surface of the water.

Mr. Whitehurst remarks, that, as water discharged from an aperture beneath a pressure of sixteen feet perpendicular height, moves at the rate of thirty-two feet in one second of time, its velocity from the cock, *F*, will be in a similar ratio. And, though the aperture of such cock be not nearly equal to the diameter of the pipe, *D*, yet the pressure of the fluid contained in the pipe will be very considerable: so that if a column of water, two hundred yards high, be thus set in motion, and then suddenly stopped by the cock, *F*, its great force will open the valve, *g*, and condense the air in the box, *H*, as often as the water is drawn from the cock. This condensation was sufficient to force the water into the reservoir, *K*, and even to burst the vessel, *H*, within a few months after its first construction; though it was made of sheet-lead, in the proportion of nine or ten pounds to one square foot, and was apparently very firm. Hence it may be rationally concluded, that the impetus of the water is far superior to the simple pressure of the column, *I K*, and is therefore equal to a greater resistance (if it were required) than a pressure of four or five feet perpendicular height.

This ingenious contrivance is now applied to a variety of machinery, by Mr. Boulton, of Soho, near Birmingham; who obtained a patent, in December, 1797, for an improved apparatus, and methods of raising water and other fluids.—Mr. Boulton has substituted valves for cocks, and manufactures the pipes of such materials as are calculated to prevent accidents from bursting.

WATFORD, a town in Hertfordshire, with a great corn-market on Tuesday. It is seated on the river Coln, seven miles S. by W. of St. Alban's, and 14 N.W. of London. Long. O. 17. W. Lat. 51. 41. N.

WATTLINGTON, a town in Oxfordshire, with a market on Saturday. It is seated on the Chiltern Hills, on a brook, which, with the continued ridge, divides the county from Buckinghamshire. It is 14 miles S.E. of Oxford, and 46 W. of London. Long. 1. O. W. Lat. 51. 37. N.

WATTEN, a town of France, in the department of the North, seated on the river Aa, five miles from St. Omer.

WATTON, a town in Norfolk, with a market on Wednesday, 18 miles S.W. of Norwich, and 90 N.N.E. of London. Long. O. 53. E. Lat. 52. 36. N.

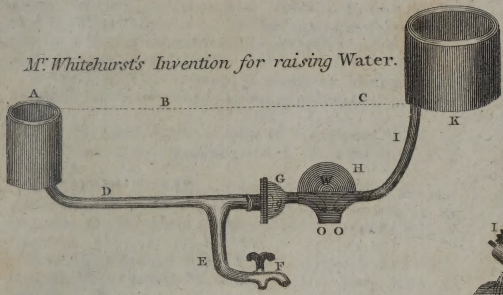
WAVEREN, a town of the duchy of Brabant, situated on the Dyle, 12 miles S. of Louvain.

WAXHOLM, a fortress on the coast of Sweden, in the Baltic, situated on a small island at the entrance of the lake Malar, where all homeward-bound ships are searched. It is 16 miles E. of Stockholm.

WAYNESBOROUGH, a town of the state of Georgia, in the county of Burke, 30 miles S. of Augusta. Long. 82. 46. W. Lat. 33. 45. N.

WEAR, a river, which rises in the west part of the county of Durham, and divides it into two parts; flowing S.E. by Stanhope to Bishop Auckland, and thence N.E. by Durham to Sunderland, where it falls into the German Ocean.

M. Whitehurst's Invention for raising Water.



Yarn-Mill.

Fig. 1.

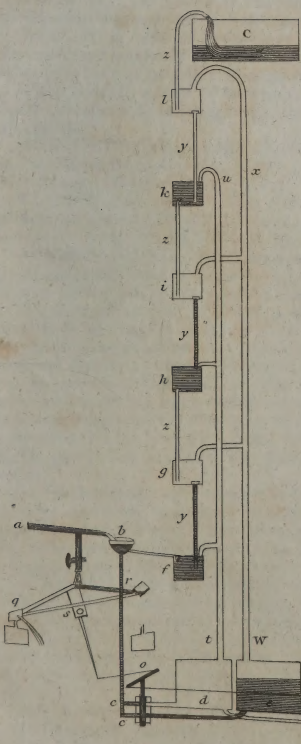
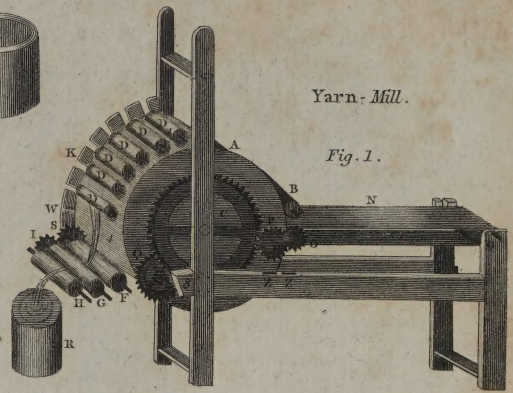


Fig. 2.

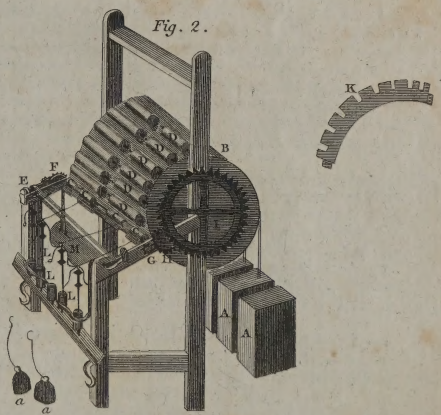
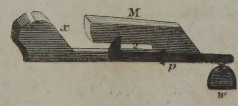


Fig. 3.



WEARMOUTH, a village in Durham, on the N. side of the mouth of the river Wear, opposite Sunderland. It is also called Monk Wearmouth, having, before the dissolution, belonged to the monks. Here is an iron bridge over the Wear, of one arch, 236 feet span, erected in 1796, and the first ever constructed of parts so formed as to unite in the manner of key-stones.

WEARMOUTH, BISHOP, a village in Durham, one mile S.W. of Sunderland. It has a manufacture of sail-cloth.

WEATHERSFIELD, a town of the United States, in Connecticut, noted for raising onions. It is five miles S. of Hartford.

WEDDENSCHIVEIL, a town of Switzerland, in the canton of Zurich. Near it is a remarkable water-fall. It is seated on the W. side of the lake of Zurich, 10 miles S.E. of that city.

WEERT, a town of Dutch Brabant, taken by the French in 1794. It is 12 miles W. of Ruremonde. Long. 5. 38. E. Lat. 51. 7. N.

WEEVER, a river, which rises in the N. part of Shropshire, runs across Cheshire, and receiving the Dane from the E. enters the estuary of the Mersey. It is navigable to Winsford, some miles above Northwich in Cheshire.

WEGELEBEN, a town of Germany, in the circle of Lower Saxony, and county of Halberstadt: five miles N. of Quedlingburg, and four E. Halberstadt.

WEGGIS, a town of Switzerland, in the canton of Lucerne, and capital of a bailiwick, situated on the north side of the Lake of Lucerne: seven miles E. Lucerne.

WEIBSTADT, a town of Germany, in the bishopric of Spire, 20 miles S.E. of Heidelberg. Long. 9. 23. E. Lat. 49. 19. N.

WEICHTERBACH, a town in Germany, in Weteravia, and in the county of Isenberg, seated on the river Kintz, with a castle, where the count resides.

WEIDEN, a town of Germany, in the upper palatinate of Bavaria, seated on the Nab, 10 miles N.W. of Leuchtenberg. Long. 12. 10. E. Lat. 49. 34. N.

WEIGHTS (*Encycl.*). Some account of these has been given under MEASURES (*Supp.*); but the following, we have no doubt, will be acceptable to our readers.

The principal measure of length is the *metre*, which is equal to 39.404 English inches: it is multiplied by prefixing the Greek numeral adjectives to the word *metre*: thus, the *decimetre* signifies 10 metres; *hectometre*, 8; *kilometre*, 1000; and *myriametre*, 10,000 metres. The measures below a metre are named in a similar manner; the Latin numeral adjectives being substituted for those of the Greek: hence, a *decimetre* denotes the tenth part; *centimetre*, the hundredth part; and *millimetre*, the thousandth part of a metre.

The standard measure of capacity is denominated a *litre*, which is equivalent to 61.1816 English cubic inches, or about 1.5-7ths of a pint, ale-measure, and 2 1-10th of a pint, wine-measure. Its multiplication and submultiplication are performed in a similar manner.

The *gramme* is adapted to weighing bodies, and is equal to 15.4457 English grains, troy weight. Its divisions and subdivisions correspond with those of the metre.

The French are employed for measuring the superficies of land, and is equal to 1076 2-5ths square feet, or 119 3-5th square yards, or about one fortieth part of an acre.

Lastly, the *stere* is used in measuring wood for fuel; it is equal to 35.31467 cubic feet.

VOL. X.

The following is a Comparative Table of the Units of the French Metres, Litres, and Grammes, with their corresponding English Inches, Gallons, and Grains.

Fr. Meas.	Metres in English Inches.	Litres in English.			Grammes in English Grs. Troy.
		Cubic Inches.	Ale Gall. 282 Inch.	Wine Gall. 231 Inch.	
1	39.404	61.1816	0.21695	0.26485	15.4457
2	78.808	122.3632	0.43390	0.52970	30.8914
3	118.212	183.5448	0.65085	0.79455	46.3371
4	157.616	244.7264	0.86780	1.05940	61.7828
5	197.020	305.9080	1.08475	1.32425	77.2285
6	236.424	367.0896	1.30170	1.58910	92.6742
7	275.828	428.2712	1.51865	1.85395	108.1199
8	315.232	489.4528	1.73560	2.11880	123.5656
9	354.636	550.6344	1.95255	2.38365	139.0113
10	394.040	611.816	2.1695	2.6485	154.457
20	788.08	1223.632	4.3390	5.2970	308.914
30	1182.16	1835.448	6.5085	7.9455	463.371
40	1576.16	2447.264	8.6780	10.5940	617.828
50	1970.20	3059.080	10.8475	13.2425	772.285
60	2364.24	3670.896	13.0170	15.8910	926.742
70	2758.28	4282.712	15.1865	18.5395	1081.199
80	3152.32	4894.528	17.3560	21.1880	1235.656
90	3546.36	5506.344	19.5255	23.8365	1390.113
100	3940.4	6118.16	21.695	26.485	1544.57

From the table here given, the English weights and measures, corresponding with those used in France, may be easily ascertained, by multiplying the hundreds, and adding the tenths and units, as circumstances may direct; or, if the number be less than one hundred, by adding the units to the tens. After the number required is thus found, it may be reduced to English feet or inches, to quarts or pints, to pounds, ounces, drachms, or grains, by means of the common rules of arithmetic.

A more ample specification of these weights and measures is published in the third volume of Mr. Nicholson's Journal; and which is abstracted from a report published in 1799, at Paris, by authority of the French government.

WEIL, or **WEYL**, a free imperial town of Suabia, in the duchy of Wirtemberg. The inhabitants are Roman-catholics. It is seated on the Worm, 12 miles W. of Stuttgart, and 20 N. of Tubingen. Long. 8. 50. E. Lat. 48. 46. N.

WEILBURG, a town of Germany, in the circle of Upper Rhine, and county of Naflau. It is seated on the Lohn, 22 miles N.E. of Naflau, 22 N.W. of Franfort, and 29 E. of Mentz. Long. 8. 26. E. Lat. 50. 18. N.

WEILHEIM, a town of Suabia, in the duchy of Wirtemberg, seated on the river Laurer.

WEILNAU, a town of Germany, in the circle of the Upper Rhine, and principality of Nassau Weiburg: thirteen miles S. Weiburg, and eighteen N.E. Mentz.

WEILTINGEN, a town of Germany, in the circle of Swabia, and duchy of Wurtemberg, on the Warnitz: forty miles S.W. Nuremberg, and fifty-four E.N.E. Stuttgart.

WEIMAR, a town of Upper Saxony, in Thuringia, with a magnificent castle, the residence of the Duke of Saxe-Weimar. It is seated on the Ilm, 20 miles N.E. of Erfurt, and 20 W.S.W. of Naumburg. Long. 11. 52. E. Lat. 51. 6. N.

WEINGARTIN, a town of Germany, in the palatinate

of the Rhine, seated on the Printza, four miles N.E. of Dourlach, and nine S. of Philipburg. Long. 9. 30. E. Lat. 49. 5. N.

WEINHEIM, a town of Germany, in the palatinate of the Rhine, 10 miles N. of Heidelberg. Long. 8. 46. E. Lat. 49. 35. N.

WEISBADEN, a town of Germany, in the electorate of Mentz, where there are hot baths in high esteem. It is eight miles N.E. of Mentz, and 13 W. of Francfort. Long. 8. 20. E. Lat. 49. 56. N.

WEISLMUNDE, a town of Western Prussia, seated at the mouth of the Vistula, below Dantzic, whose harbour it defends. Long. 18. 40. E. Lat. 54. 24. N.

WEISSENBURG, a town of France, in the department of Lower Rhine. Between this place and Lauterburg, are the famous lines from which the French drove the Austrians in 1744; and, in 1793, the Prussians drove the French from the same situation. It is seated on the Lauter, 10 miles S.W. of Landau, and 22 N.E. of Straburg. Long. 8. 11. E. Lat. 48. 53. N.

WEISSENBURG, a free imperial town of Franconia, in the bishopric of Aichtadt. The inhabitants are Protestants. It is seated on the Rednitz, five miles N. of Pappenheim, and 30 S.W. of Nuremberg. Long. 11. 2. E. Lat. 49. 4. N.

WEISSENBURG, a town of Germany, in the duchy of Saxony, 20 miles N. by W. of Wittemberg, and 20 N.E. of Dessau. Long. 12. 31. E. Lat. 52. 8. N.

WEISSENBURG, or ALBA JULIA, a city of Transylvania, capital of a county of the same name, with a bishop's see, and a university. It is seated on the side of a hill, near the river Ompias, 35 miles W. of Hermannstadt. Long. 24. 0. E. Lat. 46. 26. N.

WEISSENBURG, or STUHLWEISSENBURG, a town, of Lower Hungary, seated at the W. end of the Platten Sea, 36 miles S.W. of Buda. Long. 18. 30. E. Lat. 47. 22. N.

WEISSENFELS, a town of Upper Saxony, in Misnia, remarkable for a victory which the Swedes gained here over the Austrians. Above the town is a fine citadel, called Angutuburg, the residence of the Duke of Saxe-Weissenfels. It is seated on the Sala, 17 miles S.W. of Leipzig. Long. 12. 15. E. Lat. 51. 9. N.

WEILL, or WEDEL, a sea-port of Denmark, in N. Jutland, situate on a bay in the Little Belt, 35 miles S.S.W. of Arhusen, and 38 N.E. of Ripen. Long. 9. 30. E. Lat. 55. 45. N.

WEILTINGEN, a town of Suabia, in the duchy of Wirtemberg, situate on the Warrnitz, 40 miles S.W. of Nuremberg, and 14 E.N.E. of Stutgard. Long. 10. 21. E. Lat. 48. 58. N.

WEINSBERG, a town of Suabia, in the duchy of Wirtemberg. The valley in which it is situate is famous for its wine. It is 25 miles N. of Stutgard. Long. 9. 15. E. Lat. 49. 15. N.

WELL (*Encycl.*). The following method of procuring water, in almost every situation, has lately been suggested by M. Cadet de Vaux.—He directs the soil to be perforated with a borer: a wooden pipe is then to be placed in the hole, and driven down with a mallet; after which the boring must be continued, in order that a pipe may be driven to a greater depth. As the auger becomes filled with earth, it ought to be drawn up, and emptied; so that, by the addition of fresh portions of the pipe, the boring is carried to a considerable extent under ground, and water is in most instances obtained. Wells, thus formed, are preferable to those dug in the usual manner; being less expensive, while the supply of water is both copious and certain. Indeed, it often happens, in the

common practice of digging for wells, that the workmen are obliged to fix the windails, in order to prevent the springs from gaining on them: by this practice, a small quantity of water is the necessary consequence, and it is apt to fail during dry summers. Hence, M. de Vaux advises the earth to be perforated; a cylindrical pipe to be inserted; and to search for that element at a greater depth, in the manner before suggested.—This method is stated to be very useful in camps, or fortresses; and, in case the fluid near the surface be neither sufficiently sweet, nor of a good quality, he supposes his expedient to be the best that can be adopted, for obtaining water of a purer kind, at a greater depth.—Further, when wells have, in large towns, been rendered unfit or useless, in consequence of the ground having been tainted by privies, church-yards, &c. he very properly recommends such reservoirs to be emptied, and the bottom perforated in a similar manner, so as to reach the lower strata of water; which, being thus contained within the cylindrical pipe, will rise in a pure state into the body of the pump fixed for this purpose.—For an account of the relative salubrity of well-water, the reader will revert to the article WATER.

If wells be disused for a considerable time, the water generally becomes foul: the ambient atmosphere is corrupted; and thus arise mephitic vapours which have often proved fatal to animal life. Hence it has been suggested, to employ a pair of smith's bellows and a tube; but as these are too bulky to be conveniently carried to any distance, and frequently cannot be procured on the spur of the occasion, Mr. Salmon, of Canterbury, has invented the following apparatus, for dispersing noxious air from wells.—We are induced to recommend this ingenious contrivance to the notice of our country readers; as it is not very expensive, and will prevent many fatal accidents.

A, B, C, D, E, F (Plate 46.), represent six lengths of a metal pipe, each being eight feet long, and two inches in diameter: all these joints (except that marked F, which is made of copper, for the better support of heat) are manufactured of tin-plate. G, is a tin-kettle, or vessel (containing about two gallons), that is fastened to the upper pipe F, and the sides of which are perforated for the admission of air, and consequently for supporting the fire. This vessel must be fixed in such a direction as to have at least five feet of the pipe above its top. H, is a conical cap, designed to confine the heat to the sides of the tube.

When the machine is applied to the well, a wire must be passed through the holes a, a, in the upper part of the length A, and in the lower extremity of B, the joint ought to be luted with oil-putty, to render it air-tight; the upper end of each joint should be covered with wire, to prevent it from bending; and to form a receptacle for the putty. The other lengths are then to be managed in a similar manner, till that marked A, reach nearly to the surface of the water. The vessel G, ought to be placed on two pieces of timber laid across the well.

The apparatus, being now fixed, will speedily be filled with the foul air extracted from the well: and as the gravity of the external and internal air is equal, they become stationary. Burning coal or wood must next be put into the kettle G; by which the copper tube, F, is heated; and, the internal air being rarefied, while the external air presses downward, the noxious vapours are gradually dissipated; and a purer element is introduced into the well, whence it issues during the continuance of the fire.

Mr. Salmon remarks, that however small the current of air passing out of the funnel or pipe, F, may appear, the effect is considerable; because such discharge consists wholly of noxious vapour; whereas ten gallons of fresh air are probably

blown into the well, by means of the common bellows and leather pipe, before two gallons of mephitic vapour are removed. Such purification will be still more effectual, if the fire-kettle G, be placed at D, when the internal air becomes more rarefied: it ought, however, to be remarked, that this advantage is over-balanced by the atmosphere being rendered unfit for respiration, in consequence of the suffocating properties of the charcoal.

In the year 1794, the Society for the Encouragement of Arts, &c. conferred their silver medal on George Butler, esq. for his invention of a *bucket for drawing water from deep wells*. It consists of a common barrel, the head of which is taken out: across the top are fixed two thin bars of iron, having in the centre a small piece of the same metal, which Mr. Butler terms a *standard*. This is furnished with a collar, which has four moveable arms; and above it, there are a mortise containing a small brass pulley, and a loop to which the well-rope is secured: further, a cord is tied to one extremity of the collar, which, after passing over the pulley, communicates with a valve applied to the lower head of the vessel.—The bucket, thus constructed, when let down into the well by a rope, is filled through such valve; and, on being drawn up, the iron cross above mentioned is pressed against two parallel bars, so that the valve is opened, and the water discharged into a trough, or vessel, prepared for its reception.—The principal advantage arising from this contrivance is, that the bucket is not only filled expeditiously, but it is also brought up readily, so that no water is spilt; and, if any of it accidentally drop, it falls directly from the valve into the well, without wetting the descending rope, a circumstance of considerable importance; for, by such continual moisture (which is necessarily occasioned by the common buckets), it speedily decays, while the vessels are seldom drawn up completely filled.

The following method of procuring good water from wells, appears in the *Decade Philosophique*, &c.

"If you wish the water of a well to be clear, and free from any disagreeable taste," says the writer, "the excavation should be made considerably larger than is usually done. If, for example, you wish to construct a well five feet in diameter, the excavation ought to be from twelve to fifteen feet. A false well is made ten or twelve feet in diameter; in the middle of this large well the real well is constructed with a diameter of about five feet, but in such a manner that the water may filter through the interstices left between the stones, which form the outside of the inner well: the false well is then filled with sand and pebbles, so that the water must first filter through them before it reaches the real well. By this method you are sure of having filtered water perfectly clear and fit to drink. This operation is rather expensive, it is true; but the expense is amply compensated by the advantage of having limpid and wholesome water."

WELLAND, a river which rises in Northamptonshire, and separates that county from Leicestershire, Rutlandshire, and Lincolnshire; it passes by Market Harborough to Stamford, and is thence navigable to the Fosseike wash, which it enters below Spalding.

WELLINGBOROUGH, a town in Northamptonshire, with a market on Wednesday. A fire happened here in 1758, which consumed above 800 houses. It is seated on the side of a hill, on the river Nen, 12 miles N.E. of Northampton, and 68 N. by W. of London. Long. 0. 59. W. Lat. 52. 16. N.

WELLINGTON, a town in Shropshire, with a market on Thursday, seated near Wrekin hill, 12 miles E. of Shrewsbury, and 152 N.W. of London. Long. 2. 30. W. Lat. 52. 40. N.

WELLINGTON, a town in Somersetshire, with a market on Thursday, seated on the Tone, 15 miles N.E. of Exeter, and 147 W. by S. of London. Long 3. 25. W. Lat. 50. 57. N.

WELLS, a sea-port in Norfolk, which has a large church, and a considerable corn trade. It is 27 miles N. of Swaffham, and 121 N.N.E. of London. Long. 1. 1. E. Lat. 53. 1. N.

WELLS, a town of the United States, in the district of Maine, situate on a bay of the same name, 20 miles S.W. of Portland, and 88 N.E. of Boston. Long. 70. 32. W. Lat. 43. 20. N.

WELLS, a town 'of Upper Austria, seated on the Traun, 18 miles S. of Linz. Long. 13. 53. E. Lat. 48. 4. N.

WELSHPOOL, a town in Montgomeryshire, with a market on Monday. It is the principal trading town in the county, being the great mart for Welsh cottons, flannels, &c. The castle, called Fowis castle, is built of a reddish stone, and is a large stately structure. It is seated in a rich vale, on the river Severn, nine miles N. of Montgomery, 19 W. of Shrewsbury, and 169 N.W. of London. Long. 3. 5. W. Lat. 52. 33. N.

WEM, a town in Shropshire, with a market on Thursday, seated on the Roden, nine miles N. of Shrewsbury, and 164 N.W. of London. Long. 2. 40. W. Lat. 52. 10. N.

WENDLINGEN, a town of Suabia, in the duchy of Wirtemberg, situate on the Neckar, 12 miles S.E. of Stuttgart, and 28 N.W. of Ulm. Long. 9. 18. E. Lat. 48. 38. N.

WENDOVER, a borough in Buckinghamshire, with a market on Thursday. It sends two members to parliament, and is seven miles S.E. of Aylesbury, and 35 W. by N. of London. Long. 0. 35. W. Lat. 51. 46. N.

WENLOCK, a borough in Shropshire, with a market on Monday. It sends two members to parliament, and is twelve S.E. of Shrewsbury, and 147 N.W. of London. Long. 2. 30. W. Lat. 52. 36. N.

WENNER, the largest lake of Sweden, in W. Gothland, to the N.W. of the lake Wetter. It is 100 miles in length, and, in some places, 40 in breadth.

WENNERSBURG, a town of Sweden, in W. Gothland, which is the staple for all the iron sent from the province of Wermeland to Gotheborg. It is seated at the S.W. extremity of the lake Wenner, 15 miles E. of Uddevalla.

WENSYSSEL, a peninsula of Denmark, which makes the N. part of N. Jutland; bounded on the S. by the canal of Alburg, on the E. by the Categate, and on the N. and W. by the German Ocean.

WENSYSSEL, a town of Denmark, in N. Jutland, capital of a prefecture of the same name. It is seated on the Ryaa, 17 miles N.W. of Alburg. Long. 9. 40. E. Lat. 57. 4. N.

WEOLBY, an ancient borough in Herefordshire, with a market on Tuesday. It sends two members to parliament, and is eight miles N.W. of Hereford, and 141 W.N.W. of London. Long. 2. 41. W. Lat. 52. 9. N.

WERBEN, a town of Germany, in the old marche of Brandenburg, formerly a strong passage on the river Elbe, but now all the fortifications are ruined. It is seated at the place where the Habel falls into the Elbe, 60 miles N.W. of Berlin. Long. 12. 12. E. Lat. 53. 5. N.

WERCHTEREN, a town of Aultrian Brabant, seated at the confluence of the Demer and Dyle, nine miles E. of Mechlin. Long. 4. 49. E. Lat. 51. 0. N.

WERDEN, a town of Westphalia, in the country of Marck, with an abbey. The inhabitants are Protestants, un-

der the protection of Prussia. It is seated on the Roer, 10 miles N.E. of Dusseldorf, and 10 E. of Duisburg. Long. 7. 1. E. Lat. 51. 17. N.

WERDENBERG, a town of Switzerland, subject to the canton of Glarus, and capital of a county of the same name, which is separated from the canton by the county of Sargans, and bounded on the S. by the Rhine. It has a strong castle, the residence of the bailiff, seated on an eminence, commanding a beautiful prospect. It is 16 miles N.E. of Glarus. Long. 9. 25. E. Lat. 46. 58. N.

WERDENFELDS, a town and castle of Bavaria, which gives name to a county in the bishopric of Freisingen. It is 20 miles S. of Weilheim.

WERDOHL, a town of Westphalia, in the county of Marek, 31 miles N.E. of Cologne. Long. 7. 22. E. Lat. 51. 14. N.

WERFEN, a town and fortress of Bavaria, in the archbishopric of Saltzburgh, situate on the Saltza, 15 miles N.W. of Raftadt.

WERLE, a town of Westphalia, in the bishopric of Munster, seated on the river Sisek, 30 miles S. of Munster. Long. 7. 20. E. Lat. 51. 35. N.

WERMELAND, or **WARMELAND**, a province of Sweden, in W. Gothland, 100 miles long and 50 broad; bounded on the N. by Dalecarlia, on the E. by Westmania and Nerica, on the S. by the lakes Wenner and Dalia, and on the W. by the mountains of Norway. It is fertile, and diversified by mountains, rocks, hills, and dales, clothed with forests of birch, poplar, mountain ash, pine, and fir. It also abounds with lakes, which succeed each other almost without intermission; they are from four to forty miles in circumference; some so narrow as to appear like broad rivers, and others of a circular shape; their shores, in some parts, steep and rocky; in others gently sloping, and feathered with hanging wood to the margin of the water. Numerous rivulets flow from these lakes, and form, sometimes, small picturesque cascades. Carlstadt is the capital.

WERN, a town of Westphalia, in the bishopric of Munster, with a monastery, seated near the Lippe, 28 miles S. by W. of Munster. Long. 7. 30. E. Lat. 51. 35. N.

WERNIGERODE, a town of Upper Saxony, capital of a county of the same name, with a castle. The principal business of the town consists in brewing, distilling, and manufactures of cloth and stuff. It is 10 miles W. of Halberstadt, and 27 S.S.E. of Wolfenbuttel. Long. 11. 10. E. Lat. 52. 2. N.

WERTHEIM, a town of Franconia, capital of a county of the same name. It is seated at the confluence of the Tauber and Main, 20 miles W. of Wurtzburg. Long. 9. 53. E. Lat. 49. 46. N.

WERWICK, a town of Austrian Flanders, taken by the French in 1793. It is seated on the Lis, eight miles S.E. of Ypres. Long. 2. 58. E. Lat. 50. 46. N.

WESEL, a town of Westphalia, in the duchy of Cleves, with a strong citadel, near the confluence of the Rhine and Lippe. Here are two Calvinist churches, one for the Lutherans, and another for the papists; but the regency of the town is in the hands of the Calvinists. It was formerly an imperial and Hanseatic town, but it now belongs to the King of Prussia. It was taken by the French in 1759, but restored in 1762. It is 25 miles S.E. of Cleves, and 45 N. of Cologne. Long. 6. 37. E. Lat. 51. 27. N.

WESEL, a town of Germany, in the archbishopric of Treves, 20 miles S. of Coblenz, and 46 E.N.E. of Treves. Long. 7. 30. E. Lat. 50. 4. N.

WESENBURGH, a fortified town of Russia, in the go-

vernment of Esthonia, seated on the Wifs, 55 miles S.E. of Revel, and 55 N.W. of Narva. Long. 25. 48. E. Lat. 59. 10. N.

WESER, a considerable river of Germany, which rises in the county of Heineburg, being then called the Werra. It passes by Smalkald, crosses a corner of Thuringia, enters the duchy of Brunfwiek, and receives the Fulde at Munden. It then assumes the name of Weser, runs along the confines of the circles of Westphalia and Lower Saxony, waters Hamelin, Minden, and Hoya; receives the Aller below Verden; and passing by Bremen, enters the German Ocean.

WESTBURY, a borough in Wiltshire, with a market on Friday. It sends two members to parliament, and is 26 miles N.W. of Salisbury, and 101 W. of London. Long. 2. 13. W. Lat. 51. 16. N.

WESTERHAM, a town in Kent, with a market on Wednesday. It is the birth-place of Bishop Hoadley and General Wolfe: the latter is interred in the church. It is seated on the river Darent (which rises from nine springs near this town), 14 miles N.W. of Tunbridge, and 22 S.S.E. of London. Long. 0. 6. E. Lat. 51. 18. N.

WESTEROS, a town of Sweden, capital of Westmania, with a bishop's see, a citadel, and a famous college. It carries on a considerable commerce with Stockholm, across the lake Maeler; particularly in copper and iron from the neighbouring mines. Here are the ruins of an ancient palace, formerly inhabited by the kings of Sweden. The cathedral, built of brick, is celebrated for its tower, esteemed the highest in the kingdom. In this cathedral is the tomb of the unfortunate Eric XIV. Westeros is seated on the lake Maeler, 45 miles N.W. of Stockholm. Long. 17. 0. E. Lat. 59. 38. N.

WESTERBURG, a town of Germany, in Wetteravia, with a castle. It is the capital of a lordship of the same name, and 35 miles N. of Mentz. Long. 8. 18. E. Lat. 50. 26. N.

WESTERN TERRITORY, a country in North America, comprehending all that part of the United States which lies to the N.W. of the river Ohio. It is bounded on the W. by the Mississippi, on the N. by the Lakes, on the E. by Pennsylvania, and on the S.E. and S. by the Ohio. It contains 11,000 square miles, equal to 263,040,000 acres; from which, if we deduct 43,040,000 for water, there will remain 220,000,000 acres, belonging to the federal government, to be sold for the discharge of the national debt. This country, which is intended to be divided into several new states, is affirmed to be the most healthy and fertile spot in America, that is yet known to Europeans.

WESTERWICK, a sea-port of Sweden, in Smoland, seated on the Baltic, 50 miles N. of Calmar, and 120 S.W. of Stockholm. Long. 16. 0. E. Lat. 57. 40. N.

WESTHOFEN, a town of Germany, in the palatinate of the Rhine, five miles N.N.W. of Worms, and 20 N.W. of Mannheim.

WESTHOFEN, a town of France, in the department of Lower Rhine, 12 miles W. of Strasbourg.

WESTMANIA, or **WESTMANLAND**, a province of Sweden Proper, between Sudermania, Gestrícia, Nericia, and Upland. It is 75 miles long and 45 broad, and abounds in copper and iron mines. The face of the country is diversified like Wermeland. Westeros is the capital.

WESTPORT, a sea-port of Ireland, in the county of Mayo, seated at the mouth of a small river, which runs into Clew-Bay, eight miles W. of Castlebar. Long. 9. 22. W. Lat. 13. 48. N.

WESTRA, one of the Orkney islands, eight miles long, and from one to three broad. The number of inhabitants is about 1300. It is nine miles N N E. of Mainland.

WETHERBY, a town in the west riding of Yorkshire, with a market on Thursday, feated on the Wharf, 14 miles W. of York, and 177 N. by W. of London. Long. 1. 20. W. Lat. 53. 57. N.

WETTER, a lake of Sweden, in G. et h. l. d. S. P. of lake Wenner. It is 100 miles from N. to S. and 25 from E. to W.

WETTING, a town of Lower Saxony, in the duchy of Magdeburg, situate on the Saale, 34 miles S. of Magdeburg. Lon. 11. 40. E. Lat. 51. 31. N.

WETTINGEN, a town of Switzerland, on the Limmat, one mile S. of Baden. Its wooden bridge is a beautiful piece of mechanism, 240 feet long, and suspended 20 feet above the surface of the water. It is the last work of Grubbenman, the self taught architect, and is far more elegant than his bridge at Schaffhausen.

WEIZLAR, a free imperial town of Germany in Wetteravia, surrounded by ditches and walls flanked with towers. The inhabitants are Protestants, and have a council of 24 members. In 1693, the imperial chamber was transferred hither from Spire, on account of the wars which ravaged the palatinate. It is feated at the confluence of the Lahn, Dille, and Dillen, five miles S. of Solms, and 78 N. by E. of Spire. Long. 8. 32. E. Lat. 50. 26. N.

WEXIO, a sea-port of Sweden, in Smoland, feated on a lake, which contains a group of woody islands. Though a bishop's see, it is very small, and the houses mostly of wood. It is 50 miles W. of Calmar, and 155 S.W. of Stockholm. Long. 14. 57. E. Lat. 56. 41. N.

WEY, a river, which rises in Hampshire, flows through Surrey by Godalming and Guildford, and enters the Thames at Weybridge.

WEYMOUTH, a town in Dorsetshire, incorporated with that of Melcomb-Regis, but a distinct borough. It is feated on the W. side of an inlet of the sea: but its port is injured by the sand, so that its trade, which was once considerable, is much reduced, a few ships only being sent hence to Newfoundland. This decline is, in some degree, compensated by the great resort of persons of all ranks, for the purpose of sea-bathing, for which it is excellently fitted by its remarkable fine beach; and their majesties and the royal family have often honoured it with their residence for many weeks. A few plain and striped cottons are made here. Weymouth is 130 miles W.S.W. of London.

WHEAT (*Eucyel.*). The following important observations on the smut in wheat, blights, and the manner in which plants are nourished, by Sir John Call, bart. M.P. appear in the Communications to the Hon. Board of Agriculture.

"Having often reflected," says Sir John, "upon the nature of smut in wheat, and considered the various propositions and suggestions which had been made from time to time, for cleansing the grain, so as to prevent its affecting the flour, as also to prevent the smut from being propagated into the seed wheat so affected, I was led to deliberate in my mind whether the smut was a disorder, or disease, inherent in the seed, or an adventitious effect from the atmosphere, or some animalcula deposited in the ears of corn during their growth. In reasoning on this subject, it occurred to me, that if the disorder, or disease, called the smut, was inherent in, or latent in the seed grain, and that all such grain, when sown, would produce only ears full of smut; then, unless the disorder could be cured by some previous application, there would be a risk of having all the

crops rendered abortive, where a remedy was not applied; or if, as some persons had supposed, that the nature of the soil had contributed to produce the smut in wheat, then such soil, unless it could be corrected, would become unfit for, or dangerous to tillage. To satisfy myself at least how far the smut was a disorder liable to be propagated by seed grain taken out of smutty ears, or other grain mixed up with, and rubbed in smut, I resolved to make the following experiment.

"In the year 1797, when my men were threshing out my wheat, I desired them, as well as some of my neighbours, to save all the ears they met with affected with the smut; having collected all I could get, previous to the beginning of October, I found some ears wholly decayed, some with one, two, or more grains, apparently perfect, all which I caused to be rubbed out with the hand in a bag of paper, smut and all together; and after mixing and rubbing the grain in the smut, all I could get perfect out of smutty ears amounted to seventy-two grains, which were carefully dipped in, and marked in a ridge amongst other wheat, in a field then under tillage. Their growth from the first was similar to the rest of the field. The certificate which I deliver herewith, and the specimens of about sixty ears, gathered from the produce of the seventy-two grains, amongst which are contained every ear that appeared discoloured, or was thought by the examiners to be tending to smut, will serve to corroborate my opinion; which, as I observed before, is, that certain animalcula are deposited in the husks which cover each grain, about the time the wheat is in blossom, which are fed and brought to perfection by devouring the juice, or milky substance which rises at the root [*i. e.* the root of each grain in the husk], and that if not intercepted would form a complete grain: instead of which, as in many other cases of vegetation, the vegetable life, if I may so call it, is destroyed. And as a further proof that this is the case, and that the effect is not by the juices issuing from the earth, or rising through the tubes of the stalk, I need notice no other effect, than, that some grains perish and become smutty, while others flourish and become perfect in the same ear of corn; whereas, was the disease, which is supposed to occasion the smut, radical in the original grain of seed wheat, or infectious from the juice arising through the pores and tube of the stalk, all the grains in each ear would be affected, or those more particularly at the lower part; whereas the grains decayed are often found intermixed with others quite perfect, and dispersed throughout the ear. I therefore trust, that the prejudice conceived, that the smut in wheat is an inherent disorder, will be relinquished; or that another idea, that one kind of ground is more likely to produce smut than another, will be abandoned. I do not deny that a considerable degree of smutty wheat threshed out, and the smut of it mixed with other purer grain, will injure and prejudice the white casting of the flour, and that it may be necessary to wash and cleanse such wheat, previous to its being ground, where the smut evidently prevails; but I think my opinion of the origin of such smut is much strengthened by its prevailing more in one year than in another, and that it seldom happens the same complaint is made by farmers in the two succeeding years, notwithstanding there is no precaution taken, or remedy applied to the seed grain to prevent it; and with regard to my own experience, during twenty-nine years, I have neither mixed up my wheat with lime, nor steeped it in brine, nor washed it in any other liquid to prevent the growth of smut; nor do I believe any of my neighbours have made use of any such precautions.

"Analogous to this idea which I have just endeavoured

to explain, I am tempted, from observation, to hazard another respecting the blossoms and setting of young fruit, on fruit trees, but more particularly that of apple trees, in which a failure of fruit happens one, two, or three years together, and which is so detrimental to the produce of the orchards in Devon and Cornwall, that in the parish of Stoke Climland, where I reside, there have not been made, during the three last years, 500 hogheads of cyder, whereas in a good bearing year there are usually made from 1500 to 2000 hogheads. This defect is generally ascribed to frosty mornings, cold winds, and blights, particularly to the latter; and I am apt to believe that it is in, and from the latter, where the mischief arises; not from any simple effect of the atmosphere, but from the animalcula with which it is replete in such fogs, and which are deposited in the blossom, as in a nidus, and there brought to perfection by feeding on, and destroying the vegetable life by which they were originally nourished. Hence it is, that bunches of young fruit, set, and grown as big as hazle nuts, fall off from the branches of the tree at the stem, which seem to be eaten off, and deprived of the reception or conveyance of all nourishment, and often crumpled up by a kind of web and dry leaves. To prevent the supposed effect of blight, cold wind, and hoar frost, on wall-fruit, a net is often hung up before them, stuck full of dry fern, or other branches, to shelter the trees, without obstructing the air; and others stick in among the fruit trees, branches of fir, to cover and protect the blossoms, both which modes probably have some good effect, by intercepting and preventing the animalcula from taking post in the blossoms, or attaching themselves to the root of the young fruit.

"It is now three years that I have repeated the experiment of dibbling in, and sowing some of the best feed wheat, and some of the most shrivelled grains, or tail part of the same wheat, after winnowing; and from the result of the experiments, I am satisfied that a gallon of shrivelled grains of wheat, retaining the power of vegetation, will produce a return as good wheat in quality, and probably more in quantity, than a gallon of the finest grain of the same sort that can be sown by winnowing, or any other selection. The only advantage that I am disposed to grant, to fair, clean, and well screened feed wheat, is, that it will be more free from cockle, or any other extraneous feed, than the tail winnowings, or shrivelled feed, is likely to be; but on the other hand, a gallon of the shrivelled feed will contain three grains to two of the other, and probably will not be so much an object to be devoured by insects, birds, and vermin, as the more plump and full grains are; hence if my hypothesis is well founded, the advantage in favour of produce at the harvest will be in the shrivelled grains.

"The conclusion which I am disposed to draw from these experiments goes much beyond the advantage of converting the best kind of wheat, or other grain, to flour, and making use of an inferior sort for feed. I have been led to consider and revolve in my mind how far, and in what manner, any kind of manure contributes to the production of the crop: that it does so in the most essential manner, I do not entertain a doubt; but I differ from those who think that any kind of manure mixed with the earth, rises up through the roots, and forms any considerable part of the plant, fruit, or grain whatsoever: it may contribute to break the tenacity of the soil, to render it warm, open, and easy of perforation; so that the tender fibres and roots of any plant may find an easy passage, and genial protection therein; but I conceive that all the nourishment and juices necessary for the growth of the plants, and formation of their fruits and seeds, is derived from the atmosphere, that

it enters and descends by the buds and heart of all vegetables, and the earth is only a protecting matrix to retain and support all vegetable matter in a position to receive its nourishment. It is in forming, collecting, or attracting this nourishment, that manures are of such importance to all kinds of vegetation, either by attracting and fixing the circulating atmosphere, to hover over the earth where they are, so that the plants may imbibe what is proper for them; or by causing such a fermentation, or secretion in the earth, that by the attraction of heat it should throw up such a species of food and nourishment as is most congenial to that kind of vegetation for which the earth is cultivated.

"I will not pretend to enter into a nice discussion of the cause and powerful effects of vegetation, or attempt to controvert any opinions which have been long held on the subject; all I desire is, that the ideas I have thrown out may be favourably considered, or the experiments fairly repeated, and that I may be allowed to think that a large turnip, weighing five or six pounds, with a very strong and large top, held only to the earth by a small tap root, and a few little fibres; or that a cabbage weighing twenty or thirty pounds, standing high on a small stalk; were not wholly formed and grew to that size by moisture or substance rising through their roots out of the earth."

WHITCHURCH, a decayed borough in Hampshire, with a market on Friday. It sends two members to parliament, and is 24 miles E. by N. of Salisbury, and 58 W. by S. of London. Long. 1. 10. W. Lat. 51. 15. N.

WHITCHURCH, a town in Shropshire, with a market on Friday, 20 miles N. of Shrewsbury, and 161 N.W. of London. Long. 2. 40. W. Lat. 52. 0. N.

WHITEHORN, a royal burgh of Scotland, in Wigtonshire, governed by a provost. It is a place of great antiquity, and said to have been the first bishop's see in Scotland. It is eight miles S. of Wigton.

WHITEHORN, an island of Scotland, near the S.E. coast of the county of Wigton. Long. 4. 20. W. Lat. 54. 46. N.

WHITE MOUNTAINS, the highest part of a ridge of mountains, in the state of New Hampshire; in North America. They extend N.E. and S.W.; and their height above an adjacent meadow, is 5500 feet; and the meadow is 3500 feet above the level of the sea. The snow and ice cover them nine or ten months in the year; and during that time they exhibit the bright appearance from which they are denominated the White Mountains. Although they are seventy miles inland, they are seen many leagues off at sea, and appear like an exceedingly bright cloud in the horizon. Their highest summit is in lat. 44.° N.

WHITE-WASHING, a cheap kind of colouring of fair white given to brick or plastered walls by washing them over with a solution of quicklime. The process is the simplest imaginable. Some lumps of quicklime are plunged into a bucket of cold water, and stirred about till they are dissolved and mixed, after which a brush with a large head, and a long handle to reach the ceiling of the room, is used to spread it thinly on the walls, &c. When dry it is beautifully white, but its known cheapness has induced the plasterers to substitute a mixture of glue size and whitening for the houses of their polite customers; and this, when once used, precludes the employment of *lime-washing* ever after; for the latter, when laid on whitening, becomes yellow.

White-washing is an admirable means of rendering the dwellings of the poor clean and wholesome, as will be evident from the following account of the expence and benefit of frequently white-washing the rooms of a poor-house, by Wm. LAMM, esq. published by the Society for Bettering the Condition of the Poor.

"The poor-house of Bishop Auckland has been, during the preceding summers," says the account, "white-washed every six weeks. The method of preparing the lime (which is rock or stone-lime from Coxhoe, about ten miles from Auckland, and costs, including carriage, four pence a bushel) is as follows:—a large tub is procured to flake it in, and this is filled with lime nearly to the top, cold water being poured upon it by degrees, and it being stirred with a stick that is broad at one end, until the tub is filled with lime: when the lime and water are well incorporated, and of the confidence of mud, it is to be taken out of the tub with a wooden scoop, and strained through a hair or fine wire sieve into another vessel, where it settles to the bottom in a solid mass of white-wash. There will be some water at the top, not imbibed by the lime; this should be skimmed off. It is then to be mixed with cold water, till it is of the confidence of thin paint, being stirred occasionally while it is using. In this state it is laid on with a whitening brush by the man and his wife who have the care of the house.

"The quantity used for white-washing the fifteen rooms at Auckland poor-house, is half a bushel, which costs two pence; the expence of the four white-washings being, in the whole, not quite *eight pence a-year*. This trifling expenditure has produced a very great benefit to the poor in the work-house, to those who visit it, and indeed to the parish in general, that is not easily to be calculated.—I have the pleasure of being able to say, that there is neither disease nor vermin in our poor-house at present; but that the inhabitants are very comfortable and happy.

"It would be well for the inhabitants of cottages, as well as poor-houses, if the custom of very frequently white-washing them were prevalent throughout the kingdom. Clean white-washed walls not only contribute to prevent the existence of vermin, but induce habits of cleanliness in those who reside within them. It was observed by the late Mr. Howard, in his work on Lazarettos, that in the cottages on his estate in Bedfordshire, which had been made comfortable, *and white-washed both within and without*, the very same families, which were before slovenly and dirty, had upon this change of habitation, become neat in their persons, their houses, and their gardens."

"When it is generally known that the four white-washings of Auckland poor-house have produced the most beneficial effects, and have cost only a little trouble, and the *sum of eight pence a-year*, I flatter myself that there will be very

few poor-houses in England * which will not be frequently white-washed.—The price and quality of lime is very different in different parts of the kingdom. In London, and in some other places, it is as high as a shilling a bushel, and the lime chiefly in use is chalk lime, which does not answer so well as stone lime. The difficulty and expence, however, of obtaining the best stone lime, for this purpose, in any part of the kingdom, must be too inconsiderable to prevent its general use, if most approved of. In the neighbourhood of Manchester, a horse load of lime, which is sufficient to white-wash about a dozen cottages, costs fourteen pence; which for each cottage would be two pence halfpenny a year, supposing them regularly white-washed in spring and autumn. In some places the expence may be increased, perhaps as high as a shilling a cottage; but, as a general average for each cottage, two pence or three pence a year, expended by the landlord or the parish, in supplying the cottager with the materials for white-washing his cottage, would wonderfully contribute to the cleanliness and health of the poor throughout the kingdom.

"If the lime-wash is prepared with lime already flaked, it may, in many instances, require size to be mixed with it; but if the *quick lime* is used, and in the metropolis, and in most towns, it may be obtained at all times in the smallest quantities, it will not be necessary to mix size with it; and the good effects of the white washing in destroying vermin and removing infection will be much increased. The sooner, indeed, the lime is used after it is flaked, the better; especially if there is any apprehension of infection in the house. In that case, it is proper that the walls should be frequently washed with quick lime, fresh flaked in water, and put on while it continues bubbling and hot, as is the practice of the House of Recovery at Manchester.

"I suppose the matter of the poor-house to do the work himself. If a workman is employed to put it on, the additional expence would be about 6d. a room, which for the fifteen rooms would be 7s. 6d. a time, or 1l. 10s. a-year.—If indeed the overseer's brother or nephew is to be employed in the job by the yard, the increase of expence would be very considerable: and might, instead of eighteen pence a-year, amount to an annual expenditure of several pounds, and the cost prove almost equal to the benefit of the work being done."

WHITTLEBURY FOREST, a forest in the S. part of Northamptonshire, nine miles in length, and, in some parts, above three in breadth. Here the wild cat is still found. In

* The penitentiary house in Cold-Bath Fields was white-washed in 1796. The charge for the work was fairly made, according to the ordinary course of trade, and amounted to *one hundred and one pounds*. In 1797 it was white-washed again; the materials were bought, and a prisoner in the house employed in the work; which, as far as one could judge, was extremely well done: the expence of the materials was 1l. 7s. 6d.; the donation to the man for his trouble 2l. 12s. 6d.; in all four pounds.—In the Foundling Hospital, they have tried the experiment of white-washing some of the rooms. The greater kitchen is thirty-four feet by twenty-one, and twelve high; and the lesser kitchen, is twenty-one feet by seventeen; both of them arched, and containing a great deal of extra work: the materials, for white-washing both of them twice, cost 3s. Of the girls' dining-room over it, being 102 feet long by twenty-four feet wide, and twelve feet high; the expence of the materials, for white-washing the ceiling and cornice, and colouring of a straw colour that part of the sides of the room which was stucco, was 4s. 10d.: the workmanship, 5s. The two wards above this floor are, one of them 120 feet long by twenty-four feet wide, and twelve feet high, and the other 111 feet long by eighteen wide, and twelve feet high; all plain walls, without dado or surbase: the expence of white-washing the ceilings and cornice of both of these, and colouring the sides of the rooms, was, for the materials, 16s.; for the workmanship, 24s. In both instances size was used; which is included in the account, and was necessary, because the walls were not new plastered walls, but had been so white-washed or coloured before.—When it is known at how small a price the benefit of white-washing may be attained in poor-houses, and other public buildings, we trust the conductors of them will take care that they do not want those means of preventing vermin, filth, and infection among them.

1685, the first Duke of Grafton was appointed hereditary ranger of this forest, in which the present duke has a fine feat, called Wakefield Lodge.

WIBLINGEN, a town of Austrian Suabia, where is a Benedictine abbey. It is seated near the confluence of the Iller and Danube, three miles S.S.W. of Ulm.

WIBURG, a government of Russia, formerly Russia Finland, and comprised in Carelia. It was ceded by the Swedes to the Russians, partly by the peace of Nyfthad in 1721, and partly by the treaty of Abo in 1743. Beside pastures, the country produces rye, oats, and barley, but not sufficient for the inhabitants. It retains its own civil and criminal courts of justice: in general cases, not capital, the punishments prescribed by the provincial judicature are inflicted; but whenever a criminal is condemned to death, the Russian laws interpose, and depriving him from the sentence of beheading or hanging, as enjoined by the Swedish code, consign him to the knout and transportation to Siberia. In the governor's court, business is transacted in the Swedish, German, and Russian tongues. The peasants talk only the Finnish dialect; but the inhabitants of the towns understand Swedish also, and many of them German. Lutheranism is the established religion; but the Greek worship has been introduced by the Russians.

WIBURG, a commercial sea-port of Russia, capital of a government of the same name, with a bishop's see, and a strong citadel. It contains about 9000 inhabitants. A few houses are constructed with brick; but the greatest part are of wood. It is seated on the N.E. point of the gulf of Finland, 110 miles N.N.W. of Peterburg, and 250 N.E. of Riga. Long. 29. 10. E. Lat. 60. 56. N.

WICK, a borough and sea-port in Caithnessshire, seated on an inlet of the German ocean, S. of Nose Head. Long. 3. 2. W. Lat. 58. 30. N.

WICK, a fortified town of Dutch Limburg, seated on the Maese, opposite Maestricht, with which it communicates by a bridge. Long. 5. 41. E. Lat. 50. 52. N.

WICK-BY-DUERSTED, a town of the United Provinces, in Utrecht, with a strong castle. It is seated at the place where the Leck branches off from the Rhine, nine miles W. of Rhenen, and 15 S.E. of Utrecht. Long. 5. 22. E. Lat. 52. 6. N.

WICKWARE, a corporate town in Gloucestershire, governed by a mayor, with a market on Monday. It is 17 miles N.E. of Bristol, and 111 W. of London. Long. 2. 16. W. Lat. 51. 36. N.

WIDDIN, a fortified town of Turkey in Europe, with an archbishop's see. It has often been taken and retaken by the Turks and Austrians. It is the seat of the government of the pacha, Pashaw Oglou, who was lately, for several years, in open rebellion against the Porte, and repeatedly defeated all the Turkish forces sent against him, till at length the Porte thought proper to conclude a treaty with him almost on his own terms. Widdin is seated on the Danube, 88 miles N.E. of Nissa, and 150 S.E. of Belgrade. Long. 24. 27. E. Lat. 44. 12. N.

WIRD, a small principality of Germany, in the circle of Upper Rhine. The capital is Neuwied.

WIEDENBRUCK, a town of Westphalia, in the bishopric of Osnaburg, 32 miles S.S.E. of Osnaburg. Long. 7. 50. E. Lat. 51. 48. N.

WIELUN, a town of Great Poland, in the palatinate of Sieradia. It was ruined by the Swedes in 1656, but has been since rebuilt, and has a good cattle. It is seated on a river which falls into the Warta, 20 miles S. of Sieradia. Long. 18. 55. E. Lat. 51. 12. N.

WIELITSKA, a village of Poland, lately included in the

palatinate of Cracow, but now comprised in the Austrian kingdom of Lodomeria. It is celebrated for its salt mines, which lie eight miles S.E. of Cracow. In these inexhaustible mines, are several small chapels excavated in the salt, in which mass is laid on certain days of the year. One of these chapels is 30 feet long and 25 broad; the altar, crucifix, statues, and ornaments, all carved out of the salt. These mines are of a most stupendous extent and depth, and perfectly dry. There is, however, one small spring of water, which is impregnated with salt, as it runs through the mine. These mines have been worked above 600 years. Before the partition of Poland, in 1772, they furnished a considerable part of the revenue of the king, who drew from them an average profit of about 97,000l. sterling.

WIESENTEIG, a town of Suabia, capital of a lordship of the same name. It is 16 miles N.W. of Ulm, and 25 S. of Stuttgart. Long. 10. 2. E. Lat. 48. 35. N.

WIGAN, a borough in Lancashire, with a market on Monday and Friday. It is governed by a mayor, and sends two members to parliament. Here the strongest checks are made, and other articles of linen and cotton manufacture. That elegant species of coal, called Cannel, is found in plenty and great perfection in the neighbourhood. The river Douglas is made navigable hence to the Ribbles; and it is joined by a canal from Liverpool. Wigan is 30 miles S. of Lancaster, and 196 N.N.W. of London. Long. 2. 50. E. Lat. 53. 34. N.

WIGHTON, a town in the E. riding of Yorkshire, with a market on Wednesday, seated at the source of the Skellifer, 16 miles S.E. of York, and 192 N. by W. of London. Long. 0. 40. W. Lat. 53. 52. N.

WIGTON, a town in Cumberland, with a market on Tuesday, seated among the moors, 12 miles S.W. of Carlisle, and 304 N.N.W. of London. Long. 3. 4. W. Lat. 54. 50. N.

WIGTON, a borough and sea-port, the county-town of Wigtownshire. On the S. side are the vestiges of an ancient castle, and to the N.E. is a great morass, called the Moss of Cree. It is situate on a hill, which overlooks the bay of Wigtown, 95 miles S.W. of Edinburgh. Long. 4. 43. W. Lat. 55. 6. N.

WIGTONSHIRE, a county of Scotland, sometimes called **UPPER**, or **WEST GALLOWAY**; bounded on the N. by Ayrshire, on the E. by Kircudbrightshire, and on the S. and W. by the Irish Sea. Its greatest extent, in any direction, does not exceed 30 miles. The N. part, called the Moors, is naked and mountainous. Great numbers of sheep and black cattle are raised here; and they have a small breed of horses peculiar to this country: they are called galloways, and are very strong and gentle.

WIHITSCH, a frontier town of Turkey in Europe, in Cosinia, seated on a lake formed by the river Unna, 40 miles S.E. of Carladit. Long. 16. 10. E. Lat. 45. 4. N.

WILDBAD, a town of Suabia, in the duchy of Wirtemberg, celebrated for its warm baths, 24 miles W. of Stuttgart, and 30 N.E. of Straßburg. Long. 9. 35. E. Lat. 48. 43. N.

WILDBERG, a town of Suabia, in the duchy of Wirtemberg, situate on the Nagold, 19 miles S.W. of Stuttgart. Long. 8. 38. E. Lat. 48. 33. N.

WILDEHAUSEN, a town of Westphalia, capital of a small bailiwick, united to the duchy of Bremen. It is seated on the Hunte, 18 miles S.W. of Bremen. Long. 8. 27. E. Lat. 52. 55. N.

WILKEBOROUGH, a town of Pennsylvania, capital of the county of Luzerne. It is situate on the N. branch of

the Sufquehannah, 118 miles N.W. of Philadelphia. Long. 75. 59. W. Lat. 41. 13. N.

WILKOMIER, a town of Lithuania, in the palatinate of Wilna, feated on the Sweita, 45 miles N.W. of Wilna. Long. 24. 54. E. Lat. 55. 19. N.

WILLIS' ISLAND, a rocky ifland at the N. end of the ifland of Southern Georgia. It was difcovered in 1775, and contained the nefts of many thoufand flags. Long. 38. 29. W. Lat. 54. 0. S.

WILLISAW, a town of Switzerland, in the canton of Lucern, feated among high mountains, on the river Wiger, 25 miles N.W. of Lucern.

WILMANSTRAND, a town of Ruffia, in the government of Wiburg. In 1741, an obftinate battle was fought about a mile from this town, between 3,000 Swedes and 16,000 Ruffians; but, at laft, the former were obliged to yield to fuperiority of number. It is feated on the S. fide of the lake Saima, 40 miles N.N.W. of Wiburg, and 100 N.N.W. of Peterfburg. Long. 27. 54. E. Lat. 61. 20. N.

WILMINGTON, the largeft town of the ftate of Delaware, fituate on Chriftiana Creek, near two miles W. of the river Delaware, and 28 of Philadelphia.

WILMINGTON, a town of N. Carolina, fituate on the E. fide of the E. branch of Cape Fear River, 34 miles N. of Cape Fear, and 85 S.W. of Newburn.

WILNA, a commercial city of Lithuania, in a palatiate of the fame name, with a bifhop's fee, an univerfity, an ancient caftle, and a palace. The houfes are all built of wood. It was taken by the Ruffians in 1794; and is feated at the confluence of the Villa and Wilna, 15 miles E. of Troki, and 215 N.E. of Warfaw. Long. 25. 39. E. Lat. 54. 38. N.

WILSDRUP, or WILSDORF, a town of Upper Saxony, in the margravate of Meiffen, nine miles W. of Dresden, and 9 S. of Meiffen. Long. 13. 28. E. Lat. 51. 5. N.

WILSHOVEN, a town of Germany, in Bavaria, feated at the confluence of the Wils and Danube, 30 miles N.W. of Paffau.

WILSNACH, a town of Germany, in the margravate of Brandenburg, feated on a rivulet that falls not far from it into the Elbe.

WIMMIS, a town of Switzerland, in the canton of Bern, feated on the Sibnen, 18 miles S. of Bern. Long. 7. 8. E. Lat. 46. 34. N.

WIMPFEN, a free imperial town of Suabia, feated on the Neckar, eight miles N. of Hailbronn, and 22 E. of Heidelberg. Long. 9. 25. E. Lat. 49. 20. N.

WINBORN, or WINBORN MINSTER, a town in Dorfetfhire, with a market on Friday. It had a monaftery, in which were interred the Weft Saxon kings Etheldred and Sigeforth, and Queen Ethelburga. Its noble church, called the Minfter, was formerly collegiate. It is feated between the Stour and Allen, fix miles N. of Poole, and 102 S.W. of London. Long. 2. 1. W. Lat. 50. 47. N.

WINCAUNTON, a town in Somerfetfhire, with a market on Wednesday, feated on the fide of a hill, 24 miles S. of Bath, and 100 W. by S. of London. Long. 2. 18. W. Lat. 51. 1. N.

WINCHCOMB, a town in Gloucefterfhire, with a market on Saturday. It was formerly noted for its abbey, whose mitred abbot fat in parliament. It is feated in a deep bottom, 16 miles N.E. of Gloucefter, and 93 W.N.W. of London. Long. 2. 0. W. Lat. 51. 55. N.

WINCHENDON, a town of the United States, in Maffachufets. In October 1795 it fuffered confiderable damage by a dreadful tornado. It is fituate on Miller's River, 60 miles N.W. of Bofton.

WINDAW, a town of the duchy of Courland, with a caftle, Vol. X.

and a harbour at the mouth of the Wetaw, in the Baltic, 70 miles N.W. of Mitaw, and 100 N. of Memel. Long. 22. 5. E. Lat. 57. 20. N.

WINDERMERE-WATER, or WINANDER-MERE, the moft extenfive lake in England, lying between Weftmoreland and Lancashire. It extends 10 miles from N. to S. but in no part broader than a mile; and exhibits a greater variety of fine landfcapes than any lake in England. It is famous for its fine char, and abounds alfo with trout, perch, pike, and eel. It has a communication on the W. with Eftwaite-water; and its principal feeders are the rivers Rothay and Brathay. This lake is frequently interfeated by promontories, and spotted with iflands. Among thefe, the Holme, or Great Ifland, an oblong tract of 30 acres, croffes the lake in an oblique line furrounded by a number of inferior ifles, finely wooded. Not one bulrush, or fwampy reed, defiles the margin of this lake.

WINDHAM, a town of the ftate of Connecticut, capital of a county of the fame name. It is feated on the Shetucket, 31 miles E. of Hartford.

WINDISMERK, a territory of Germany, forming the E. part of Carniola. Metling is the capital.

WINDLINGEN, a town of Suabia in the duchy of Wirtemberg, feated on the Neckar, 12 miles from Stuttgart.

WIND-MILL (*Encycl.*). As wind-mills essentially contribute to agricultural and domeftic convenience, we prefent our readers with a delineation of a fpecimen of thofe employed in the vicinity of Lifbon; becaufe the construction of their sails is in fome refpects different from, and, in the opinion of Lord Somerville, fuperior to, thofe ufed in Britain (fee Pl. 56).

The advantages of mills on this construction are ftated by his lordfhip to be the following: 1. That the broad part of the sail is at the end of the lever, or branch, and thus an equal refiftance may be overcome with lefs length of branches, or arms. Thefe being confequently shortened a confiderable weight of timber will be rendered unneceffary, and a material faving of expence be obtained, in the height, prime coft, and fubfequent repairs of the mill. 2. The sails, constructed on the plan above reprefented, may be fet to draw in a manner fimilar to the *stay-fails* of a fhip; and, as they are fwelled more than thofe of common mills, Lord S. remarks, that they will render it unneceffary to bring the mill fo frequently to the wind; a practice which, in machines of the ufual construction, is always attended with confiderable trouble.

Parish WIND-MILL, a mill of the common kind, thus called becaufe it is employed, under the infpection of benevolent individuals, folely for the advantage of the poor in the *parish*, in times of fcarcity. The following excellent examples are taken from the Reports of the Society for bettering the Condition of the Poor.

The fcarcity of wheat in the fummer of 1795, led many of the inhabitants of Chislehurst into a wifh, that they might have a mill on their common, under fuch regulations that each perfon might be certain of having his own corn fairly ground, and returned to him in due meafure, and of its being drefsed to fuch a degree of finenefs as he fhould chofe; or that he might be able to purchafe, at a fair price, fuch kind of flour, mixed or unmixed, as he wifhed.

The building of one at the expence of the parish was there firft thought. But they were difsuaded from that, by its being pointed out to them, that fuch an expence would fall very heavy upon many perfons, who could already barely fupport the weight of the prefent rates. For, whether the principal were to be raifed upon the parish in the firft inftance, or the money to be obtained by granting life annuities

out of the rates, which last requires a special authority, in either case it would be felt as a very great burthen. It was therefore proposed to the parishioners, that if they would give their consent to the granting of a part of the common for that purpose, a set of ladies and gentlemen (the number of them being at last settled to be ten) would undertake the whole at their own expence, and build a parish mill. Two particular days in each week should be allotted to the working for the poor; or for such persons as should bring but small quantities of corn to be ground: the person who brought it should be allowed, if he chose, to stay and see it ground; and, after having it dressed just as he might choose, should take it away with him, upon paying in ready money 4d. per bushel for the grinding, and 2d. for the dressing, where it should be dressed: but that on other days, or when there was no grist-work sent in, the mill might be worked for the benefit of the proprietors; or it might be let by them to a tenant, under the same restrictions.—On these conditions the ground was granted: and on the failure of the conditions, it was agreed that it should be forfeited, and revert to the parish.

The original idea of the proprietors was to erect a mill, such as had been built a few years before on Dartford Brent. The basement of brick, the mill itself of timber, with the head alone turning to the wind. The cost of that at Dartford was said to have been 800*l*. The sum of 200*l*. more was intended to be added for a house for the miller; the shares being estimated at 100*l*. to each proprietor. Mr. John Hall of Dartford, who had been employed in the mill at that place, was consulted: and at last it was agreed that he should build that at Chislehurst. No precise terms were drawn up in writing concerning it. He offered to undertake it for 1000*l*.; or to build it as should be directed, and to be paid by measure and value when it was completed. The last proposal was preferred.

Orders were given to him accordingly; and he promised to lay the foundation early in the spring of 1796: and in the mean time to prepare every thing in forwardness, so as for the mill to work by the Michaelmas following.

The foundation was laid as had been proposed, and the outer frame was erected early in the summer of 1796: but the mill cannot be said to have worked till the end of April 1797; nor was it completed till September in that year.

In the mean time a neat miller's house was finished; and about 2 acres of land inclosed for his use. The work certainly appears to be well executed. The mill carries 3 pair of stones. Two pair of French ones for wheat; and one bed-stone, French, with a runner of Peak-stone, for barley, or hogs' meat. There is also a machine for dressing the meal; in which the revolution of the brushes is easily reversed, for their preservation; as also a bouting machine for cloths of any kind. The mill itself draws up the sacks, and sets them down upon any of the floors. The wind-shaft, and the cross, are of cast-iron. The head turns itself into the wind, by a fan-tail and rack work. The cap is a hemisphere very curiously formed, both for beauty, and for keeping out the weather, by means of bent planks. The weather boarding of the mill itself is also unusually good; every part being covered doubly. The joints at each angle (for the body of the mill is octagonal) are covered with sheet lead: which helps to form part of a metallic communication from the top to the earth, as a security against lightning.

The mill carries 3 pair of stones. But the wind seldom serves for working them all together; especially when the dressing machines are at work too. Yet it is reported that the proprietors of the Barham mill, which has but 2 pair of stones, wish their mill had been upon a larger scale. If that be really the case, it may deserve consideration, whenever a parish mill is undertaken, whether a mill of an intermediate size may not upon the whole be more advisable.

The design of the proprietors in erecting the mill, never was to undersell the fair dealer in any respect; or to let even the poor have their meal at a price below the market: but to put it in the power of each person, in every station of life, to obtain such flour of any sort of grain as he might choose; and to obtain it of a good quality.

This it is imagined that they have now done. Those who choose to send their own corn, may do it; and may see to its being fairly returned to them. On Mondays and Tuesdays, in every week, the smallest quantities are not to be refused to be ground for the poor: and each person may have his meal dressed in any manner he may desire. Those of any condition in life who choose to buy, may buy at the mill, of a good quality and at a fair price. All the effect intended to be produced on other millers, or on the retail dealers of the shops, was to make it their interest to deal fairly by their customers.

The mill at Chislehurst, certainly, is a convenience to the neighbourhood. It is not apprehended that it has, in any degree, hurt the millers around the place; though it has already almost as much work as it can perform. This seems to shew that a mill was really wanted: and it has put other millers, the shopkeepers, and bakers, on their guard, at the same time that it has injured nobody.

One effect intended by it has answered: the certainty of obtaining meal of what quality, of what degree of mixture with other kinds of grain, or of what fineness you choose; and the having the produce of your own corn returned fairly to you. This last may sometimes be doubtful at other mills; and probably sometimes is doubted where the return is fairly made. Here any one may assure himself that it is so, if he pleases.

It is proper to caution the reader against an error, into which the proprietors have fallen, and from which those of the mill at Barham Downs* have been exempt;—the want of sufficient care as to the expence of the undertaking.

The mill at Chislehurst has certainly been not only more expensive than was intended, but more so than was necessary. The builder offered to undertake it for 1000*l*.; or to build it as should be directed, and to be paid by measure and value, when it was completed; which last proposal was preferred.—The proprietors did not attend to the progress of the work, in the same manner as those would have done, who had their own profit in view; so that when the bills were sent in, they contained a charge of above 470*l*. for day work; all of it for articles, which the proprietors understood were to be charged by measure. In the whole, the mill-wright's bill has amounted to 176*l*.; besides 214*l*. the cost of the house, and 44*l*. for the fencing.

During the five months, from April to September, 1797, while the miller was interrupted by the workmen completing the mill, he paid the proprietors at the rate of 4 per cent, on 1000*l*. the money then advanced. From Michaelmas, 1797, he undertook it at the rate of 3½ per cent, on 1700*l*. and from Ladyday last at 73*l*. 10*s*. a-year, being 3½ per cent,

* The mill at Barham Downs cost only 336*l*.; the scales and utensils of different kinds 17*l*.; in all 353*l*.; only 33*l*. beyond the sum originally proposed.

on 1200*l*. the whole money expended. He seems to have no doubt but that he will be able by and by to pay a larger interest; but the fact is, that they cannot now let it to produce above four per cent.

It seems necessary to state these circumstances; in order that those who are desirous of benefiting their neighbourhood by a parish mill, may be cautioned against unguarded and extraordinary expence.—Parish mills are at present much wanted: the erection of them will be very useful in most parts of England; and, with a proper degree of attention, they will pay a sufficient interest upon the money to be expended in the erection of them.

WINDOW (*Encycl.*). In 1802, soon after the termination of the war with France, a considerable addition was made to the duties formerly imposed on windows. These will be best shewn by the following

TABLE OF THE DUTY ON WINDOWS.

Number of Win- dows.	Duties payable by 38 Geo. III. cap. 40.						Additional Duties payable by 42 Geo. III. c. 34.						Total Duties to be charged in one Sum for every Dwelling- house.					
	In England.			In Scotland.			In England.			In Scotland.			In England.			In Scotland.		
	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.
Not more than 6 (except such in- habited dwell- houses which shall be worth the rent of $\frac{1}{2}$ <i>l</i> . by the year, and shall be charged to the rate or duty, according to the rent thereof), -	0	4	6	0	2	6	0	1	6	0	6	0	4	0				
Not more than 6 if charged as of the value of $\frac{1}{2}$ <i>l</i> . a year,	0	6	0	0	4	0	0	2	0	0	8	0	0	6	0			
7 Windows -	0	14	6	0	12	6	0	4	0	0	18	6	0	16	0			
8 -	1	1	0	0	19	6	0	9	0	1	10	0	1	8	0			
9 -	1	7	0	1	5	0	0	11	0	1	18	0	1	16	0			
10 -	1	14	6	1	12	6	0	16	0	2	10	6	2	8	0			
11 -	2	4	0	2	2	6	0	1	1	3	5	0	3	3	0			
12 -	2	16	0	2	14	6	0	1	4	0	4	0	3	18	0			
13 -	3	8	0	3	6	0	1	7	0	4	15	0	4	13	0			
14 -	4	0	0	3	18	6	0	1	10	0	5	0	5	8	0			
15 -	4	12	6	4	10	6	0	1	13	0	5	6	5	8	0			
16 -	5	4	0	5	2	6	0	1	16	0	6	7	0	6	18	0		
17 -	5	16	0	5	14	6	0	1	19	0	7	15	0	7	13	0		
18 -	6	8	0	6	6	0	2	2	0	8	10	0	8	8	0			
19 -	7	0	0	6	18	6	0	2	5	0	9	5	0	9	1	0		
20 -	7	12	6	7	10	6	0	2	8	0	10	0	0	18	0			
21 -	8	4	0	8	2	6	0	2	11	0	10	15	0	10	13	0		
22 -	8	16	0	8	14	6	0	2	14	0	11	10	0	11	8	0		
23 -	9	8	0	9	6	0	2	17	0	12	5	0	12	3	0			
24 -	10	0	0	9	18	6	0	3	0	13	0	12	18	0				
25 -	10	12	6	10	10	6	0	3	3	13	15	0	13	13	0			
26 -	11	2	0	11	0	0	3	8	0	14	10	0	14	8	0			
27 -	11	12	6	11	10	6	0	3	13	0	15	5	0	15	3	0		
28 -	12	2	0	12	0	0	3	18	0	16	0	15	18	0				
29 -	12	12	6	12	10	6	0	4	0	16	15	0	16	13	0			
30 -	13	2	0	13	0	0	4	8	0	17	10	0	17	8	0			
31 -	13	12	6	13	10	6	0	4	13	0	18	5	0	18	3	0		
32 -	14	2	0	14	0	0	6	4	18	0	19	0	18	18	0			
33 -	14	12	6	14	10	6	0	5	3	19	15	0	19	13	0			
34 -	15	2	0	15	0	0	5	8	0	20	10	0	20	8	0			
35 -	15	12	6	15	10	6	0	5	13	0	21	5	0	21	3	0		
36 -	16	0	0	15	18	6	0	6	0	22	0	21	18	0				
37 -	16	8	0	16	6	0	6	7	0	22	15	0	22	13	0			
38 -	16	16	6	16	14	6	0	6	14	0	23	10	0	23	8	0		
39 -	17	4	0	17	2	6	0	7	1	24	5	0	24	3	0			
40 not more than 44	17	10	6	17	8	6	0	8	4	25	15	0	25	13	0			
45 -	49	10	0	18	18	6	0	9	5	28	5	0	28	3	0			
50 -	54	20	0	20	8	6	0	10	5	30	15	0	30	13	0			
55 -	59	22	0	21	18	6	0	11	5	33	5	0	33	3	0			
60 -	64	23	0	23	8	6	0	11	19	15	9	0	35	7	0			
65 -	69	25	0	24	18	6	0	12	9	17	9	0	37	7	0			
70 -	74	26	0	25	8	6	0	12	19	0	39	9	0					

Number of Win- dows.	Duties payable by 38 Geo. III. cap. 40.						Additional Duties payable by 42 Geo. III. c. 34.						Total Duties to be charged in one Sum for every Dwelling- house.					
	In England.			In Scotland.			In England.			In Scotland.			In England.			In Scotland.		
	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.
75 not more than 79	28	0	27	18	0	13	9	0	41	9	0	41	7	0				
80 -	84	29	10	0	29	8	0	13	19	0	43	9	0	43	7	0		
85 -	89	31	0	0	30	18	0	14	9	0	45	9	0	45	7	0		
90 -	94	32	0	0	32	8	0	14	19	0	47	9	0	47	7	0		
95 -	99	34	0	0	33	18	0	15	9	0	49	9	0	49	7	0		
100 -	109	37	0	0	36	18	0	15	9	0	52	9	0	52	7	0		
110 -	119	40	0	0	39	18	0	15	9	0	56	9	0	56	7	0		
120 -	129	43	0	0	42	18	0	17	9	0	60	9	0	60	7	0		
130 -	139	46	0	0	45	18	0	17	9	0	64	9	0	64	7	0		
140 -	149	49	0	0	48	18	0	19	9	0	68	9	0	68	7	0		
150 -	159	52	0	0	51	18	0	20	9	0	72	9	0	72	7	0		
160 -	169	55	0	0	54	18	0	21	9	0	76	9	0	76	7	0		
170 -	179	58	0	0	57	18	0	22	9	0	80	9	0	80	7	0		
180 and upwards -	61	0	60	48	0	22	0	22	0	83	0	82	18	0				

And for every such dwelling-house which shall contain more than 180 windows or lights, for every window or light exceeding the number of 180, 2*l*. 6*s*. each.

The said duties to be charged in respect of every inhabited dwelling-house, with the household and other offices, without any other exemptions being allowed than such as are contained in this act, notwithstanding any former statute. 42 Geo. III. c. 34.

The following clauses are included in the act 38 Geo. III. c. 40.

Every assise shall be in force for one year, and charged upon the occupiers of houses, cottages, or tenements; and shall be paid without any new assise, notwithstanding any change in the occupation.

No duty shall be levied for any cottage or tenement containing not more than six windows, the occupier whereof, by reason of poverty only, not for any other cause, is exempted from church and poor rates.

Every chamber in any inns of court or chancery, or in any college or hall in the universities, or in any hall or office belonging to any person or persons, body or bodies politic or corporate, or any public hospital, being severally in the tenure of any person chargeable to the said duties, containing eight windows or under, shall be charged thereto at the rate of [42 Geo. III. c. 40.] three shillings for every window; and every such chamber, which shall contain more than eight windows, shall be subject to the duties as if the same was an entire house.

Nothing herein shall charge any licensed chapel; nor any windows in dairies.

That is to say, by the stat. 36 Geo. III. c. 117. no duty shall be charged on any windows or lights in any dairies, or in any room or places kept and used for the sole purpose of drying and keeping cheese, or of making cheese or butter, and for no other purpose, whether the same shall be attached to, or detached from, the dwelling-house or not, and which shall be occupied by any person who shall sell, or be in any manner concerned in selling, the produce of dairies, or any kind of cheese.

But such windows or lights must be made with splines or wooden laths, or iron bars, and wholly without glass; also the dairies or rooms aforesaid must not be used to dwell or to sleep in, and on the doors thereto there must be painted, in large Roman black letters, of two inches in height, the words "Dairy and Cheese Room," or some of them, as the case shall require, otherwise such dairies and rooms shall be charged with the duties.

No window shall be deemed to be stopped up, unless stopped with stone or brick, or with the same materials as

the outside walls; but this is not to extend to any stopped up window in roofs, if stopped with like materials as the outside. And no window shall be newly made in any dwelling-house, or office belonging thereto; or if stopped up, be restored; nor shall any window be stopped up, without giving six days' previous notice thereof in writing, to the surveyor, on pain of ten pounds for every window newly made, restored, or stopped up.

If any surveyor shall receive any such notice, or discover that any window hath been newly made or restored, he shall certify the same by way of charge to the commissioners, who are to cause the abatement to be rectified according to such certificate; but such amended assessments may be appealed against.

No abatement to be subject to appeal or abatement unless it shall be proved that the windows were stopped up previous to the making of the assessment.

The following are clauses in the act 32 Geo. III. c. 34.

Every dwelling-house, cottage, or tenement, occupied at the time of making the assessment, shall be brought into charge by the assessors, according to the number of windows therein; and if any assessor shall omit to charge the occupier according to the number of windows, whether the occupier shall be entitled to be discharged from the same, in manner herein-after mentioned, or not, such assessor shall forfeit five pounds.

Where any house, cottage, or tenement, in England, containing not more than six windows, shall be brought into charge, and the occupier shall receive parochial relief, or shall, by reason of poverty only, and not for any other cause, be exempted from payment of the usual taxes towards church and poor, the assessors shall, on the certificate of assessors, set opposite the sum charged on the occupier, the fact of his receiving parochial relief, or from being exempted from payment of taxes, and shall return such facts, together with the assessments, to the commissioners; and the commissioners, before the allowance of any assessment, shall examine the assessor touching the return; and if the commissioners shall from such examination be satisfied that any occupier receives parochial relief, or is *bona fide*, by reason of poverty only, and not from any other cause, exempted from the payment of the usual taxes, it shall be lawful for the commissioners to strike out the charge against such occupier; and where any house, cottage, or tenement, in Scotland, containing not more than six windows, shall be brought into charge, and the occupier shall be poor, and shall receive relief from the kirk session, and shall keep no servant, carriage, horse, mule, or dog, the assessor shall, on the certificate of assessment, set opposite the sum charged the fact of his being poor, and of not having any servant, carriage, horse, mule, or dog, and shall return such facts, together with the assessments, to the commissioners; and in case the surveyor of the district shall be satisfied with the facts, and shall certify the same to the commissioners, the commissioners shall strike out the charge against the occupier; and in case the surveyor shall be dissatisfied, then the commissioners shall examine into the truth of such facts in like manner as the commissioners in England.

Every house unoccupied shall be inserted as such in the assessment, with the number of windows therein; and the assessors, and in their default the surveyors and inspectors, shall cause the same to be certified to the commissioners, from the time of such house coming into the occupation of any person, and such person shall cause notice thereof to be given to such surveyor or inspector within twenty days after his coming into the occupation of such house; and every person neglecting to do so shall forfeit five pounds, and shall be

liable moreover for such neglect to be charged to the said duties for the whole year in which such house became occupied, but on giving such notice shall be chargeable only from the time of his coming into the occupation.

Nothing herein shall subject any hospital, charity school, or poor-house, to the payment of the duties, except such apartments therein as are occupied by the officers or servants thereof, which shall be subject to the duty (according to the number of windows in each), provided that every such hospital, charity-school, or poor-house, shall be brought into charge by the assessors, and shall be stated on the certificate of assessments as such; and on proof of the fact the commissioners are to discharge such hospital, charity school, and poor-house, except as aforesaid, from the said duties.

No window shall be deemed to be stopped up, unless stopped up effectually with stone or brick, or with the same kind of materials whereof the outside walls doth consist.

Nothing herein shall charge any window in the roof of any dwelling-house, which shall be stopped up effectually with materials of the like nature of which the outside of the roof shall consist, nor any window which shall have been stopped up before, with other materials than herein described, and which shall not at any time since have been restored.

No window shall be newly made in any house, nor shall any window stopped up, be restored, or stopped up, without six days' previous notice in writing given by the occupier to the surveyor or inspector, on pain that the occupier shall forfeit ten pounds for every window.

If any surveyor or inspector shall receive notice, or otherwise discover, that any window hath been newly made or restored, which hath not been charged in the assessment, such surveyor or inspector shall certify the same, by way of charge, to two commissioners, and shall state to what amount the person liable to the duties hath been under-rated, and thereupon the commissioners shall cause such assessment to be amended, and the duties to be charged shall be levied from the commencement of the year. But if the commissioners shall be of opinion that any window restored shall have been stopped up when the assessment was made, with intent to evade the duties, they shall charge the occupier double the sum by which the assessment shall be increased by reason of such certificate; and every such assessment, when amended, shall be liable to be appealed against.

No assessment shall be subject to appeal, nor any abatement of the duties allowed in any year, by reason of any windows being stopped up, unless it shall be proved that the same windows were stopped up, according to the directions of this act, previous to the 5th of April next, before the making the assessment, in England, or in Scotland, previous to the term of Whitsunday; and that the same windows, if restored, were restored after six days' notice thereof, as before directed.

The parish in which any assessment shall be made, shall be answerable for the amount of the duties, and for the duties being duly demanded of the persons charged, within ten days after the same are payable, by the collectors, and also for such collectors' duly paying the sums received to the receiver-general; and if any collector shall neglect or refuse to demand payment of the duties of the persons charged, or leave a demand in writing at their last place of abode within the time limited, or, in case of default of payment thereof, upon such demand, shall neglect or refuse to execute the warrant of the commissioners for recovering the same, within two calendar months after the duties are payable, it shall not be lawful for such collector to insert in the schedule, to be by the receiver-general returned into the exchequer, the name of such person having made default, but the parish shall be

unfiverable; and no collector shall be allowed to infer in any schedule the name of any person as not having paid the duties, unless such collector shall make oath that the sum is wholly unpaid, either to such collector, or to any other person, to the best of his knowledge and belief; and that such person became insolvent or a bankrupt before the day on which the duties became payable, and had not goods sufficient whereon to levy within the parish, or that such person removed from the parish before the day on which the duties became payable; and that there was not nor are any goods of any person liable to the duties in arrear, whereby the same could be levied.

Any arrear of the said duties, arising by default aforesaid, or by the failure of any collector, shall be re-assessed upon the parish or place.

If any wilful delay or failure shall happen in demanding, receiving, or recovering, or paying over any of the duties, through the default or neglect of any collector, it shall be lawful for the commissioners to revoke the appointment of the collectors in default or neglecting, and by indorsement of the same precept of appointment, to appoint other collectors in their stead, for the remainder of the year.

Collectors in default, to deliver up certificates of their assessments, &c. on penalty of 20l. And if any two or more of the inhabitants, or the churchwardens or overseers, or guardians of the poor of any description, or two or more of them, or the select vestry, or any seven or more of them, where a select vestry shall be authorized to act for any parish, shall require security to be taken of the collectors, and shall name proper persons to be collectors, who shall respectively give security, it shall not be lawful for the commissioners to appoint collectors, until such security be given; and if the persons returned to the commissioners, shall not give security, then the said commissioners are to appoint such persons, and no other, who shall have been named to them. And the collectors, when required by the churchwardens, &c. shall deliver an account of the sums received, &c. on penalty of 20l.

If any person shall remove out of the limits of the collector without paying the duties, or without leaving sufficient goods, he shall forfeit 20l.

No goods to be taken by virtue of any execution, or other process, except at the suit of the landlord for rent, or of the king, unless the party shall pay the arrear of duty, not exceeding a year's, but in case of refusal, the collector may distrain and sell the goods.

One moiety of all penalties hereby imposed shall, if sued for within 12 calendar months, be to his majesty, and the other moiety thereof, with full costs, to the person who shall sue, and all such penalties exceeding twenty pounds shall be sued for in the superior courts. But his majesty's attorney-general in England, and advocate in Scotland, may stay proceedings, as well as to the share of the informer as to the share of his majesty. And in default of prosecution within the time before limited, no such penalty shall be afterwards recoverable, except in the name of his majesty's attorney-general, or advocate in Scotland.

Penalties not exceeding twenty pounds shall be recoverable before two commissioners, who may mitigate the same, not being in any case less than one moiety, and they are to assess the same upon the party, and charge the same in the assessment, in addition to the duty.

WINDSHEIM, an imperial town of Franconia, 28 miles S.W. of Wurtzburg, and 36 S.S.W. of Bamberg. Long. 10. 25. E. Lat. 49. 25. N.

WINDSOR, a town of Vermont, in the county of Windsor, where the assembly commonly holds its session, although

Bennington is the principal town. It is seated on the river Connecticut, 98 miles N.E. of Bennington.

WINDSOR, a town of the state of Connecticut, situate on the river Connecticut, three miles N. of Hartford.

WINDSOR, a town of North Carolina, situate on the Cathai, 23 miles W. of Edenboro.

WINDWARD ISLANDS, such of the Caribbean Islands, in the West Indies, as commence at Martinico, and extend to Tobago.

WINDWARD PASSAGE, the strait between Pont Maizi, at the E. end of the island of Cuba, and Cape St. Nicholas, at the N.W. extremity of St. Domingo.

WINNENDEN, a town of Suabia, in the duchy of Wirtemberg, 12 miles E.N.E. of Stuttgart. Long. 9. 16. E. Lat. 48. 49. N.

WINNICZA, a strong town of Poland, in Podolia, capital of a territory of the same name, with a castle. It was taken by the Cossaks in 1658, but retaken soon after. It is seated on the river Bog, 35 miles N. of Bracklaw. Long. 28. 12. E. Lat. 49. 23. N.

WINSCHOTEN, a town of the United Provinces, in Groningen. Here, in 1568, was fought the first battle between the revolted Dutch and the Spaniards, who were defeated by Prince Lewis, brother to William I. prince of Orange. It is six miles S.W. of Dollart Bay, and 16 S.E. of Groningen. Long. 6. 58. E. Lat. 53. 3. N.

WINSEN, a town of Lower Saxony, in the duchy of Lunenburg, seated at the confluence of the Elbe and Ilmenau, 13 miles N.W. of Lunenburg. Long. 10. 11. E. Lat. 53. 24. N.

WINSHEIM, an imperial town of Franconia, in the margravate of Anspach. It is surrounded by a good rampart, a double ditch, and thick walls flanked with 20 towers. The inhabitants are Protestants. In 1730, a fire reduced almost the whole town to ashes. It is seated on the Aisch, 30 miles N.W. of Nuremberg. Long. 10. 31. E. Lat. 49. 32. N.

WINSLOW, a town in Buckinghamshire, with a market on Tuesday, seven miles N.W. of Aylesbury, and 50 W.N.W. of London. Long. 0. 45. W. Lat. 51. 57. N.

WINSTER, a town in Derbyshire, which has a meeting for the sale of provisions on Saturday. It is five miles N.W. of Derby, and 152 N.N.W. of London.

WINTERBERG, a town of Westphalia, 37 miles S. of Paderborn, and 60 E. of Cologne. Long. 8. 15. E. Lat. 51. 5. N.

WINTERBURG, a town of Germany, in the circle of Lower Rhine and county of Sponheim, 10 miles W.N.W. of Creutznach.

WINTERINGHAM, a corporate town in Lincolnshire, governed by a mayor, who is chosen only out of one street. It has no market; and is seated near the Humber, 33 miles N. of Lincoln.

WINTERTHUR, a town of Switzerland, in the canton of Zurich, where there is a rich library and a mineral spring. It is seated in a fertile plain, on the river Ulach, 15 miles N.E. of Zurich. Long. 8. 45. E. Lat. 47. 31. N.

WIPERFURT, a town of Westphalia, in the duchy of Berg, seated near the source of the Wipper, whose water is of a peculiar quality for bleaching, 36 miles E.S.E. of Drefeldorf.

WIPRA, a town of Upper Saxony, in the county of Mansfeldt, situate on the Wipper, 10 miles W.N.W. of Eisleben, and 20 E. of Nordhausen. Long. 11. 20. E. Lat. 51. 30. N.

WIRKSWORTH, a populous town in Derbyshire, with a market on Tuesday. It is seated in a valley, near the source of the Ecclestone, and remarkable for having the greatest lead

market in England. It is 13 miles N. by W. of Derby, and 139 N.N.W. of London. Long. 1. 30. W. Lat. 53. 6. N.

WISBADEN, a town of Germany, in the principality of Nassau, capital of a lordship of the same name, subject to the Prince of Nassau-Saarbrück. It is famous for its warm baths, which were known to the ancient Romans, and is five miles N. of Mentz. Long. 8. 20. E. Lat. 49. 56. N.

WISBEACH, a town in Cambridgeshire, with a market on Saturday. It is seated in the life of Ely, between two rivers, and possesses a considerable trade in the export of corn, and of oil pressed from seeds at mills in its neighbourhood. Barges only can come up its river, large vessels stopping six miles below. It is 18 miles N. of Ely, and 80 N. by E. of London. Long. 0. 6. E. Lat. 52. 38. N.

WISBY, a sea-port of Sweden, in the isle of Gothland, with a castle. It is seated on the side of a rock, on the Baltic, 88 miles S.E. of Stockholm. Long. 18. 41. E. Lat. 57. 36. N.

WISCASSET, a town of the United States, in the district of Maine, which carries on a considerable trade. It is 56 miles N.W. of Portland. Long. 70. 5. W. Lat. 44. 47. N.

WISSET, a fortified town of the Netherlands, in the duchy of Limburg, seated on the Maese, seven miles N. of Liege, and 20 N.W. of Limburg. Long. 5. 40. E. Lat. 50. 41. N.

WISCHGROD, a town of Poland, in the palatinate of Plockko, seated on the Wislula, 18 miles E. by S. of Plockko, and 58 N.W. of Warsaw. Long. 19. 50. E. Lat. 52. 52. 44. N.

WISLOCHE, a town of Germany, in the palatinate of the Rhine, seated on the Elfat, eight miles S. of Heidelberg. Long. 8. 48. E. Lat. 49. 18. N.

WISMAR, a strong sea-port of Germany, in the duchy of Mecklenburg, seated at the bottom of a bay of the Baltic, 36 miles E. of Lubec, and 66 W. by S. of Stralsund. Long. 14. 44. E. Lat. 53. 54. N.

WISTON, a corporate town in Pembrokeshire, with a market on Wednesday. It is governed by a mayor, and was formerly strengthened with a castle, which is now a gentleman's seat. It is 10 miles N. of Pembroke, and 235 W.N.W. of London. Long. 4. 52. W. Lat. 51. 53. N.

WITCHWOOD, a forest in Oxfordshire, between Burford and Charlbury; the only considerable one now remaining in that county.

WITEPSKI, a town of Lithuania, capital of a palatinate of the same name, with a castle. The fortifications are so good, that the Russians besieged it several times in vain. It is seated in a morass, at the confluence of the Dwina and Widwa, 65 miles E. of Polotsk, and 80 W.N.W. of Smolensko. Long. 29. 40. E. Lat. 55. 43. N.

WITHAM, a town in Essex, with a market on Tuesday. Its church, an ancient Gothic structure, stands one mile from the town, at a place called Chipping Hill. It is eight miles N.E. of Chelmsford, and 37 E.N.E. of London. Long. 0. 41. E. Lat. 51. 51. N.

WITHAM, a river in Lincolnshire, which waters Lincoln, and enters the German Ocean, below Boston. From Lincoln it has a communication with the Trent, by a navigable canal, called the Fossdike, cut by King Henry I.

WITLISTH, a town of Germany, in the archbishopric of Treves, with a castle, seated on the river Lefer.

WITNEY, a town in Oxfordshire, with a market on Thursday. Here are manufactures of the finest blankets, and other thick woollens, called bearskins and kerseys. It is eight miles N.W. of Oxford, and 64 W.N.W. of London. Long. 1. 18. W. Lat. 51. 52. N.

WITSHAUSEN, a town of Germany, capital of a territory of the same name, in the landgraviate of Hesse Cassel. It is

seated on the Wefer, eight miles E.N.E. of Cassel. Long. 9. 46. E. Lat. 51. 24. N.

WITTENBERGEN, a town of Upper Saxony, in the mark of Prignitz, 60 miles N.W. of Berlin. Long. 11. 48. E. Lat. 53. 2. N.

WITTENSTEIN, a town of Russia, in the government of Livonia, 40 miles S.E. of Revel. Long. 24. 39. E. Lat. 58. 47. N.

WITTMUND, a town of Westphalia, in East Friedland, seated near the German Ocean, 15 miles N.E. of Embden. Long. 7. 4. E. Lat. 53. 41. N.

WITTESEA-MERE, a lake in the N.E. part of Huntingdonshire, six miles long and three broad. It is four miles S. of Peterborough.

WITTLICH, a town of Germany, in the electorate of Treves, 16 miles N.E. of Treves, and 38 S.W. of Coblenz. Long. 6. 27. E. Lat. 50. 7. N.

WITTSTOCK, a town of Upper Saxony, in the mark of Prignitz, 43 miles N. of Brandenburg, and 47 N.N.W. of Berlin. Long. 12. 30. E. Lat. 53. 10. N.

WIVLESCOMB, a town in Somersetshire, with a market on Tuesday, 20 miles N.N.E. of Exeter, and 155 W. by S. of London. Long. 3. 28. W. Lat. 51. 4. N.

WLOSIMEITZ, a town of Little Poland, capital of a duchy of the same name, in Volhunia, with a castle. It is seated on the Luy, which falls into the Bug, 36 miles W. of Lucko, and 56 N. of Lemburg. Long. 24. 30. E. Lat. 51. 3. N.

WOBNURN, a town in Bedfordshire, with a market on Friday. It is seated on a rising ground, and was formerly famous for its abbey, which now belongs to the Duke of Bedford, and is his country seat. Woburn was burnt down in 1724, but has been neatly rebuilt, and has a free-school, and a charity-school, founded by a duke of Bedford. Near it is found great plenty of fullers'-earth. It is 12 miles S. of Bedford, and 42 N.N.W. of London. Long. 0. 32. W. Lat. 52. 2. N.

WODNAY, a town of Bohemia, in the circle of Prach, seated on the Bianitz, 12 miles N.W. of Budweis, and 56 S. of Prague. Long. 14. 50. E. Lat. 42. 9. N.

WOERDEN, a town of the United Provinces, in Holland, seated on the Rhine, 18 miles S. of Amsterdam. It was taken by the French in 1672 and 1794. Long. 4. 51. E. Lat. 52. 6. N.

WOKEY, or OKBY, a village in Somersetshire, on the S. side of the Mendip Hills, two miles W. of Wells. Here is a famous cavern, called Wokey Hole, the mouth of which is only six feet high; but it soon expands into a spacious vault, 80 feet in height, resembling the inside of a cathedral; the roof composed of pendant rocks, whence a clear water, of a petrifying quality, continually drops. From this grotto a narrow passage descends to another of less height; and beyond a second narrow passage is a third grotto. The extremity is above 200 yards from the entrance.

WOLBECK, or WOLDBECK, a town of Westphalia, in the bishopric of Munster, seven miles S.E. of Munster.

WOLFERSDIKE, an island of the United Provinces, in Zealand, between North Beveland and South Beveland.

WOLKOSKOI, a town of Russia, in the government of Novogorod, 100 miles S.E. of Novogorod. Long. 34. 20. E. Lat. 57. 30. N.

WOLKOWSKA, a town of Lithuania, in the palatinate of Novogrodeck, seated on the Ros, 23 miles S.E. of Grodno. Long. 24. 46. E. Lat. 53. 4. N.

WOOLER, a town in Northumberland, with a market on Thursday. In a plain near this town the Scots, under the command of Earl Douglas, were defeated by Lord Percy and

M^r Harmar's Machine for Drefsing Woollen-Cloth, &c.

Fig. 1.

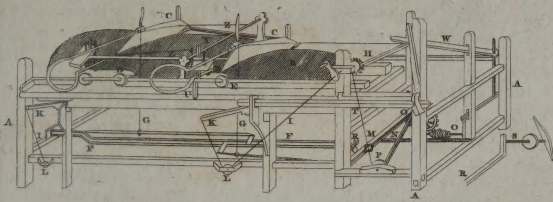


Fig. 2.

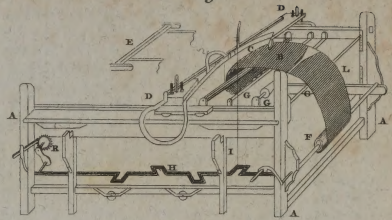


Fig. 3.

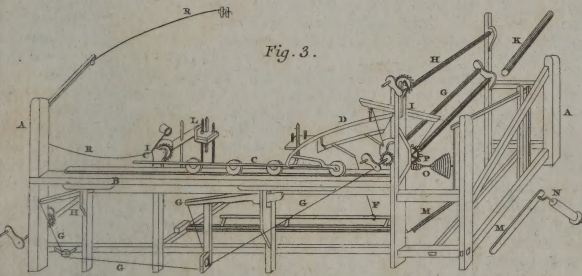


Fig. 2.

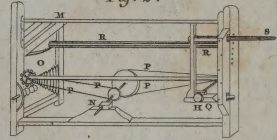
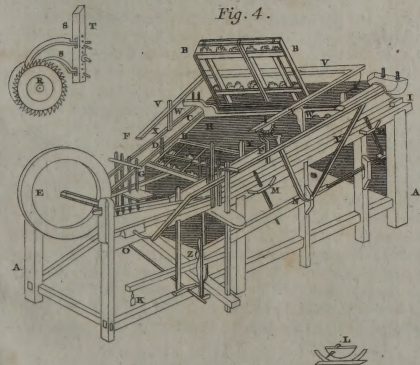


Fig. 4.



Portuguese Wind-Mill.



Earl March, on Holyrood-day, 1402. The battle was so bloody, that it gave the name of Redriggs to the place where it was fought. Wooler is seated on the Till, near the Chesiot hills, 14 miles S. of Berwick, and 318 N. by W. of London. Long. 1. 46. W. Lat. 55. 34. N.

WOLLIN, a sea-port of Germany, in Prussian Pomerania, capital of an island of the same name, in the mouth of the Oder. It is to miles W. of Cammin. Long. 14. 39. E. Lat. 54. 4. N.

WOLMAR, a town of Ruffia, in the government of Livonia, seated on the Aa, 38 miles N. of Riga. Long. 24. 25. E. Lat. 57. 32. N.

WOLSHINGHAM, a town in the county of Durham, 76 miles S.W. of Durham, and 259 N.N.W. of London.

WOLVERHAMPTON, a town in Staffordshire, with a market on Wednesday. It has an ancient collegiate church, annexed to the deanery of Windfor, and a handsome chapel. Here is a great iron manufacture, consisting of locks, hinges, buckles, corkcrews, and jappanned ware. It is seated on a hill, 13 miles S. of Stafford, and 124 N.W. of London. Long. 2. 0. W. Lat. 52. 47. N.

WOODBIDGE, a town in Suffolk, with a market on Wednesday, seated on the E. side of a sandy hill, on the river Deben, eight miles from the sea. It has docks for building ships, has a great corn trade, and is famous for refining salt. It had an abbey, of which there are no remarkable ruins. It is seven miles E.N.E. of Ipswich, and 76 N.E. of London. Long. 1. 25. E. Lat. 52. 11. N.

WOODBURY, a town of New Jersey, on the E. side of the river Delaware, nine miles S. of Philadelphia.

WOODS, LAKE OF THE, a lake of North America, which makes part of the N. boundary of the Western Territory of the United States. It is 150 miles long, and 60 where broadest, but is very irregular in its shape.

WOOLLEN-CLOTH, a kind of manufacture of which an account is given under the article CLOTH. The following is the specification of a patent granted to Mr. Harnar, of Sheffield, for a machine for raising a shag on all sorts of woollen cloths, and cropping or shearing them, which, together, come under the description of *dressing woollen cloths*, and also for cropping or shearing of fustians. It is dated March 29, 1794. See Pl. 56.

Fig. 1. exhibits a side and end view of shearing cloth from list to list. A, is the frame, with its pillars, legs, and rails. B, is the cushion or shear-board over which the cloth is extended. C, the cropper's shears in their situation for working, with their bobs or levers. D, the harness or breeches fitted to each end of the riding blade of C; at the near end is hollowed the bow of C, and at both ends fastened with screws passing through the blade, or else is grooved to admit the blade, and is fastened with wedges. It is composed of two strong pieces of plank, with holes to admit screws through to nut-screws fastened to their upper surface, and square holes through which pass small pillars; other two pieces of plank are frames for wheels turning on pins (as in drawing) situated under the pieces fastened to the riding blade; here the lower ends of screws are rivetted to plates, but so as to turn, which plates are screwed to the wheel-frames; also, in these lower pieces, small pillars are fixed, which, passing through the upper pieces, steady the harness; those screws turned to right or left bring the edges of C to the angle of B, for the work of shearing. E, the inclined planes down which the wheels of D roll when the machine is working. F, is the working axle, with its rods or rails; the gudgeons of this axle rest on the cross rails of A; the axle has the inclination of B and E, as in drawing. Its rods, fixed to the sides of it by projecting

pieces, are about four inches from its centre, and the thimbles of G ride down them to keep pace with C in its progress. G, is the line communicating at the lower end by a thimble with the rods of F, and at the upper end with the bob or lever of C, as in drawing. H, is an axletree, with its handle, cog-wheel, and stop, fixed by stops, on which it turns, to the pillars of A. I, the lines communicating with the extremities of K at one end, and the other with H. K, levers, turning on their pins, and, by the action of K and I, work against E, to raise C from B, for all necessary purposes. L, pulleys in their frames, to give a proper direction to I, that the turning of H may have the effect before named. M, is a crank attached to the lower gudgeon of F; the crank handle has an eye in it, through which a square leg passes, against which works the lower end of a screw, the nut of which is one side of the said eye. This screw, turned to right or left, loosens or fastens the leg in the eye at pleasure. The said leg at the other extremity has a handle where the near end of the catch N is fitted on. Now, as the leg is shifted by means of its eye and screw in that end where the handle is further from the centre of F, N works O with more speed. N, is the catch that works O. O, is the cog-wheel of N, with its screw pinion on its axle. P, is an iron axle, with pulleys near both ends, with a cog-wheel. R, is a small sword, fitted into the mortise of the projection on the lower extremity of F, and pinned, and the other end is fitted to the crank handle of S. S, is the crank axle and pulley that carries the band which goes to the power that works the machine. The situation for R, as to that end that fits on the crank of S, is directly behind the lower end of F, and under the further extremity of B, where the crank end of S rides on a stop fixed to the further rail of A; the pulley end where the stop is rides on X. Now the crank S being put in motion, gives R the necessary vibration, and R works F, which alternately raising or falling its rods or rails by G, C works, and, to effect the progression of C, F being in a working state, M works N, and O works P, and C is carried forwards by T, and to carry C forwards faster or slower, as necessary. For the due performance of shearing cloth, the handle of the leg of M, where N is fitted on, must be brought nearer to the centre of F for slackening, and more distant from the said-centre to increase the speed, as then N will take more or less teeth in O. Or the progression in this frame may be effected by the method described in the progression of fig. 3, under the letters M, N, O, P, T, the lines for carrying forwards C by P. U, is a projection fastened to D, and works against U when C is about to stop. V, is a rail and small sword passing through a mortise fixed to one of the legs of A, at nearly one end, and, by a working joint, goes up to near the extremity of W. W, is a lever, passing through its fulcrum, and pinned to the upper end of X; and near the other end rests on a small notch, sunk in the inside of the upper end of one of the pillars of A, and weighted in the extremity with lead or iron. X, is the step of the pulley end of S, and, by a small sword, goes up to W, on the near side of one of the pillars of A, through which X goes, and moves on a pin, and is the step of one end of O; and the further side of the said pillar, where the letter X stands, is the step of the pulley end of S. Now when U or D works against U or V, W is thrown from its notch, and W, sinking, raises X, and slackens the band on the pulley of S; then the machine stops, and X, raising the step of S on the further side of the pillar of A, on the near side of it sinks the step of O, and the screw-pinion is thrown out of the large cog-wheel of P. Y, is a small axle on steps, fastened to

D, with its handle and bands going to near the extremity of Z. Z, two small rails, with catches at their extremities, which fall into notches in D to fasten both the shears of C together. Now when the machine stops, by the means already described, the pressure of the handle of Y raises the catches of Z, from their notches in D, and the shears of C are at liberty, and may be driven by the hand to the necessary situation for shifting the cloth, first turning H to the right, to clear them from B. The cloth being shifted, bring the said shears of C to their proper situation, and the catches of Z will fasten them; then turn H to the left, throwing back its catch, and the shears of C are brought to their work: when lift up to its notch, the extremity of W, and the band on S, is tightened, and the machine works.

Fig. 2, a side and the two end views of shearing the length-way of the cloth. A, the frame, with its pillars, legs, and rails. B, a circular cushion, or shear-board, formed to the angle of the cropper's shears, and at each end resting on steps fixed to the top rail of A, to be moved round, as occasion shall require. C, the cropper's shears in its harness, or working position. D, the harness, attached to both ends of the ledger blade of the shears C, as particularly described in fig. 1, under the letter D; but this mode of shearing requires that the strong pieces, attached by screws to the ends of C, should be framed together near the back of the said laid ledger blade, to take the weight of the ends of the shears. When the whole width of a narrow cloth is shorn, the second shear of C is placed behind that in drawing, and has another, B, for it to work upon, and I, to be worked by. And that part of D attached to the heel of C and letter E, are lengthened as described (fig. 3) under the letter C; so in like manner the shears are situated behind each other in taking the width of a broad cloth. Here it must be noted, as in this mode of shearing the cloth having the progression, the wheels of D are omitted, and pieces of wood, half rounded, supply their place. E, is a small frame in its steps, with its arms and lices. The situation of E is seen under letter D, fig. 3; it is attached to the heel part of the harness, as there seen by the drawing. One of the lines of E goes down to the working-rail of E, in the aforesaid, fig. 3; and the other line communicates with the lever or bob of D. F, the roller, with its handle; on which the cloth to be shorn is wound. G, the small rollers, to guide the cloth to B; the middle one which swells riding on it, lighteneth the lists of the cloth as it rides forwards: the swells are moveable, for the purpose of suiting cloths more or less long-listed. H, the rod, cranked on every side, with the pulley for the progression, and that also which carries a band to the working power situated at the upper end of A, near Q. I, is the thimble fitted on the crank, with the line going up to near the extremity of the bob working C. K, an axle, with its cog-wheel and stop, as particularly described (fig. 1) under the letters H, I, K, L, and produce a like effect, and must be fixed to this figure the same as in that. L, the cheek to F, fastened by a pin at the near end, and passing under F, being hollowed to it, the further extremity (being carried under C and B) having a weight suspended on it. M, the roller, with a cog-wheel, to which the end of the cloth is attached; and being tightened by the handle of F, the weight on L keeps it in that tight state as it is carried through the work. N, an iron axletree, carrying a large pulley with one groove, and a five-groove pulley with its steps, that out of sight lies under A on a cross rail. O, an iron axletree, carrying a five-groove pulley and screw pinion on steps, as in drawing. P, bands

going from the small pulley of H to the large pulley of N; and from the five-groove pulley of N to the five-groove pulley of O. Now these five-groove pulleys gradually descend in their dimensions from fourteen inches to three inches in one, and the other may be the same dimensions, or very considerably smaller; or it may be reduced to a pulley of three inches diameter with one groove. These five-groove pulleys stand, in respect to each other, in contrary directions. Now when the crank by a band on the pulley on its upper extremity is set to work, the band B, from the other pulley, puts O and P in motion, and carries forward M. That M may have different speed, the band of the five-groove pulleys must be shifted for that purpose to the different grooves, which give them more or less speed.

The Stop-Frame.—Q, the stop where rides the upper end of H, which step at one end is tenoned into the pillar of A, and pinned. R, is a small sword, at the lower end tenoned into the extremity of Q, and pinned; and at the upper end is mortised, so as to admit the further end of S. S, is the lever, tenoned into the mortise of R, and pinned, and passing through a mortise in the pillar of A. Now to stop the machine, the near extremity of the lever S must be pressed down, and that slackeneth the band communicating from the acting power to the pulley of H. When set a-going the said extremity of S must be lifted up, and pinned there. To work this machine, put the cloth to work as directed under letter M; then throw back the stop of G, and the shears are brought to their work; then raise the extremity of S, and the machine works.

Fig. 3, shews a second mode of shearing cloth the length way: a side and end view. A, is the frame, with its pillars, legs, and side and end rails. B, the inclined planes, as fig. 1, under E. C, the shear-boards, over which the cloth is stretched from H to I: every shear has its board, and is placed by the side of each other, so as to take the width of the cloth; and the shears, situated for the like purpose on them, the harness H, and small working frame E, fig. 2, are lengthened accordingly. B, the cropper's shears in its harness, and bob or working lever, with E, fig. 2, in its proper situations, attached by the steps to the harness of D. E, the axle, with the line communicating with the bob at one end; and at the other with one of the axle rods, by a thimble, described under F and G, fig. 1. F, the line and thimble before named. G, a small axle, with its lines, levers, pulleys, &c, particularly described under letters H, I, K, L, fig. 1. H, rollers for the cloth, and their cog-wheels and stops. I, a lever, with its catch and stop to the wheel of H, which is on the other side of the pillar of A, near the middle of it, and falls into the cog-wheel of H, which line communicates with the lower end of the catches on H and L, and passeth through small pulleys, fixed under the catches, on the inside of the frame A, that, by the pressure of the upper extremity of the said lever, the catches are raised out of the cogs of their wheels, to give liberty for winding the cloth when shorn on the roller of H, situated near to I. K, a roller to guide the cloth, when wound forwards, that it may keep its situation on the surface of C: it is placed near the axle G, on steps, in the same direction fixed to the pillars of A. L, an axle, with its handles, cog-wheel, and stop, resting on B, with its near stop. This axle has an aperture through the middle of it lengthwise, to admit the cloth through. Now when the cloth is stretched from one of the rollers of H to the other, by turning L to the right, more regular tightness is given to the cloth, and better fits it for the action of shearing.

For effecting the progression in shearing and working the shears, M is a small sword, fitted on the handle of the projection of E at one end, and at the other on the crank handle of N. N, a crank, with its pulley with one groove, and a small five-groove pulley. Or this may be reduced to a small one-groove pulley, of about three inches diameter. The larger one-groove pulley carries a band to the power that drives the machine. The situation of this crank is nearly the same as S, fig. 1, and produces the like effect. O, is an axle, with a large five-groove pulley and screw pinion. These pulleys of N and O have their bands, and descend in their dimensions, as particularly described under letter P, fig. 2. P, a roller, with its cog-wheel, on which the bands wind that carry forward D, with all the other shears, more or less, fastened together by a rail, at their proper distances from each other (as in drawing), that each may take its proper share of cloth, being situated as described under letter C. Bands from P to D carry forward the shears of D.

For stopping this frame, the stop part of fig. 1, under letters U, V, W, X, must be put to it, fixed to the rails and pillars of A. Q, is a projection attached to D, and will stop this frame when the parts above directed are fixed to it in the manner directed, fig. 1. R, is a line attached to the shears of D, and passing through a small pulley fixed in the back rail of A, runs through another pulley fixed in a convenient situation over the frame of this said fig. 3, and by pulling its extremity draws back the shears of D when they have cut their board of cloth.

For working this machine, the cloth is wound on the upper roller of H, and round a small roller at the upper end of A, and extended down C, and under K, and to the other roller of H, where it is attached; the stop of the upper roller falling into its wheel, the cloth is tightened by the lower roller and the handles of the roller. L, their respective catches falling into the cogs of their wheels, which keep the cloth in a tight state, then throwing back the catch of G, the shears of D are let down to their work, when, by means of R, they are brought to their proper situation on B. Then lift up the lever of the stop-frame into its notch, as directed under letter S, fig. 2, and the machine works. When the machine stops, as before directed, and particularly described, fig. 1, under X, to shift the cloth for cutting another length, press down the near extremity of I of this third figure, and wind the cloth that is cut on H. When lifting up the said extremity of I, the cloth may be tightened as above described, and the shears of D shifted to continue their work.

Fig. 3. For raising a shag on cloth preparatory to shearing. A, the side and end rails, legs, and pillars, with its teals, frames, and cotters. B, the frames, one open and the other shut, which turn on hinges, and, when shut ready for work, are fastened by buttons screwed loosely to C. C, is a frame mortised, to fit four sides of B, when shut; and by small projections, or slides fixed to its four corners, rides in the groove of a third frame, fixed to the rails of F. D, a third frame in the inner grooves, or two sides of it; C rides this frame, is attached to F, its projection slides through the gutter or flutes of L, when working. E, the double crank, with its large pulley, which by a band goes to the working power. These cranks stand in contrary directions, on the same axle, that the frame may work alternately. F, working rails, fitted on the crank handles, and fastened on by screws. These rails have a working joint near the side of G, and on the further side of G are attached, by screws, to each end of D; and as E works the frames of D, which carry C and B, works round L, and so raise the shag. G,

the pulleys, fixed in their frames, over which F rides. H, the board for raising, in its inclined posture, with the cloth passing over it from one roller of I to the other. I, the rollers, situated before and behind H, and attached to the legs of A, by screws, the gudgeons riding on steps; and at the upper end of H is a small roller, to guide the cloth round the end of H, with swells for both lists of the cloth, after the manner of fig. 2, under the letter G. K, the check to the fore roller I, which at one end is attached to one of the legs of A, and near that end lies over the same roller, and hollowed to fit it, and at the other end carries a weight, as in drawing. L, two pieces of plank, situated on both sides H, at the upper termination of M. The inside of the said planks are fluted or guttered to the angles of L, which stands at the foot of A. The small projection at the top of L is a pattern of the slides fixed to the sides of D, which pass through the aforesaid angle when the frames are working, which raise them to and from the cloth. To effect the revolution of the slides that carry C, the top piece of L is fastened to the side of its plank, at or near the upper end, by a screw, on which it moves, and at or near the bottom end it is fastened to its plank, but with the liberty to play. Now when D, by its slides, has passed through the gutter, the lower end of the top piece of L falls, and forms a bridge, to carry the slides of L to the top of the gutter, for the making of another revolution. M, are small swords, terminating in L, and fastened with pins, and passing through sockets fixed to the rail of A, and mortised at the lower extremity into N, where they move on pins. N, a strong rail, extending along the side of A, having a joint in it, and turning on pins in a mortise fixed to the pillars of A. O, an axle, with small projections at its ends, in steps, lying on the lower rail of A, extending from one side of the machine to the other. P, small swords, one tenoned into the projection of O, and the other admitting the near extremity of N, through a mortise where it moves upon a pin. Q, an upright leg, fastened at the lower end to the axle of O, near the lower rail of A. Now by turning this leg to right or left, it moves O, and O, by its projection, raises and lowers the near extremity of N, and N raises and sinks L, which has a like effect on B, C, D; so that, by these mediums, B is brought into contact with H in all necessary degrees. R, is a cog-wheel, its situation is on the further extremity of the back roller of I. S, two catches, for carrying forwards R, attached to I at one end in mortises, and moving on pins, and the other working the cogs of R. T, the working leg, fixed to the further pillar of A by a screw, as in drawing. The upper extremity of the said leg goes through a socket, fixed to the further rail of F, near the upper part of it. Now, by the vibration of this said extremity of T, in its socket, by E working F, S carries round R, and by varying the pins of S nearer to, or more distant from, the centre of its motion, the said R is carried forwards either faster or slower.

For shifting B and C to right and left of H, for the purpose of raising more regularly, U, a cog-wheel and stop of the under-side, with a handle near the periphery of the said cog-wheel, to act as a crank on the top-side. V, three rails. The rail that crosses the top of H is tenoned into the extremities of those that form or lie to the right and left of it. W, the steps on which V rides, with pins to keep the rails of V in their place. X, bands fastened at one end to C, and the other extremity passing through nuts fixed to V, where they are fastened by the end screws working through the side of their nuts against them. Y, two legs, fastened together at the lower end by a working joint at the upper ends. The further is attached to the near rail of F,

and that nearer works upon a pin, a little short of its extremity, with a catch falling into the teeth of W; and as it works U round, there is another catch on the same side, which prevents the said U from working back. Now F works Y, and Y works U, and U works by its crank V, and X shifts C from right to left by turns in the degree necessary by tightening and slackening the band X. Z, is the near step of E, screwed to a short rail at one end, tenoned into the near pillar of A, near which the step of A is situated. The other extremity of the said rail is fixed under a pin, on a short upright leg, which at the lower is screwed to the inside of the near rail of A, near which the step of A is situated.

Now to set this machine to work, or stop it when working; for the latter, move the said rail from under its pin, and by raising it the band on E slackens, and the machine stops; and having extended the cloth from the near roller I, on which it is wound, to that behind H, and fixed the handles in B, with its cutters, and buttoned them down, you must then bring the extremity of Z under its said pin, and the machine works.

WOOLPIT, a town in Suffolk, supposed to be the ancient Sitomagus, and noted for making the best white bricks. It is eight miles E. by S. of Bury St. Edmund's, and 75 N.E. of London.

WORCESTER, the county town of Worcester, in the state of Massachusetts, and the largest inland town in New England. It is 47 miles W. of Boston.

WORCUM, a town of Dutch Brabant, seated on the S. side of the Maese, just below its junction with the Wahal, eight miles N.N.W. of Heusden, and 22 E. of Rotterdam. Long 4. 52. E. Lat. 51. 52. N.

WORCUM, a sea-port of the United Provinces, in Friesland, situated on the Zuider Zee, 18 miles S.W. of Lewarden. Long 5. 15. E. Lat. 53. 0. N.

WORDEN, a town of Lower Saxony, in the duchy of Holstein, situated on the Elbe, ten miles N.W. of Gluckstadt.

WORDEN, GROSSEN, a town of Lower Saxony, in the duchy of Bremen, ten miles N.N.W. of Stade.

WORDINGBERG, a sea-port of Denmark, on the S. coast of the island of Zealand, 43 miles S.W. of Copenhagen. Long 11. 58. E. Lat. 55. 3. N.

WORINGEN, a town of Germany, in the electorate of Cologne, seated on the Rhine, eight miles from Cologne.

WORKHOUSE (*Encycl.*). We have in that article, as well as under the article *House of Industry* (*Supp.*), pointed out some of the defects which render these receptacles of little benefit either to the poor themselves, or to the community at large. The following extract, however, from the Rev. Mr. Gilpin's account of the new poor-house at Boldre, in Hampshire, will shew how these defects are to be remedied.

The old poor-house of Boldre being a wretched place, and having been managed at a great expence, it was determined at a vestry, held in the year 1792, to build a new one on a better site; to put in a respectable master and mistress; and to give the overlooking of it to a monthly committee of the gentlemen and farmers of the parish.

Accordingly they borrowed the sum of 800l. and bought a piece of ground, about two acres and a half; elevated, dry, and airy; here they erected the house, at a little distance from the road; and yet near enough to be under the constant eye of observation. It is built substantially of brick; single, that the air may have free passage through it, and extending about eighty-two feet in front, and twenty in breadth. These dimensions give an excellent work-room

on the right, as you enter; and, on the left, a kitchen and back-kitchen: the master's room, which is also the committee-room, about eighteen feet by fourteen, occupies the centre, and has a window on one side, inspecting the work-room; and another, on the opposite side, inspecting the kitchen. Above stairs, the sleeping chambers are separated nearly as those are below; only, as there are commonly more women and children in a poor-house than men, a room at the end of the men's apartment is taken off for a sick room, with a separate staircase. Over the chambers are excellent garrets; behind the kitchen part of the house, are the pantries and other conveniences, among which is a store-room thirty feet long.

The ground between the house and the road, which is a falling space of about sixty yards, is divided, first, into a dry convenient play-yard for the children; and the remainder, about half an acre, running down to the road, is a garden; the larger garden, which is an acre, lies behind the house.

The house being finished, and sufficiently dry, the inhabitants of the old house, consisting of nine or ten men and women, and between twenty and thirty children, were brought into it, on the 19th of May, 1793; and the whole put under the care of Mr. and Mrs. Salter, who are both of them well acquainted with the whole business of spinning and weaving. He has set up a couple of looms, and a number of spinning wheels, and generally presides over this part of the business himself; Mrs. Salter attending to the economy and management of the house. The inhabitants are all employed according to their capacities: some of the old women in cooking, mending, and washing; the old men in the garden; the children, and some of the women, in spinning and weaving; children even of four or five years of age are employed, and earn about a penny a-day. In summer they come into the work-room at six; in winter as soon as it is light. At breakfast they have an hour's respite, and the same at dinner. They have all tasks; but so easy, that, if they work hard, they can finish them by two in the afternoon; and, without any exertion, by six.

Their table of diet is as follows:—on Sunday, meat, with plenty of vegetables and bread; the allowance of which is four ounces for grown persons, and three for children; on Monday, the remains of Sunday's dinner warmed with vegetables and bread; on Tuesday, each grown person has a pound of pudding, and the children three quarters of a pound; on Wednesday, the same as on Sunday; on Thursday, the same as on Monday; on Friday, ox-head stew with vegetables and bread; on Saturday, a clearance is made of all the remains in the house; and, if they fall short, the deficiency is made up with bread and cheese. For breakfast, beef broth, or milk porridge and bread, are provided; except for a few old women, who, having been in the habit of drinking tea all their life-time, are allowed that indulgence, on account of their good behaviour. At supper, the regular meal is six ounces of bread, and an ounce of cheese, for every grown person; and for children, four ounces of bread, and three quarters of an ounce of cheese; this is sometimes varied with potatoes, which the children like better. The children, including all under the age of fifteen years, sit at one table, and the grown persons at another. Every thing is good in its kind: the children seldom eat up all that is provided, and the remainder is fried up again the next day among the remains. During the late scarcity of bread-corn, Mrs. Salter used a less proportion of wheat, and a larger of potatoes, particularly for supper; and during the winter of the year 1795, she boiled potatoes and onions, and mixing them well together, fried them up with

a little lard ; the people were in general fonder of this dish than of their usual meal.

Four bushels and a half of malt are allowed each month for beer. We must add, that the master and mistress generally fare as the family does, though it is not required by the committee.

The clothing of the poor is equally good; every one has a new suit for Sunday, generally spun and woven in the house. It is carefully hung up at night; and the old clothes produced for the week.

Thus the poor are well lodged, well fed, and well clothed; and yet (on deducting their earnings) at *less than half the expence* that they cost the parish before, being about nine pence a-head weekly; whereas in the old house, with continual complaint, the allowance was double that; though provisions, at that time, were much cheaper than they are now.

In the article of clothing, much more is saved. Though the poor are now so decently clad, yet, by care and management, the whole expence of the clothing in the year 1795, including shoes, amounted only to 17l. 6s. 8d.; whereas the expence of clothing the poor in the old house, did not amount to less, one year with another, than 70l. annually. In one year it reached 90l.: for as no care was taken to keep the clothes in repair, nor any distinction made between old and new, they were always in rags, and yet always craving for new clothes.

Another article of saving is in the health of the poor; arising from the airiness and cleanliness of the present house, the good clothing, the wholesomeness and plenty of provisions, and from the care that is taken to keep the family clean. No epidemical, nor indeed any disorder, has appeared among them, since the new house has been opened.

By this alteration in the management of the house, a saving in the poor's-rates of the parish was made in the year 1795, of 157l. 1s. 6d. notwithstanding the then advanced price of provisions, and the variety of expences incident to a new establishment; and the average diminution in the rates, from Easter 1793 to the present time, has been 164l. a-year. The gardens belonging to the house are in high cultivation, and bear such quantities of potatoes and cabbages, the chief vegetables used in the family, that in general they are abundantly supplied. During the scarcity of the year 1795, they were obliged, indeed, to purchase potatoes.

But nothing is so delightful in the institution as the cheerfulness with which every thing is conducted. The old women, who behave well, have their little indulgences of tea and snuff; and the men, of tobacco. The children's tasks are made pleasing to them, by little gratuities out of their

earnings. The master has the art of turning even their play-hours to use, and yet making them more happy than if they were left to themselves.

Punishment in Boldre work-house is rare and gentle; and consists chiefly in confining the delinquent in a room by himself, and abridging him of a meal: if, however, the master is under the necessity of correcting a boy corporally, the punishment is always inflicted in the presence of some respectable person.—For devotion and religious instruction, the family assembles in the kitchen, every morning when the bell rings for breakfast. The master reads, and generally explains, some easy and practical part of the New Testament; after which they all join in prayer. On Sunday morning and evening, these exercises are enlarged, and accompanied with singing hymns, in which all the children join. They regularly attend church on Sundays: and it is a pleasing sight to see so many well-clothed figures, happy faces, and healthy countenances, issuing from a parish work-house. In the afternoon, on Sunday, the children attend the school, where they are catechised with the other children of the neighbourhood: the old people also attend with them.

The advantages of a *well-regulated poor-house* consist in superior comfort of the aged, the education of the young, the reform of the dissolute, and the diminution of poor's-rates. All these benefits have attended the new regulation of the poor-house at Boldre; so that a happy and useful society has been thereby formed out of the very dregs of the parish. The old people having all their wants supplied, and their wishes attended to, feel themselves more comfortable than they ever did before; and are glad to render cheerfully, in return, what little services they can: the children*, bred to industry and Christian virtue, promise to become useful members of society; and the penitence and good conduct of some persons in the house, who, for want of education and early good habits, had been involved in idleness and profligacy, do infinite credit to the institution. Mr. Gilpin adds, that the poor's-rate has been reduced from 654l. 12s. to 490l. a-year, at the same time that the comfort and happiness, the industry, and the moral and religious habits of the poor, and in its consequences to the whole parish, have been increased, with a reasonable confidence of still greater improvement and saving to the parish, by its effects and example on the rising generation.

WORKINGTON, a sea-port in Cumberland, seated on the Derwent, over which is a stone-bridge. From this port a large quantity of coal is exported. This was the landing-place of Mary queen of Scots, when she was driven to take refuge in England. In the neighbourhood is a large iron foundry. Workington is seven miles W. of Cockermouth, and 307 N. of London. Long. 3. 35. W. Lat. 53. 42. N.

* It should be observed that, in Boldre work-house, the children are kept separate and distinct from the adults: and that Mr. Gilpin has founded a school of industry and education, that provides for a great many of the children of the poor in that parish. Nothing less than such circumstances, with very good management, could render a poor-house, as at Boldre, a fit residence for children. The common occurrences of a parish will make it necessary to receive into a poor-house those whom idleness and vice have made very improper examples for youth; and children in work-houses are generally the subject of uneasiness and unpleasantness to the aged poor, who are too frequently the butt and sport of their thoughtless and uneducated little creatures which are to be found in most poor-houses. If all of them, above seven years of age, were to be removed from the work-house to some cottage, and there boarded, as in a parish-school, at a certain sum (the mistress having the benefit of their work), they would be more cheaply kept, and better educated; a parochial school might thereby be provided, and a deserving family supported; they would also get out at an earlier age, and into better services, than they do now; the objection to taking children into any family, out of a poor-house, being general, and almost insurmountable. A work-house, if well conducted, might be made as comfortable a retreat to the aged poor, who have no domestic connections, as any charitable foundation whatever; and that at less than the present expence.

WORKSOP, a town in Nottinghamshire, with a market on Wednesday. It is noted for a magnificent seat of the Duke of Norfolk. Here was once an abbey, the gate of which remains, and the room over it is converted into a school. On the west side of the town is a circular hill, which was the site of a castle. Quantities of licorice are grown in its vicinity, which is also peculiarly remarkable for the number of noblemen's seats. The canal from the Trent to Chesterfield, passes near this place. It is 24 miles N. of Nottingham, and 146 N. by W. of London. Long. 1. 0. W. Lat. 53. 20. N.

WORSTED, a town in Norfolk, with a market on Saturday. It is noted for being the place where worsteds were first made. It is 12 miles N. of Norwich, and 120 N.E. of London. Long. 1. 26. E. Lat. 52. 52. N.

WOTTON-BASSETT, a borough in Wiltshire, with a market on Friday. It sends two members to parliament, and is 30 miles N. of Salisbury, and 89 W. of London. Long. 1. 54. W. Lat. 51. 31. N.

WOTTON-UNDER-EDGE, a corporate town in Gloucestershire, with a market on Friday. The inhabitants are principally clothiers, and it is governed by a mayor. It is seated under the hills, 20 miles N.E. of Bristol, and 108 W.N.W. of London. Long. 2. 11. W. Lat. 51. 40. N.

WRAGBY, a town in Lincolnshire, with a market on Thursday, 11 miles E.N.E. of Lincoln, and 144 N. of London. Long. 0. 10. W. Lat. 53. 18. N.

WRATH, CAPE, a vast promontory in Southernlandshire, which form the N.W. point of Great Britain. Against its rugged cliffs lofts the rapid tide bursts with incredible fury.

WREKIN, a noted mountain in Shropshire, eight miles E.S.E. of Shrewsbury.

WREXHAM, a town in Denbighshire, with a market on Monday and Thursday. It is the most populous town in all North Wales, and a place of considerable traffic. It retains the language and appearance of an English town, and has a Gothic church, the lofty steeple of which is the boast of this part of the country. Near Wrexham is a large foundry for cannon and other articles. It is seated on a river, which falls into the Dee, in a country affording plenty of lead, 13 miles S. by W. of Chester, and 188 N.W. of London. Long. 3. 10. W. Lat. 53. 2. N.

WRINTON, a town in Somersetshire, with a market on Tuesday. The most noted mines for calamine are in its neighbourhood. It is the birth-place of Mr. Locke, and seated among the Mendip-hills, 11 miles N.N.W. of Wells, and 125 W. of London. Long. 2. 38. W. Lat. 51. 21. N.

WROTHAM, a town in Kent, with a market on Tuesday. It has a large church in which are 16 stalls, supposed to have been made for the clergy attending the Archbishop of Canterbury, who had a palace here, till Archbishop Ippley, in the 14th century, demolished it, and built another at Maidstone. It is 11 miles W.N.W. of Maidstone, and 24 S.E. of London. Long. 0. 24. E. Lat. 51. 18. N.

WROXETER, a town in Shropshire, five miles S.E. of Shrewsbury. It is said to have been built by the Britons, on the banks of the Severn, over which are the traces of a bridge, discernible at low water. The circumference was three miles, environed by a wall three yards broad, with a deep trench on the outside, which may be traced in several places. Roman coins are frequently found here, but none of the Saxon, which is looked upon as a proof that it was destroyed before their arrival.

WUNNENBERG, a town of Westphalia, in the bishop-

ric of Paderborn, which received its name from a victory gained by Charlemagne over the Saxons in 974. It is 14 miles S. of Paderborn. Long. 8. 15. E. Lat. 51. 26. N.

WUNSEDEL, a town of Franconia in the principality of Bayreuth. Near it are mines of copper and iron, and quarries of marble. It is 16 miles W. of Egra, and 34 E. of Bayreuth. Long. 12. 24. E. Lat. 50. 10. N.

WUNSTORF, a town of Lower Saxony, in the principality of Calenberg, 10 miles W.N.W. of Hanover.

WURZACH, a town of Suabia, in the county of Waldburg, situate on the Aitrach, 17 miles N. of Wangen, and 26 N.W. of Kempten. Long. 10. 5. E. Lat. 48. 6. N.

WURZEN, or **WURTZEN**, a town of Upper Saxony, in the territory of Leipzig, with a citadel. It was formerly a bishop's see. The principal trade is in beer, of which great quantities are exported. It is situate on the Muldaw 14 miles E. of Leipzig, and 44 N.W. of Dresden. Long. 12. 40. E. Lat. 51. 19. N.

WUSTERHAUSEN, a town of Upper Saxony, in the middle marche of Brandenburg, seated on the Döffe, 27 miles N. of Brandenburg, and 36 N.W. of Berlin. Long. 12. 30. E. Lat. 52. 53. N.

WUSTERHAUSEN, a town of Upper Saxony, in the middle marche of Brandenburg, 11 miles S.E. of Berlin.

WYCOMB, CHIPPING, or HIGH WYCOMB, a borough in Buckinghamshire, with a market on Friday. In 1744, a Roman tessellated pavement was discovered in an adjacent meadow; and in its neighbourhood are many corn and paper mills. This town is governed by a mayor, and sends two members to parliament. It is seated on the Wyck, 13 miles S.E. of Aylesbury, and 31 W.N.W. of London. Long. 0. 39. W. Lat. 51. 37. N.

WYE, a town in Kent, with a market on Thursday, seated on the Stour, 10 miles S. of Canterbury, and 56 S.E. of London. Long. 1. 4. E. Lat. 51. 10. N.

WYE, a river of South Wales, which issuing out of Plynlimmon Hill, very near the source of the Severn, crosses the N.E. corner of Radnorshire, giving name to the town of Rhyadergwy [Fall of the Wye], where it is precipitated in a cataract. Then flowing between this county and Brecknockshire, it crosses Herefordshire, and dividing the counties of Gloucester and Monmouth, falls into the mouth of the Severn, below Chepstow. The romantic beauties of the Wye, which flows in a deep bed, between lofty rocks clothed with hanging woods, and here and there crowned by ruined castles, have employed the descriptive powers of the pen and pencil.

WYE, a river in Derbyshire, which rises in the N.W. part, above Buxton, and flowing S.E. falls into the Derwent, below Bakewell.

WYE, a town of Switzerland, in a territory of the abbey of St. Gallen, with a palace. It is built on an eminence, 16 miles S.S.W. of Constance. Long. 9. 4. E. Lat. 47. 34. N.

WYMONDHAM, or WINDHAM, a town in Norfolk, with a market on Friday. The steeple of the church is very high, on it was hung Ket, the rebel, in the reign of Edward VI. It is nine miles S.S.W. of Norwich, and 100 N.N.E. of London. Long. 1. 6. E. Lat. 52. 36. N.

WYNENDALE, a town of Austrian Flanders, where General Webb, in 1708, with 6000 men only, defeated 24,000 French. It is eight miles E.N.E. of Dixmude.

WYRE, a river in Lancashire, which rises near Wyresdale, six miles S.E. of Lancaster, and passing by Garstang, enters the Irish Sea below Poulton.

X.

XABEA, a sea-port of Spain, in Valencia, 38 miles N.E. of Alicante, and 54 S.S.W. of Valencia. Long. 0. 25. E. Lat. 38. 40. N.

XACCA, or **SACCA**, a sea-port of Sicily, with an old castle. It is seated on the S. coast of the island, at the foot of a mountain, 20 miles S.E. of Mazara, and 41 S.S.W. of Palermo. Long. 13. 2. E. Lat. 37. 41. N.

XAGUA, a sea-port on the S. coast of the island of Cuba, one of the finest in America, 84 miles S.E. of Havana. Long. 80. 45. W. Lat. 22. 10. N.

XALAPA, a town of New Spain, in the province of Tlascala, with a bishop's see. It contains about 2000 inhabitants. This town is said to give name to the purgative root called jalap, or xalap. It is 60 miles E. of Angulos. Long. 98. 20. W. Lat. 19. 32. N.

XALISCO, a town of New Spain, in the province of Guadalajara Proper, seated on the Pacific Ocean, 400 miles W. of Mexico. Long. 110. 5. W. Lat. 22. 30. N.

XATIVA, a town of Spain, in Valencia. Having taken the part of Charles III. in 1707, Philip V. ordered it to be demolished, and a new town to be built, called St. Philip. It is seated on the side of a hill, at the foot of which runs the Xucar, 32 miles S.W. of Valencia, and 50 N.W. of Alicante. Long. 0. 14. W. Lat. 39. 4. N.

XAVIER, or **SABI**, the capital of the kingdom of Whidah, on the Slave Coast of Guinea. It is noted for its great market, which is held at the distance of a mile from the walls. The market-place is surrounded by sutlers' booths, which are only permitted to sell certain sorts of meat, as beef, pork, and the flesh of goats and dogs. Here slaves of both sexes are bought and sold, as well as oxen, sheep, dogs, hogs, fish, and birds. Here are to be found various commodities of Whidah manufacture, and every thing of European, Asiatic, or African production. Xavier is seated one mile from the river Euphrates.

XAVIER, a town of Spain, in Navarre, noted as the birth-place of the celebrated Romish saint and missionary of that name. It is 35 miles S.E. of Pampeluna.

XAVIEQ, St. a town of Paraguay, in the province of La Plata, 200 miles W. of Rio Janeiro. Long. 50. 6. W. Lat. 24. 0. S.

XENIL, a river of Spain, which rises in Granada, and falls into the Guadalquivir, three miles below Ecya.

XERES-DE-BADAJOS, a town of Spain, in Estremadura, and in the territory of Tra-la-Guadiana, seated on the rivulet Ardilla, 27 miles S.E. of Badajoz. Long. 6. 32. W. Lat. 38. 9. N.

XERES-DE-GUADIANA, a town of Spain, in Andalusia, seated on the Guadiana, 18 miles N. of Ayamonte. Long. 7. 15. W. Lat. 37. 30. N.

XERES-DE-LA-FRONTERA, a town of Spain, in Andalusia. It is famous for excellent wine; and hence, it is thought, is derived the name of that we call Sherry. It is called *de la Frontera*, because, when the Moors possessed Cadiz, it was the frontier of the Christians. It is seated on the Guadaleta, five miles N. of Port St. Mary, and 110 S. by W. of Madrid. Long. 5. 59. W. Lat. 36. 42. N.

XERES-DE-LA-FRONTERA, a town of New Spain, in the audience of Guadalajara. Long. 104. 25. W. Lat. 22. 35. N.

XERES-DE-LOS-CABALLEROS, a town of Spain, in Estremadura, 51 miles S.W. of Merida, and 72 N.N.W. of Seville. Long. 6. 25. W. Lat. 38. 17. N.

XERUMENHA, a town of Portugal, in Alentejo, 13 miles S.W. of Badajoz, and 36 E. of Evora. Long. 6. 9. W. Lat. 38. 35. N.

XICOCO, an island of Japan, between Niphon, and Saikoka.

XIMO, an island of Japan, the second in size, an emittance, situate to the S.W. of Niphon, from which it is divided by a narrow channel. It is 300 miles in circumference.

XIXONA, a town of Spain, in Valencia, and in the territory of Segura, with a strong castle. It is seated among mountains, in a country that produces excellent wine, 15 miles S.W. of Alicante. Long. 0. 10. W. Lat. 38. 6. N.

XUCAR, a river of Spain, which rises in New Castile, in the Sierra-de-Cuenca. It passes by Cuenca, and entering the province of Valencia, runs into the gulf of Valencia, at the town of Cullera.

XUDNAGROD, a town of Turkish Croatia, 17 miles N. of Sebenico, and 37 E. of Kzara. Long. 16. 51. E. Lat. 40. 34. N.

Y.

Yan-arm of the Zuider Zee, which enters that sea, five miles E. of Amsterdam. It forms the boundary between N. and S. Holland, and is pronounced *Ey*.

YAKUTSK, one of the four provinces of the Russian government of Irkutsk; in the eastern part of Siberia.

YAKUTSK, a town of Siberia, capital of a Russian province of the same name, seated on the river Lena. Long. 129. 53. E. Lat. 62. 1. N.

YALE, the capital of a province of the same name, in the island of Ceylon.

YAMBO, a sea-port of Arabia, with a castle, on the coast of the Red Sea, 60 miles S.W. of Medina. Long. 40. 10. E. Lat. 23. 40. N.

YAMBURG, a town of Russia, in the government of Petersburg, situate on the Luga, 20 miles E. of Narva. Long. 28. 16. E. Lat. 59. 15. N.

YANG-TCHEOU, a populous city of China, in the province of Kiang-nan. Being intersected by a number of canals, it has 24 stone bridges, each consisting of several arches. It is 45 miles N.E. of Nanking.

YANG-TESE-KIANG, a great river of China, which rises in the province of Yun-man, and having crossed Hou-quang and Kiang-nan, enters the Eastern Ocean, opposite the isle of Tsong-ming, which is formed by the sand accumulated at its mouth.

YARN-MILL. The following is extracted from the specification of a patent granted in 1787 to Mr. Kendrew, and Mr. Porthouse, of Darlington, for a mill or machine, upon new principles, for spinning yarn from hemp, tow, flax, or wool. It may be worked by water, or as a horse-mill, or in any other way, and is made and used in the following way: There is a cylinder, marked A in the drawing, fig. 1 (Plate 56.), three feet diameter, and ten inches broad, made of dry wood or metal, turned true, and covered on its circumference with a smooth leather, upon which are placed the rollers marked D, covered with leather, and supported in their situations by the slits in the covered piece of wood marked K, in which the iron axes of the rollers turn, but suffers them to press on the wheel marked A. There must be another piece similar to the above to support the other end of the rollers. These rollers are of different weights. The upper roller marked D 1 is two stone, the rest decreasing to the last, which is only two pounds weight and one half. There is an iron fluted roller, marked F, furnished with a toothed wheel at each end, and a wood one, marked G, covered with cloth, and over it a smooth leather. There is an assisting roller, marked H, of fluted iron. These rollers are supported by their axes, turning in the slit, marked 2, of the piece of wood marked M (fig. 3), which is here separated from the end of the frame marked 8, to shew the rollers and wheelwork. The rollers marked G and F are squeezed together by means of the lever marked p, and its weight marked w (fig. 3). The roller marked H is pressed to the mark G by its axis, acting upon the inclined plane marked x (fig. 3). There is a rubbing roller covered with woollen cloth, and on its axis is a small wheel, marked I, driven by the wheel marked S. This roller rests upon the roller marked G, and by its motion prevents any dirt or

fibres from adhering to it. There is a cloth, marked N, revolving over two rollers marked O, O, which has motion given to it from the wheel marked C, by means of another wheel marked P. This cloth moves at the same pace as the surface of the wheel marked A. There is a supporter, marked Y, of the axis of the wheels marked O, P, but is removed, in order to shew them; it is fixed by its tenons in the mortises marked Z, Z. The roller marked B is kept in action by its endeavour to slip down the inclined plane at the top of the piece marked Y, thereby pressing against the revolving cylinder; and another piece, similar to this, must be understood to support the other end of the roller's axis. By the side of this revolving cloth is a table placed, of the same length and breadth as the cloth is, to which belong two smooth cloths or leathers, of the same size as the table. The machine being thus prepared, the attendant or workman must take a quantity of hemp, tow, flax, or wool, more or less, according to the fineness of the thread to be made, and lay or spread it evenly upon one of the smooth cloths on the table, then place it on the revolving cloth marked N, motion being communicated to the roller marked F, by wheel-work, as usual, from a water, horse, or other kind of mill, which wheel-work is communicated to the wheel marked Q, on whose axis is a nut, which turns the wheel marked C, and thereby the cylinder marked A moves, and with it all the rollers, by which motion the hemp, tow, flax, or wool, is drawn forward. The cloth turns down, but the hemp, tow, flax, or wool, go upon the cylinder marked A, under the roller marked B, and so forward under all the rollers marked D, then falls in between the rollers marked G, F, turns under the roller marked G, and over the roller marked H, which, as it gives the rollers hold of the hemp, tow, flax, or wool, in two places, enables them to draw forward the long fibres thereof, though many of them are to draw from under the marks 4 or 5 of the pressing rollers, marked D; it then falls into a cannister, marked R, and as by the wheel-work the rollers marked F, G, H, move three times faster than the cloth and cylinder, the sliver must be three times longer than when presented. By the time this is drawing, the other cloth is filled with hemp, tow, flax, or wool, as before, and laid upon the revolving roller, laying the hemp, tow, flax, or wool, over the end of the other, which goes forward as before, and thus a continued sliver is produced as long as the machine continues its motion. But in order that this sliver may come out of the cannister marked R, without entanglement, it must pass through an instrument marked 5 (fig. 3), placed over the rollers marked F, G, its open side marked T, to the cylinder at mark 4, supported by its ends marked V, V, in the slits marked W, of the before-described pieces marked K. The aperture X is so small as to press the fibres close to each other in their passage through it previous to their passing the rollers, by which means they remain pressed side by side in the sliver, and will not entangle. These thick slivers are drawn smaller by a similar process, and in the same manner as used for cotton, but the machines for drawing are all of the same structure as the above, except that they have no revolving cloth. The sliver is applied to the

cylinder under the roller marked B, which draws it forward under all the rollers, as before described, drawing it out, or lengthening it, every fresh machine through which it presses, till it be small enough for the spinning machine. It must be remarked, that the cylinders are made less in diameter, according to the different smallness of the sliver intended to be drawn upon them at the first; whilst the sliver is at its greatest thickness, the cylinder is required to be three feet diameter, as above described, the next rather less, and so on to the last, which is only two feet. The aperture of the bottom of the contractor belonging to each machine is also made one third part smaller than another in succession, from the greatest to the smallest cylinder; as also the drawing rollers marked F, G, H are furthest from the pressing roller marked D in the longest cylinder, and nearest at the smallest cylinder. At the largest cylinder the distance is about nine inches, and the smallest about four inches; but their distance cannot in all cases be fixed, as it depends on the different length of the fibres of the hemp, tow, flax, or wool; long ones requiring the distances mentioned, and short ones requiring the distances much shorter than is here specified.

The following several letters or marks are in the machine figured 2. The spinning machine, as to its drawing principle, is the same as the drawing machine. The slivers are presented to it in cannisters marked A, and drawn over a cylinder marked B, covered with rollers marked D. The fibres which are to form the thread are drawn from the cylinder by the rollers marked C, the under roller of which is made of fluted iron, the other of wood, covered with leather; they move six or eight times faster than the cylinder marked B; are enabled to draw the hemp, tow, flax, or wool, forward from under the pressing rollers marked D, by being squeezed together with the weights and crooks marked a, a, locked to the small part of the rollers marked C. There is a belt of smooth cloth, marked E, moving on two rollers, which are turned by the wheel marked F, on the axis of the fluted roller; at the opposite end of which, as at the mark G, is a nut, which turns the wheel marked H, on whose axis is another nut, turning the wheel marked I, and thereby the cylinder marked B, with all its rollers. These rollers move in curved pieces of wooden metal, marked K, which, to prevent confusion, are not represented in their places: they have slits in them, in which the rollers' axes are guided, but so deep as at all times to suffer the rollers to press upon the cylinder. These rollers are covered with cloth and leather. The top roller is about ten pounds weight, decreasing to the sixth roller, which is only about one pound weight: the yarn is turned by the spindles marked L, and rubbed over the wet cloth belt if spinning linen yarn, but if spinning worsted yarn the belt must be removed, that it may not touch it as it passes to the spool, which it coils round as fast as the rollers let it out. The spindles marked L, are turned by a belt from the wheel marked M, which derives its motion from the mill, and by a wheel on its axis communicates it to the roller under the mark C by the wheel marked F, and so to the rest, as above described. The hemp, tow, flax, or wool, is twined in the same manner as cotton is by mills.

YAROSLAF, a government of Russia, formerly a province of the government of Moscow.

YAROSLAF, a town of Russia, capital of a government of the same name. It is seated at the confluence of the Volga with the Kotorosl, 140 miles N.E. of Moscow. Long. 38. 59. E. Lat. 57. 35. N.

YARUM, a town in the N. riding of Yorkshire, with a market on Thursday. It is seated on the Tees, over which

is a stone bridge, 40 miles N.N.W. of York, and 238. N. by W. of London. Long. 1. 12. W. Lat. 54. 31. N.

YAXLEY, a town in Huntingdonshire, 14 miles N. of Huntingdon, 78 N. by W. of London.

YELLOW RIVER, or **HOANG-HO**, a large river of Asia, which, after a course of nearly 600 leagues across Tartary and China, enters the Eastern Sea, to the N. of the mouth of the Yan-tse-kiang. It is very broad and rapid, but so shallow, that it is scarcely navigable. It is called the Yellow River, because the clay and sand which it washes down, especially in time of rain, make its water appear of a yellow colour.

YELLOW SEA, a gulf of China, between the provinces of Pe-tcheli and Chang-tong on the W. and the peninsula of Corea on the E.

YENISEI, or **JENISA**, a river of Siberia, which running from S. to N. enters the Frozen Ocean, to the E. of the bay of Ob.

YENISEISK, or **JENISKOI**, a large and populous town of Siberia, in the province of Tomsk, seated on the river Yenisei. Long. 92. 35. E. Lat. 57. 46. N.

YEN-PING-FOU, a city of China, in the province of Fokien. It has in its district seven cities of the third class, and is seated on the brow of a mountain, at the foot of which is the river Minho. It is 275 miles S. of Nan-king.

YEN-TCHEOU-FOU, a city of China, in the province of Chang-tong. Its district contains four cities of the second, and 23 of the third class; and it is seated between two rivers, 275 miles S.E. of Peking.

YEN-TCHING, a city of China, in the province of Chang-tong, and jurisdiction of Tsi-nan-fou. Here a kind of glass is made, so delicate and brittle, that it cracks when exposed to the smallest injuries of the air.

YEOVIL, or **IVEL**, a corporate town in Somersetshire, with a market on Friday. Here is a manufacture of cloth, but the principal one is of gloves. It is seated on the Ivel, 20 miles S. of Wells, and 123 W. by S. of London. Long. 2. 37. W. Lat. 50. 55. N.

YESD, a town of Persia, in Irac Agemi, on the road from Kerman to Ispahan. It has a silk manufacture; and here are made the finest carpets in the world. It is 200 miles E.S.E. of Ispahan. Long. 56. 50. E. Lat. 32. 0. N.

YONNE, a department of France, containing part of the late province of Burgundy. It is so called from a river that rises in the department of Nievre, and passing by Chateau Chinson, Clameci, Auxerre, Joigny, and Sens, falls into the Seine. Auxerre is the capital.

YORIMAN, a province of Guiana, about 150 miles in length, on the river Amazon. The native inhabitants are strong, robust, and active, and both sexes go naked.

YO-TCHEOU-FOU, a commercial city of China, in the province of Hou-quang. Its district contains one city of the second, and seven of the third class; and it is seated on the Yang-tse-kiang, 275 miles S.W. of Nan-king.

YOUGHALL, a town of Ireland, in the county of Cork. It is surrounded by walls, has a very commodious harbour, with a well-defended quay, and sends two members to parliament. It has a manufacture of earthen ware, and is seated on the side of a hill, at the mouth of the river Blackwater, 28 miles E. by N. of Cork. Long. 7. 45. W. Lat. 51. 59. N.

YPRES, a large city of Flanders, with a bishop's see. It has a considerable manufacture of cloth and serges; and every year in lent there is a well-frequented fair. It was one of the barrier towns belonging to the Dutch, till 1781, when Emperor Joseph II. obliged them to withdraw their

garrison. It has been often taken and retaken; the last time by the French in 1794. It is seated on the Yperlee, 12 miles W. of Courtray, 15 N.W. of Lisle, and 130 N. of Paris. Long. 2. 48. E. Lat. 50. 51. N.

YRIEX, St. a town of France, in the department of Upper Vienne. It derives its name from a saint who built a monastery here, and is seated on the river Isle, 20 miles S. of Limoges.

YSENDYCK, a strong town of Dutch Flanders, in the isle of Calsand, seated on a branch of the river Scheld, called Blie, eight miles E. of Sluys, and 48 N.W. of Ghent. Long. 3. 38. E. Lat. 51. 20. N.

YSSELBURG, a town of Dutch Guelderland, 12 miles E. of Cleves, and 22 N.E. of Gueldres. Long. 6. 15. E. Lat. 51. 42. N.

YSSELMOND, an island of Holland, situate between the Merve on the N. and another branch of the Maese on the S. It has a town of the same name, near three miles W. of Rotterdam.

YSSELSTEIN, a town of the United Provinces, in Holland, with a castle, seated on the river Yssel, five miles S.W. of Utrecht. Long. 5. 5. E. Lat. 52. 7. N.

YSSENGEAUX, a town of France, in the department of Upper Loire, 10 miles N.E. of Puy.

YSTAD, or YSTAD, a sea-port of Sweden, in the province of Schonen, 26 miles S.E. of Lund. Long. 13. 44. E. Lat. 55. 22. N.

YUEN-YANG-FOU, a city of China, in the province of Hou-quang. Its district contains one city of the second, and six of the third class. It is 300 miles W. of Nanking.

YVERDUN, a strong town of Switzerland, in the Pays de Vaud, capital of a bailiwick of the same name, with a castle. It is seated at the head of a lake of the same name, on the rivers Orbe and Thele, 30 miles S.W. of Bern. Long. 6. 50. E. Lat. 46. 50. N.

YVETOT, a town of France, in the department of Lower-Seine, five miles N.E. of Caudebec.

YU-HING-FOU, a city of China, in the province of

Ho-nan. Its district contains two cities of the second, and 12 of the third class. It is 175 miles N.W. of Nan-king. YUMA, one of the Bahama Islands, in the West Indies, lying to the N. of Cuba, 55 miles in length, and 17 in breadth.

YUMETO, one of the Bahama Islands, in the West Indies, to the N. of the isle of Yuma, lying under the tropic of Cancer. It is 37 miles in length.

YUN, the largest canal in China, called also THE IMPERIAL CANAL. This celebrated canal, which extends from Canton to Peking, forms a communication between the N. and S. provinces. The traffic upon it is exceedingly great, and it is, in various other respects, an object of wonder and admiration to Europeans.

YUN-PING-FOU, a city of China, in the province of Petcheli. Its district contains one city of the second, and five of the third class; and it is 87 miles E. of Peking.

YUNG-NAN, one of the most fertile and opulent provinces in China; bounded on the N. by Se-tcheuen and Thibet, on the E. by Quang-si and Kwei-tcheou, on the S. by the kingdoms of Laos and Tonquin, and on the W. by those of Burmah and Pegu. Its gold, copper, and tin mines; its amber, rubies, sapphires, agates, pearls, marble, musk, silk, elephants, horses, gums, medicinal plants, and linen; have procured it the highest reputation. Its commerce and riches are immense.

YUN-NAN-FOU, the capital of the province of Yunnan, in China, once remarkable for its extent and the beauty of its public buildings, all which have been destroyed by the Tartars, in their different invasions. Its district contains four cities of the second and third class. It is 430 miles N.W. of Canton.

YURCUP, a town of Turkey in Asia, in Caramania, 125 miles N.E. of Cogni, and 270 E. of Constantinople. Long. 34. 30. E. Lat. 39. 40. N.

YVOY, a town of France, in the department of the Ardennes, seated on the Cher, 10 miles S. of Sedan. Long. 5. 4. E. Lat. 49. 32. N.

Z.

ZABERN, a town of Germany, in the palatinate of the Rhine, 15 miles W. of Philipsburg. Long. 8. 10. E. Lat. 49. 11. N.

ZABOLA, a town of Transylvania, on the confines of Moldavia, five miles S.W. of Neumark.

ZABURN, a town of France in the department of Lower Rhine, 15 miles N. of Strasburg. Long. 7. 50. E. Lat. 48. 50. N.

ZACATECAS, a city of New Spain, in the audience of Guadalajara. It is surrounded by very rich silver mines, and 312 miles N.E. of Mexico.

ZACHN, or **SOCHAN**, a town of Upper Saxony, in Hinder Pomerania, 14 miles E. of Stargard, and 52 S. of Colberg. Long. 15. 16. E. Lat. 53. 18. N.

ZAFRA, a town of Spain, in Elfremauria, with a castle. It is seated at the foot of a mountain, near the river Guadalajara, 20 miles S.W. of Medina. Long. 6. 12. W. Lat. 38. 19. N.

ZAGATULLA, a town of New Spain, in the audience of Mexico, 200 miles S.W. of that city, at the mouth of a river of the same name. Long. 104. 35. W. Lat. 17. 50. N.

ZAGARA, a famous mountain of Turkey in Europe, in Livadia, on the Gulf of Corinth, near mount Parnassus, and almost always covered with snow. It was the ancient Helicon, from which issued the fountain Hippocrene, and was sacred to the Muses, who had here a temple.

ZAGRAD, a strong town of Slavonia, capital of a county of the same name, with a bishop's see. It is seated on the Save, 25 miles N.E. of Carlstadt, and 137 S.W. of Buda. Long. 15. 41. E. Lat. 46. 20. N.

ZAHARA, a strong town of Spain, in Andalusia, seated on a craggy rock, and defended by a citadel. It is 47 miles S.E. of Seville. Long. 4. 55. W. Lat. 36. 52. N.

ZAHARA, or THE DESERT, a vast country of Africa, bounded on the N. by Barbary, on the E. by Fezzan and Cashna, on the S. by Tombuctoo, and on the W. by the Atlantic Ocean. The air is very hot, but wholesome to the natives. The soil is generally sandy and barren, inasmuch that the caravans crossing it to and from Negroland are often reduced to great extremities. The inhabitants are wild and ignorant. They have a number of petty princes; and the Mahometan religion is professed throughout the country.

ZAHNA, a town of Upper Saxony, 34 miles S.S.W. of Potsdam. Long. 12. 40. E. Lat. 51. 53. N.

ZAIRE, a large river of Africa, which, rising in the kingdom of Macoco, divides the kingdoms of Loango and Congo, and falls into the Atlantic Ocean, below Sogno.

ZALAMEA, a town of Spain, in Seville, 12 miles N. of Niebla, and 38 W.N.W. of Seville. Long. 5. 55. W. Lat. 37. 38. N.

ZAMORA, a strong town of Spain, in Leon, with a bishop's see. In its environs fine turcois stones are found. It is seated on a hill, on the river Douero, over which is a bridge of 17 arches, 35 miles N. of Salamanca, and 150 N.W. of Madrid. Long. 5. 18. W. Lat. 41. 41. N.

VOL. X.

ZAMORA, a town of Peru, in the audience of Quito. In its neighbourhood are rich mines of gold, and it is seated near the Andes, 230 miles S. of Quito. Long. 75. 55. W. Lat. 5. 6. S.

ZAMORA, a town of Spain, in the province of Guadalajara, 30 miles S.E. of Guadalajara. Long. 104. 30. W. Lat. 20. 30. N.

ZAMORA, a town of Algiers, in the province of Constantine, 250 miles W. of Hamamet. Long. 6. 25. E. Lat. 36. 20. N.

ZAMOSKI, a strong town of Poland, in Red Russia, now the Austrian kingdom of Lodomeria. It has a citadel, and is 37 miles N.W. of Lemburg. Long. 23. 26. E. Lat. 50. 52. N.

ZAMPANGO, a town of New Spain, in the province of Mexico Proper, 25 miles N. of Acapulco.

ZANFARA, a kingdom of Negroland, to the W. of the kingdom of Zegzeg. The inhabitants are tall in stature, of a very black complexion, with broad faces, and savage dispositions. It is very little known to Europeans.

ZANZIBAR, an island of Africa, on the coast of Zanguebar, between the islands of Pemba and Moufia, with the title of a kingdom tributary to Portugal. It abounds in sugar-canes and citrons. The inhabitants are Mahometans. Long. 38. 25. E. Lat. 6. 0. S.

ZARA, a strong city of Venetian Dalmatia, capital of a county of the same name, with an archbishop's see, a citadel, and a harbour. It was formerly much more considerable, the circumference of the walls being now but two miles, and the inhabitants not above 6000. Near the church, which the Greeks call St. Helia, are two fluted columns of the Corinthian order, supposed to have been part of the temple of Juno. There are fine paintings in the churches, done by the best masters; and they pretend to have the body of St. Simeon, brought from Judea, and kept in a shrine, with a crystal before it. Zara is seated on a small peninsula, in the gulf of Venice, 80 miles S.W. of Jaiciza, and 150 S.E. of Venice. Long. 16. 6. E. Lat. 44. 30. N.

ZARENG, or **SEGESTAN**, a town of Persia, the capital of the province of Segestan, celebrated for its beautiful pottery. It is 220 miles W. of Candahar.

ZARIK, a town of Turkey in Europe, in the Morea, 22 miles E. of Misira. Long. 22. 8. E. Lat. 37. 5. N.

ZARNATE, a strong town of Turkey in Europe, in the Morea, seated on an eminence, 20 miles W. of Misira.

ZARNAW, a town of Little Poland, in the palatinate of Sandomir, 63 miles N. of Cracow. Long. 19. 56. E. Lat. 51. 13. N.

ZASLAW, a town of Poland, in Volhinia, seated on the Horin, 15 miles S.E. of Ostrog. Long. 27. 41. E. Lat. 50. 20. N.

ZATMAR, a strong town of Upper Hungary, capital of a county of the same name. It is seated on a small lake, formed by the river Samos, 50 miles E. by S. of Tockay, and 130 E. of Buda. Long. 22. 34. E. Lat. 47. 50. N.

ZATOR, a town of Poland, capital of a starosty of 13. N.

the same name, in the palatinate of Cracow, with a castle. It is seated on an eminence, near the river Vistula, 20 miles S.W. of Cracow, and 50 S.E. of Ratibor. Long. 19. 42. E. Lat. 49. 54. N.

ZAWEH, a town of Persia, in the province of Khorasm, situate on the Tedjen, about 20 miles from the Caspian Sea, 80 miles N. of Mesched, and 135 N.N.E. of Astrabad.

ZBARAZ, a town of Poland, in Podolia, 70 miles N. by W. of Kaminiack.

ZBOROW, a town of Austrian Poland, in the palatinate of Lemburg. Here, in 1649, John Casimir, king of Poland, with 20,000 men, was attacked in his camp by 110,000 Cossacs and Tartars, for three days successively, but defended himself so bravely, that the latter were glad to consent to terms of accommodation. Zborow is 25 miles W. of Zbaraz, and 52 E. by S. of Lemburg. Long. 25. 46. E. Lat. 49. 46. N.

ZEBID, a city of Arabia, in the province of Yemen, 52 miles N. of Mocha. Long. 43. 15. E. Lat. 14. 13. N.

ZEBU, or CEBU, one of the Philippine islands in the Indian Ocean, between those of Leyte and Negros. It is 140 miles long and 30 broad.

ZEDIC, a town of Barbary, principal place of a district, in the country of Tripoli. It is seated on a bay of the Mediterranean, to which it gives name, 180 miles E.S.E. of Tripoli.

ZEGEDIN, or SZEGED, a strong town of Hungary, situate near the confluence of the Maros and Theisse, 60 miles N.W. of Temeswar, and 68 N. of Belgrade. Long. 21. 5. E. Lat. 46. 8. N.

ZEGZEG, a kingdom of Negroland, lying on the river Niger, by which it is separated, on the north, from the empire of Cashna. On the east it is bounded by Zanfara, on the south by Benin, and on the west by unknown deserts. It consists partly of plains and partly of mountains. The latter are extremely cold, while the former are intolerably hot; but abound with water, and are exceedingly fruitful.

ZEIGHENHEIM, a town of Germany, in the landgraviate of Hesse Cassel, 30 miles S. of Cassel. Long. 9. 19. E. Lat. 50. 52. N.

ZEIL, a town of Suabia, capital of a county of the same name, in the Algau, with a castle. It is seated on the little river Aitrach, 70 miles S. of Ulm.

ZEITON, a town of Turkey in Europe in Janna, with a castle and an archbishop's see. It is a small place, and seated on a hill, by a gulf of the same name, near the river Eyalada, 50 miles S.E. of Larissa.

ZEITZ, a town of Upper Saxony, in the duchy of Naumburg, with a castle and a well-frequented college. It is seated on the Ester, 25 miles S.W. of Leipsic, and 45 E. of Erfurt. Long. 12. 8. E. Lat. 50. 59. N.

ZELL, a town of Lower Saxony, capital of a duchy of the same name, which devolved to the house of Hanover by marriage. It is surrounded by ditches and ramparts, on which are planted chestnut and lime trees. It is a small town, without trade or manufactures; but the high courts of appeal for all the territories of the electoral house of Brunswick-Lunenbourg are held here, and the inhabitants derive their principal means of subsistence from this circumstance. The castle, a stately building, surrounded by a moat, was formerly the residence of the dukes of Zell; and was repaired by George III. king of Great Britain, for the residence of his unfortunate sister, the queen of Denmark, who died here. In 1757 the French reduced the suburbs of Zell to ashes, and even set fire to the orphan hospital, in which a great number of helpless children are

said to have perished. Zell is seated on the Aller, 31 miles N.W. of Brunswick, and 47 S. by W. of Lunenburg. Long. 10. 12. E. Lat. 52. 49. N.

ZELL, an imperial town of Suabia, seated on the Kintzig, 28 miles S. of Baden, and 52 W.S.W. of Stutgard. Long. 8. 8. E. Lat. 48. 22. N.

ZELLI, an imperial town of Staabiz, seated on a lake of the same name, otherwise called the Zeller See, or lower lake of Constance, 14 miles N.W. of Constance.

ZELL, a town of Germany, in the electorate of Treves, seated on the Moselle, 33 miles N.E. of Treves.

ZELL-IN-THE-PINZGAU, a town of Germany in the archbishopric of Salzburg, seated on a lake 37 miles S.W. of Salzburg.

ZELLERFELD, a town of Lower Saxony, in the Hartz forest. Silver to the value of 20,000 imperial crowns is annually coined here. It is six miles S.S.W. of Goslar.

ZEMLIN, or ZEMPLIN, a town of Upper Hungary, capital of a county of the same name. It is seated on the Bodrog, 25 miles S.E. of Cassovia, and 27 N.E. of Tockay. Long. 21. 35. E. Lat. 48. 36. N.

ZENGAN, a town of Persia, in the province of Irac, 80 miles N.N.E. of Amadan.

ZENGUA, a town of Turkey in Asia, in the pachalic of Aleppo, situate on the Euphrates, 55 miles N.N.E. of Aleppo, and 90 E. of Alexandretta. Long. 37. 50. E. Lat. 36. 25. N.

ZENIA, a town of Hungary, memorable for a signal victory gained in 1697 by Prince Eugene over the Turks, commanded by Emperor Mustapha II. It is 52 miles N. of Belgrade, and 52 W. of Temeswar. Long. 21. 30. E. Lat. 46. 5. N.

ZERBST, a town of Upper Saxony, capital of a district of that name, in the principality of Anhalt, with a castle, where the princes commonly reside. The inhabitants are partly Lutherans and partly Calvinists, and are famous for brewing good beer. It is 27 miles N.W. of Wittemberg. Long. 12. 13. E. Lat. 52. 0. N.

ZEREA, a town and fortress of Persia, in the province of Farsistan, 18 miles N.N.E. of Schira. Long. 54. 30. E. Lat. 29. 52. N.

ZERIGA, a town of Persia, in Irac-Arabia, seated in a narrow plain, between mountains. It has produced several very famous Arabian horses.

ZIA, an island of the Archipelago, one of the Cyclades, to the south-west of Negropont, 15 miles long and eight broad. It abounds in barley, wine, and silk; also a fine sort of oak, whose fruit, called Villam, is the best trading commodity of the island, it being used by dyers and tanners. The principal town, of the same name, is seated on an eminence, 30 miles from the harbour, at the further end of a valley. It resembles an amphitheatre, and contains 2500 houses, all flat at the top. It belongs to the Turks, but most of the inhabitants are Greeks, and have a bishop.

ZIBIT, a territory in Arabia Felix, extending from the principality of Mecca to that of Mocha, being bounded on the east by the principality of Tehama, and on the west by the Red Sea. The Turks were formerly masters of this country, but it now belongs to an Arabian prince.

ZIMR, a trading town of Arabia Felix, capital of a territory of the same name. It is seated on the Zibit, 150 miles N.W. of Aden.

ZIEGENHAYN, a town of Germany, in the circle of the Upper Rhine and principality of Hesse, 26 miles S. of Cassel. Long. 9. 5. E. Lat. 50. 42. N.

ZIGET, a strong town of Hungary, which has been several times besieged and taken by the Turks and Imperialists. It is 44 miles S.E. of Canischa, and 130 S.S.E. of Vienna. Long. 17. 42. E. Lat. 46. 21. N.

ZINC (*Enchyl.*). The following is extracted from the specification of the patent granted to Mr. Browne, of Derby, for the method of making extract of zinc. He says, "the extract of zinc is made or composed of the vegetable or animal acid, saturated with the oxyd of zinc, in whatever state it may be found, whether in the state of ore, as calaminaris of every description, blend, or black-jack, or by whatever other name it may be called, or in the state of flowers, or soot from furnaces where brass or spelter is made, called tutty-pompholix, or oven-bruck, or the flowers or oxyd made directly from the ore, or in its metallic state, by heat, or any kind of acid. The acid necessary for this purpose may be made by acetous fermentation, as common vinegar, either in its natural or distilled state, or any acid produced from any vegetable, by chemical acid, or any vegetable or animal oil, whether disengaged by any process, or used in the state of oil; all or any of the above being saturated with the oxyd of zinc, produce extract of zinc."

ZIRICZEE, a strong town of the United Provinces in Zealand, and the principal of the isle of Schowen. It was the ancient residence of the counts of Zealand, and was then a place of much more consequence, the port having been since filled with sand. It was taken by the Spaniards in 1676. It is 12 miles N.E. of Middleburg, and 18 S.W. of Briel. Long. 4. 10. E. Lat. 51. 36. N.

ZITTAU, a fortified town of Germany, in Lusatia, subject to the elector of Saxony. Besides the suburbs and handsome gardens that surround it on all sides, there are a number of fine villages that depend on it. The principal business of the inhabitants is brewing beer; but there are above 100 clothiers, and in the neighbouring villages above 1000 weavers. Its merchants trade with those of Prague and Leipsic, and extend their commerce as far as Holland. The cathedral of Rittaw has three organs and two high steeples. Near it is a college, where the languages, drawing, and other arts, are taught gratis. Joining to the cloisters is a library, the finest in all Lusatia; and at a small distance from it, is the orphan-house. Zittaw being occupied by the Prussians in 1757, was taken by the Austrians, who pillaged the town, and almost entirely destroyed it, notwithstanding the inhabitants were the subjects of their ally, the Elector of Saxony. It is seated on the Neisse, 17 miles S.W. of Gorlitz, and 25 S.E. of Dresden. Long. 15. 5. E. Lat. 50. 59. N.

ZNAIM, a strong town of Germany, in Moravia, with a castle, in which are a great many Pagan antiquities. It is seated on the river Teya, 24 miles S.W. of Brinn, and 32 N. of Vienna. Long. 16. 40. E. Lat. 48. 38. N.

ZOARA, a fortified town on the coast of Barbary, with a good harbour, 60 miles W. of Tripoli. Long. 11. 55. E. Lat. 32. 45. N.

ZOBELITZ, a town of Upper Saxony, in the territory of Erzgebürg. The inhabitants subsist principally by working the serpent stone, which is found in the neighbourhood, into pitchers, bowls, tea and coffee cups, &c. A red species of this stone is also found here, which is considered as the finest, and therefore claimed by the sovereign as his property. It is 17 miles S. of Freyburg.

ZOBTEN, a town of Silesia, in the principality of Schweidnitz, nine miles E.N.E. of Schweidnitz.

ZOFFINGEN, a town of Switzerland, in the canton of Bern, with an elegant church and a public library, con-

taining several curious manuscripts. The inhabitants, about 2000, have their own magistrates, and what is peculiar, their own courts of justice, both civil and criminal, which decide in the last resort, without an appeal to Bern. It is seated near a large forest, which contains the best pine-trees in all Switzerland, three miles from Arburg. Long. 7. 6. E. Lat. 47. 5. N.

ZOLNOCK, a town in Upper Hungary, capital of a county of the same name. It was taken by the Turks in 1534, and retaken in 1685. It is seated on the Teyssy, where the Sagelia falls into it, 62 miles N.E. of Colecsza, and 62 E. of Buda. Long. 20. 50. E. Lat. 47. 10. N.

ZONS, a town of Germany, in the archbishopric of Cologne, with a castle, 13 miles N.N.W. of Cologne. Long. 6. 55. E. Lat. 51. 8. N.

ZORNDORF, a village in Germany, in the new marche of Brandenburg, one mile north of Custrin. Here in 1758 the King of Prussia, after a dreadful conflict, totally defeated the Russians.

ZOUT PAN, a curious salt lake in the country of the Hottentots, a few miles north of Point Padron. It is in a plain, much above the level of the sea, and three miles in circumference. At some seasons it is formed into an entire mass of fine white salt.

ZUCKMANDEL, a town of Silesia, in the principality of Neisse, with a bishop's see, 10 miles S. of Neisse.

ZUEELA, a town of the kingdom of Fezzan, situate in a district of remarkable fertility, in which the remnants of ancient buildings, the number and size of the cisterns, and the construction of the vaulted caves, intended perhaps as repositories of corn, exhibit wonderful vestiges of ancient splendour. It is 140 miles E. of Moorzook. Long. 16. 34. E. Lat. 27. 59. N.

ZVENIGOROD, a town of Russia, in the government of Moscow, situate on the Moskva, 28 miles W. of Moscow. Long. 37. 2. E. Lat. 55. 40. N.

ZUG, a town of Switzerland, capital of a canton of the same name, seated on a beautiful lake, in a fertile valley, abounding with corn, pasture, and wood. In 1435, a street which was on the side of the lake was swallowed up. There are several handsome churches, and a good town-house. It is remarkable that Oswald, a saxon king of Northumberland, in the seventh century, is the tutelary saint of this place. Zug is 12 miles N.E. of Lucern, and 42 S.E. of Basil. Long. 8. 16. E. Lat. 47. 10. N.

ZUIDER-ZEE, a great bay of the German Ocean, which extends from south to north in the United Provinces, between Friesland, Overysse, Guelderland, and Holland.

ZUILLICHAU, a town of Silesia, in the province of Crossen, 16 miles N.E. of Crossen. Long. 16. 12. E. Lat. 52. 12. N.

ZULPHA, a town of Persia, almost close to Ispahan, to which it is a sort of suburb, and separated from it by the river Sanderon. It is peopled by a colony of Armenians, who were brought into Persia by Shah Abbas. It is an archbishop's see, and contains several churches and monasteries.

ZULPICH, or **ZULCH**, a town of Germany, in the duchy of Juliers, belonging to the archbishop of Cologne. It is seated on the Nassel, 10 miles S. of Juliers, and 10 W. of Bonn. Long. 6. 40. E. Lat. 50. 46. N.

ZURITA, a town of Spain, in Old Castile, with a castle, seated on the Tajo, very near Toledo. Long. 3. 17. W. Lat. 39. 50. N.

ZURZACH, a town of Switzerland, in the county of Baden, remarkable for two fairs much frequented by the merchants of Germany and France. It is seated on

the Rhine, just above the junction of the Aar with that river.

ZUTZ, a town of Switzerland, in the country of the Grisons. Though not the largest, it is the principal of the district of Upper Bagadina, because it contains the criminal court of justice.

ZUYST, a village of the United Provinces, five miles from Utrecht. It abounds in plantations and shady walks, and is greatly ornamented by the spacious buildings which Count Zinzendorf appropriated to the fraternity of Hurrenhuters or Moravians. The brethren are employed in various kinds of manufacture; and as many of them have been either educated in England, or have worked there, their workmanship far exceeds that of any other part of Holland; but the articles are proportionably dearer. Zuyst is much frequented, in the summer months, by a substantial class of Dutch merchants (particularly from Amsterdam) who have no country seats of their own.

ZWETL, a town of the archduchy of Austria, at the confluence of the Zwetl and Kamp, 26 miles W.N.W. of Krems, and 56 W.N.W. of Vienna. Long. 15. 2 E. Lat. 48. 30. N.

ZWICKAU, a town of Upper Saxony, in Misnia, formerly imperial, but now subject to the Elector of Saxony. The place where the inhabitants are buried is in Voigtland; and therefore it is commonly said, that they are Misnians while alive, but Voigtlanders after they are dead. Zwickau is seated on the Muldaw, 15 miles S. of Altenburg, and 20 N.E. of Plawen. Long. 12. 26. E. Lat. 50. 45. N.

ZWINENBERG, a town of Germany, in the land-

grave of Hesse Darmstadt, eight miles S. of Darmstadt, and 12 N. of Worms.

ZWITTAU, a town of Moravia, in the circle of Olmutz, 30 miles N.W. of Olmutz, and 84 E. of Prague.

ZWOLL, a town of the United Provinces, in Overysse, and in the district of Zailant. It is defended by some fortifications, and the canal, which begins near this place, and extends to the river Yssel, is defended by several forts. Near it is the mountain of St. Agnes, where there was formerly an Augustin convent, in which Thomas Kempis lived 71 years, and died in 1471. It was formerly an imperial and hanseatic town, and is seated on an eminence on the rivers Aa and Yssel, five miles S. of Hasselt, and eight S.E. of Campen. Long. 6. 10. E. Lat. 52. 33. N.

ZWONIGRAD, a town of Imperial Dalmatia, capital of a district. It is 36 miles S. of Bihacs, and 60 S.E. of Segna. Long. 14. 40. N. Lat. 44. 42. N.

ZWORNICK, a town of Bosnia, 60 miles N. of Seralo, and 68 S.W. of Belgrade. Long. 18. 45. N. Lat. 44. 24. N.

ZYGETH, a strong town of Lower Hungary, capital of a county of the same name, with a citadel. It was besieged in 1566, by Solyman II. emperor of the Turks, and taken three days after his death; but was afterwards retaken by the Austrians. It is seated in a morass, made by the river Alma, 50 miles N.W. of Esseck. Long. 18. 58. E. Lat. 46. 17. N.

ZYTOMIERZ, a town of Poland, in Volhinia, seated on the Cieciwief, 70 miles W. of Kiof, and 120 E. of Lucko. Long. 29. 22. E. Lat. 50. 35. N.

FINIS.



